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Checklist of marine and estuarine fishes from the Alaska–Yukon Border, Beaufort Sea, to Cabo San Lucas, Mexico

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Table of Contents

Abstract . . . 7
Introduction . . . 7
Species Accounts . . . 11
Order Myxiniformes . . . 11
Family Myxinidae—Hagfishes . . . 11
Order Petromyzontiformes . . . 12
Family Petromyzontidae—Lampreys . . . 12
Order Chimaeriformes . . . 12
Family Rhinochimaeridae—Longnose Chimaeras . . . 12
Family Chimaeridae—Ratfishes or Shortnose Chimaeras . . . 12
Order Heterodontiformes . . . 13
Family Heterodontidae—Bullhead Sharks or Horn Sharks . . . 13
Order Orectolobiformes . . . 13
Family Ginglymostomatidae—Nurse Sharks . . . 13
Family Rhincodontidae—Whale Sharks . . . 13
Order Lamniformes . . . 14
Family Odontaspididae—Sand Tigers . . . 14
Family Mitsukurinidae—Goblin Sharks . . . 14
Family Pseudocarcharhinidae—Crocodile Sharks . . . 14
Family Megachasmidae—Megamouth Sharks . . . 14
Family Alopiidae—Thresher Sharks . . . 15
Family Cetorhinidae—Basking Sharks . . . 15
Family Lamnidae—Mackerel Sharks . . . 15
Order Carcharhiniformes . . . 16
Family Scyliorhinidae—Cat Sharks . . . 16
Family Triakidae—Hound Sharks . . . 16
Family Carcharhinidae—Requiem Sharks . . . 17
Family Sphyrnidae—Hammerhead Sharks . . . 19
Order Hexanchiformes . . . 20
Family Chlamydoselachidae—Frill Sharks . . . 20
Family Hexanchidae—Cow Sharks . . . 20
Order Echinorhiniformes . . . 21
Family Echinorhinidae—Bramble Sharks . . . 21
Order Squaliformes . . . 21
Family Squalidae—Dogfish Sharks . . . 21
Family Etmopteridae—Lantern Sharks . . . 21
Family Somniosidae—Sleeper Sharks . . . 21
Family Dalatiidae—Kitefin Sharks . . . 22
Order Squatiniformes . . . 22
Family Squatinidae—Angel Sharks . . . 22
Order Torpediniformes . . . 22
Family Torpedinidae—Torpedo Electric Rays . . . 22
Family Narcinidae—Electric Rays or Numbfishes . . . 23
Order Pristiformes . . . 23
Family Pristidae—Sawfishes . . . 23
Order Rajiformes . . . 23
Family Rhinobatidae—Guitarfishes . . . 23
Family Trygonorrhinidae—Banjo Rays . . . 24
Family Arhynchobatidae—Softnose Skates . . . 24
Family Rajidae—Hardnose Skates . . . 26
Order Myliobatiformes . . . 27
Family Platyrhynidae—Thornbacks . . . 27
Family Urotrygonidae—Round Stingrays . . . 27
Family Dasyatidae—Whiptail Stingrays . . . 28
Family Gymnuridae—Butterfly Rays . . . 29
Family Aetobatidae—Pelagic Eagle Rays . . . 29
Family Myliobatidae—Eagle Rays . . . 29
Family Mobulidae—Devilrays . . . 29
Family Rhinopteridae—Cownose Rays . . . 30
Order Acipenseriformes . . . 30
Family Acipenseridae—Sturgeons . . . 30
Order Elopiformes . . . 31

Family Elopidae—Tenpounders . . . 31
Order Albuliformes . . . 31
Family Albulidae—Bonefishes . . . 31
Family Halosauridae—Halosaurs . . . 31
Family Notacanthidae—Spiny Eels . . . 31
Order Anguilliformes . . . 32
Family Colocongridae—Worm Eels (placed in this family by López *et al.* 2007) . . . 32
Family Chlopsidae—False Morays . . . 32
Family Muraenidae—Morays . . . 32
Family Synaphobranchidae—Cutthroat Eels . . . 35
Family Ophichthidae—Snake Eels or Worm Eels . . . 35
Family Derichthyidae—Longneck Eels . . . 37
Family Muraenesocidae—Pike Congers . . . 37
Family Nemichthyidae—Threadtail Snipe Eels . . . 37
Family Congridae—Conger Eels or Garden Eels . . . 38
Family Nettastomatidae—Duckbill Eels . . . 39
Family Serrivomeridae—Sawtooth Eels . . . 40
Order Saccopharyngiformes . . . 40
Family Cyematidae—Bobtail Eels . . . 40
Family Saccopharyngidae—Swallowers or Whiptail Gulpers . . . 40
Family Eurypharyngidae—Gulpers or Pelican Eels . . . 41
Family Monognathidae—Onejaws or Monognathids . . . 41
Order Clupeiformes . . . 41
Family Engraulidae—Anchovies . . . 41
Family Pristigasteridae—Longfin Herrings . . . 43
Family Clupeidae—Herrings . . . 43
Order Gonorynchiformes . . . 44
Family Chanidae—Milkfishes . . . 44
Order Cypriniformes . . . 45
Family Cyprinidae—Carps and Minnows . . . 45
Order Siluriformes . . . 45
Family Ariidae—Sea Catfishes . . . 45
Order Argentiniformes . . . 45
Family Argentinidae—Argentines . . . 45
Family Opisthoproctidae—Barreleyes or Spookfishes . . . 46
Family Bathylagidae—Deepsea Smelts . . . 46
Family Microstomatidae—Pencilsmelts . . . 48
Family Alepocephalidae—Slickheads . . . 48
Family Platytroctidae—Tubeshoulders . . . 50
Order Osmeriformes . . . 51
Family Osmeridae—Smelts . . . 51
Order Salmoniformes . . . 52
Family Salmonidae—Trouts and Salmons . . . 52
Order Stomiiformes . . . 54
Family Gonostomatidae—Bristlemouths . . . 54
Family Sternoptychidae—Marine Hatchetfishes . . . 56
Family Phosichthyidae—Lightfishes . . . 57
Family Stomiidae—Barbeled Dragonfishes or Dragonfishes . . . 58
Order Aulopiformes . . . 61
Family Synodontidae—Lizardfishes . . . 61
Family Scopelarchidae—Pearleyes . . . 62
Family Evermannellidae—Sabertooth Fishes . . . 62
Family Alepisauridae—Lancetfishes . . . 63
Family Paralepididae—Barracudinas . . . 63
Family Bathysauridae—Deepsea Lizardfishes . . . 64
Family Notosudidae—Paperbones or Waryfishes . . . 64
Family Ipnopidae—Tripodfishes . . . 65
Family Giganturidae—Telescopefishes . . . 65
Order Myctophiformes . . . 65
Family Neoscopelidae—Blackchins . . . 65
Family Myctophidae—Lanternfishes . . . 66
Order Lampridiformes . . . 74
Family Lampridae—Opahs . . . 74
Family Lophotidae—Crestfishes . . . 74

Family Trachipteridae—Ribbonfishes . . . 75
Family Regalecidae—Oarfishes . . . 75
Family Stylephoridae—Thread-tails or Tube-eyes . . . 75
Order Gadiformes . . . 76
Family Bregmacerotidae—Codlets . . . 76
Family Macrouridae—Grenadiers or Rattails . . . 76
Family Moridae—Codlings, Deepsea Cods, or Moras . . . 78
Family Melanonidae—Pelagic Cods . . . 79
Family Merlucciidae—Merlucciid Hakes . . . 79
Family Gadidae—Cods . . . 79
Family Lotidae—Burbots . . . 80
Order Ophidiiformes . . . 81
Family Carapidae—Pearlfishes . . . 81
Family Ophidiidae—Cusk-eels . . . 81
Family Bythitidae—Livebearing Brotulas or Viviparous Brotulas . . . 84
Family Dinematichthyidae . . . 85
Order Batrachoidiformes . . . 85
Family Batrachoididae—Toadfishes . . . 85
Order Lophiiformes . . . 86
Family Lophiidae—Goosefishes or Monkfishes . . . 86
Family Antennariidae—Frogfishes . . . 86
Family Chaunacidae—Coffinfishes or Sea Toads . . . 87
Family Ogcocephalidae—Batfishes . . . 87
Family Caulophrynidae—Fanfins . . . 87
Family Melanocetidae—Blackdevils . . . 88
Family Himantolophidae—Footballfishes . . . 88
Family Oneirodidae—Dreamers . . . 88
Family Thaumatichthyidae—Wolftrap Anglers . . . 89
Family Centrophrynidae—Deepsea Anglerfishes . . . 90
Family Ceratiidae—Seadevils . . . 90
Family Gigantactinidae—Whipnoses . . . 90
Family Linophrynidae—Netdevils . . . 91
Order Mugiliformes . . . 91
Family Mugilidae—Mullets . . . 91
Order Atheriniformes . . . 92
Family Atherinopsidae—New World Silversides . . . 92
Order Beloniformes . . . 93
Family Exocoetidae—Flyingfishes . . . 93
Family Hemiramphidae—Halfbeaks . . . 95
Family Belonidae—Needlefishes . . . 95
Family Scomberesocidae—Sauries . . . 96
Order Cyprinodontiformes . . . 96
Family Fundulidae—Topminnows . . . 96
Family Poeciliidae—Livebearers . . . 97
Order Stephanoberyciformes . . . 97
Family Melamphaidae—Bigscales . . . 97
Family Cetomimidae —Flabby Whalefishes or Whalefishes . . . 99
Family Rondeletiidae—Redmouth Whalefishes . . . 100
Family Barbourisiidae—Velvet Whalefishes . . . 100
Family Mirapinnidae—Hairyfish and Ribbonbearers or Tapetails . . . 100
Order Beryciformes . . . 100
Family Anoplogastridae—Fangtooths . . . 100
Family Diretmidae—Spinyfins . . . 100
Family Anomalopidae—Flashlightfishes . . . 101
Family Holocentridae—Squirrelfishes . . . 101
Order Zeiformes . . . 101
Family Oreosomatidae—Oreos . . . 101
Family Zeidae—Dories . . . 102
Order Gasterosteiformes . . . 102
Family Aulorhynchidae—Tubesnouts . . . 102
Family Gasterosteidae—Sticklebacks . . . 102
Family Syngnathidae—Pipefishes . . . 102
Family Aulostomidae—Trumpetfishes . . . 103
Family Fistulariidae—Cornetfishes . . . 103

Family Macroramphosidae—Snipefishes . . . 104
Order Scorpaeniformes . . . 104
Family Scorpaenidae—Rockfishes or Scorpionfishes . . . 104
Family Triglidae—Searobins . . . 113
Family Anoplopomatidae—Sablefishes . . . 114
Family Zaniolepididae—Combfishes . . . 114
Family Hexagrammidae—Greenlings . . . 115
Family Jordaniidae—Longfin Sculpins[1] . . . 116
Family Scorpaenichthyidae—Cabezon . . . 116
Family Rhamphocottidae—Grunt Sculpins . . . 116
Family Cottidae—Freshwater Sculpins[1] . . . 117
Family Psychrolutidae—Marine Sculpins[1] . . . 117
Family Agonidae—Poachers . . . 127
Family Cyclopteridae—Lumpfishes or Lumpsuckers . . . 132
Family Liparidae—Snailfishes . . . 134
Order Perciformes . . . 144
Family Centropomidae—Snooks . . . 144
Family Moronidae—Temperate Basses . . . 144
Family Howellidae—Lanternbellies or Temperate Ocean-Basses . . . 144
Family Polyprionidae—Wreckfishes . . . 145
Family Epinephelidae—Groupers . . . 145
Family Serranidae—Sea Basses . . . 147
Family Opistognathidae—Jawfishes . . . 150
Family Priacanthidae—Bigeyes . . . 150
Family Apogonidae—Cardinalfishes . . . 151
Family Malacanthidae—Tilefishes . . . 151
Family Nematistiidae—Roosterfishes . . . 151
Family Carangidae—Jacks . . . 152
Family Coryphaenidae—Dolphinfishes . . . 156
Family Echeneidae—Remoras . . . 156
Family Bramidae—Pomfrets . . . 157
Family Caristiidae—Manefishes or Veilfins . . . 158
Family Lutjanidae—Snappers . . . 158
Family Lobotidae—Tripletails . . . 160
Family Gerreidae—Mojarras . . . 160
Family Haemulidae—Grunts . . . 161
Family Sparidae—Porgies . . . 164
Family Polynemidae—Threadfins . . . 164
Family Sciaenidae—Drums and Croakers . . . 164
Family Mullidae—Goatfishes . . . 168
Family Kyphosidae—Sea Chubs . . . 168
Family Chaetodontidae—Butterflyfishes . . . 169
Family Pomacanthidae—Angelfishes . . . 170
Family Pentacerotidae—Armorheads . . . 170
Family Kuhliidae—Flagtails . . . 170
Family Oplegnathidae—Knifejaws . . . 171
Family Cirrhitidae—Hawkfishes . . . 171
Family Cichlidae—Cichlids . . . 171
Family Embiotocidae—Surfperches . . . 171
Family Pomacentridae—Damselfishes . . . 173
Family Labridae—Wrasses . . . 175
Family Bathymasteridae—Ronquils . . . 178
Family Zoarcidae—Eelpouts . . . 179
Family Stichaeidae—Pricklebacks . . . 186
Family Cryptacanthodidae—Wrymouths . . . 189
Family Pholidae—Gunnels . . . 189
Family Anarhichadidae—Wolffishes . . . 191
Family Ptilichthyidae—Quillfishes . . . 191
Family Zaproridae—Prowfishes . . . 191
Family Scytalinidae—Graveldivers . . . 191
Family Chiasmodontidae—Swallowers . . . 191
Family Trichodontidae—Sandfishes . . . 192
Family Ammodytidae—Sand Lances . . . 193
Family Uranoscopidae—Stargazers . . . 193

Family Tripterygiidae—Triplefins . . . 194
Family Dactyloscopidae—Sand Stargazers . . . 194
Family Blenniidae—Combtooth Blennies . . . 195
Family Clinidae—Kelp Blennies . . . 196
Family Labrisomidae—Labrisomid Blennies . . . 197
Family Chaenopsidae —Tube Blennies . . . 199
Family Icosteidae—Ragfishes . . . 201
Family Gobiesocidae—Clingfishes . . . 201
Family Callionymidae—Dragonets . . . 203
Family Eleotridae—Sleepers . . . 203
Family Gobiidae—Gobies . . . 203
Family Microdesmidae—Wormfishes . . . 207
Family Ptereleotridae—Dartfishes . . . 207
Family Ephippidae—Spadefishes . . . 208
Family Luvaridae—Louvars . . . 208
Family Zanclidae—Moorish Idols . . . 208
Family Acanthuridae—Surgeonfishes . . . 208
Family Sphyraenidae—Barracudas . . . 209
Family Gempylidae—Snake Mackerels . . . 209
Family Trichiuridae—Cutlassfishes . . . 210
Family Scombridae—Mackerels . . . 211
Family Xiphiidae—Swordfishes . . . 213
Family Istiophoridae—Billfishes . . . 213
Family Centrolophidae—Medusafishes . . . 213
Family Nomeidae—Driftfishes or Flotsamfishes . . . 214
Family Tetragonuridae—Squaretails . . . 214
Family Stromateidae—Butterfishes . . . 215
Order Pleuronectiformes . . . 215
Family Paralichthyidae—Sand Flounders . . . 215
Family Pleuronectidae—Righteye Flounders . . . 218
Family Achiridae—American Soles . . . 221
Family Bothidae—Lefteye Flounders . . . 222
Family Cynoglossidae—Tonguefishes . . . 222
Order Tetraodontiformes . . . 223
Family Balistidae—Triggerfishes . . . 223
Family Monacanthidae—Filefishes . . . 224
Family Ostraciidae—Boxfishes . . . 224
Family Tetraodontidae—Puffers . . . 225
Family Diodontidae—Porcupinefishes . . . 226
Family Molidae—Molas or Ocean Sunfishes . . . 226
Acknowledgments . . . 227
References . . . 227

Abstract

This paper is a checklist of the fishes that have been documented, through both published and unpublished sources, in marine and estuarine waters, and out 200 miles, from the United States-Canadian border on the Beaufort Sea to Cabo San Lucas, Mexico. A minimum of 241 families and 1,644 species are known within this range, including both native and nonnative species. For each of these species, we include maximum size, geographic and depth ranges, whether it is native or nonnative, as well as a brief mention of any taxonomic issues.

Key words: eastern North Pacific Ocean, taxonomy, species inventory

Introduction

Scope

This is a comprehensive inventory of the fish species recorded in marine and estuarine waters between the Alaska-Yukon Territory border in the Beaufort Sea to Cabo San Lucas at the southern end of Baja California, and out about 200 miles from shore. Our westernmost range includes the eastern Bering Sea and Aleutian Islands.

We have also included species that are on the border or close to the border of our range, but have not yet been reported within our study area. These species are marked with an asterisk (*) and have been reported (1) in the western Bering Sea; (2) off Canada's Yukon Territory; (3) along the southern-eastern tip (but non-Pacific side) of Baja California; and (4) in waters somewhat beyond 200 miles from shore. Although the term West Coast usually refers to the coast of the contiguous western United States, our usage herein means the entire study area. This edition, exclusive of "border" species encompasses fish fauna from 241 families, and a minimum of 1,644 species. In addition, we have included 1) introduced species (marked by a double asterisk (**)), 2) records whose veracity are unclear (marked with a question mark (?)), and 3) records that are likely in error (marked with an X).

Data Sources

We have used a wide range of data and information sources for this inventory. Generally, these sources can be placed into seven categories:

1) Peer-reviewed journals, monographs, and books—We have generally accepted information in peer-reviewed literature to be accurate where the purpose of the article was to record new data on species. In publications with reports of species occurrences far outside their known depth or geographic ranges, and without commentary on the unusual observations (i.e., where the author(s) appear to be unaware of the uniqueness of the data), we cite the range as previously known from well-documented records and add the "new record" preceded by words such as "reported to" or "perhaps to" or "but without documentation."
2) Regional guides—In most instances, we have accepted records found in older, but not ancient, guides such as Miller and Lea (1972), Hart (1975), and Eschmeyer and Herald (1983), as these were based on solid reviews of the literature and examination of permanent vouchers. Where we or other authors have uncovered errors in those works, and we feel the corrections may have been or are likely to be overlooked, we have made and annotated the corrections.
3) Museum specimens—To find potential new extensions of size, range, or depth as represented by voucher specimens in museums we reviewed the fish collections of the National Marine Fisheries Service at the Auke Bay Laboratory (AB); Academy of Natural Sciences of Drexel University (ANSP Fish); California Academy of Sciences (CAS); Universidad National Autonoma de Mexico, Colleccion Nacional de Peces (IBUNAM CNPE); Los Angeles County Museum of Natural History (LACM); Oregon State Fish Collection (OS); Royal British Columbia Museum (RBCM); Russian Academy of Science Ichthyological Collecton at Saint Petersberg (ZIN); Santa Barbara Natural History Museum (SBMNH), Scripps Institution of Oceanography (SIO); University of Alaska, Fairbanks (UAM); Florida Museum of Natural History (UF); National Museum of Natural History (USNM); and University of Washington (UW).
   The identity of most of the specimens from these collections included in this inventory were confirmed by the following: Catherine W. Mecklenburg (AB, CAS, USNM, UAM, and UW); David Catania (CAS); Milton Love and Richard Feeney (LACM); Milton Love (SBMNH), Ben Frable, H. J. Walker Jr., Cynthia Klepadio, Phillip Hastings, and Richard Rosenblatt (SIO); Katherine Maslenikov (UW). Boris A. Sheiko (ZIN).
4) Gray literature and survey databases—In recent years, there have been several fishery resource assessments, primarily trawl surveys, along the Pacific Coast. Examples of these are the shelf and slope trawl surveys conducted by NOAA Fisheries and by the Southern California Coastal Water Research Program and the trawl and longline surveys of Fisheries and Oceans Canada. The use of data from these surveys, usually available in annual and final reports, or more recently online, was challenging. As noted by Matarese *et al.* (2003), some of the data, especially from older surveys (pre-1995), are of uneven quality. In light of this, we were cautious in accepting data about more unusual occurrences where voucher specimens or photographs were unavailable. From these older studies, we tended to accept reports of easily identifiable fish species and to reject clearly disjunct occurrences of coastal species and reports involving poorly understood fish groups. In some instances where we had access to the survey databases for these earlier studies, we sometimes accepted depth and range extensions when there was at least a second collection made near that new record. Unquestionably, the accuracy of species identifications has increased in more recent surveys with improved guides and keys to fishes, greater ichthyological expertise, and interest in biodiversity relationships. Even so, in a number of instances we requested that the original datasheets be rechecked to assure that the species were properly coded in the database. In cases where the data cited represent a considerable extension of known range or depth, we

include the current published record and add the new data preceded by "reported to" or other phrase to alert readers to the need for saving voucher specimens.

5) Personal communications—Over the years, fishers and biologists have reported many unusual sightings or records of fish captures to us. We have included those that come with the best documentation. We give only the most general information for the records from personal communications because in most cases the contributors themselves intend to publish papers giving the details. Most of the records, such as those from John Snow of fishes from Mexico, Alex E. Peden and Graham E. Gillespie of British Columbia fishes, and Boris A. Sheiko of Russian fishes, are backed by voucher specimens in permanent museum collections. Many personal communication records are backed by photographs and discussion of diagnostic characters.
6) Our own unpublished data from field excursions—These records are usually supported by voucher specimens, photographs, or videos.
7) FishBase (cited in this inventory as Froese and Pauly 2019)—First, we acknowledge the undoubted value of FishBase as a very useful first resource when conducting research on a fish species. However, while compiling this inventory, we found numerous errors in FishBase, the result of misinterpretation of source material. For that reason, if we could not access the sources cited in FishBase, we have noted that we were unable to verify a particular datum.

Species Accounts

Order of Presentation

We follow the higher taxon sequences of Page *et al.* (2013); these are based on presumed phylogenetic relationships. Within each family, the genera and species are arranged alphabetically. Common names of families are given as plural (e.g., Acanthuridae—Surgeonfishes), even though there may be only one extant species in the family (e.g., Luvaridae—Louvars). Several of these families have fossil representatives and some have several nominal species, albeit currently classified as junior synonyms of one extant species. Moreover, families are erected to include groups of similar animals, regardless of number of species known at the time of naming of the family. This usage (plural) follows Mecklenburg *et al.* (2002) and Page *et al.* (2013).

For each species, we give the scientific name followed by the name of the describer(s) and publication date of the description; one or more common names; maximum size, in total length (TL), if available, or in standard length (SL), or fork length [occasionally we present both SL and TL]; geographic range; and depth range. The depth range is often prefaced by a habitat descriptor, such as "marine" or "benthic". For size, geographic, and depth ranges each datum is followed by its source. Synonym(s) are then mentioned if they have been in recent use in the literature or are apt to be found in databases such as in online museum catalogs. At the end of an account, comments on common names, taxonomy, or other considerations may be included.

Scientific name—This includes what we judged to be the currently accepted binomial of genus and species as given in the most recent classifications adopted by the appropriate specialists; in practice we tended to follow names provided by Fricke *et al.* (2020). However, in those instances where the species or genus name diverge from that database, we have provided the source for the name we have accepted and the alternative name of Fricke *et al.* (2020) or another source. For each species, we also provide the original describer of the species and the date of publication of the name and description. We have retained the convention (i.e., International Commission of Zoological Nomenclature) of connecting dual authors with an ampersand (&) rather than the word "and", and separating authors from the date of publication by a comma. We followed Fricke *et al.* (2020) for the describers' names and dates of all species.

Common names—In general, we have followed the common (English language) names given in Page *et al.* (2013). In the service of brevity, we do not, in general, list either older disused names, or names from other countries and in other languages. However, in those instances where we have used names different from those of Page *et al.* (2013), it was usually to give precedence to well-established West Coast of North America names. As examples, we retained Soupfin Shark (*Galeorhinus galeus* or possibly *Galeorhinus zyopterus*) rather than Tope and Yellowtail (*Seriola dorsalis*) rather than Yellowtail Jack. Where we differ from Page *et al.* (2013) we also provide the name that they list. If more than one common name is in use, the names are listed in alphabetical order with the recommended name in bold type. For names of species that are not listed in Page *et al.* (2013), we provide those given in Love *et al.* (2005) or have been coined and contributed by interested persons for this publication.

Size and depth conversions—We give size and depth in both metric and English units. For publications giving both metric and English (e.g., Hart 1973, Eschmeyer and Herald 1983) we did not recalculate the conversions or round whole numbers or fractions but present them as given in the original publications.

To convert centimeters to inches, we divided centimeters by 2.54; meters to feet, by multiplying meters by 3.2808; and fathoms to meters, by multiplying fathoms by 1.829. Rather than round any of the resulting converted numbers, say to 3,500 m from 3,481 m, as some authors have done (e.g., Quero *et al.* 1990; Fischer *et al.* 1995), we have chosen to give the numbers as calculated so that subsequent authors do not reconvert and inadvertently make the lengths or depths decrease or increase.

In a few instances, we found sharp divergences in maximum lengths or depths reported by recent authorities. In those instances, we have listed more than one maximum length or depth. Such differences can occur due to taxonomic revisions, and one of the lengths or depths may no longer relate to the species for which it is given. We identified and corrected several of these occurrences, but resolution of a few remained elusive.

Geographic range—Geographic ranges are stated from broadest to finest scale. If the species is also found outside the eastern North Pacific, we first give the broadest range. For example, we may first note that a species is "circumglobal," without giving specific locations throughout the world. By circumglobal we do not mean in all the seas of the world, but usually in the three major oceans or circumglobal in the Arctic. We then provide a more specific range in the Pacific Ocean, beginning with the westernmost record (e.g., "southern Japan"), and then the eastern Pacific (including Bering, Chukchi, and Beaufort Seas) range. Records from eastern Asia (e.g., Japan, Korea, eastern Russia) are usually given in less precise terms (e.g., "northern Japan") than those within our geographic boundaries (e.g., "La Jolla, southern California").

Where there is a sense that the western Pacific population is disjunct from that of the eastern Pacific, we separate the data with a semicolon (e.g., *Carcharhinus falciformis*: "western Pacific Ocean at least as far northward as Ryukyu Islands (Yoshino and Aonuma in Nakabo 2002); Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (Galván-Magaña *et al.* 2000) …"

We have separated California and Baja California each into northern, central, and southern areas. Northern California extends from the Oregon border to about San Francisco, central California from just south of San Francisco to Point Conception, and southern California from just south of Point Conception to the Mexico border. Northern Baja California extends from the US-Mexico border to about Punta Baja, central Baja California extends to Punta Eugenia, and southern Baja California runs to Cabo San Lucas. While we generally give only the extremes of geographic range, in some instances, such as along the southern California and Baja California coast, we have often included both northern- or southernmost island and mainland occurrences. Geographic coordinates (latitude and longitude) are included in instances where fishes were captured well offshore or in areas where we felt there are no well-known landmarks.

In addition:

For place names, we use those names prevalent in the country of origin (e.g., Bahía Magdalena rather than Magdalena Bay).

"Baja California" means the outer (Pacific) coast of that peninsula.

Depth range—Depths given are minimum and maximum. Depth is rounded to the nearest integer. The one exception is when a depth record was originally recorded as 2 feet or less, in which case the meter conversion is less than 1. Because the very young life stages (larvae and pelagic juveniles) of many fishes live at or near the surface, where possible we have tried to exclude records of pelagic stages. In some cases, where a depth of "0" meters or feet was given, it was not possible to differentiate between intertidal and surface collections. In addition, we have labeled as "intertidal" those fishes that were taken in beach seines or other very near-shore nets.

Depth is often the most problematic metric for fishes. There are two reasons for this. One is that collections made on the sea floor by, for instance, bottom trawl or by dispersing anesthetic, are often conducted over a range of depths. When this occurred, we made it a practice to use the extremes of the range. However, in certain instances, a depth range was so large that we were unable to use the data. A second, and much more frequent, complexity arose in documenting maximum depths of midwater or pelagic species when these fishes were captured in the water column with a non-closing net, such as an Isaacs-Kidd midwater trawl. In these instances, it was not possible to ascertain where in the water column fishes were captured—it could have been anywhere from the maximum depth fished to the surface. In these instances, we have often provided two maximum depths, one our assessment of a "reasonable" one, based on assessing a number of captures of that species, and the other a possible maximum one,

based on possible maximum depth of captures. As an example, for the lanternfish *Diogenichthys atlanticus*, we give a maximum depth of 1,720 m, but note that "A record of 5,041 m (16,534 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a non-closing midwater trawl and may represent a catch shallower than the maximum depth."

Synonyms and Taxonomic Debates—At the end of each account we have sometimes included alternative scientific names when we judge these are still in use or we wish to make it clear that the species in our area has recently gone by another name and our account includes records published under that name. We also highlight instances where there is still taxonomic debate. As an example, while we consider *Careproctus lerikimae* to be a valid species, Mecklenburg et al (2018) consider it a junior synonym of *Careproctus reinhardti*. Thus, we note under the *C. lerikimae* the following: "Mecklenburg *et al.* (2018) considered *C. lerikimae* a junior synonym of *Careproctus reinhardti* (Krøyer, 1862) based on COI sequencing."

Species Accounts

Please note that 1) species that are barely outside, or on the boundary of, our geographic range are marked with an asterisk (*), 2) introduced species are marked by a double asterisk (**), 3) records whose veracity are unclear are marked with a question mark (?), and 4) records that are likely in error are marked with an X.

Order Myxiniformes

Family Myxinidae—Hagfishes

Eptatretus deani (Evermann & Goldsborough, 1907). **Black Hagfish**. To 66.2 cm (26 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). South-eastern Alaska (Wisner and McMillan 1990) to Islas San Benito, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 52–2,743 m (171–8,997 ft) (min.: Bradburn *et al.* 2011; max.: Wisner and McMillan 1990).

Eptatretus fritzi Wisner & McMillan, 1990. **Guadalupe Hagfish**. To 58.5 cm (23 in) TL. Isla Guadalupe, central Baja California. Benthic; depth: 182–2,743 m (600–8,997 ft). All in Wisner and McMillan (1990).

Eptatretus mcconnaugheyi Wisner & McMillan, 1990. **Shorthead Hagfish**. To 48.2 cm (19 in) TL. Two populations: one from Santa Monica Bay, southern California to Islas de Cedros and San Benito, central Baja California, and one in the lower portion of the Gulf of California. Benthic; depth: 42–415 m (138–1,362 ft). All in Wisner and McMillan (1990).

Eptatretus stoutii (Lockington, 1878). **Pacific Hagfish**. To 82 cm (32.3 in) TL (Conel 1931). Hecate Strait (52°38'N, 130°00'W), British Columbia (DFO) to southern Baja California (26°37.2'N) (Cruz-Acevedo *et al.* 2018); reported but not confirmed from south-eastern Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 16–1,247 m (53–4,090 ft) (min.: Wisner and McMillan 1990; max.: NWFSC-FRAM).

Myxine circifrons Garman, 1899. **Whiteface Hagfish**. To 55.5 cm (21.9 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). San Francisco, northern California to north-central Chile (Wisner and McMillan 1990). The Islas Galápagos record listed in Miller and Lea (1972) appears to be in error (Grove and Lavenberg 1997). Benthic; depth: about 700–1,860 m (2,297–6,102 ft) (Wisner and McMillan 1995).

Myxine hubbsi Wisner & McMillan, 1995. To 54 cm (21.3 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Southern California to Chile (Wisner and McMillan 1995). Benthic; depth: about 1,100–2,440 m (3,609–8,005 ft) (Wisner and McMillan 1995).

Order Petromyzontiformes

Family Petromyzontidae—Lampreys

Entosphenus tridentatus (Richardson, 1837). **Pacific Lamprey**. To 85 cm (33.5 in) TL (Orlov *et al.* 2008b). Honshu (Orlov *et al.* 2008b), and Hokkaido, Japan (Nakabo in Nakabo 2002); eastern Chukchi Sea (Mecklenburg *et al.* 2002), and Bering Sea to Punta Canoas, northern Baja California (Miller and Lea 1972), and likely to Isla Clarión, and Islas Revillagigedo, Mexico (Renaud 2008). Southernmost freshwater occurrence is currently in the Big Sur River, central California (Reid and Goodman 2016). Depth: at sea, near surface to 1,508 m (4,946 ft) (min.: Eschmeyer and Herald 1983; max.: Hoff and Britt 2003). Anadromous, may be found at sea, often far offshore, any time of the year. Previously as *Lampetra tridentata* (Richardson, 1836). The author of the species description is sometimes given as Gairdner, or Gairdner in Richardson, but authorship evidently is correct as Richardson, or Richardson (ex Gairdner) (Eschmeyer 1998 and online edition 8 November 2004).

Lampetra ayresii (Günther, 1870). **Western River Lamprey**. To 34.6 cm (13.6 in) TL (Morgan *et al.* 2018). Tee Harbor, south-eastern Alaska (Scott and Crossman 1973) to San Francisco Bay, northern California (Vladykov and Follett 1958). Anadromous, found in estuaries and coastal marine waters for a few months in summer; depth: at sea, perhaps to 119 m (390 ft) (DFO) (taken in a midwater trawl; Maria Cornthwaite).

Lethenteron camtschaticum (Tilesius, 1811). **Arctic Lamprey**. To 62.5 cm (24.6 in) TL (McPhail and Lindsey 1970). Almost circumpolar; White Sea and coasts of Barents Sea eastward off Siberia and Alaskan coasts to Beaufort Sea off Anderson River, Canada, and south through Chukchi and Bering Seas to Honshu, Japan, and Korean Peninsula in western Pacific Ocean; Kenai Peninsula, Gulf of Alaska in eastern Pacific; East Finnmark in eastern Atlantic (Mecklenburg *et al.* 2011)**.** Depth: at sea to 50 m (164 ft) (Mecklenburg *et al.* 2002). Anadromous. Recently as *Lampetra camtschatica* (Tilesius, 1811). Provisionally considered to be a junior synonym of *Lethenteron kessleri* (Anikin, 1905) by Naseka and Renaud (2020).

Order Chimaeriformes
Reviewed by: Joseph J. Bizzarro

Family Rhinochimaeridae—Longnose Chimaeras

Harriotta raleighana Goode & Bean, 1895. **Longnose Chimaera**, Pacific Longnose Chimaera, or Narrow-nose Chimaera. To 120 cm (47.2 in) TL (Ebert 2003). Circumglobal; Western Pacific Ocean from southern China to southern Japan (Nakabo in Nakabo 2002; Dagit *et al.* 2016); southern California (verified at 32°16.3'N, 119°04.1'W) (NWFSC-FRAM) to Gulf of California (Eschmeyer and Herald 1983); Colima, Mexico (Castro-Aguirre *et al.* 2007); Puntarenas, Costa Rica (9°26N, 85°29'W) (Angulo *et al.* 2014); Peru (3°47'S, 81°28'W) (Chirichigno and Vélez 1998). Depth: at least 350–2,600 m (1,148–8,538 ft) (Weigmann 2016). Weigmann (2016) reports that the 2,603 m (8,538 ft) report in some publications is based on a fish that was reidentified as *Harriota haeckeli* Karrer, 1972. Reist in Coad and Reist (2018) give a maximum depth of 3,100 m (10,168 ft), but we were unable to document the source of that datum.

Family Chimaeridae—Ratfishes or Shortnose Chimaeras
Reviewed by: Joseph J. Bizzarro

Hydrolagus colliei (Lay & Bennett, 1839). **Spotted Ratfish** or Whitespotted Ratfish. Verified to 63 cm (24.8 in) TL (Barnett *et al.* 2015), possibly to 97 cm (38.2 in) TL (Miller and Lea 1972). Western Gulf of Alaska (Mecklenburg *et al.* 2002) to Cabo Blanco (9°26'N, 85°30'W); Costa Rica (Angulo *et al.* 2014); northern Gulf of California (Hart 1973). Two isolated populations in the Gulf of California: one at Isla Tiburon, the other in the Bahiá de La Paz–Cabo San Lucas region (González-Acosta *et al.* 1999). Usually near bottom; depth: surface (Clemens and Wilby 1961), intertidal to 1,593 m (5,225 ft) (min.: Cross 1981; max.: Mejía-Mercado *et al.* 2014).

Hydrolagus melanophasma James, Ebert, Long & Didier, 2009. **Eastern Pacific Black Ghostshark** or Black

Ghost Chimaera. To 128 cm (50.4 in) TL (James *et al.* 2009). Monterey Bay, central California to Gulf of California (Ebert 2016), to Valdivia, Chile (Aguirre-Villaseñor *et al.* 2013). Depth: 31–1,903 m (102–6,242 ft) (min.: James *et al.* 2009; max.: Mejía-Mercado *et al.* 2014).

Hydrolagus trolli Didier & Séret, 2002. **Pointy-nosed Blue Chimaera** or Abyssal Ghostshark. 120.4 cm (47.4 in) TL (Didier and Seret 2002). Australia, New Caledonia, New Zealand, Hawai'i; individuals identified as this species were observed with an ROV off central and southern California (Lundsten *et al.* 2009, Reichert *et al.* 2016). Depth: 612–2,064 m (2,007–6,770 ft) (min.: Didier and Séret 2002; max. Jacobsen Stout *et al.* 2016). Regarding California fish, "Our specimens cannot yet be confirmed as *Hydrolagus trolli* until morphometric data and/or DNA samples from preserved specimens have been collected and analyzed" (Reichert *et al.* 2016).

Order Heterodontiformes

Family Heterodontidae—Bullhead Sharks or Horn Sharks

Reviewed by: Joseph J. Bizzarro

Heterodontus francisci (Girard, 1855). **Horn Shark**. To at least 121 cm (47.6 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The widely reported maximum length of 122 cm (48 in) TL (e.g., Miller and Lea 1972) is based on a statement in Roedel and Ripley (1950) that this species reached a maximum length of "about 4 feet [=122 cm]." Bolinas, northern California (Personal communication: Santa Barbara Natural History Museum Fish Collection, Santa Barbara, California) to Gulf of California (Miller and Lea 1972); reported to Colombia (Mejîa-Falla *et al.* 2007), probably Ecuador (Ebert 2003), and Peru (Cornejo *et al.* 2015). Benthic; depth: intertidal to 201 m (660 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Heterodontus mexicanus Taylor & Castro-Aguirre, 1972. **Mexican Horn Shark**. To about 100 cm (39.4 in) TL (Ramírez-Amaro *et al.* 2013). De La Cruz-Agüero *et al.* (1997) list the maximum length as much larger, 1.7 m TL (5.6 ft). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994), into the Gulf of California (Compagno 1984), and possibly to northern Peru (Chirichigno and Vélez 1998). Benthic; depth: intertidal to 67 m (218 ft) (min.: Pollom *et al.* 2020c; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); reports to 250 m (820 ft) (Pollom *et al.* 2020c) are undocumented.

Order Orectolobiformes

Family Ginglymostomatidae—Nurse Sharks

Reviewed by: Joseph J. Bizzarro

****Ginglymostoma unami*** Del Moral-Flores, Ramírez-Antonio, Angulo, & Pérez-Ponce de León, 2015. **Pacific Nurse Shark.** To at least 208 cm (81.9 in) (Del Moral-Flores *et al.* 2015). Southernmost Baja California into Gulf of California (Moral-Flores *et al.* 2015), to Máncora, Peru (Chirichigno and Vélez 1998). Depth: intertidal to at least 55 m (180 ft) (min.: Personal communication: California Academy of Sciences Fish Collection, San Francisco, California; max.: Del Moral-Flores *et al.* 2015). Previously assigned to *Ginglymostoma cirratum* (Bonnaterre, 1788), a species now apparently limited to the Atlantic Ocean and Caribbean Sea (Ebert *et al.* 2013, Del Moral-Flores *et al.* 2015). Confusion with *Ginglymostoma cirratum* makes assignment of maximum depth problematic.

Family Rhincodontidae—Whale Sharks

Reviewed by: Joseph J. Bizzarro

Rhincodon typus Smith, 1828. **Whale Shark**. Reliable to at least 17.0 m (55.8 ft) (Weigman 2016), probable to 20.0 m (65.6 ft) TL (Chen *et al.* 1997). Circumglobal; western Pacific Ocean at least as far northward as just

north of Hokkaido Island, Japan (Tomita *et al.* 2014); Patrick's Point (41°10'N, 124°15'W), northern California to northern Chile and Islas Galápagos (Ebert 2003). Pelagic; depth: descends to in excess of 1,928 m (6,324 ft) (Tyminski *et al.* 2015).

Order Lamniformes

Family Odontaspididae—Sand Tigers

Reviewed by: Joseph J. Bizzarro

Odontaspis ferox (Risso, 1810). **Ragged-tooth Shark** or Smalltooth Sandtiger Shark. To about 4.5 m (14.8 ft) TL (Ebert *et al.* 2013). Circumglobal in temperate waters; western Pacific Ocean north to Honshu Island, Japan (Yoshino and Aonuma in Nakabo 2002); Newport Beach and Santa Barbara Island, southern California (Seigel and Compagno 1986) to Gulf of California (Eschmeyer and Herald 1983), Colombia (Mejía-Falla *et al.* 2007); Islas Galápagos (Acuña-Marrero *et al.* 2013); Desventuradas Islands, Chile (Long *et al.* 2014). Depth: 10–1,015 m (33–3,329 ft) (min.: Ebert *et al.* 2013; max. Weigmann 2016).

Family Mitsukurinidae—Goblin Sharks

Reviewed by: Joseph J. Bizzarro

Mitsukurina owstoni Jordan, 1898. **Goblin Shark**. Maximum measured size is 4.10 m (13.45 ft) TL (Kukuev 1982); however, a photo of a specimen from the Gulf of Mexico was estimated at 5.40–6.17 m (17.12–20.24 ft) (Parsons *et al.* 2002). Circumglobal; western Pacific Ocean north to Honshu, Japan (Aonuma and Yoshino in Nakabo 2002); San Clemente Island, southern California (Ugoretz and Seigel 1999). Depth: surface to 1,300 m (4,264 ft) (Ebert *et al.* 2013).

Family Pseudocarcharhinidae—Crocodile Sharks

Reviewed by: Joseph J. Bizzarro

****Pseudocarcharias kamoharai*** (Matsubara, 1936). **Crocodile Shark**. To at least 122 cm (48 in) TL (Ebert *et al.* 2013). Circumglobal; western Pacific Ocean north to southern Japan (Yoshino and Aonuma in Nakabo 2002); two records within our range, about 200 km off Punta Eugenia, southern Baja California (26°52'N, 116°59'W) (Ruiz-Campos *et al.* 2010), and further southward 960 km off southern Baja California (25°40'N, 129°00'W) (Long and Seigel 1997); Colombia–Chile (Ebert 2016). Depth: surface to 1,740 m (5,707 ft) (Pradeep *et al.* 2017).

Family Megachasmidae—Megamouth Sharks

Reviewed by: Joseph J. Bizzarro

Megachasma pelagios Taylor, Compagno, & Struhsaker, 1983. **Megamouth Shark**. To 7.1 m (23.3 ft) TL (Watanabe and Papastamatiou 2019). Circumglobal; western Pacific Ocean north to northern Japan (Ebert *et al.* 2013); Hawai'i (Ebert *et al.* 2013); southern California (Compagno *et al.* in Fischer *et al.* 1995); off Punta Eugenia, Baja California (Castillo-Géniz *et al.* 2012); Peru (Kelez *et al.* 2020). Depth: 8–1,000 m (26–3,280 ft) (min.: Ebert *et al.* 2013; max.: Weigmann 2016), and as shallow as 5 m (16 ft) in benthic, coastal waters (Ebert *et al.* 2013).

Family Alopiidae—Thresher Sharks
Reviewed by: Joseph J. Bizzarro

Alopias pelagicus Nakamura, 1935. **Pelagic Thresher**. To 4.28 m (14.04 ft) TL (Weigman 2016). Circumglobal; western Pacific Ocean north to southern Japan (Yoshino and Aonuma in Nakabo 2002); southern California (Hanan *et al.* 1993) to Panama, including southern tip of Baja California (Compagno *et al.* in Fischer *et al.* 1995); Gulf of California (Bizzarro *et al.* 2009); Islas Galápagos (Grove and Lavenberg 1997); Colombia (Mejía-Falla *et al.* 2007) and Peru (Cornejo *et al.* 2015). Oceanic; depth: surface to at least 300 m (984 ft) or more (Weigman 2016).

Alopias superciliosus (Lowe, 1841). **Bigeye Thresher**. To 4.84 m (15.9 ft) TL (Weigmann 2016); unsubstantiated reports to 5.5 m (18 ft) TL (Compagno in Carpenter 2003). Circumglobal; western Pacific Ocean north to southern Japan (Yoshino and Aonuma in Nakabo 2002); Cape Mendocino, northern California (Preti *et al.* 2008) to Gulf of California (Eschmeyer and Herald 1983); Islas Galápagos (Grove and Lavenberg 1997); Colombia to Chile (Ebert 2016). Depth: surface to 955 m (3,132 ft) (Coelho *et al.* 2015).

Alopias vulpinus (Bonnaterre, 1788). **Common Thresher Shark** or Thresher Shark. To at least 5.73 m (18.8 ft) (Weigmann 2016), and possibly to 6.36 m (20.9 ft) TL (Ebert 2003). Circumglobal in warm waters; western Pacific Ocean north to Hokkaido Island, Japan (Yoshino and Aonuma in Nakabo 2002); west of Yakobi I., south-eastern Alaska (Bruce Wing, pers. comm. to M.L.) to Chile (Eschmeyer and Herald 1983), including Gulf of California (Smith *et al.* 2009). Coastal and oceanic epipelagic; depth: surface to 650 m (2,132 ft) (Weigmann 2016).

Family Cetorhinidae—Basking Sharks
Reviewed by: Joseph J. Bizzarro

Cetorhinus maximus (Gunnerus, 1765). **Basking Shark**. Well documented to 12.2 m (40 ft) FL (Mecklenburg *et al.* 2018); reports to 15.2 m (50 ft) TL not verifiable but possibly not exaggerated (Bigelow and Schroeder 1953). Circumglobal in cold waters; Yellow Sea, Seas of Japan and Okhotsk, and western North Pacific Ocean to eastern North Pacific south of Aleutian Islands and in Gulf of Alaska to at least Punta Abreojos (26°42'N, 113°35'W), central Baja California (Mecklenburg *et al.* 2002). Records from further south and in Gulf of California are poorly documented (Sandoval-Castillo *et al.* 2006); Colombia to Chile (Ebert 2016). Coastal pelagic; depth: surface to 1,501 m (4,933 ft) (min.: Bigelow and Schroeder 1953; max.: Braun *et al.* 2018).

Family Lamnidae—Mackerel Sharks
Reviewed by: Joseph J. Bizzarro

Carcharodon carcharias (Linnaeus, 1758). **White Shark**. To about 6 m (19.5 ft) TL (Randall 1987); possibly to 6.4 m (21.1 ft) TL (Compagno 2001). Circumglobal, mostly amphitemperate; western Pacific Ocean north to Sea of Japan (Dolganov 2012); northwest Bering Sea (59°56'N, 178°56' W) and Gulf of Alaska (60°17'N, 145°35'W) (Martin 2004) to Gulf of California to Nayarit, Mexican Pacific Ocean (Becerril-García *et al.* 2019); Panama to Chile (Eschmeyer and Herald 1983), and Islas Galápagos (Grove and Lavenberg 1997). Pelagic, coastal and offshore over island and continental shelves; depth: intertidal to 1,200 m (3,936 ft) (Francis *et al.* 2012). Francis *et al.* (2012) report that the 1,280 m depth listed in Bigelow and Schroeder (1948) is erroneous.

Isurus oxyrinchus Rafinesque, 1810. **Shortfin Mako**. Reliably to 4.45 m (14.6 ft) TL (Capapé 1977); possibly to 5.85 m (19.4 ft) TL (Kabasakal and de Maddalena 2011). Circumglobal in warm waters; western Pacific Ocean north to Japan (Yoshino and Aonuma in Nakabo 2002); British Columbia (Gillespie 1993) to Chile (Miller and Lea 1972), and Islas Galápagos (Grove and Lavenberg 1997). Coastal and oceanic pelagic; depth: surface to 888 m (2,913 ft) (min.: Eschmeyer and Herald 1983; max.: Abascal *et al.* 2011).

Isurus paucus Guitart Manday, 1966. **Longfin Mako**. To about 4.27 m (14 ft) TL (Weigmann 2016). Circumglobal; western Pacific Ocean north to southern Japan (Yoshino and Aonuma in Nakabo 2002); two records from southern California (Ebert 2003), and one specimen from well off Cabo San Lucas (21°44'N, 112°10'W),

Baja California (Ruiz-Campos *et al.* 2010). Pelagic; depth: 30–1,767 m (98–5,796 ft) (min.: Ebert 2003; max.: Hueter *et al.* 2017), possibly to surface (Allen and Robertson 2015)

Lamna ditropis Hubbs & Follett, 1947. **Salmon Shark**. To 3.05 m (10 ft) TL (Compagno 1984). Korea and Japan to Okhotsk and Bering Seas to Bering Strait (Mecklenburg *et al.* 2011), and Gulf of Alaska (Mecklenburg *et al.* 2002) to central Baja California (Eschmeyer and Herald 1983); Isla Guadalupe, but without documentation (Reyes-Bonilla *et al.* 2010). Coastal and oceanic pelagic; marine, brackish and, perhaps, fresh waters (Dyldin and Orlov 2016a); depth: surface to 1,864 m (6,114 ft) (Carlisle *et al.* 2011).

Order Carcharhiniformes

Family Scyliorhinidae—Cat Sharks

Reviewed by: Joseph J. Bizzarro

Apristurus brunneus (Gilbert, 1892). **Brown Cat Shark**. To 73.5 cm (28.7 in) TL (NWFSC-FRAM). Icy Point (58°N), south-eastern Alaska (Wilson and Hughes 1978) to central Baja California (28°48'N) (Cruz-Acevedo *et al.* 2018); Panama (Compagno 1984) to Chile (Ebert 2016); Islas Revillagigedo, Mexico (Becerril-García *et al.* 2020). At bottom to well off bottom; depth: 24–1,341 m (79–4,398 ft) (Weigmann 2016). 1,401 m (4,595 ft) (Morera *et al.* 2019).

Apristurus kampae Taylor, 1972. **Longnose Cat Shark**. To 72.0 cm (28.3 in) TL (NWFSC-FRAM). Washington (48°00'N) (Bradburn *et al.* 2011) to Gulf of California (Eschmeyer and Herald 1983); Peru (Ebert 2016). An Islas Galápagos record may be an undescribed species (Grove and Lavenberg 1997). Depth: 177–1,888 m (581–6,193 ft) (min.: Weigman 2016; max.: Compagno 1984).

***Apristurus* sp**. An undescribed species has been collected off central California (Ebert 2003).

Cephaloscyllium ventriosum (Garman, 1880). **Swell Shark**. To 110 cm (43.3 in) TL (Robertson and Allen 2015). Monterey Bay, central California to Acapulco, Mexico, including Gulf of California (Eschmeyer and Herald 1983); possibly from Ecuador to Chile (Robertson and Allen 2015). Benthic; depth: 5–457 m (15–1,500 ft) (min.: Roedel and Ripley 1950; Feder 1974).

Cephalurus cephalus (Gilbert, 1892). **Lollipop Cat Shark**. To 36.7 cm (14.4 in) TL (Jaime-Rivera *et al.* 2019). San Carlos, southern Baja California, to south of Mazatlan, including the southern Gulf of California and Islas Revillagigedo (Pollom *et al.* 2020e), and possibly southward to Panama (Compagno 1984), Peru (Ebert *et al.* 2013), and Chile (Balart *et al.* 2000). Depth: 155–927 m (508–3,041 ft) (Compagno 1984). *Cephalurus* from Panama, Peru, and Chile differ from the type specimens of *C. cephalus* in a number of characters and may represent one or more new species (Compagno 1984).

Parmaturus xaniurus (Gilbert, 1892). **Filetail Cat Shark**. To 61 cm (24 in) TL (Eschmeyer and Herald 1983). Cape Foulweather, Oregon (47°52'N) (NWFSC-FRAM) to Baja California and Gulf of California (Eschmeyer and Herald 1983). Depth: 88–1,519 m (290–4,982 ft) (min.: Wilkins *et al.* 1998; max.: Jacobsen Stout *et al.* 2016).

Family Triakidae—Hound Sharks

Reviewed by: Joseph J. Bizzarro

Galeorhinus galeus (Linnaeus, 1758). **Soupfin Shark** or Tope. To about 2 m (6.5 ft) TL (Miller and Lea 1972). Temperate waters, nearly worldwide; northern British Columbia (Miller and Lea 1972) to Gulf of California (Compagno *et al.* in Fischer *et al.* 1995); Ecuador (Béarez 1996) to Chile (Miller and Lea 1972). Coastal pelagic; depth: surf to 826 m (2,709 ft) (min.: Compagno 1984; max.: Thorburn *et al.* 2019). The common name Soupfin Shark has consistently been used for this shark on the West Coast, but the official AFS–ASIH name (Nelson *et al.* 2004) is Tope. While we treat *Galeorhinus zyopterus* Jordan & Gilbert, 1883 as a junior synonym, we note that Chabot and Allen (2009) and Naylor *et al.* (2012) found evidence from DNA studies that the eastern Pacific Ocean population may merit status as a separate species. If that is the case, *G. zyopterus* would be resurrected.

Mustelus albipinnis Castro-Aguirre, Antuna-Mendiola, González-Acosta & De la Cruz-Agüero, 2005. **Whitemargin**

Fin Smoothhound. 129 cm (50.8 in) TL (Weigmann 2016). Off Bahía Magdalena, southern Baja California (Castro-Aguirre *et al.* 2005), and in Gulf of California (Pérez -Jiménez *et al.* 2005), possibly to Ecuador and Islas Galápagos (Ebert *et al.* 2013). Depth: 6–281 m (2–922 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Weigmann 2016). *Mustelus hacat* Pérez-Jiménez, Nishizaki, and Castillo-Geniz 2005 is a synonym.

Mustelus californicus Gill, 1864. **Gray Smoothhound**. To 1.63 m TL (64.25 in) (Miller and Lea 1972). Cape Mendocino, northern California to Mazatlán, Mexico, including Gulf of California (Eschmeyer and Herald 1983), and Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010); Peru (Cornejo *et al.* 2015). Depth: intertidal to 265 m (869 ft) (min.: Carlisle *et al.* 1960: max.: Weigmann 2016).

Mustelus henlei (Gill, 1863). **Brown Smoothhound**. To 165 cm (65 in) TL (NWFSC-FRAM). Northern Washington (Jonathon Cusick, pers. comm. to M.L.) to Gulf of California (Eschmeyer and Herald 1983), and south to Peru (Pérez-Jiménez *et al.* 2016). Depth: intertidal to 369 m (1,210 ft) (min.: Carlisle *et al.* 1960; max.: Morera *et al.* 2019).

Mustelus lunulatus Jordan & Gilbert, 1882. **Sicklefin Smoothhound**. To 175 cm (68.9 in) TL (Amezcua Linares 1996). San Diego, southern California (Eschmeyer and Herald 1983) to Panama (Ebert *et al.* 2013), and possibly to Talara, Peru (Chirichigno and Vélez 1998), including Gulf of California (Galván-Magaña *et al.* 1996). Depth: 1–200 m (3–656 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Triakis semifasciata Girard, 1855. **Leopard Shark**. To 2.13 m (7 ft) TL (Eschmeyer and Herald 1983). Samish Bay, Washington (48°37.2'N, 122°28.1'W) (Farrer 2009) to Mazatlán, Mexico (Miller and Lea 1972), including Gulf of California (Eschmeyer and Herald 1983), and Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010). Depth: intertidal to 156 m (515 ft) (min.: Carlisle *et al.* 1960; max.: Mary Yoklavich, pers. comm. to M.L.).

Family Carcharhinidae—Requiem Sharks

Reviewed by: Joseph J. Bizzarro

Carcharhinus albimarginatus (Rüppell, 1837). **Silvertip Shark**. 3 m (9.8 ft) TL (Compagno *et al.* in Fischer *et al.* 1995). Indo-Pacific; western Pacific Ocean north to Ryuku Islands (Yoshino and Aonuma in Nakabo 2002); Patchily distributed from Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) to Ecuador (Béarez 1996), including Guatamala, Colombia, Islas Revillagigedo, Clipperton Islands, Isla Cocos, and Islas Galápagos (Ebert *et al.* 2013). Depth: surface to 800 m (2,624 ft) or more (Compagno *et al.* in Fischer *et al.* 1995).

Carcharhinus altimus (Springer, 1950). **Bignose Shark**. 3.0 m (9.8 ft) TL (Compagno *et al.* in Fischer *et al.* 1995). Circumglobal; patchily distributed from central Baja California (Compagno *et al.* in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 810 m (2,633 ft) (min.: Compagno in Carpenter and De Angeles 2016; max.: Weigmann 2016).

Carcharhinus brachyurus (Günther, 1870). Copper Shark or **Narrowtooth Shark**. To 3.25 m (10.7 ft) TL (Randall *et al.* 1990). Circumglobal; western Pacific Ocean north to central Japan (Yoshino and Aonuma in Nakabo 2002); Santa Cruz Island, southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to central Mexico (Allen and Robertson 2015); Colombia to Peru (Allen and Robertson 2015), including Gulf of California and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 360 m (1,181 ft) (Compagno in Carpenter 2003). Naylor *et al.* (2012) suggest that *C. brachyurus* may be comprised of several species; one from the Indo-Pacific and perhaps another from the Atlantic and southern Africa region.

Carcharhinus cerdale (Gilbert in Jordan & Evermann, 1898). **Pacific Smalltail Shark**. To somewhat less than 140 cm (55.1 in) TL (Castro 2011). Formerly southern Baja California at least as far northward as about 23°24.6'N, 110°13.8'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), to Gulf of California (but now extirpated from this region). Now found from central America and Peru (Pollom *et al.* 2020b). Depth: 5–40 m (16–131 ft) (Allen and Robertson 2015).

Carcharhinus falciformis (Müller & Henle, 1839). **Silky Shark**. To about 3.5 m (11.5 ft) TL (Weigmann 2016). Circumglobal; western Pacific Ocean at least as far northward as Ryukyu Islands (Yoshino and Aonuma in Nakabo 2002); Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (Galván-Magaña *et al.* 2000) to northern Chile (Grove and Lavenberg 1997), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 500 m (1,640 ft) or more (min.: Ebert *et al.* 2013; max.: Compagno 1984).

Carcharhinus galapagensis (Snodgrass & Heller, 1905). **Galapagos Shark**. To at least 3.0 m (12.1 ft) TL and possibly to 3.7 m (14.1 ft) TL (Weigman 2016). Circumglobal in tropical waters; western Pacific Ocean north to Ogasawara Islands (Yoshino and Aonuma in Nakabo 2002); patchily distributed from central Baja California (Compagno *et al.* in Fischer *et al.* 1995), and Rocas Alijos, southern Baja California (Gotshall 1996), to Peru (Cornejo *et al.* 2015), and Easter Island (Chirichigno and Vélez 1998), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 371 m (1,217 ft) (min.: Allen and Robertson 2015; max.: Weijerman *et al.* 2019). Possibly a synonym of *Carcharhinus obscurus* (Naylor *et al.* 2012). Pazmiño *et al.* (2019) reported on a number of individuals that were hybrids of *C. galapagensis* and *Carcharhinus obscurus* (Lesueur, 1818) in the eastern Pacific Ocean.

Carcharhinus leucas (Müller & Henle, 1839). **Bull Shark**. To 3.5 m (11.5 ft) TL (Tyabji *et al.* 2020) or perhaps to 3.66 m (12 ft) (Weigmann 2016). Circumglobal in warm waters; possibly southern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California); western Pacific Ocean north to about Okinawa, Japan (Yoshino and Aonuma in Nakabo 2002); Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010), southern Baja California (Eschmeyer and Herald 1983) to Paita, Peru (Chirichigno 1974), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995). Marine and fresh water; depth: surface (Allen and Robertson 2015), 1 m (3 ft) or less to 164 m (538 ft) (min.: Ebert *et al.*, 2013; max.: Lea *et al.* 2015). A depth record of 500 m (1,640 ft) (Manilo and Bogorodsky 2003) is considered unlikely (Weigmann 2016). Naylor *et al.* (2012) suggest that this may be a species complex.

Carcharhinus limbatus (Müller & Henle, 1839). Blackfin Shark or **Blacktip Shark**. To 2.86 m (9.4 ft) TL (Weigmann 2016). Circumglobal in tropical waters; Ensenada, northern Baja California (Ebert 2003) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Unconfirmed records from California (Ebert 2003). Inshore (Compagno 1984); depth: surface to 160 m (328 ft) (min.: Grove and Lavenberg 1997; max.: White and Sommerville 2010).

Carcharhinus longimanus (Poey, 1861). **Oceanic Whitetip Shark**. To at least 3.5 m (11.5 ft) TL (Weigmann 2016), and possibly to 3.95 m (13 ft) TL (Compagno 1984). Circumglobal; western Pacific Ocean north to Ryukyu Islands (Yoshino and Aonuma in Nakabo 2002); unconfirmed reports from central California (Ebert 2003); perhaps Gaviota, southern California (Tim Herrlinger and Paul Krause, pers. comm. to M.L.), and Cortes Bank, southern California (Miller and Lea 1972), to Puerto Pizarro, Peru (Chirichigno 1974), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: at or near surface to 1,190 m (3,903 ft) (min.: Eschmeyer and Herald 1983; max.: Howey *et al.* 2016). The individuals living in the Indo-Pacific and eastern Atlantic may be a separate species (Naylor *et al.* 2012).

Carcharhinus obscurus (Lesueur, 1818). **Dusky Shark**. To 4.2 m (13.8 ft) TL (Weigmann 2016). Circumglobal; western Pacific Ocean north to central Japan (Yoshino and Aonuma in Nakabo 2002); Redondo Beach, southern California to Gulf of California (Eschmeyer and Herald 1983); unconfirmed from northern Chile (Ebert *et al.* 2013). Depth: intertidal to 573 m (1,879 ft) (Hoffmayer *et al.* 2014). Pazmiño *et al.* (2019) reported on a number of individuals that were hybrids of *C. obscurus* and *Carcharhinus galapagensis* (Snodgrass & Heller, 1905) in the eastern Pacific Ocean.

XCarcharhinus porosus (Ranzani, 1840). **Smalltail Shark**. Naylor *et al.* (2012) suggest that this species is not found in the eastern Pacific and that *Carcharhinus cerdale* (Gilbert in Jordan and Evermann, 1898) is the valid species.

Galeocerdo cuvier (Péron & Lesueur, 1822). **Tiger Shark**. To 7.4 m (24.4 ft) TL (Randall 1992). Circumglobal in tropical waters; western Pacific Ocean north to Honshu Island, Japan (Yoshino and Aonuma in Nakabo 2002); sighting (unverifiable) at Prince William Sound, Gulf of Alaska (Karinen *et al.* 1985); southern California to Peru (Eschmeyer and Herald 1983), including Islas Galápagos (Grove and Lavenberg 1997), and Gulf of California (Galván-Magaña *et al.* 1996). Coastal pelagic; marine and brackish waters (Yoshino and Aonuma in

Nakabo 2002); depth: surface and intertidal to 1,136 m (3,726 ft) (Werry *et al.* 2014). Tiger sharks living in the Atlantic may represent a separate species (Naylor *et al.* 2012).

Nasolamia velox (Gilbert, 1898). **Whitenose Shark**. To 165 cm (65 in) TL (Weigmann 2016). Off Malibu, southern California (Walker *et al.* 2020); central Baja California and Gulf of California (Compagno *et al.* in Fischer *et al.* 1995) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 2–192 m (6–630 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Compagno *et al.* in Fischer *et al.* 1995).

Negaprion brevirostris (Poey, 1868). **Lemon Shark**. To about 3.68 m (12.1 ft) TL (Weigmann 2016). Pacific and Atlantic Oceans; Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) and Gulf of California (Compagno 1984) to northern Peru (Chirichigno and Vélez 1998). Depth: intertidal to 120 m (394 ft) (Weigmann 2016).

Prionace glauca (Linnaeus, 1758). **Blue Shark**. To 383 cm (12.6 ft) TL; reported but not confirmed to 4.8–6.5 m (15.7–21.3 ft) TL (Compagno 1984). Circumglobal in temperate and tropical waters; western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); Kodiak Island, western Gulf of Alaska (Karinen *et al.* 1985) to Chile (Miller and Lea 1972), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic pelagic; depth: surface to about 1,000 m (3,280 ft) (min.: Eschmeyer and Herald 1983; max.: Weigmann 2016). This species may more properly be placed in the genus *Carcharhinus* (Naylor *et al.* 2012).

Rhizoprionodon longurio (Jordan & Gilbert, 1882). **Pacific Sharpnose Shark**. To 1.54 m (60.6 in) TL (Franke and Acero 1991). Long Beach, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno and Vélez 1998), including Gulf of California (Compagno *et al.* in Fischer *et al.* 1995). Depth: intertidal to a least 27 m (89 ft) (min.: Compagno *et al.* in Fischer *et al.* 1995; max.: Ebert *et al.* 2013), and perhaps to 100 m (328 ft) (Amezcua Linares 1996).

Triaenodon obesus (Rüppell, 1837). **Whitetip Reef Shark**. Reliably to 1.68 m (5.5 ft) (Weigmann 2016); possibly to 2.13 m (7 ft) TL (Appukutan *et al.* 1988). Indo-Pacific; western Pacific Ocean north to Ogasawara Islands (Yoshino and Aonuma in Nakabo 2002); at least as far north as Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); Islas Revillagigedo, southern Baja California (Donna Schroeder, pers. comm. to M.L.) to Ecuador (Béarez 1996), including Islas Galápagos (Compagno 1984), and westwards to Kermadec Islands (Bornatowski *et al.* 2018); three individuals observed at a site off southeast Brazil (Bornatowski *et al.* 2018). Depth: surface to 330 m (1,082 ft) (Simpendorfer *et al.* 2020).

Family Sphyrnidae—Hammerhead Sharks

Reviewed by: Joseph J. Bizzarro

****Sphyrna corona*** Springer, 1940. **Scalloped Bonnethead**. To 92 cm (36.2 in) TL (Compagno *et al.* in Fischer *et al.* 1995). Gulf of California (Compagno *et al.* in Fischer *et al.* 1995) to northern Peru (Chirichigno 1974), including the southern tip of Baja California (Compagno *et al.* in Fischer *et al.* 1995), now rare north of Colombia (Pérez-Jiménez 2014). Depth: inshore (Allen and Robertson 1994) to perhaps 100 m (320 ft) (Weigmann 2016).

Sphyrna lewini (Griffith & Smith, 1834). **Scalloped Hammerhead**. 4.3 m (14.1 ft) TL (Robertson and Allen 2008). Circumglobal; western Pacific Ocean north to southern Japan (Yoshino and Aonuma in Nakabo 2002); several southern California records as far north as Santa Barbara, southern California (Seigel 1985) and south to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Grove and Lavenberg 1997); depth: surface to at least 1,043 m (3,421 ft) (min.: Weigmann 2016; max.: Moore and Gates 2005), Among other authors, Naylor *et al.* (2012) found evidence that *Sphyrna lewini* is likely a species complex.

****Sphyrna media*** Springer, 1940. **Scoophead** or Scoophead Shark. To 150 cm (59.1 in) TL (Compagno *et al.* in Fischer *et al.* 1995). Gulf of California and tip of Baja California to Ecuador and probably northern Peru; western Atlantic (Ebert *et al.* 2013). Gulf of California population appears to be extirpated (Pérez-Jiménez 2014). Depth: surface to 100 m (328 ft) (Robertson and Allen 2002).

Sphyrna mokarran (Rüppell, 1837). **Great Hammerhead**. To 6.1 m (20 ft) TL (Weigmann 2016). Circumglobal; western Pacific Ocean north to Kyushu, Japan (Yoshino and Aonuma in Nakabo 2002); Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) to northern Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Gulf of California population perhaps extirpated (Pérez-Jiménez 2014). Depth: surface to at least 300 m (984 ft) (min.: Yoshino and Aonuma in Nakabo 2002; max.: Myers 1999). *Sphyrna mokarran* may be composed of two species; one from the Atlantic and one from the Indo-Pacific (Naylor *et al.* 2012).

Sphyrna tiburo (Linnaeus, 1758). **Bonnethead** or Bonnethead Shark. To about 1.5 m (46 in) TL (Compagno in Carpenter 2003); possibly to 1.8 m (6 ft) TL (Eschmeyer and Herald 1983). Formerly San Diego, southern California (Eschmeyer and Herald 1983) to Paita, Peru (Chirichigno and Vélez 1998); western Atlantic (Compagno 1984). Last documented specimen north of Colombia was captured in Mexico in 2006 (Pérez-Jiménez 2014). Rare from Colombia to Peru (Pollom *et al.* 2020g). Depth: intertidal to 90 m (295 ft) (Weigmann 2016). *Spyrna tiburo* is probably a species complex (Fields *et al.* 2016).

Sphyrna zygaena (Linnaeus, 1758). **Smooth Hammerhead**. To 4 m (13.1 ft) (Weigmann 2016). Circumglobal; western Pacific Ocean north to Hokkaido, Island, Japan (Dyldin *et al.* 2018); central California (Miller and Lea 1972) to Gulf of California (Eschmeyer and Herald 1983) to Bahía de San Antonio, Chile (33°35'S (Brito 2004b), including Islas Galápagos (Compagno 1984). Depth: surface to at least 200 m (656 ft) (min.: Compagno 1984; max.: Ebert 2003), and possibly to 420 m (1,640 ft) or more (Weigman 2016).

Order Hexanchiformes

Family Chlamydoselachidae—Frill Sharks

Reviewed by: Joseph J. Bizzarro

Chlamydoselachus anguineus Garman, 1884. **Frill Shark**. To at least 1.96 m (6.4 ft) TL (Ebert 2003). Circumglobal; western Pacific Ocean north to Japan (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); one record from off Point Arguello, central California (Miller and Lea 1972), and one from off Chile (Pequeño 1989). Depth: surface to 1,570 m (5,150 ft) (min.: Ebert 2003; max.: Bizzarro *et al.* 2017).

Family Hexanchidae—Cow Sharks

Reviewed by: Joseph J. Bizzarro

Hexanchus griseus (Bonnaterre, 1788). **Bluntnose Sixgill Shark**, Mud Shark, or Sixgill Shark. Confirmed to 4.82 m (15.8 ft), and probably to 5.5 m (18 ft) (Ebert *et al.* 2013). The 6 m (19.7 ft) reference (Roberts *et al.* 2015) is undocumented and appears to be based on the maximum possible size estimated from a partial specimen (Celona *et al.* 2005). Circumglobal in temperate and tropical waters; western Pacific Ocean north to southern Japan (Nakaya and Shirai in Masuda *et al.* 1984); eastern North Pacific Ocean south of Aleutian Islands (Larkins 1964) to Gulf of California (Allen and Robertson 2015) to Chile (Chirichigno and Vélez 1998), including Islas Galápagos (Buglass *et al.* 2020). Depth: surface to at least 2,490 m (8,167 ft) (min.: Compagno 1984; max.: Weigman 2016). The modifier bluntnose was added to the common name by Compagno (1999); there are two species of sixgill shark, although only one occurs in our area.

Notorynchus cepedianus (Péron, 1807). **Broadnose Sevengill Shark** or Sevengill Shark. To 2.96 m (9.7 ft) TL (Ebert 1989); there are no authenticated records larger than this (David Ebert, pers. comm. to M.L.). Circumglobal in temperate waters; western Pacific Ocean north to Japan (Hattoka in Nakabo 2002): south-eastern Alaska (Pietsch and Orr 2019) to southern Baja California and Colombia to Chile (Allen and Robertson 2015), including Islas Galápagos (Buglass *et al.* 2020). Depth: less than 1 m (3 ft) to 570 m (1,870 ft) (min.: Compagno 1984; max.: Weigmann 2016). The modifier broadnose was added to the common name by Compagno (1999).

Order Echinorhiniformes

Family Echinorhinidae—Bramble Sharks
Reviewed by: Joseph J. Bizzarro

Echinorhinus cookei Pietschmann, 1928. **Prickly Shark**. To 4.5 m (14.8 ft) TL (Ebert *et al.* 2014). Indo-Pacific; southern Japan (Hatooka in Nakabo 2002); Moolach Beach, Oregon (Pearcy *et al.* 1985) to barely into Gulf of California (Allen and Robertson 2015) to Chile (Kong and Meléndez 1991, Long *et al.* 2011), including Islas Galápagos (McCosker and Rosenblatt 2010), and Islas Revillagigedo (Becerril-García *et al.* 2020); Hawai'i (Linda Kuhnz, pers. comm. to M.L.). Depth: 4–1,100 m (13–3,608 ft) (min.: Ebert 2003; max.: Robertson and Allen 2002).

Order Squaliformes

Family Squalidae—Dogfish Sharks
Reviewed by: Joseph J. Bizzarro

Squalus suckleyi (Girard, 1855). **Pacific Spiny Dogfish**. To at least 140 cm (55.1 in) TL (Mecklenburg *et al.* 2018); possibly to 160 cm (63 in) TL (Eschmeyer & Herald 1983). Koreas northward to Russia to Bering Sea and south-eastern Chukchi Sea (near Kotzebue), Alaska to southern Baja California (Ebert *et al.* 2010). Coastal, inshore and offshore; depth: intertidal and from surface to 1,460 (4,789 ft) (min.: Ebert *et al.* 2013; max.: Allen and Robertson 2015). Authors have previously reported the date of publication of the species description as 1854, however while the paper was presented in November 1854, the proceedings were published in 1855 (Mecklenburg *et al.* 2016). Formerly *Squalus acanthias* Linnaeus, 1758.

Family Etmopteridae—Lantern Sharks
Reviewed by: Joseph J. Bizzarro

Centroscyllium nigrum Garman, 1899. **Combtooth Dogfish** or Pacific Black Dogfish. To 52 cm (20.4 in) TL (Ebert *et al.* 2013). Southern California (Eschmeyer and Herald 1983) and northern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to central Chile (Sielfeld and Vargas 1996), Isla del Cocos, Islas Galápagos, and Hawai'i (Eschmeyer and Herald 1983). Depth: 269–1,212 m (883–3,975 ft) (min.: Long 1994; max.: Bradburn *et al.* 2011). What was likely a combtooth dogfish was photographed off La Jolla, southern California, at a depth of 32 m (105 ft) (Herb Gruenhagen, pers. comm. to M.L.).

Etmopterus benchleyi Vásquez, Ebert, & Long, 2015. To 51.5 cm (20.3 in) TL. Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Nicaragua to Panama (Vásquez *et al.* 2015). Depth: 836–1,470 m (2,742–4,822 ft) (min.: Vásquez *et al.* 2015; max.: Morera *et al.* 2019).

Family Somniosidae—Sleeper Sharks
Reviewed by: Joseph J. Bizzarro

Somniosus pacificus Bigelow & Schroeder, 1944. Mud Shark or **Pacific Sleeper Shark**. To at least 4.3 m (14.1 ft) (Ebert 1987), with unconfirmed, deep-water observations to 7.0 m (23 ft) (Yano *et al.* 2007). Taiwan to Bering Sea to south-eastern Chukchi Sea (66°20' N, 165°47'W), and on Russian side of southern Chukchi Sea (Mecklenburg and Steinke 2015) to Pacific Ocean off southern Baja California (Compagno 1984). Possible hybrids of this species and *Somniosus microcephalus* (Bloch & Schneider, 1801) have been taken somewhat west of Baffin Bay, eastern Canada (Hussey *et al.* 2015). There is one anecdotal report of a large shark (possibly

this species) that was taken near Tuktoyaktuk, northwest Territory, Canada (Reist in Coad and Reist 2018). Reports of *S. pacificus* as far south as Pisco, Peru (Chirichigno and Vélez 1998) and Bahía de San Antonio, Chile (33°35'S) (Brito 2004a) are not considered valid and probably represent S*omniosus antarcticus* Whitley, 1939 (Ebert *et al.* 2009). Depth: surface, intertidal to about 2,205 m (7,232 ft) (min.: Bright 1959; max.: Yeh and Drazen 2009); at the greatest depths in the southern part of the range.

Zameus squamulosus (Günther, 1877). **Velvet Dogfish.** To 115 cm (45.3 in) TL (Santos *et al.* 2020). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Ebert *et al.* 2013); one record from southern California (33°43'N, 118°32'W) (Daniel Kamikawa, pers. comm. to M.L.); Peru and Chile (Ebert 2016). Depth: surface to 1,511 m (4,956 ft) (min.: Compagno in Carpenter and De Angelis 2016; max.: Weigman 2016), perhaps to about 2,000 m (6,560 ft), but without documentation (Roberts *et al.* 2015).

Family Dalatiidae—Kitefin Sharks

Reviewed by: Joseph J. Bizzarro

****Euprotomicrus bispinatus*** (Quoy & Gaimard, 1824). **Pygmy Shark**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Circumglobal; a few caught about 500 miles off central and southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; Ebert 2003); Chile and Peru (Ebert 2016), and Easter Island (Pequeño 1989). Depth: surface (at night) to at least 1,500 m (4,920 ft) (Ebert *et al.* 2013). This species might more properly be placed in the genus *Squaliolus* (Naylor *et al.* 2012).

Isistius brasiliensis (Quoy & Gaimard, 1824). **Cookiecutter Shark**. To at least 56 cm (22 in) TL (Weigmann 2016). Circumglobal; western Pacific Ocean north to Hokkaido, Japan (Ebert *et al.* 2013); documented as far north as San Nicolas Island, southern California, and probably at least as far north as Año Nuevo, central California (Ebert *et al.* 2015) to Peru (13°46'S) (Chirichigno and Vélez 1998), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 3,700 m (12,136 ft) (min.: Compagno 2002; max.: Retzger 1990).

Order Squatiniformes

Family Squatinidae—Angel Sharks

Reviewed by: Joseph J. Bizzarro

Squatina californica Ayres, 1859. **Pacific Angel Shark**. To 175 cm (68.9 in) TL (Ebert *et al.* 2013). Clover Point, Vancouver Island (48°24'N, 123°21'W) (King and Surry 2016) to Gulf of California (Bizzarro *et al.* 2007). Reports from Chile are erroneous (Cailliet *et al.* 2020), and those from Peru are unlikely (Cornejo *et al.* 2015). One old, unverifiable record from south-eastern Alaska (Evermann and Goldsborough 1907; Mecklenburg *et al.* 2002); southern Chile record (Eschmeyer and Herald 1983) not verifiable. Co-occurs with *Squatina armata* (Philippi, 1887) off Peru. Depth: intertidal to 205 m (672 ft) (min.: Carlisle *et al.* 1960; max.: Robertson and Allen 2008). Previously *Torpedo californica* Ayres, 1855.

Order Torpediniformes

Family Torpedinidae—Torpedo Electric Rays

Reviewed by: Joseph J. Bizzarro

Tetronarce californica (Ayres, 1855). **Pacific Electric Ray** or Pacific Torpedo Ray. To 137 cm (53.9 in) TL (Ebert 2003). western Pacific Ocean off Sanriku, Japan (Hatooka in Nakabo 2002) and South Kuril Islands and Kinmei Seamount (Dolganov 2015); Wiah Point, Graham Island, northern British Columbia (Clemens and Wilby 1961) to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), including Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010), and Peru (Cornejo *et al.* 2015). Several records from the Gulf of California (e.g., Escobado-Sánchez *et al.* 2010). Depth: intertidal to at least

406 m (1,332 ft) (min.: Carlisle *et al.* 1960; max.: Weigman 2016), and possibly to 1,079 m (3,539 ft) (Bradburn *et al.* 2011). Previously *Torpedo californica* Ayres, 1855.

Family Narcinidae—Electric Rays or Numbfishes
Reviewed by: Joseph J. Bizzarro

Diplobatis ommata (Jordan & Gilbert, 1890). **Bullseye Electric Ray** or Ocellated Electric Ray. To 25.1 cm (9.9 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía San Juanico (26°13.8'N, 112°28.6'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern Baja California (De La Cruz-Agüero *et al.* 1994) to Ecuador (Last *et al.* 2016), including Gulf of California (McEachran in Fischer *et al.* 1995). Depth: intertidal to 155 m (492 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011).

Narcine entemedor Jordan & Starks, 1895. **Giant Electric Ray** or Cortez Numbfish. To at least 107 cm (42.1 in) TL (Bizzarro 2005), and possibly to 119 cm (46.9 in) TL (Romero-Caicedo *et al.* 2015); 84 cm (33.1 in) DW (Ehemann *et al.* 2017b). Laguna Manuela (28°14'N, 114°05'W), central Baja California (Cartamil 2009) to Caleta La Cruz, Peru (Chirichigno and Vélez 1998), including Gulf of California (McEachran in Fischer *et al.* 1995). Depth: intertidal to 100 m (328 ft) (min.: Weigman 2016; max.: Amezcua Linares 1996).

Order Pristiformes

Family Pristidae—Sawfishes
Reviewed by: Joseph J. Bizzarro

Pristis pristis (Linnaeus, 1758). **Largeteeth Sawfish**. To 7.0 m (23 ft) TL (Compagno and Last 1999). Pacific and Atlantic Oceans; originally Topolobampo (25.58°N, Amezcua-Linares 2009) or Mazatlan, Mexico (Faria *et al.* 2013) to Peru (Chirichingo and Cornejo 2001). Now greatly reduced or extirpated outside of Nicaragua, Panama, and Colombia (Kyne *et al.* 2013). Depth: 0–60 m (197 ft) (Weigmann 2016). This species may be a separate, Pacific Ocean, species *Pristis zephyreus* (Robertson and Allen 2015).

Order Rajiformes

Family Rhinobatidae—Guitarfishes
Reviewed by: Joseph J. Bizzarro

Pseudobatos glaucostigmus (Jordan & Gilbert, 1883). **Speckled Guitarfish**. To 91 cm TL (35.8 in) TL (Rodrigues-Romero *et al.* 2008); a much larger record, about 150 cm (59.1 in) TL (Ramírez-Amaro *et al.* 2013) is undocumented. Bahía Magdalena, southern Baja California Sur (Pollom *et al.* 2000a) to Ecuador (Amezcua Linares 1996), including Gulf of California (McEachran in Fischer *et al.* 1995). Benthic; depth: intertidal to 112 m (367 ft) (min.: Weigman 2016; max: Amezcua Linares 1996). In an analysis of DNA, Naylor *et al.* (2012) found no statistical difference between this species and *Pseudobatos productus* (Ayres, 1854). Nevertheless, because of differences in morphology and color patterns, they retained the two species.

Pseudobatos prahli (Acero & Franke, 1995). **Gorgona Guitarfish**. To 90 cm TL (Carrera-Fernández *et al.* 2012). Todos Santos (23.41°N), southern Baja California (Rutledge 2021); Gulf of Tehuantepec (Carrera-Fernández *et al.* 2012), and southern Costa Rica to northern Peru (Rutledge 2021). Benthic, depth: 18–24 m (59–79 ft) (Carrera-Fernández *et al.* 2012), and possibly to 70 m (230 ft) (Acero and Franke 1995).

Pseudobatos productus (Ayres, 1854). **Shovelnose Guitarfish**. To 156 cm (61.5 in) TL (Baxter 1966). The 1.7 m given in Eschmeyer and Herald (1983) is based on a misprint (Love *et al.* 2005). San Francisco, northern California (Miller and Lea 1972) to southern Mexico, including Gulf of California (McEachran in Fischer *et al.*

1995). Benthic; depth: 1–91 m (3–298 ft) (Ebert 2003). We follow Last *et al.* (2016b) and remove this species from *Rhinobatos*.

Pseudobatos leucorhynchus (Günther, 1867). **Whitesnout Guitarfish**. To 78 cm (30.7 in) TL (Weigman 2016), and possibly to 118 cm (46.5 in) TL (Romero-Caicedo *et al.* 2015). Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (Arellano-Martinez *et al.* 1997) to northern Peru (Robertson and Allen 2015), including Gulf of California (Castro-Aguirre and Espinosa Pérez 1996), and Islas Galápagos (Last *et al.* 2016). Benthic; depth: intertidal to 50 m (7–164 ft) (min.: Weigman 2016; max.: Robertson and Allen 2002).

Family Trygonorrhinidae—Banjo Rays

Reviewed by: Joseph J. Bizzarro

Zapteryx exasperata (Jordan & Gilbert, 1880). **Banded Guitarfish**. To 97 cm (38.2 in) TL (Vilavicencio-Garayzar 1995); a much larger record of about 140 cm (55.1 in) TL (Rameirez-Amaro *et al.* 2013) is undocumented. Jalama Beach, central California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), to Gulf of California, to at least Mazatlan, Mexico (Bizzarro and Kyne 2015). A record from Peru (Cornejo *et al.* 2015) likely refers to another species. Benthic; depth: intertidal to 200 m (656 ft) (min.: Eschmeyer and Herald 1983; max.: De La Cruz-Agüero *et al.* 1997). Castillo-Páez *et al.* (2017) state that the eastern Pacific Ocean *Zapteryx* require a taxonomic revision.

Family Arhynchobatidae—Softnose Skates

Reviewed by: Joseph J. Bizzarro

This family is considered a subfamily of Rajidae by some researchers.

****Bathyraja*** sp. Egg cases and juveniles of a species tentatively identified as *Bathyraja* sp. have been taken near Cape Bathhurst, in the western Amundsen Gulf, Northwest Territory, Canada (Reist in Coad and Reist 2018).

Bathyraja abyssicola (Gilbert, 1896). **Deepsea Skate**. To 157 cm (63 in) TL (Sheiko and Tranbenkova 1998). Southern Japan (Nakaya in Amaoka *et al.* 1983), Sea of Okhotsk (Dudnik and Dolganov 1992), western Bering Sea (Mecklenburg *et al.* 2002), and eastern Bering Sea as far north as 56°07'N, 169°07'W (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), Aleutian Islands south of Tanaga Island (Zorzi and Anderson 1990), and north of Unalaska Island (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), eastern Gulf of Alaska (Mecklenburg *et al.* 2002), and northern British Columbia (Gilbert 1896), to Islas Coronados, northern Baja California (Zorzi and Anderson 1988); southern Gulf of California (Kuhnz *et al.* 2019); Islas Revillagigedo (Becerril-García *et al.* 2020); Isla Galápagos (Cerutti-Pereyra *et al.* 2018). Benthic; depth: 362–2,905 m (1,187–9,525 ft) (min.: Zorzi and Anderson 1988 (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California); max.: Gilbert 1896 (Personal communication: National Museum of Natural History Fish Collection, Washington, D.C.; 1,588 fm)).

Bathyraja aleutica (Gilbert, 1896). **Aleutian Skate**. To about 161 cm (63.4 in) TL (Zenger 2004). Chiba Prefecture (35°20.4'N) (Ishihara *et al.* 2012), Japan to Bering Sea to south-eastern Alaska (Mecklenburg *et al.* 2002), and northern British Columbia (Love *et al.* 2005) to central California (36°12'N) (Bradburn *et al.* 2011). Benthic; depth: 15–1,602 m (49–5,256 ft) (Sheiko and Fedorov 2000).

Bathyraja interrupta (Gill & Townsend, 1897). **Bering Skate**. To 89 cm (35 in) TL (Ainsley *et al.* 2014). Bering Sea and eastern Aleutian Islands through the Gulf of Alaska to the southern Strait of Georgia (Pietsch and Orr 2019). Benthic; depth: 26–1,380 m (85–4,526 ft) (min.: Pietsch and Orr 2019; max: Orlov and Tokranov 2019).

Bathyraja kincaidii (Garman, 1908). **Sandpaper Skate**. To 63.5 cm (25 in) TL (Pietsch and Orr 2019). Southeastern Alaska to northern Baja California (Pietsch and Orr 2019). Benthic; depth: 18–1,372 m (59–4,500 ft) (min.: Pietsch and Orr 2019; max.: Miller and Lea 1972).

Bathyraja lindbergi Ishiyama & Ishihara, 1977. **Commander Skate**. To 102 cm (40.2 in) TL (Zenger 2004). Sea of Okhotsk off Hokkaido (Nakaya in Amaoka *et al.* 1983) to Bering Sea and Aleutian Islands to south-eastern

Alaska (55°40'N, 135°20'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov). Benthic; depth: 34–1,200 m (111–3,937 ft) (min.: Stevenson *et al.* 2008; max.: Hoff and Britt 2003). A previous possible maximum depth of 2,000 m (6,562 ft) (Love *et al.* 2005) was based on the supposition that this species might be a junior synonym of *Bathyraja matsubarai* (Ishiyama, 1952), a position not widely held.

Bathyraja maculata Ishiyama & Ishihara, 1977. **Whiteblotched Skate**. To 147 cm (58.9 in) TL (Stevenson *et al.* 2007). Sea of Okhotsk and northern Sea of Japan to Bering Sea, and Aleutian Islands (Mecklenburg *et al.* 2002), to the Dixon Entrance, south-eastern Alaska (Bizzarro and Vaughn 2009). Benthic; depth: 73–1,200 m (241–3,936 ft) (min.: Sheiko and Fedorov 2000; max.: Stevenson *et al.* 2008).

Bathyraja mariposa Stevenson, Orr, Hoff, & McEachran, 2004. **Butterfly Skate**. To 76 cm (29.9 in) TL (Stevenson *et al.* 2004). Aleutian Islands, Alaska from Petrel Bank to the Islands of Four Mountains (Stevenson *et al.* 2004). Benthic; depth: 90–457 m (295–1,499 ft) (min.: Stevenson *et al.* 2004; max.: Stevenson *et al.* 2008).

Bathyraja matsubarai (Ishiyama, 1952). **Dusky-purple Skate.** To 126 cm (49.6 in) TL (Weigman 2016). Northern Japan (Hatook *et al.* in Nakabo 2002) and Sea of Okhotska (Tohkairin *et al.* 2015).

Two specimens in the University of Washington fish collection (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) are reported from the Bering Sea. While no precise location data is available, the captures were made on "Vessel 60 (Argosy), cruise 1985-01 in summer of 1985" and the identifications were made by John McEachran (Katherine Maslenikov). Benthic; depth: 120–2,000 m (393–6,560 ft) (Federov *et al.* 2003).

Bathyraja microtrachys (Osburn & Nichols, 1916). **Fine-spined Skate**. To at least 91 cm (35.8 in) TL (Ebert *et al.* 2017). Southwest of Tofino, Vancouver Island (48°35'N, 126°53'W) (Orr *et al.* 2019b) to about central Baja California (300 miles southeast of San Diego, southern California) (Ebert 2003); Gulf of California (Kuhnz *et al.* 2019). Benthic; depth: 1,126–3,322 m (3,693–10,896 ft) (Kuhnz *et al.* 2019).

Bathyraja minispinosa Ishiyama & Ishihara, 1977. **Whitebrow Skate**. To 89.5 cm (35.2 in) TL (Ebert *et al.* 2009). Sea of Okhotsk off Hokkaido (Nayaka in Amaoka *et al.* 1983) and Pacific Ocean off Kuril Islands (Dudnik and Dolganov 1992) to Commander Islands and Bering Sea to Aleutian Islands; northern British Columbia (Peden 2003) close to Alaska border (Love *et al.* 2005). Benthic; depth: 106–1,420 m (348–4,686 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov; max.: Nakaya in Amaoka *et al.* 1983).

Bathyraja panthera Orr, Stevenson, Hoff, Spies, & McEachran 2011. **Leopard Skate**. To about 139 cm (54.7 in) TL (Ormseth 2014). Aleutian Islands and Petrel Bank between longitudes 170° and 179°W (Orr *et al.* 2011). Benthic; depth: 48–396 m (157–1,299 ft) (Ormseth 2014).

Bathyraja parmifera (Bean, 1881). **Alaska Skate**. To 135 cm (54 in) TL (Stevenson *et al.* 2007). North-western Sea of Okhotsk (Saveliev *et al.* 2019), Western Bering Sea, at Ozernoy Bay, Kamchatka (Mecklenburg *et al.* 2018) to south-eastern Chukchi Sea (Mecklenburg and Steinke 2015) to central and eastern Aleutian Islands and south-eastern Alaska (Mecklenburg *et al.* 2016). Eggs cases collected in the Chukchi Sea east of Wrangel Island, Russia and on Beaufort Slope (Mecklenburg and Steinke 2015). Benthic; depth: 17–392 m (56–1,286 ft) (min.: Stevenson *et al.* 2007; max.: Stevenson *et al.* 2008) in Alaska waters. Reported to deeper depths in the western Bering Sea (1,425 m, 4,674 ft, Mecklenburg *et al.* 2002; 1,800 m, 5,904 ft, Grigorov *et al.* 2015), but may be a misidentification or an undescribed species (Ormseth 2015). This species and *Bathyraja simoterus* (Ishiyama, 1967) may be synonymous (Last *et al.* 2016).

Bathyraja spinosissima (Beebe & Tee-Van, 1941). **Pacific White Skate** or White Skate. To 208 cm (81.9 in) TL (David Ebert, pers. comm. to M.L.). Patchily reported from the eastern Bering Sea (56°08'N, 169°19'W) (Orr *et al.* 2019b), Port Waldport, Oregon (Ebert 2003), Mexican mainland at Sinaloa (Castro-Aguirre and Espinosa Pérez 1996), and southern Gulf of California (Kuhnz *et al.* 2019); Isla del Cocos, Costa Rica (Beebe and Tee-Van 1941); Islas Galápagos (Ebert 2003). Benthic; depth: 800–2,938 m (2,624–9,637 ft) (min.: Ebert 2003; max.: Pearcy *et al.* 1982).

Bathyraja taranetzi (Dolganov, 1983). **Mud Skate**. To 77 cm (30.3 in) TL (Ebert 2005). Pacific coast of Kuril Islands and Kamchatka to Bering Sea and Aleutian Islands; unconfirmed report from western Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 17–1,063 m (56–3,487 ft) (min.: Weigman 2016; max.: Dolganov 1985). Also as *Rhinoraja taranetzi* Dolganov, 1983 by some authors. *Rhinoraja longi* Raschi & McEachran, 1991 is included as a junior synonym.

Bathyraja trachura (Gilbert, 1892). Black Skate or **Roughtail Skate**. To 94 cm (37 in) TL (Winton *et al.* 2014). Sea of Okhotsk and northern Kuril Islands to Cape Navarin, western Bering Sea, Commander–Aleutian Chain, and eastern Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002), to off Ensenada (31°30'N, 118°08'W), northern Baja California (Ruiz-Campos *et al.* 2010); north of Isla Guadalupe, central Baja California (Castro-Aguirre and Espinosa Pérez 1996); mid–Gulf of California (Kuhnz *et al.* 2019). Benthic; depth: at least as shallow as about 300 m (984 ft) (Joseph J. Bizzarro) to 2,900 m (9,512 ft) (Last *et al.* 2016).

Bathyraja violacea (Suvorov, 1935). **Okhotsk Skate**. To 107 cm (42.1 in) TL (Dolganov 1998), and perhaps 132 cm (52.0 in) TL (Grigorov *et al.* 2017). Seas of Okhotsk and Japan, and Pacific Ocean off Hokkaido to northwestern Bering Sea off Cape Navarin, Russia (Dolganov 1999), and northeastern Bering Sea (Mecklenburg *et al.* 2002); western Aleutian Islands (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 23–1,110 m (75–3,642 ft) (min.: Dolganov 1999; max.: Sheiko and Fedorov 2000).

Family Rajidae—Hardnose Skates

Reviewed by: Joseph J. Bizzarro

Amblyraja hyperborea (Collett, 1879). **Arctic Skate** or Boreal Skate. To 112 cm (44.1 in) TL (Weigman 2016) or perhaps to 120 cm (47.2 in) TL (Roberts *et al.* 2015). Cosmopolitan; primarily in high latitudes in northern and southern hemispheres; polar basins southward to Beaufort Sea of Alaska and western Canada (Mecklenburg *et al.* 2011), to Chukchi Borderland (Meckleburg and Steinke 2015); also southern Sea of Okhotsk and Pacific coast of northern Japan (Hatooka *et al.* in Nakabo 2002) to Navarin Canyon, northern Bering Sea (Ebert 2003, Stevenson 2004), and Aleutian Islands (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to northern British Columbia (Love *et al.* 2005), to central Panama, including Gulf of California (Zorzi and Anderson 1988). Benthic; depth: 92–3,167 m (302–10,388 ft) (min.: Mecklenburg *et al.* 2016; max.: Kuhnz *et al.* 2019). We follow Last *et al.* (2016) and consider *Amblyraja badia* (Garman, 1899) to be a synonym.

Beringraja binoculata (Girard, 1855). **Big Skate**. To 244 cm (96 in) TL (Eschmeyer and Herald 1983). Bering Sea and Aleutian Islands, at least as far west as Unalaska Island, to eastern Gulf of Alaska (Mecklenburg *et al.* 2002), to Cabo Falsa (22°54'N, 110°02'W), southern Baja California (Castro-Aguirre *et al.* 1993), and Gulf of California (Castro-Aguirre and Espinosa Pérez 1996). Benthic; depth: 2 m (5 ft) or less to at least 501 m (1,643 ft) (min.: Miller *et al.* 1980; max.: Farrugia *et al.* 2016). Reported, but not confirmed, to 523 m (1,715 ft) (NWFSC-FRAM). The often-cited deeper maximum depth of 800 m (2,624 ft) (e.g., Allen and Smith 1988) lacks documentation and should not be cited (Farrugia *et al.* 2016). Formerly *Raja binoculata* (Girard, 1855).

Beringraja inornata (Jordan & Gilbert, 1881). **California Skate**. To 79 cm (31.1 in) TL (NWFSC-FRAM). Strait of Juan de Fuca (Eschmeyer and Herald 1983) to southern Baja California and Gulf of California (McEachran in Fischer *et al.* 1995). Benthic; depth: 3 m (10 ft) to at least 300 m (984 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Joseph J. Bizzarro). While there are a small number of NWFSC-FRAM records from deeper than 300 m (as deep as 792 m, 2,598 ft), these lack documentation and may be due to misidentifications. Similarly, the 1,600 m (5,248 ft) record of Pearcy *et al.* (1982) is likely in error (Joseph J. Bizzarro). Formerly *Raja inornata* Jordan & Gilbert, 1881. While we have listed this species, as well as *Beringraja rhina* (Jordan & Gilbert, 1880) and *Beringraja stellulata* (Jordan & Gilbert, 1880), in the genus *Beringraja*, we argue that the inclusion of these three species within that genus is unfounded, based on genetic results that separate them from *Beringraja binoculata* (Girard, 1855) and *Beringraja pulchra* (Liu, 1932) (found in the northwest Pacific). Parenthetically, *B. binoculata* and *B. pulchra* are the only two skates in this genus that are known to deposit multiple embryos in each egg case) (Chiquilo *et al.* 2014). Thus, we only reluctantly accept this unlikely change of genus until a reclassification (in progress as of 2021) is published.

Beringraja rhina (Jordan & Gilbert, 1880). **Longnose Skate**. To 204 cm (80.3 in) TL (Weigmann 2016). Southeastern Bering Sea (Mecklenburg *et al.* 2002) to just below Punta San Juanico (25°59'N, 113°17'W), southern Baja California (Snytko 1987), and Gulf of California (Eschmeyer and Herald 1983). Benthic; depth: 9–1,294 m (30–4,244 ft) or more (min.: Wayne Palsson, pers. comm. to M.L.; max.: Keller *et al.* 2006b). Formerly *Raja*

rhina Jordan & Gilbert, 1880. Probably not in *Beringraja* (Chiquillo *et al.* 2014) and note our comments under *Beringraja inornata* (Jordan & Gilbert, 1881).

Beringraja stellulata (Jordan & Gilbert, 1880). **Starry Skate**. To 79 cm (31.1 in) TL, and probably to 82.5 cm (32.5 in) TL (Joseph J. Bizzarro). Queen Charlotte Sound (50°56.5'N, 128°45.3'W), British Columbia (DFO) to Isla de Cedros, and Bahía de Sebastian Vizcaino, central Baja California (Castro-Aguirre and Espinosa Pérez 1996). and northern Gulf of California (Jacobsen Stout *et al.* 2019). Bering Sea and Gulf of Alaska records of this species are incorrect (Mecklenburg *et al.* 2002), and perhaps reflect catches of *Bathyraja parmifera* (Ebert 2003). Benthic; depth: 2 m or less to at least 400 m (1,312 ft) (min.: Miller *et al.* 1980; max.: Joseph J. Bizzarro), with undocumented records to 982 m (3,221 ft) (Joseph J. Bizzarro). Formerly *Raja stellulata* Jordan & Gilbert, 1880. However, while we list this species, for now, as *B. stelluata* we disagree with the revision; please note our comments under *Beringraja inornata* (Jordan & Gilbert, 1881).

Rostroraja equatorialis (Jordan & Bollman, 1890). **Equatorial Skate**. To 88 cm (34.6 in) TL (Weigman 2016). Laguna de San Ignacio, southern Baja California (De La Cruz-Agüero and Cota-Gómez 1998) to Peru (4°43'S, 81°23'W) (Chirichigno and Vélez 1998). Benthic; depth: 20–200 m (66–660 ft) (Robertson and Allen 2002). Formerly *Raja equatorialis* Jordan & Bollman, 1890.

Rostroraja velezi (Chirichigno, 1973). **Rasptail Skate**. To 121 cm (47.6 in) TL (Soto-López *et al.* 2020). About Bahía San Juanico, southern Baja California (Robertson and Allen 2015) to west and southwest Gulf of California to Peru; Islas Galápagos and Malpelo (Robertson and Allen 2002). Benthic; depth: no deeper than 20 m (66 ft) and most probably 10 m (33 ft) or less (Joseph J. Bizzarro, unpubl. data) to 300 m (984 ft) (Robertson and Allen 2002).

Order Myliobatiformes

Family Platyrhynidae—Thornbacks

Reviewed by: Joseph J. Bizzarro

Platyrhinoidis triseriata (Jordan & Gilbert, 1880). **Thornback Ray** or Thornback Fanray. To 91 cm (35.8 in) TL (Ebert 2003). Tomales Bay, northern California (Plant 1989) to the Bahía Magdalena Complex (de la Cruz-Agüero *et al.* 1994); disjunct population in the Gulf of California (McEachran in Fischer *et al.* 1995). A report from Ecuador (Béarez 1996) is without documentation. Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 137 m (449 ft) (min.: Carlisle *et al.* 1960; max.: Ebert 2003).

Family Urotrygonidae—Round Stingrays

Reviewed by: Joseph J. Bizzarro

Urobatis concentricus Osburn & Nichols, 1916. Bullseye Stingray, **Reef Stingray**, Reticulated Round Ray, or Spot-on-Spot Round Ray. To 58.4 cm (23.0 in) TL (Ehemann *et al.* 2017a); 37.6 cm (14.8 in) DW (Ehemann *et al.* 2017). Isla de Cedros (M.L., unpubl. data) and, off mainland, Rocas Chester (27°53'N, 115°04'W), central Baja California (M.L., unpubl. data) to Bahía Huatulco, Oaxaca, southern Mexico (Amezcua Linares 1996). Benthic; depth: 1–120 m (4–394 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011). Recently as *Urolophus concentricus* (Osburn & Nichols, 1916).

Urobatis halleri (Cooper, 1863). Round Ray or **Round Stingray**. To 58 cm (22 in) TL (Eschmeyer and Herald 1983), 33 cm (13.1 in) DW (Lyons and Lowe 2013). Humboldt Bay, northern California (Miller and Lea 1972) to Panama (Lyons *et al.* 2015), and possibly Peru (Robertson and Allen 2015), including Gulf of California (McEachran in Fischer *et al.* 1995). Benthic; depth: 0.3–91 m (1–298 ft) (min.; M.L., pers. obs.; max.: Ebert 2003). Recently as *Urolophus halleri* Cooper, 1863.

Urobatis maculatus Garman, 1913. **Cortez Stingray** or Spotted Round Ray. To at least 42 cm (16.5 in) TL (McEachran in Fischer *et al.* 1995), and probably 31 cm (12.2 in) DW (Bizzarro 2009). Lagunas Ojo de Liebre-

Guerrero Negro, central Baja California (De La Cruz-Agüero *et al.* 1996) and Gulf of California (McEachran in Fischer *et al.* 1995) to Puerto Vallarta, Mexico (Pollom *et al.* 2020f). Benthic; depth: 1–90 m (3–295 ft) (min.: Robertson and Allen 2002; max.: Aburto-Oropeza *et al.* 2011). Recently as *Urolophus maculatus* (Garman, 1913).

Urotrygon aspidura (Jordan & Gilbert, 1882). **Panamic Stingray** or Spinytail Round Ray. To 50 cm (19.7 in) TL (Amezcua Linares 1986), and at least 23 cm (9.2 in) DW (Robertson and Allen 2002). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Paita, Peru (Chirichigno and Vélez 1998), and Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 3–100 m (9–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Urotrygon chilensis (Günther, 1872). **Blotched Stingray** or Chilean Round Ray. To at least 41.9 cm (16.5 in) TL (McEachran in Fischer *et al.* 1995), and perhaps to 33 cm (13 in) DW (Bizzarro *et al.* 2009). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Chile (Chirichigno and Vélez 1998), including Gulf of California (McEachran in Fischer *et al.* 1995). Benthic; depth: 1–60 m (3–197 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002). Ehemann *et al.* (2021) note that this species may be limited to the Southern Hemisphere and that specimens taken in the Northern Hemisphere may represent another species.

Urotrygon munda Gill, 1863. Spiny Round Ray or **Spiny Stingray**. To 53.8 cm (21.2 in) TL (Flores-Ortega *et al.* 2020), 28.8 cm (11.3 in) DW (Weigman 2016). About Punta Eugenia, central Baja California (Robertson and Allen 2015), and Gulf of California (Miyake and McEachran 1986) to Callao, Peru (Chirichigno and Vélez 1998). Benthic; depth: 1–80 m (3–262 ft) (min.: Weigmann 2016; max.: Flores-Ortega *et al.* 2011).

Urotrygon rogersi (Jordan & Starks, 1895). **Roger's Round Ray** or Thorny Stingray. To 55 cm (21.7 in) TL (Robertson and Allen 2015), DW 36 cm (14.2 in) (John Snow, pers. comm. to M.L.). Bahía San Juanico, southern Baja California (Fitch 1953) to Ecuador (De La Cruz-Agüero *et al.* 1997), including Gulf of California (McEachran in Fischer *et al.* 1995). Benthic; depth: 2–235 m (7–771 ft) (min.: Castro-Aguirre *et al.* 1999; max.: Acevedo-Cervantes *et al.* 2017).

Family Dasyatidae—Whiptail Stingrays

Reviewed by: Joseph J. Bizzarro

Hypanus dipterurus (Jordan & Gilbert, 1880). Bullseye Stingray, **Diamond Stingray,** Shorttail Stingray, or Whiptail Stingray. To 200 cm (78.7 in) TL (Grove and Lavenberg 1997); 122 cm (48 in) DW (Robertson and Allen 2008). Malibu, southern California (Christopher Lowe, pers. comm. to M.L.) to northern Chile and Islas Galápagos (Grove and Lavenberg 1997), including Gulf of California (McEachran in Fischer *et al.* 1995); Hawaiian Islands (Last *et al.* 2016). Unverified captures off British Columbia and central California. Benthic; depth: intertidal to at least 150 m (492 ft) (Carlise *et al.* 1960; Weigman 2016), and perhaps to 355 m (1,164 ft) (Mundy 2005). Previously as *Dasyatis dipterura* (Jordan & Gilbert, 1880), we follow Last *et al.* (2016) and use the genus name *Hypanus*.

Hypanus longus (Garman, 1880). **Longtail Stingray**. To about 180 cm (70.1 in) DW (Weigman 2016). Bahía San Juanico, southern Baja California (Fitch 1953) to Ecuador, and probably to northern Peru (Chirichigno and Vélez 1998), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: shallow waters to at least 118 m (387 ft) (Amezcua Linares 1996), and probably deeper. Previously *Dasyatis longa* (Garman, 1880), we follow Last *et al.* (2016a) and place this species in the genus *Hypanus*.

Pteroplatytrygon violacea (Bonaparte, 1832). **Pelagic Stingray**. To at least 80 cm (31.4 in) DW (Weigman 2016) in marine waters, and to 96 cm (37.8 in) DW in captivity (Mollet *et al*. 2002); 163 cm (64.2 in) TL (Eschmeyer and Herald 1983). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); British Columbia (Peden and Jamieson 1988) to Baja California to central Chile (Ebert 2003), and Islas Galápagos (Eschmeyer and Herald 1983). Depth: surface to 381 m (1,250 ft) over deep water (min.: Love *et al.* 2005; max.: Mundy 2005).

Family Gymnuridae—Butterfly Rays
Reviewed by: Joseph J. Bizzarro

Gymnura marmorata (Cooper, 1864). **California Butterfly Ray**. To 157 cm (61.8 in) DW (Jonathan Williams, pers. comm. to M.L.). Point Conception, California (Miller and Lea 1972) through Baja California Peninsula, and eastern Gulf of California, and to at least El Chuyudo (28°19.2'N), Sonora, Mexico (Smith *et al.* 2009). Benthic; depth: intertidal to 94 m (308 ft) (min.: Carlisle *et al.* 1960; max.: Amezcua Linares 1996). Records from south of Gulf of California are likely misidentified *Gymnura crebripunctata* (Peters, 1869) (Last *et al.* 2016), or *Gymnura afuera* Hildebrand, 1946.

Family Aetobatidae—Pelagic Eagle Rays
Reviewed by: Joseph J. Bizzarro

We follow White and Naylor (2016) and remove the genus *Aetobatus* from the Myliobatidae.

Aetobatus laticeps Gill, 1865. **Pacific Eagle Ray** or Pacific White-Spotted Eagle Ray. To at least 2.3 m (7.5 ft) (Last *et al.* 2016) or perhaps to 3.6 m (11.8 ft) DW (Amezcua Linares 1996). Bahía Almejas, southern Baja California (Love *et al.* 2005) to Los Organos, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997) and Gulf of California (Galván-Magaña *et al.* 1996). Depth: shallow bays and estuaries (Amezcua Linares 1996) to 82 m (269 ft) (Cortés *et al.* 2012). The northern California reference (Grove and Lavenberg 1997) appears to be an error. Last *et al.* (2016) separated this species from *Aetobatus narinari* (Euphrasen, 1790).

Family Myliobatidae—Eagle Rays
Reviewed by: Joseph J. Bizzarro

XAetomylaeus asperrimus (Gilbert, 1898). **Rough Eagle Ray**. While there is one report from within our range, from Bahía Almejas, southern Baja California (Fitch 1953), it is highly likely this specimen was *Aetobatus laticeps* Gill, 1865. *Aetomylaeus asperrimus* is known from Costa Rica, Ecuador, and the Islas Galápagos (Kyne *et al.* 2020).

Myliobatis californica Gill, 1865. **Bat Ray**. To 1.8 m (6 ft) DW (Eschmeyer and Herald 1983). Yaquina Bay, Oregon (Ebert 2003) to Gulf of California (Eschmeyer and Herald 1983), including Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (M.L., pers. obs.), intertidal to 176 m (577 ft) (min.: Eschmeyer and Herald 1983; max.: Bradburn *et al.* 2011).

Myliobatis longirostris Applegate & Fitch, 1964. **Longnose Eagle Ray** or Snouted Eagle Ray. To about 110 cm (43.4 in) DW (Ramírez-Amaro *et al.* 2013). Ensenada, northern Baja California to Mazatlan, Mexico (Pollom *et al.* 2020d), including Gulf of California (McEachran and Notarbartolo di Sciara in Fischer *et al.* 1995), and from Guatamala (Pollom *et al.* 2020d) to Sechura, Peru (Chirichigno and Vélez 1998). Inshore; depth: to 64 m (210 ft) (White and Sommerville 2010).

Family Mobulidae—Devilrays
Reviewed by: Joseph J. Bizzarro

Mobula birostris (Walbaum, 1792). Giant Manta or **Manta**. To at least 7 m (23 ft) DW (Weigman 2016), and unconfirmed to 9.1 m (29.8 ft) DW (Last and Stevens 2009). Circumglobal in warm waters mainly between 40°N and 40°S (Last *et al.* 2016); western Pacific Ocean north to Okinawa (Aonuma and Yoshino in Nakabo 2002); Santa Barbara, southern California (Ebert 2003) to Peru (12°S) (Moreno and Gonzalez-Pestana 2017), including Gulf of California (McEachran and Notarbartolo di Sciara in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997); sighting (unverifiable) reported from Prince Willam Sound, Alaska (Karinen *et al.* 1985). Pelagic; depth: surface to at least 1,000 m (3,280 ft) (Weigman 2016).

Mobula mobular (Bonnaterre, 1788). Giant Devilray or **Spinetail Devil Ray**. Notarbartolo di Sciara *et al.* (2020) note that recent taxonomic changes among the Mobulidae have made the name Giant Devilray obsolete and suggest that Spinetail Devil Ray is more accurate. To at least 5.2 m (17.1 ft) DW (Last *et al.* 2016). Circumglobal; western Pacific Ocean north to Korea and northern Japan (as *Mobula japonica*, Aonuma and Yoshino in Nakabo 2002); central California to Peru (Ebert 2003), including Gulf of California (Galván-Magaña *et al.* 1996). Depth: surface to at 700 m (2,296 ft) (min.: Ebert 2003; max.: Weigmann 2016). The *Mobula thurstoni* reported by MacGinitie (1947) from Laguna Beach, southern California is likely *M. mobular* (Notarbartolo di Sciara 1987). We follow Poortvliet *et al.* (2015) and Last *et al.* (2016) in synonymizing *Mobula japanica* (Müller & Henle, 1841) with this species.

Mobula munkiana Notarbartola di Sciara, 1987. **Pygmy Devil Ray** or Munk's Devil Ray. 110 cm (43.3 in) DW (Couturier *et al.* 2012). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); Gulf of California to Peru, Islas Galápagos and other offshore islands (Robertson and Allen 2008). Depth: surface to 30 m (98 ft) (Weigman 2016), and to benthos in nearshore waters (Smith *et al.* 2009).

Mobula tarapacana (Philippi, 1893). Chilean Devil Ray or **Sicklefin Devil Ray**. To 3.7 m (12.1 ft) DW (Compagno and Last in Carpenter and Niem 1999). Circumglobal; western Pacific Ocean north to northern Japan (Aonuma and Yoshino in Nakabo 2002); southern Baja California (McEachran and Notarbartolo di Sciara in Fischer *et al.* 1995) to Chile (Pequeño 1989), including Gulf of California (McEachran and Notarbartolo di Sciara in Fischer *et al.* 1995). Depth: surface to over 2,000 m (6,560 ft) (min.: Robertson and Allen 2002; max. Jones *et al.* 2020).

Mobula thurstoni (Lloyd, 1908). **Smoothtail Mobula** or Bentfin Devilray. To 1.85 m (6.1 ft) DW (Weigman 2016); reported to 2.2 m (7.1 ft) DW (Bizzarro *et al.* 2007). Circumglobal; Isla Guadalupe (Miller and Lea 1972, as *M. lucasana*); patchily reported from southern Baja California through Gulf of California (McEachran and Notarbartolo di Sciara in Fischer *et al.* 1995), Guatamala to Panama, and Ecuador (Marshall *et al.* 2019) Depth: surface to 100 m (328 ft) or more (Notarbartolo di Sciara 1988). *Mobula lucasana* Beebe & Tee-Van, 1938 is a synonym.

Family Rhinopteridae—Cownose Rays

Reviewed by: Joseph J. Bizzarro

Rhinoptera steindachneri Evermann & Jenkins, 1891. Gabilan, **Golden Cownose Ray**, Golden Ray, or Pacific Cownose Ray. To 104 cm (40.9 in) DW (Bizzarro *et al.* 2007). Bahía de Sebastian Vizcaino, central Baja California (Castro-Aguirre and Espinosa Pérez 1996), to Gulf of California (McEachran and Notarbartolo di Sciara in Fischer *et al.* 1995), to Peru (Chirichigno 1974), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to about 77 m (253 ft) (min.: Grove and Lavenberg 1997; max.: Weigmann 2016). A maximum depth of 1,226 m (4,021 ft) reported by Morera *et al.* (2019) was based on a capture by a bottom trawl and probably represents a midwater capture during net deployment or retrieval. *A List and Index of the Publications of the United States National Museum* (1947) gives the date of publication as July 16, 1891; sometimes given as 1892.

Order Acipenseriformes

Family Acipenseridae—Sturgeons

Acipenser medirostris Ayres, 1854. **Green Sturgeon**. To 270 cm (108 in) TL (Moyle 2002). Peter the Great Bay, Sea of Japan (Antonenko *et al.* 2003) to Tohoku, Japan (Hosoya in Nakabo 2002) to Pacific coast of Kamchatka, Bering Sea, and Gulf of Alaska (Mecklenburg *et al.* 2002) to just south of Bahía de San Quintin, northern Baja California (Rosales-Casián and Almeda-Jáuregui 2009). Bering Sea records have been rare and not well documented (Mecklenburg *et al.* 2002). On 4 June 2005, a Green Sturgeon was caught in Kuskokwim Bay off Kwigillingok (59°51'N, 162°08'W) (Love *et al.* 2005). In addition, a few Green Sturgeon have been captured in the lower Yukon River which enters the Bering Sea near Norton Sound (Randy Brown, pers. comm. to M.L.). Depth: to 167 m (548 ft) at sea (NWFSC-FRAM). Anadromous.

Acipenser transmontanus Richardson, 1837. **White Sturgeon**. Perhaps to 6 m (20 ft) FL (Moyle 2002). Moyle notes that the largest length records for this species were made before 1900 and "were subject to inaccurate measurements and exaggerated reporting." Moyle also notes the largest recent record, from Oregon, was 3.2 m (10.5 ft) long. Northern Gulf of Alaska (Mecklenburg *et al.* 2002) to Bahía de Todos Santos, northern Baja California (Ruiz-Campos *et al.* 2011). Depth: to 122 m (400 ft) at sea (Miller and Lea 1972). Anadromous.

Order Elopiformes

Family Elopidae—Tenpounders

Elops affinis Regan, 1909. **Machete** or Pacific Ladyfish. To 91.4 cm (36 in) TL (Miller and Lea 1972). Mandalay Beach, southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Talara, Peru (Chirichigno and Vélez 1998), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995). Marine and brackish waters (Romero-Berny *et al.* 2018); depth: 1–10 m (4–33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max. Robertson and Allen 2002).

Order Albuliformes

Family Albulidae—Bonefishes

Albula gilberti Pfeiler & van der Heiden, 2011. **Cortez Bonefish**. To about 41.2 cm (16.2 in) TL (John Snow, pers. comm. to M.L.). San Francisco, northern California, along west coast of Baja California, and into the Gulf of California (Pfeiler *et al.* 2011) to Acapulco, Mexico (Palacios-Salgado *et al.* 2014). Depth: intertidal to perhaps 27 m (89 ft) (Pfeiler *et al.* 2011). Previously referred to as *Albula vulpes* (Linneus, 1758) and "*Albula* sp. A" (Pfeiler *et al.* 2011).

Albula pacifica (Beebe, 1942). **Pacific Shafted Bonefish**. To 60 cm (23.6 in) TL. Marquis Point (23°56.8'N, 110°51.1'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Pfeiler 2008), including at least southern Gulf of California (Robertson and Allen 2015). Primarily in estuaries; depth: to 10 m (33 ft) (Robertson and Allen 2015).

Family Halosauridae—Halosaurs

Aldrovandia oleosa Sulak, 1977. To 49.9 cm (19.6 in) TL (Hanke *et al.* 2014). Circumglobal; two collected off Haida Gwaii (54°04'N, 134°07'W), British Columbia (Hanke *et al.* 2014), and another just north of the U.S.–Mexico border (Kamikawa and Stevenson 2010). A specimen observed on the Davidson Seamount and referred to as *Aldrovandia* sp. (Lundsten *et al.* 2009) was probably this species (Burton and Lea 2019). Depth: 819–3,300 m (2,686–10,824 ft) (min.: Kamikawa and Stevenson 2010; max.: Poulsen *et al.* 2018).

Halosaurus attenuatus Garman, 1899. To 40.6 cm (16 in) TL (Froese and Pauly 2019; note that we were unable to verify this record). Probably circumglobal (Smith in Carpenter and De Angelis 2016); Southern Baja California (Cruz-Acevedo *et al.* 2018) to Gulf of California to Panama (Robertson *et al.* 2017); Islas Galápagos; eastern Atlantic (Robertson *et al.* 2017). Depth: 1,113–2,500 m (3,651–8,200 ft) (Robertson *et al.* 2017).

Family Notacanthidae—Spiny Eels

Notacanthus chemnitzii Bloch, 1788. **Snubnosed Spiny Eel**. To 135 cm (54 in) TL (Mecklenburg *et al.* 2018). Probably circumglobal; Greenland (Okamura and Takahashi in Okamura *et al.* 1995); western Pacific Ocean off

Japan (Yabe in Amaoka *et al.* 1983); Sea of Okhotsk (Orlov 1998); northern Bering Sea (59°22'N, 178°28'W) (Maslenikov *et al.* 2013) to Chile (Pequeño 1989). Benthopelagic; depth: 126–3,285 m (413–10,775 ft) (min.: Orlov and Tokranov 2019; max.: Yabe in Amaoka *et al.* 1983); usually taken at the greater depths (Mecklenburg *et al.* 2002). Either a single species with some intraspecific variation (Mecklenburg *et al.* 2018) or a species complex (Robertson *et al.* 2017).

Polyacanthonotus challengeri (Vaillant, 1888). **Longnose Tapirfish**. To about 60 cm (23.6 in) TL (Gon in Gon and Heemstra 1990). Circumglobal, predominantly antitropical, on the continental rise; western Pacific Ocean north off northern Sea of Japan off Hokkaido (Yabe in Amaoka *et al.* 1983) and western North Pacific off southern Honshu (Crabtree *et al.* 1985) to northern Bering Sea (60°10'N, 179°41'W) (Maslenikov *et al.* 2013) to Cape Falcon, Oregon (Stein and Butler 1971). Benthopelagic; depth: 700–3,753 m (2,296–12,313 ft) (min.: Smith in Carpenter and De Angelis 2016; max.: Sulak *et al.* 1984).

Order Anguilliformes

Family Colocongridae—Worm Eels (placed in this family by López *et al.* 2007)

Thalassenchelys coheni Castle & Raju, 1975. **Leaflike Eel**. To 30.4 cm (12 in) TL (Castle and Raju 1975). Western North Pacific to southern British Columbia (west of northern Vancouver Island at 48°40'N, 126°43'W) (Hanke *et al.* 2014) to Isla Guadalupe, central Baja California (Shimokawa *et al.* 1995). Epipelagic; depth: perhaps 3 m to 1,745 m (8–5,724 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Hanke *et al.* 2014). Likely the leptocephalus larvae of *Congriscus megastomus* (Günther, 1877) (Kurogi *et al.* 2016).

Family Chlopsidae—False Morays

Chlopsis apterus (Beebe & Tee-Van, 1938). **Stripesnout False Moray.** To 25 cm (9.8 in) TL (Robertson and Allen 2002). Near Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); tip of Baja California (23°03'N, 109°28'W) (Lavenberg 1988) and mouth of Gulf of California to Colombia (Robertson and Allen 2002). Depth: 80–155 m (262–510 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Chlopsis kazuko*** Lavenberg, 1988. **Mexican False Moray** or Kazunoko's False Moray. To 12 cm (4.7 in) TL. Tip of Baja California and Jalisco, Mexico to Costa Rica. Depth: 50–100 m (164–328 ft). All in Robertson and Allen (2002).

Family Muraenidae—Morays

****Anarchias galapagensis*** (Seale, 1940). **Hardtail Moray** or Minute Moray. To 17.3 cm (6.8 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Lower Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Colombia (Robertson and Allen 2002), including tip of southern Baja California (Charter and Moser in Moser 1996), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 0–61 m (200 ft) (Robertson and Allen 2015).

****Echidna nebulosa*** (Ahl, 1789). Snowflake Moray or **Starry Moray**. To 80 cm (31.5 in) TL (Robertson and Allen 2008). Indo-Pacific; western Pacific Ocean north to Kochi, Japan (Hatooka in Nakabo 2002); Cabo San Lucas, southern Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Colombia (Robertson and Allen 2002), including lower Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995), and Islas Galápagos (McCosker and Rosenblatt 2010). Marine and brackish waters (Koeda *et al.* 2016); benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 48 m (157 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Mundy 2005).

Echidna nocturna (Cope, 1872). Freckled Moray or **Palenose Moray**. To 75 cm (29.5 in) TL (Allen and Robertson 1994). Bahía Santa Maria (24°47'N, 112°16'W), southern Baja California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California), Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Peru (Allen and Robertson 1994), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 30 m (98 ft) (min.: Casellanos-Galindo *et al.* 2005; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

****Enchelycore octaviana*** (Myers & Wade, 1941). **Slenderjaw Moray**. To 93 cm (36.6 in) TL (Grove and Lavenberg 1997). Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Peru (Robertson and Allen 2002), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 2–40 m (7–131 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

****Gymnomuraena zebra*** (Shaw, 1797). **Zebra Moray**. To 150 cm (59 in) TL (Allen and Robertson 1994). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) to southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995), and central America to Peru (Grove and Lavenberg 1997), including Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 1–50 m (3–164 ft) (Robertson and Allen 2008).

Gymnothorax castaneus (Jordan & Gilbert, 1883). Chestnut Moray or **Panama Green Moray**. To 155.2 cm (61.1 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Isla de Cedros, central Baja California (Robertson and Allen 2015), and Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Béarez 1996), and perhaps to Chipana, northern Chile (Sielfeld 2010), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 101 m (3–331 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Gymnothorax dovii (Günther, 1870). **Fine-spotted Moray**. 170 cm (66.9 in) TL (Robertson and Allen 2008). Isla de Cedros, central Baja California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Gulf of California to Ecuador, and offshore islands including Islas Galápagos (Robertson and Allen 2008). Benthic; depth: intertidal to 160 m (525 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sánchez-Jiménez *et al.* 2018).

Gymnothorax equatorialis (Hildebrand, 1946). Equatorial Moray or **Spottail Moray**. To 100 cm (39.4 in) TL (Gómez *et al.* 2014). Bahía San Cristóbal, southern Baja California (27°37'N, 114°55'W) (Rodríguez-Romero *et al.* 2008), Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Iquique, northern Chile (Sielfeld *et al.* 2010), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 5–183 m (16–600 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Gymnothorax flavimarginatus (Rüppell, 1830). **Yellowmargin Moray**. 124 cm (48.8 in) TL (Robertson and Allen 2008). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); Bahía Santa Maria, southern Baja California (Jonathan *et al.* 2015); tip of Baja California, Costa Rica to Panama and offshore islands (Robertson and Allen 2008). Benthic; depth: 0.5–150 m (2–492 ft) (min.: Smith *et al.* 2019; max.: Robertson and Allen 2008).

Gymnothorax mordax (Ayres, 1859). **California Moray**. To 152 cm (5 ft) TL (Miller and Lea 1972). Point Conception, California to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), including Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010), and Rocas Alijos (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A specimen reported from Clipperton Island (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was misidentified (Katherine Dale and Arturo Ramírez, pers. comm. to M.L.), and one from Nicaragua (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) is a leptocephalus. Early-stage larvae have been taken around Cabos San Lucas, in the lowermost part of the Gulf of California (on both sides), and down the Mexican mainland as far south as Mazatlán (William Watson, pers. comm. to M.L.). Beltrán-León and Rios Herrera (2000) tentatively identified

larvae captured off Colombia as this species. Benthic; depth: lower intertidal to 40 m (131 ft) (min.: Ruiz-Campos *et al.* 2010b; max.: Eschmeyer and Herald 1983).

Gymnothorax panamensis (Steindachner, 1876). **Masked Moray** or Panamic Moray. To 75 cm (29.5 in) TL (Robertson and Allen 2002). Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California; Punta Hughes (24°45'N, 112°15.9'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Benthic; depth: intertidal to 107 m (351 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Amezcua Linares 1996).

Gymnothorax phalarus Bussing, 1998. **Small-spotted Moray**. To 93 cm (36.6 in) TL (Robertson and Allen 2002). Tip of Baja California and south-eastern Gulf of California to Peru (Robertson and Allen 2002). Benthic; depth: 25–933 m (82–3,060 ft) (min.: Robertson and Allen 2002; max.: Morera *et al.* 2019).

Gymnothorax verrilli (Jordan & Gilbert, 1883). **White-edged Moray**. To 43 cm (16.9 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Charter and Moser in Moser 1996); Chiapas, Mexico (González-Acosta *et al.* 2018) to Panama (Robertson and Allen 2015). Benthic; depth: intertidal to 18 m (60 ft) (min.: Robertson and Allen 2015; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Muraena argus (Steindachner, 1870). **Argus Moray** or White-spotted Moray. To 120 cm (47.2 in) TL (Jiménez Prado and Béarez 2004). Santa Catalina Island (McCosker and Smith 2004) and Redondo Beach, southern California (Phil Garner, pers. comm. to M.L.), La Jolla, southern California (Scott McGee, pers. comm. to M.L.), and Bahía Magdalena (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern Baja California to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997), Gulf of California, and other offshore islands (Robertson and Allen 2002). Benthic; depth: 5–120 m (17–394 ft) (min.: Robertson and Allen 2008; max.: Aburto-Oropeza *et al.* 2011).

Muraena clepsydra Gilbert, 1898. **Hourglass Moray**. To about 120 cm (47.2 in) TL (Jiménez Prado and Béarez 2004). Cabo San Lucas, southern Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998), including lower Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 25 m (83 ft) (min.: Thomson *et al.* 1979; max.: Robertson and Allen 2002).

Muraena lentiginosa Jenyns, 1842. **Jewel Moray**. To 63 cm (24.9 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía Magdalena, southern Baja California (Charter and Moser in Moser 1996) to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Benthic; depth: intertidal to 27 m (89 ft) (min.: Weaver 1970; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Scuticaria tigrina (Lesson, 1828). Tiger Moray or **Tiger Reef Eel**. To 140 cm (55.1 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to Taiwan (Ho *et al.* 2015); Gulf of California to Colombia (Robertson and Allen 2002), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: 3–25 m (10–83 ft) (Robertson and Allen 2002).

Uropterygius macrocephalus (Bleeker, 1864). **Largehead Moray**, Longhead Moray, or Needle-tooth Moray. To 49 cm (19.2 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; western Pacific Ocean north to at least Taiwan (Ho *et al.* 2015); Punta Marquez (23°56.8'N, 110°52.2'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Robertson and Allen 2002), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Benthic; depth: intertidal to at least 15 m (49 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Smith *et al.* 2019).

Uropterygius polystictus Myers & Wade, 1941. Many-spotted Moray**, Peppered Moray**, or Peppered Snake Moray. To 72 cm (28.3 in) TL (Robertson and Allen 2002). Gulf of California (McCosker and Rosenblatt

in Fischer *et al.* 1995) to southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Colombia (Grove and Lavenberg 1997), including Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 0.3–35 m (1–115 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

Uropterygius versutus Bussing, 1991. Blackeye Snake Moray, **Crafty Moray**, or Two-holes Moray. To 56 cm (22 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Colombia (Grove and Lavenberg 1997), including Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Benthic; depth: intertidal to 40 m (131 ft) (Allen and Robertson 1994).

Family Synaphobranchidae—Cutthroat Eels

Histiobranchus bathybius (Günther, 1877). **Deepwater Cutthroat Eel.** To 137 cm (54 in) TL (Saldanha and Bauchot in Whitehead *et al.* 1986). Circumglobal; western Pacific Ocean north to Japan and Russian North-western Pacific (Orlov and Tokranov 2019); unknown in eastern North Pacific except for one record from south-eastern Bering Sea, Alaska (Mecklenburg *et al.* 2002), and one record from off Cabo San Lucas, southern Baja California (Sulak and Shcherbachev 1997). Depth: 295–4,855 m (968–15,928 ft) (min.: Orlov and Tokranov 2019; max.: Saldanha and Bauchot in Whitehead *et al.* 1986). We classify this species in *Histiobranchus* following Sulak and Shcherbachev (1997). *Histobranchus* cf. *bathybius* was observed in the Clarion-Clipperton Zone (about 12°27.2'N, 116°38.9'W), well south of the Cabo San Lucas record (Amon *et al.* 2017).

Synaphobranchus affinis Günther, 1877. **Slope Cutthroat Eel**. To 160 cm (63 in) TL (Sulak and Shcherbachev 1997)**.** Circumglobal; western Pacific Ocean north to Russian Western Pacific (Orlov and Tokranov 2019); unknown in eastern North Pacific except for one Bering Sea, Alaska record (Mecklenburg *et al.* 2002); Hawai'i (Mecklenburg *et al.* 2002). Depth: 290–2,400 m (951–7,872 ft) (min.: Sulak and Shcherbachev 1997; max. Orlov and Tokranov 2019).

Synaphobranchus brevidorsalis Günther 1887. **Shortdorsal Cutthroat Eel**. 1 m (39.4 in) TL (Roberts *et al.* 2015). Circumglobal (Sulak and Shcerbachev 1997); western Pacific Ocean north to Pacific coast of Japan (Sulak and Shcerbachev 1997); Paul Revere Ridge, west of Vancouver Island (50°13'N, 129°46'W) (Hanke *et al.* 2014). Depth: surface to 2,960 m (9,709 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sulak and Shcerbachev 1997).

Unidentified Synaphobranchidae. Observed in deep water off central California (Lundsten *et al.* 2009).

Family Ophichthidae—Snake Eels or Worm Eels

Bascanichthys bascanoides Osburn & Nichols, 1916. **Sooty Sand Eel**. To 77 cm (30.3 in) TL (Robertson and Allen 2002). Bahía Almejas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); central Gulf of California to Panama and Isla del Cocos, Costa Rica (Robertson and Allen 2002). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to 20 m (66 ft) (Robertson and Allen 2002).

Callechelys cliffi Böhlke & Briggs, 1954. **Sandy Ridgefin Eel**. To 46 cm (18.1 in) TL (Robertson and Allen 2002). Gulf of California to Panama (Allen and Robertson 1994), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995). Depth: surface to 30 m (0–98 ft) (McCosker and Rosenblatt in Fischer *et al.* 1995).

Callechelys eristigma McCosker & Rosenblatt, 1972. **Spotted Ridgefin Eel**. To 113 cm (44.5 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Gulf of California to Costa Rica (Robertson and Allen 2002), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995). Depth: 2–25 m (7–82 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

Ethadophis merenda Rosenblatt & McCosker, 1970. **Snack Eel**. To 53 cm (20.9 in) TL. Bahía Thurloe (27°38'N, 114°50'W), southern Baja California. The depth range of this species is unknown. However, because the type

specimen was taken from the stomach of a white seabass (*Atractoscion nobilis*) it is likely to inhabit relatively shallow waters. All in Rosenblatt and McCosker (1970).

Herpetoichthys fossatus (Myers & Wade, 1941). **Mustachioed Snake Eel**. To 55 cm (21.6 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Gulf of California, including Cabo San Lucas, southern Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995), Peru (Chirichigno and Vélez 1998), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 5–40 m (15–131 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

Ichthyapus selachops (Jordan & Gilbert, 1882). **Smiling Sand Eel**. To 54 cm (21.3 in) TL (Robertson and Allen 2002). Costa Rica to Ecuador (Robertson and Allen 2008) to southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995), including Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Benthic; depth: intertidal to 34 m (110 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Letharchus rosenblatti McCosker, 1974. **Black Sailfin Eel** or Sailfin Snake Eel. To 35 cm (13.8 in) TL (Allen and Robertson 1994). Gulf of California to Ecuador (Béarez 1996), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: intertidal to 17 m (56 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

Myrichthys tigrinus Girard, 1859. Spotted Snake Eel or **Tiger Snake Eel**. To 74 cm (29.1 in) TL (Robertson and Allen 2015). Bahía Magdalena, southern Baja California (Charter in Moser 1996) to Callao, Peru (Chirichigno and Vélez 1998), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and Isla del Cocos (Robertson and Allen 2002). Benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 60 m (197 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Myrophis vafer Jordan & Gilbert, 1883. **Pacific Worm Eel**. To 47 cm (18.5 in) TL (Robertson and Allen 2002). San Pedro, southern California (Miller and Lea 1972) to Punta Aguja, Peru (Chirichigno and Vélez 1998), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 46 m (151 ft) (min: Robertson and Allen 2002; max: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Ophichthus triserialis (Kaup, 1856). **Pacific Snake Eel**. To 121.5 cm (47.8 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Off Lincoln City (44°58.6'N, 124°09'W), Oregon (Pickens *et al.* 2018) to Peru, including Gulf of California (Eschmeyer and Herald 1983) and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 155 m (508 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker and Rosenblatt 1998). The *O. triserialis* mentioned as living around the Islas Galápagos in Eschmeyer and Herald (1983) is another, island endemic, species (Love *et al.* 2005).

Ophichthus zophochir Jordan & Gilbert, 1882. **Yellow Snake Eel**. To 98 cm (38.6 in) TL (Amezcua Linares 1996). Humboldt Bay, northern California (Miller and Lea 1972) to Arica, northern Chile (Sielfeld *et al.* 2010), including Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 110 m (361 ft) (min.: Miller and Lea 1972; max.: McCosker and Rosenblatt 1998).

Paraletharchus pacificus (Osburn & Nichols, 1916). **Pacific Sailfin Eel** or Sailfin Eel. To 81 cm (31.9 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Gulf of California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Panama (Allen and Robertson 1994), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995) and Isla del Cocos (Robertson and Allen 2002). Benthic; depth: intertidal to 35 m (115 ft) (min.: Robertson and Allen 2002; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

Phaenomonas pinnata Myers & Wade, 1941. **Elastic Eel**. To 53.5 cm (21 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Gulf of California to Colombia, including southern tip of Baja California and Islas Galápagos

(McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: 1–50 m (3–164 ft) (min.: McCosker and Rosenblatt in Fischer *et al.* 1995; max.: Robertson and Allen 2002).

Quassiremus nothochir (Gilbert, 1890). Elastic Snake Eel, Red-banded Snake Eel, **Redsaddled Snake Eel**, or Short-fin Snake Eel. To 70 cm (27.6 in) TL (McCosker and Rosenblatt in Fischer *et al.* 1995). Gulf of California to Panama (Robertson and Allen 2002), including southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995). Benthic; depth: 1–80 m (262 ft) (min.: Robertson and Allen 2015; max.: Aburto-Oropeza *et al.* 2011).

Scytalichthys miurus (Jordan & Gilbert, 1882). **Shorttail Viper Eel**. To 97 cm (38.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Isla Guadalupe, central Baja California and southern tip of Baja California (McCosker and Rosenblatt in Fischer *et al.* 1995) to Panama (Robertson and Allen 2002), including Islas Galápagos (Grove and Lavenberg 1997) and Isla del Cocos (Robertson and Allen 2002). Benthic; depth: 10–85 m (33–279 ft) (min.: Robertson and Allen 2002; max.: McCosker and Rosenblatt in Fischer *et al.* 1995).

Family Derichthyidae—Longneck Eels

Derichthys serpentinus Gill, 1884. **Neck Eel**. To 40 cm (15.7 in) TL (Castle in Smith and Heemstra 1986). Circumglobal; western Pacific Ocean north to northern Japan (Balanov *et al.* 2009); southern California to Chile (33°S) (Fitch and Lavenberg 1968). Depth: 16–2,400 m (52–7,872 ft) (min.: Roberts *et al.* 2015; max.: Porteiro *et al.* 2017).

Family Muraenesocidae—Pike Congers

Cynoponticus coniceps (Jordan & Gilbert, 1882). **Conehead Eel**, Conger-head Pike Conger, or Red Pike Conger. To 202 cm (79.5 in) TL (Robertson and Allen 2002). Southern tip of Baja California to Peru (Robertson and Allen 2015), including Gulf of California (Ruiz-Campos *et al.* 1998). Depth: 6–100 m (20–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Smith in Fischer *et al.* 1995).

Family Nemichthyidae—Threadtail Snipe Eels

Avocettina bowersii Garman, 1899. **Smalleye Snipe Eel**. To 67.5 cm (26.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Eastern and central Pacific; Patton Seamount, Gulf of Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); San Francisco, northern California (Charter in Moser 1996) to northern Chile (19°44'S) (Kong and Meléndez 1991). Pelagic; depth: 0–4,000 m (13,120 ft) (Robertson *et al.* 2017).

Avocettina infans (Günther, 1878). Close-spine Snipe Eel or **Blackline Snipe Eel**. To 80 cm (31.5 in) TL (Smith and Nielsen 1989). Circumglobal, but almost exclusively in Northern Hemisphere; Japan (Hatooka in Nakabo 2002) and Russian North-western Pacific (Orlov and Tokranov 2019); Commander and Aleutian Islands and Gulf of Alaska (Mecklenburg *et al.* 2002) and northern Bering Sea as far north as 59°22'N, 178°28'W) (Maslenikov *et al.* 2013) to Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), including Gulf of California (Charter in Moser 1996). Pelagic, rarely over continental shelf; depth: surface to 4,580 m (15,022 ft) (min.: Charter in Moser 1996; max.: Fricke *et al.* 2019).

Nemichthys larseni Nielsen & Smith, 1978. **Pale Snipe Eel**. To about 161 cm (63.4 in) TL (Kamikawa 2017). Eastern North Pacific from between Springfield and Warwick Seamounts (47°56'N, 131°26'W) (Hanke *et al.* 2014) to central Mexico, including Gulf of California, to Hawai'i (Nielsen and Smith 1978). Mostly mesopelagic; depth: at least as shallow as 25 m to 2,439 m (82–8,000 ft) (min.: Personal communication: Oregon State University Fish Collection, Corvallis, Oregon; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Nemichthys scolopaceus Richardson, 1848. **Slender Snipe Eel**. To about 2 m (78.7 in) TL (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to Japan (Hatooka in Nakabo 2002) and Russian north-western Pacific (Orlov and Tokranov 2019); Gulf of Alaska (Mecklenburg *et al.* 2002) to southern Chile (52°S) (Sielfeld and Vargas 1996), including Gulf of California (Charter in Moser 1996). Primarily mesopelagic and bathypelagic, sometimes over continental shelf; depth: surface to 4,337 m (14,225 ft) (min.: Mecklenburg *et al.* 2002; max.: Charter in Moser 1996).

Family Congridae—Conger Eels or Garden Eels

Ariosoma gilberti (Ogilby, 1898). Gilbert's Conger or **Sharpnose Conger**. To at least 27 cm (10.6 in) TL (Allen and Robertson 1994). Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Bahía Asuncion (27°06'N, 114°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Grove and Lavenberg 1997), including Gulf of California (Smith in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 100 m (3–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011). McCosker and Rosenblatt (2010) consider *A. gilberti* to be limited to Islas Galápagos and Panama and *A. hemiaspidus* (Wade, 1946) to be the Mexican species.

****Bathycongrus macrurus*** (Gilbert, 1891). 29.3 cm (11.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas (23°00'N, 11°15'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Colombia (04°04.5'N, 81°307'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 50–590 m (164–1,935 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Fischer *et al.* 1995). A California record (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) refers to a leptocephalus larva.

Bathycongrus varidens (Garman, 1899). **Largehead Conger**. About 1 m (3.28 ft) (Fischer *et al.* 1995). Southern Baja California (24°19.8'N) (Cruz-Acevedo *et al.* 2018) to Chile (Fischer *et al.* 1995). Depth: 165–935 m (541–3,067 ft) (Fischer *et al.* 1995).

Chiloconger dentatus (Garman, 1899). **Shortsnout Conger** or **Thicklip Conger**. To 30 cm (11.8 in) TL (Robertson and Allen 2008). Punta Tosca (24°11'N, 111°29'W), southern Baja California (Charter in Moser 1996); Sinaloa (25°18'N, 49°W), 2 miles south of entrance of Bahía Topolobampo (Smith and Karmovskaya 2003), to Colombia (Charter in Moser 1996). Depth: 27–247 m (89–810 ft) (Smith and Karmovskaya 2003). Previously known as *Chiloconger obtusus* Garman, 1899*, Chiloconger labiatus* Myers and Wade, 1941*,* and *Paraconger dentatus* (Garman, 1899); the valid name was determined by Grove and Lavenberg (1997) to be *C. dentatus.*

Gnathophis cinctus (Garman, 1899). Catalina Conger or **Hardtail Conger**. To 41.9 cm (16.5 in) TL (Fitch and Lavenberg 1968). Santa Rosa Island, southern California (Fitch and Lavenberg 1968) to Peru (Robertson and Allen 2002), including Gulf of California (Gall *et al.* 2020), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 9–366 m (30–1,200 ft) (min.: Fitch and Lavenberg 1968; max.: Miller and Lea 1972). Various other deeper records (e.g., 4,409 m (14,460) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)), are based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Gorgasia punctata Meek & Hildebrand, 1923. Dotted Garden Eel or **Peppered Garden Eel**. To at least 50 cm (19.7 in) TL (Allen and Robertson 1994). Bahía Santa Maria (24°46.1'N, 112°16'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Panama (Smith in Fischer *et al.* 1995), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: less than 0.3 to 30 m (1–99 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

****Heteroconger canabus*** (Cowan & Rosenblatt, 1974). **Cape Garden Eel** or White-ring Garden Eel. To about 82 cm (32.3 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla,

California). Southern tip of Baja California and south-western corner of Gulf of California (Robertson and Allen 2015); Costa Rica (Galván-Magaña *et al.* 1996). Benthic; depth: 3–20 m (10–66 ft) (min.: Robertson and Allen 2002; max.: Smith in Fischer *et al.* 1995).

Heteroconger digueti (Pellegrin, 1923). **Cortez Garden Eel**, Pale Garden Eel, or Pale Green Garden Eel. To 106 cm (24.8 in) TL (Robertson and Allen 2002). Islas San Benito, central Baja California (Gotshall 1998); southern tip of Baja California (Smith in Fischer *et al.* 1995) to central Mexico (Robertson and Allen 2002). Benthic; depth: 2–34 m (7–110 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The 230–275 m (754–902 ft) depth range given by Smith (in Fischer *et al.* 1995) may be an error.

****Heteroconger pellegrini*** Castle, 1999. Mime Garden Eel or **Speckled Garden Eel**. To 63 cm (24.8 in) TL. Tip of Baja California to Panama (Robertson and Allen 2002), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 5–30 m (17–98 ft) (Robertson and Allen 2002).

****Paraconger californiensis*** Kanazawa, 1961. California Conger or **Ringeye Conger**. To 61 cm (24 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas, southern Baja California to Talara, Peru (Grove and Lavenberg 1997), including southern Gulf of California (Smith in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and Isla del Cocos (Robertson and Allen 2002). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 12–70 m (40–230 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011).

Paraconger similis (Wade, 1946). **Shorttail Conger**. To 74 cm (29.1 in) TL (John Snow, pers. comm. to M.L.). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California and just north of La Playita (barely inside Gulf of California on Baja California side) (John Snow, pers. comm. to M.L.), Sinaloa (Gulf of California), Islas Galápagos, and Islas Revillagigedo (Robertson and Allen 2002). Beltrán-León and Rios Herrera (2000) captured larvae off Colombia that they tentatively assigned to this species. Depth: 49–150 m (161–492 ft) (min.: Smith and Karmovskaya 2003; max.: Smith in Fischer *et al.* 1995).

Rhynchoconger nitens (Jordan & Bollman, 1890). Bignose Conger or **Needletail Conger**. To 40 cm (15.7 in) TL (Smith in Fischer *et al.* 1995). Central Baja California (Smith in Fischer *et al.* 1995) to southern Peru (Béarez *et al.* 2002), including Gulf of California (Smith in Fischer *et al.* 1995). Depth: 20–307 m (66–1,008 ft) (min.: Robertson and Allen 2002; max. Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Xenomystax atrarius Gilbert, 1891. **Deepwater Conger** or Twinpored Eel. To 100 cm (39.3 in) TL (Smith in Fischer *et al.* 1995). Vancouver Island, British Columbia (Hart 1973); Newport Beach, southern California (Seigel 1987) to central Chile (37°31'S) (Kong and Meléndez 1991), including Gulf of California (Eschmeyer and Herald 1983) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 116–1,401 m (380–4,595 ft) (min.: Robertson *et al.* 2017; max.: Morera *et al.* 2019).

Family Nettastomatidae—Duckbill Eels

Facciolella equatorialis (Gilbert, 1891). **Dogface Witch Eel**. To 90 cm (35.4 in) TL (Grove and Lavenberg 1997). Carmel Submarine Canyon, central California (Burton and Lea 2019) to Peru (Nakaya *et al.* 2009), including Islas Galápagos (McCosker *et al.* 1997). Depth: 64–1,000 m (210–3,280 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker *et al.* 1997). *Facciolella gilberti* (Garman, 1899) is a junior synonym (Nelson *et al.* 2004).

Venefica ocella Garman, 1899. 78 cm TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Moresby Island (52°00'N, 131°34'W), British Columbia (Hanke and Roias 2012) to west coast of central America (5°30'N, 131°35'W) (Hanke and Roias 2012) and near Valparaiso, Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 1,669–2,580 m (5,474–8,462 ft) (min.: Hanke and Roias 2012; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Venefica procera (Goode & Bean, 1883). To 110 cm (43.3 in) TL (Kamikawa 2017). Atlantic Ocean, Caribbean Sea; western Pacific in Celebes Sea (Kamikawa 2017); Oregon (45°38.5'N, 125°17.5'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California); southern California (Jordan and Evermann 1896). Depth: 326–2,304 m (1,069–7,557 ft) (Kamikawa 2017). Fricke *et al.* (2020) does not list this species as living in the eastern Pacific.

Venefica tentaculata Garman, 1899. **Longnose Witch Eel**. To about 90 cm (35.4 in) TL (Asano in Masuda *et al.* 1984). Japan (Asano in Masuda *et al.* 1984) and southern Sea of Okhotsk (Orlov and Tokranov 2019); Haida Gwaii (54°04'N, 134°09'W), British Columbia (Hanke *et al.* 2014) to Chile (Charter in Moser 1996). Depth: 183–2,083 m (600–6,832 ft) (min.: Robertson *et al.* 2017; max.: Hanke *et al.* 2014).

Family Serrivomeridae—Sawtooth Eels

Serrivomer jesperseni Bauchot, 1953. **Crossthroat Sawpalate**. To 67 cm (26.8 in) SL (Mecklenburg *et al.* 2002). Circumglobal (Fricke *et al.* 2020); close to Alaska off Dixon Entrance, northern British Columbia (Love *et al.* 2005) to Chile (Pequeño 1989). Depth: 366–2,500 m (1,200–8,200 ft) (min.: Peden and Hughes 1986; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Serrivomer sector Garman, 1899. **Sawtooth Eel**. Possibly to 76 cm (30 in) TL (Eschmeyer and Herald 1983). Indo-Pacific; western Pacific Ocean north to Japan (Hatooka in Nakabo 2002); Washington (47°25.8'N) (NWFSC-FRAM) to northern Chile (Fitch and Lavenberg 1968). Depth: 0–4,268 m (13,999 ft) (min.: Robertson *et al.* 2017; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Stemonidium hypomelas Gilbert, 1905. Black Serrivomerid Eel. To 37.7 cm (14.8 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Ryukyu and Ogasawara Islands (Hatooka in Nakabo 2002); as far northwards as northern Baja California (30°50'N, 121°48'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 175–2,100 m (574–6,888 ft) (min.: Froese and Pauly 2019—note that we were unable to verify this record; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Order Saccopharyngiformes

Family Cyematidae—Bobtail Eels

Cyema atrum Günther, 1878. **Black Bobtail Eel**. To 16 cm (6.3 in) TL (Kamikawa 2017). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); north end of Vancouver Island (50°33'N, 129°14'W) (Hanke *et al.* 2014) to Chile (Pequeño 1989). Mesopelagic and bathypelagic; depth: 100 m or less to 5,100 m (328–16,728 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Grey 1956).

Family Saccopharyngidae—Swallowers or Whiptail Gulpers

Saccopharynx lavenbergi Nielsen & Bertelsen, 1985. To 78 cm (30.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Off San Francisco, northern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (4°05'N, 78°36'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Deep midwater; depth: primarily 167–3,000 m (528–9,840 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Charter in Moser 1996).

Family Eurypharyngidae—Gulpers or Pelican Eels

Eurypharynx pelecanoides Vaillant, 1882. **Umbrellamouth Gulper**. To more than 100 cm (39.3 in) TL (Nielsen and Bertelsen in Whitehead *et al.* 1986). Circumglobal; western Pacific Ocean north to Japan (Shinohara *et al.* 2009) and Russian north-western Pacific (Orlov and Tokranov 2019); Oregon (45°10'N, 124°40'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Chile (23°36'S, 71°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 425 to at least 3,000 m (1,394–9,840 ft) (min.: Clarke and Wagner 1976; max.: Smith in Carpenter and De Angelis 2016). The widely cited maximum depth of 7,625 (25,010 ft) (e.g., Kamikawa 2017) does not appear to be creditable (Fujii *et al.* 2010).

Family Monognathidae—Onejaws or Monognathids

Monognathus ahlstromi Raju, 1974. To 5 cm (2 in) TL. Central California. Depth: mesopelagic. All in Raju (1974).

***Monognathus* sp.** An undescribed *Monognathus* has been collected in the California Current region (Charter in Moser 1996).

Order Clupeiformes

Family Engraulidae—Anchovies

Anchoa argentivittata (Regan, 1904). **Silverstripe Anchovy**. To 12.5 cm (4.9 in) TL (Robertson and Allen 2002). Central Baja California (29°32'N, 115°12'W) (Personal communication: Universidad National Autonoma de Mexico, Colleccion Nacional de Peces, Mexico City, Mexico) to Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) and central-eastern Gulf of California to Peru, including Islas Galápagos (Robertson and Allen 2015). Depth: surface to 10 m (33 ft) (Robertson and Allen 2002).

Anchoa compressa (Girard, 1858). **Deepbody Anchovy**. To 16.5 cm (6.5 in) TL (Miller and Lea 1972). Morro Bay, central California (Miller and Lea 1972) to Bahía Magdalena, southern Baja California (Whitehead *et al.* 1988). Depth: intertidal to perhaps 19 m (61 ft) (min.: Carlisle *et al.* 1960; max.: Allen *et al.* 2002).

Anchoa curta (Jordan & Gilbert, 1882). **Short Anchovy**. To 8.9 cm (3.5 in) TL (Yáñez-Arancibia 1978). Punta Abreojos, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including lower half of Gulf of California (Robertson and Allen 2002). Pelagic, primarily nearshore and estuaries and occasionally entering fresh water (Whitehead *et al.* 1988); depth: to 10 m (33 ft) (Robertson and Allen 2002).

Anchoa delicatissima (Girard, 1854). **Slough Anchovy**. To 12.9 cm (5.1 in) TL (Miller *et al.* 2008). Marina del Rey, southern California (Soule and Oguri 1987) to Bahía Magdalena, southern Baja California (Miller and Lea 1972). Marine and brackish waters (Whitehead *et al.* 1988); depth: intertidal to 27 m (89 ft) (min.: Allen 1999; max.: City of San Diego 2020).

Anchoa exigua (Jordan & Gilbert, 1882). **Slender Anchovy**. To 7.5 cm (3 in) TL (Robertson and Allen 2002). Bahía Playa Maria (28°56'N, 114°32'W), central Baja California (Knaggs *et al.* 1975) to southern Gulf of California (Whitehead *et al.* 1988) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998). Pelagic, nearshore (Whitehead *et al.* 1988); depth: to 10 m (33 ft) (Robertson and Allen 2002). The author names for this species belong within parentheses, not without as sometimes seen; the species was classified by Jordan and Gilbert in the genus *Stolephorus*.

Anchoa helleri (Hubbs, 1921). **Gulf Anchovy**. To 10.3 cm (4.1 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and into Gulf of California (Robertson and Allen 2008). Nearshore; depth: about 0–4 m (12 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Anchoa ischana (Jordan & Gilbert, 1882). Gulf of California Slender Anchovy, **Sharpnose Anchovy**, or Slender Anchovy. To 17 cm (6.7 in) TL (Flores-Ortega *et al.* 2016). As far northward as Laguna San Ignacio, southern Baja California (Barjau-González 2003), and throughout Gulf of California (Whitehead *et al.* 1988) to northern Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Romero-Berny *et al.* 2018); depth: as shallow as 1 m (3 ft) to perhaps 27 m (90 ft) (min.: González-Acosta *et al.* 1999; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Anchoa lucida (Jordan & Gilbert, 1882). **Bright Anchovy**. To 16 cm (6.3 in) TL (Robertson and Allen 2002). Laguna San Ignacio, southern Baja California (Danemann and De La Cruz-Agüero 1993) to northern Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) to Puerto Pizarro, northern Peru (Whitehead *et al.* 1988). Pelagic, nearshore and estuarine (Whitehead *et al.* 1988); depth: 1–60 m (3–197 ft) (min.: González-Acosta *et al.* 1999; max.: Amezcua Linares 1996).

Anchoa mundeoloides (Breder, 1928). **Northern Gulf Anchovy**. To 15 cm (5.9 in) TL (Robertson and Allen 2002). Bahía Sebastian de Vizcaino (27°51'N, 115°04.7'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California to Chiapas, Mexico (González-Acosta *et al.* 2018); possibly Costa Rica (Fricke *et al.* 2020). Depth: surface to perhaps 27 m (90 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Anchoa nasus (Kner & Steindachner, 1867). **Bignose Anchovy** or Longnose Anchovy. To 17 cm (6.7 in) TL (Robertson and Allen 2002). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) and throughout Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) to Arica, northern Chile (Sielfeld *et al.* 2010). Pelagic and nearshore, tolerating some low salinity (Whitehead *et al.* 1994); depth: 0–142 m (466 ft) (min.: Robertson and Allen 2015; max.: Zeballos Flor *et al.* 1998). The maximum depth of capture was made by bottom trawl and it is possible this species was captured in midwater.

Anchoa scofieldi (Jordan and Culver, 1895). **Yellow Anchovy**. 13.7 cm (5.4 in) TL (John Snow, pers. comm. to M.L.). La Playita (23°02'N, 109°31'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Jalisco, Mexico to Ecuador (Robertson and Allen 2008). Pelagic; depth: nearshore (Robertson and Allen 2008).

Anchovia macrolepidota (Kner, 1863). **Bigscale Anchovy**. To 25 cm (9.8 in) TL (Yáñez-Arancibia 1978). Laguna San Ignacio, southern Baja California (Dannemann and De La Cruz-Agüero 1993) to northern Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) to Zorritos, Peru (Chirichigno and Vélez 1998). Marine and brackish waters (Romero-Berny *et al.* 2018); depth: surface to perhaps 18 m (59 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Cetengraulis mysticetus (Günther, 1867). **Anchoveta**. To about 22 cm (8.7 in) TL (Robertson and Allen 2002). Los Angeles, southern California (Miller and Lea 1972) to Callao, Peru (Beltrán-León and Rios Herrera 2000), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Fricke *et al.* 2020); depth: surface to 38 m (155 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The maximum depth capture was made by bottom trawl and it is possible this species was captured in midwater.

Engraulis japonicus Temminck & Schlegel, 1846. **Japanese Anchovy**. To about 16 cm (6.3 in) SL (Lindberg and Legeza 1965). western Pacific Ocean north to south-eastern Kamchatka; one record from Alaska, south of western Aleutian Islands (Mecklenburg *et al.* 2002). Near surface, epipelagic and coastal, but also occurring to over 1,000 km (620 miles) from shore; depth: to 150 m (495 ft) (Mecklenburg *et al.* 2002).

Engraulis mordax Girard, 1854. **Northern Anchovy**. To 24.8 cm (9.7 in) TL (Whitehead *et al.* 1988). One record off Yakutat, eastern Gulf of Alaska (Mecklenburg *et al.* 2002); Haida Gwaii, British Columbia to Cabo San Lucas, southern Baja California (Miller and Lea 1972), and Gulf of California (Hammann and Cisneros-Mata 1989). Depth: surface (M.L., pers. obs.), intertidal to 528 m (1,732 ft) (min.: Chotkowski 1994; max: Jacobsen Stout *et al.* 2016). We note that, as of March 2021, the NWFSC-FRAM database, based on bottom trawl surveys, has six records deeper than 528 m: 529 m, 1,735 ft, 543 m, 1,781 ft, 571 m, 873 ft, 601 m, 1,981 ft, 806 m, 2,644 ft, and 945 m, 3,100 ft), thus while these may represent catches made in the water column during net deployment or retrieval, the species may enter waters deeper than the current published maximum.

Family Pristigasteridae—Longfin Herrings

Opisthopterus dovii (Günther, 1868). Dove's Longfin Herring or **Pacific Longfin Herring**. To 23 cm (9.1 in) (Robertson and Allen 2008). Punta Marquez, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Punta Malpelo, Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen and Robertson 1994). Inshore waters and estuaries (Allen and Robertson 1994); depth: intertidal to 37 m (121 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Pliosteostoma lutipinnis (Jordan & Gilbert, 1882). **Yellowfin Herring**. To 25 cm (9.8 in) TL (Jiménez Prado and Béarez 2004). Southern Baja California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) to Colombia (Allen and Robertson 1994), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995). Coastal, including estuaries; depth: to 50 m (164 ft) (Amezcua Linares 1996).

Family Clupeidae—Herrings

*****Alosa sapidissima*** (Wilson, 1811). **American Shad**. To 76 cm (30 in) TL (Miller and Lea 1972). Native to Atlantic Ocean; intentionally introduced to Pacific Ocean, spread to Kamchatka, Russia to south-eastern Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002) to Bahía de Todos Santos, northern Baja California (Miller and Lea 1972). Depth: surface to 250 m (820 ft) (Allen and Smith 1988). While there are a few other, deeper, records (e.g., 440 m, 1,443 ft, Bradburn *et al.* 2011; 646 m, 2,119 ft, 881 m, 2,890 ft, and 1,151 m, 3,885 ft, NWFSC-FRAM), all are from bottom trawls and the fish could have entered the nets in the water column as the net were being deployed or retrieved. Anadromous.

Clupea pallasii Valenciennes, 1847. **Pacific Herring**. To 46 cm (18 in) TL (Miller and Lea 1972). Korea and Japan to Arctic Ocean off Alaska to northern Baja California; Arctic Canada as far east as Queen Maud Gulf (Coad in Coad and Reist 2018). Scattered populations in Norwegian Barents Sea and Russian White and Pechora Seas (Whitehead 1985, Jørstad *et al.* 1994, Jørstad 2004, Laakkonen *et al.* 2015). This species hybridizes with *Clupea harengus* Linnaeus, 1758 in northern Europe (Laakkonen *et al.* 2015). Marine, brackish waters and, very occasionally, fresh waters (Moyle 2002); depth: surface to 250 m (820 ft) (Whitehead 1985). There are a number of deeper capture records (e.g., 723 m, 2,371 ft, Bradburn *et al.* 2011; 1,033 m, 3,388 ft, 1,068 m, 3,503 ft, NWFSC-FRAM) all recorded from bottom trawl catches. In these circumstances it is not possible to ascertain if these fish were caught on the bottom or in midwaters during net deployment or recovery. Almost always captured above 150 m (492 ft) (Whitehead 1985).

*****Dorosoma petenense*** (Günther, 1867). **Threadfin Shad**. To 33 cm (13 in) TL (Moyle 2002). Native to the south-eastern United States and south to Belize. Introduced to West Coast. Off Oregon (Eschmeyer and Herald 1983) to San Diego Bay, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995). Shallow fresh, brackish, and marine waters.

Etrumeus acuminatus Gilbert, 1890. **Pacific Round Herring**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Circumglobal; Japan (Aonuma in Nakabo 2002); Monterey Bay, central California to Chile (Miller and Lea 1972), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Nearshore (Grove and Lavenberg 1997); depth: intertidal to 200 m (656 ft) (min.: Suda *et al.* 2002; max.: Robertson and Allen 2008). We follow Fricke *et al.* (2020) and place *Etrumeus teres* (DeKay, 1842) in synonymy with *E. acuminatus*.

Harengula thrissina (Jordan & Gilbert, 1882). **Flatiron Herring**. To 18.4 cm (7.3 in) TL (Miller and Lea 1972). La Jolla, southern California (Miller and Lea 1972) to Callao, Peru (Beltrán-León and Rios Herrera 2000), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995). Inshore, marine and brackish waters (Fricke *et al.* 2020); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1 m (3 ft) to at least 7 m (23 ft) (min.: González-Acosta *et al.* 1999; max.: Godínez-Domínguez *et al.* 2000).

Lile nigrofasciata Castro-Aguirre, Ruiz-Campos, & Balart, 2002. **Blackstripe Herring**. To 13 cm (5.1 in) (Robertson and Allen 2008). Bahía Magdalena, southern California and Gulf of California to northern Peru (Castro-Aguirre *et al.* 2002). Lagoons and other shallow littoral waters (Castro-Aguirre *et al.* 2002).

Lile stolifera (Jordan & Gilbert, 1882). Pacific Piquintinga or **Striped Herring**. To 15.9 cm (6.3 in) TL (Coello *et al.* 2021). Bahía Ballenas (26°40'N, 113°30'W), southern Baja California (Grove and Lavenberg 1994) to Puerto Pizarro, Peru (Chirichigno and Vélez 1974), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Allen and Robertson 1994); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–3 m (3–10 ft) (min.: González-Acosta *et al.* 1999; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

?*Opisthonema bulleri* (Regan, 1904). **Slender Thread Herring**. To 24 cm (9.4 in) TL (Robertson and Allen 2015). Several specimens taken south-east of Punta Abreojos, southern Baja California (Jason Masters, photographs to M.L., tentatively confirmed by Ross Robertson); Gulf of California to northern Peru (Robertson and Allen 2015). Depth: intertidal to perhaps 10 m (33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Opisthonema libertate (Günther, 1867). **Deepbody Thread Herring** or Pacific Thread Herring. To about 30 cm (11.8 in) TL (Amezcua Linares 1996). Port Hueneme, southern California (Lea and Rosenblatt 2000) to Chile (Pequeño 1l989), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Fricke *et al.* 2020); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to at least 70 m (3–230 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Velasco and Thiel 2002).

Opisthonema medirastre Berry & Barrett, 1963. **Middling Thread Herring**. To 30 cm (11.8 in) TL (Jiménez Prado and Béarez 2004). Redondo Beach, southern California (Miller and Lea 1972) to Huacho, Peru (Chirichigno and Vélez 1998), including Gulf of California (Whitehead and Rodríguez-Sánchez in Fischer *et al.* 1995). Depth: surface (nightlight: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 10 m (33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Sardinops sagax (Jenyns, 1842). **Pacific Sardine**. To 41 cm (16.1 in) TL (Clemens and Wilby 1961). Indo-Pacific (Whitehead 1985); north Pacific from south of Japan to southern Kamchatka and Commander Islands (Mecklenburg *et al.* 2002), and Cross Sound, south-eastern Alaska (Bruce Wing, pers. comm. to M.L.) to Gulf of California (Galván-Magaña *et al.* 1996), and Islas Galápagos (Grove and Lavenberg 1997). Pelagic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 383 m (1,256 ft) (min.: Carlisle *et al.* 1960; max.: Jacobsen Stout *et al.* 2016) or perhaps to 982 m (3,221 ft) (Bradburn *et al.* 2011), although this latter depth was based on a bottom trawl catch and may represent fish caught well above the bottom.

Order Gonorynchiformes

Family Chanidae—Milkfishes

Chanos chanos (Fabricius, 1775). **Milkfish**. To 180 cm (70.9 in) TL (Whitehead in Fischer *et al.* 1995). Indo-Pacific; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); San Pedro, southern California (Duffy and Bernard 1985) to Callao, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Fricke *et al.* 2011); depth: 0–20 m (66 ft) (min.: Robertson and Allen 2008; max.: Mundy 2005).

Order Cypriniformes

Family Cyprinidae—Carps and Minnows

Cyprinids are primarily freshwater fishes. They only occasionally stray into estuaries.

*****Cyprinus carpio*** Linnaeus, 1758. **Common Carp**. To 122 cm (48 in) TL (Page and Burr 1991). Circumglobal in fresh water; occasionally off British Columbia and in bays such as San Francisco (Eschmeyer and Herald 1983), and in the Salish Sea (Pietsch and Orr 2019).

Mylocheilus caurinus (Richardson, 1837). **Peamouth**. To 35.9 cm (14.1 in) TL (Wydoski and Whitney 1979). British Columbia marine waters (Wydoski and Whitney 1979) and Columbia River Estuary (Bottom and Jones 1990).

Pogonichthys macrolepidotus (Ayres, 1854). **Splittail**. To 44 cm (17.5 in) TL (Page and Burr 1991). Primarily freshwater habitat, but tolerates brackish conditions. May be found in Suisan and San Pablo bays and Carquinez Straits, northern California and also Central Valley Delta region and Sacramento River, California (Moyle 1976).

Order Siluriformes

Family Ariidae—Sea Catfishes

Ariopsis guatemalensis (Günther, 1864). **Widehead Sea Catfish**. To 45 cm (17.7 in) TL (Robertson and Allen 2015). Southern Baja California, mouth of Gulf of California to Costa Rica (Robertson and Allen 2015). Marine and brackish waters (Fricke *et al.* 2020); depth: 0–20 m (66 ft) (Robertson and Allen (2015).

Bagre panamensis (Gill, 1863). **Chihuil** or Chihuil Sea Catfish. To about 57 cm (22.4 in) (Robertson and Allen 2008). Off Santa Ana River, southern California (Miller and Lea 1972) to Isla Lobos de Tierra, Peru (Chirichigno and Vélez 1998), including Gulf of California (Miller and Lea 1972). Depth: 0–177 m (10–584 ft) (min. Robertson and Allen 2015; max.: Zeballos Flor *et al.* 1998).

XCathorops sp. A report from Bahía Almejas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) is a misidentified *Notarius* (Benjamin Frable).

Notarius planiceps (Jordan & Gilbert, 1882). **Thicklip Sea Catfish**. To at least 35 cm (13.8 in) TL (Robertson and Allen 2015). Southern Baja California to Colombia, not in Gulf of California (Robertson and Allen 2015). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 0–60 m (197 ft) (Robertson and Allen 2015).

Occidentarius platypogon Günther, 1864. **Cominate Sea Catfish** or Slender-spined Catfish. To 53.5 cm (21.1 in) TL (Hernández-Padilla *et al.* 2020). Laguna San Ignacio, southern Baja California (De La Cruz-Agüero and Cota-Gómez 1998) to northern Peru (Robertson and Allen 2015), including Gulf of California (Robertson and Allen 2015). Depth: 3–107 m (10–351 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California as *Netuma platypogon*; max.: Amezcua Linares 1996). Originally and still sometimes classified in *Arius,* also recently in *Sciades and Aspistor* (Fricke *et al.* 2020).

Order Argentiniformes

Family Argentinidae—Argentines

Argentina sialis Gilbert, 1890. **Pacific Argentine**. To 22 cm (8.7 in) TL (Robertson and Allen 2002). West coast of Vancouver Island (49°04’N, 126°23’W), British Columbia (Gavin Hanke, pers. comm. to M.L.) to Gulf of California (Schneider in Fischer *et al.* 1995) to about Puerto Vallerta, Mexico (Robertson and Allen 2015); probably northern Peru (Chirichigno and Vélez 1998). Depth: 11–1,093 m (36–3,585 ft) (min.: Schneider in Fischer *et al.* 1995; max.: NWFSC-FRAM).

Family Opisthoproctidae—Barreleyes or Spookfishes

Bathylychnops exilis Cohen, 1958. **Javelin Spookfish**. To 58 cm (22.8 in) SL (Parin *et al.* 1995). North Pacific and North Atlantic Oceans (Fricke *et al.* 2020); Japan (Fujii in Masuda *et al.* 1984) to Kuril Islands (Parin *et al.* 1995); British Columbia (Gillespie 1993) to at least as far south as Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); also reported from Gulf of California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and Chile (21º27'S) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bathypelagic; depth: about 151–3,329 m (495–10,900 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Dolichopteryx longipes (Vaillant, 1888). **Brownsnout Spookfish**. To 18 cm (7.1 in) SL (Berry and Perkins 1966). Possibly circumglobal, North Atlantic and Pacific Oceans (Fricke *et al.* 2020); central California (36°57'N, 122°13'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Chile (Pequeño 1989). Pelagic; depth: 152–2,160 m (500–7,085 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Prokofiev (2020) believes this species is limited to the Atlantic Ocean.

Dolichopteryx parini Kobyliansky & Fedorov, 2001. **Winged Spookfish**. To 21.7 cm (8.5 in) SL (Mecklenburg *et al.* 2002). Possibly throughout the North Pacific; recorded from Pacific off Honshu, Japan and Sea of Okhotsk to southern Bering Sea to southern British Columbia (Mecklenburg *et al.* 2002). Mesopelagic; depth: about 200–2,000 m (656–6,560 ft), possibly shallower (min.: Mecklenburg *et al.* 2002; max. Orlov and Tokranov 2019). A "*Dolichopteryx parini*" from central California (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) is a *Bathylychnops exilis* Cohen 1958 (Katherine Maslenikov).

Dolichopteryx pseudolongipes Fukui, Kitagawa, & Parin, 2008. At least 11.2 cm (4.4 in) SL (Parin *et al.* 2009). New Caledonia (Prokofiev 2020); off San Clemente Island, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Islas Galápagos (Parin *et al.* 2009). Depth: at least 310–400 m (1,018–1,312 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Ioichthys kashkini Parin, 2004. 23.2 cm (9.1 in) SL. Indian Ocean and perhaps off California. Parin (2004) tentatively identified a juvenile specimen from California, previously called *Bathylychnops brachyrhynchus* (Parr 1937), as *I. kashkini*. Mesopelagic; depth: to at least 710 m (2,329 ft). All in Parin (2004).

Macropinna microstoma Chapman, 1939. **Barreleye**. To 16 cm (6.3 in) TL (Mecklenburg *et al.* 2002). Western North Pacific off northern Japan and Kuril Islands to Bering Sea and Gulf of Alaska to eastern South Pacific west of Islas Juan Fernández, Chile (Mecklenburg *et al.* 2002). Primarily mesopelagic; depth: 16–2,150 m (53–7,052 ft) (min.: Mecklenburg *et al.* 2002; max.: Gavin Hanke, pers. comm. to M.L.).

Opisthoproctus soleatus Vaillant, 1888. **Shortnose Flatironfish**. To 11 cm (4.3 in) SL (Hartel and Orrell in Carpenter and De Angelis 2016). Circumglobal; off San Diego, southern California (32°N, 124°W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Depth: about 300–800 m (984–2,625 ft) (Quéro in Quéro *et al.* 1990).

Rhynchohyalus natalensis (Gilchrist & von Bonde, 1924). **Glasshead Barreleye**. 16 cm (6.3 in) SL (Hartel and Orrell in Carpenter and De Angelis 2016). Circumglobal (Fricke *et al.* 2020); Ogasawara Islands (Aizawa in Nakabo 2002); off San Clemente Island (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), southern California and off northern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 0–775 m (2,542 ft) (Fricke *et al.* 2011).

Family Bathylagidae—Deepsea Smelts

Bathylagoides nigrigenys (Parr 1931). To 10.5 cm (4.1 in) SL (Kobyliansky 1985). Equatorial and tropical waters of Indo-Pacific (Kobyliansky 1985); southern California (32°45'N, 118°54'W) (Personal communication:

Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989), including Gulf of California. Depth: surface (night light, Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 91 to perhaps 1,095 m (300–3,593 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Adults usually at depths of 200–300 m (Kobyliansky 1985).

Bathylagoides wesethi (Bolin, 1938). **Snubnose Blacksmelt**. To about 13.5 cm (5.3 in) SL (Savinykh 1999). Oregon (Matarese *et al.* 1989) to off Bahía Magdalena (24°10.9'N, 113°06.9'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and well-off Ecuador (03°30'S, 112°01.5'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Pelagic and mesopelagic; depth: 25–1,130 m (82–3,706 ft) (min.: Childress and Nygaard 1973; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and perhaps to 4,268 m (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The deepest capture was made with a midwater trawl that may have taken the specimen shallower than the deepest tow depth.

Bathylagus pacificus Gilbert, 1890. **Pacific Blacksmelt** or Slender Blacksmelt. To about 25 cm (10 in) SL (Fitch and Lavenberg 1968). Southern Japan and Sea of Okhotsk (Kanayama in Amaoka *et al.* 1983) to southern Bering Sea to off Bahía Magdalena (24°10.9'N, 113°06.9'W), southern Baja California (Personal Communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Gulf of California (Mecklenburg *et al.* 2002), and 02°36'N, 112°57'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Adults generally in lower mesopelagic and bathypelagic and not ascending to epipelagic depths; depth: 150 to perhaps about 4,100 m (492–13,448 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The maximum depth of 7,700 m (25,256 ft) (Mecklenburg *et al.* 2002) is considered unlikely and probably reflects "incidental catches during trawl hauling to the surface" (Fujii *et al.* 2010).

Leuroglossus schmidti Rass, 1955. **Northern Smoothtongue**. To 20 cm (7.9 in) SL or more (Mason and Phillips 1985). Northern Honshu, Japan to Sea of Okhotsk to Bering Sea (Mecklenburg *et al.* 2002) to southern British Columbia (Peden 1981). Adults primarily epipelagic to upper mesopelagic; depth: near surface to 1,800 m (5,905 ft) (Mecklenburg *et al.* 2002). Classified in *Bathylagus* by some authors. Records from south of British Columbia (e.g., Lauth (1999) from Point Conception, California) likely relate to *L. stilbius* (Peden 1981, Dunn 1983; nomenclatural history is summarized in Mecklenburg *et al.* 2002).

Leuroglossus stilbius Gilbert, 1890. **California Smoothtongue**. To 20 cm (7.9 in) TL (Kamikawa 2017). Washington State (Kamikawa 2017) to Peru (Nakaya *et al.* 2009), including Gulf of California (Miller and Lea 1972). *Leuroglossus stilbius urotranus* reported from Chile (Pequeño 1989) is considered *Leuroglossus urotranus* Bussing, 1965 (Fricke *et al.* 2020). Epipelagic to mesopelagic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 13 m to perhaps 3,824 m (42-12,542 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). A number of "*Leuroglossus stilbius*" in the University of Washington collection are listed as having been captured off Alaska—these should be considered as *Leuroglossus schmidti* Rass, 1955 (Katherine Maslenikov).

Lipolagus ochotensis (Schmidt, 1938). **Popeye Blacksmelt**. To 20 cm (7.9 in) TL (Sinclair *et al.* 2015). Australia (Fricke *et al.* 2020); Southern Honshu, Japan, and Sea of Okhotsk to Bering Sea (Kobyliansky 1985), to southeast of Cabo San Lucas (22°27'N, 110°59'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Adults generally within mesopelagic depths (Mecklenburg *et al.* 2002); depth: surface to perhaps 4,100 m (13,448 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A maximum depth of 6,100 m (Kanayama in Amaoka *et al.* 1983) is considered unlikely and probably reflects "incidental catches during trawl hauling to the surface" (Fujii *et al.* 2010).

Melanolagus bericoides (Borodin, 1929). To at least 24.4 cm (9.6 in) SL (Roberts *et al.* 2015). Circumglobal; Western Pacific Ocean north to Japan (Miya 1994) and Russian north-western Pacific Ocean (Orlov and Tokranov 2019); Oregon to central California (Matarese *et al.* 1989), and at least off Chile (Pequeño 1989, 1997; Kong and Meléndez 1991). Depth: 100–3,065 m (328–10,053 ft) (min.: McEachran and Fechhelm 1998; max.: Porteiro *et al.* 2017).

Pseudobathylagus milleri (Jordan & Gilbert, 1898). **Stout Blacksmelt**. To 22 cm (8.7 in) TL (Kamikawa 2017). Southern Honshu, Japan and southern Sea of Okhotsk, to Bering Sea (Mecklenburg *et al.* 2002), to Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Generally mesopelagic and bathypelagic and not ascending to epipelagic depths; depth: 60 (197 ft) to perhaps 1,299 m (4,261 ft) (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A maximum depth of 6,600 m (Kanayama in Amaoka *et al.* 1983) is considered unlikely and probably reflects "incidental catches during trawl hauling to the surface" (Fujii *et al.* 2010).

Family Microstomatidae—Pencilsmelts

Microstoma microstoma (Risso, 1810). **Dusky Pencilsmelt**. To 21 cm (8.3 in) TL (Cynthia Klepadlo, pers. comm. to M. L). Circumglobal; subarctic–transitional eastern Pacific to central Baja California (Moser and Butler in Moser 1996). Depth: 0–4,145 m (13,595 ft) (Cynthia Klepadlo, pers. comm. to M.L.). Moser and Butler in Moser (1996) considered at least the eastern Pacific form to be an undescribed species.

Nansenia candida Cohen, 1958. **Bluethroat Argentine** or White Pencilsmelt. To 23.9 cm (9.4 in) SL (Mecklenburg *et al.* 2002). (Length is from the paratype of *Nansenia sanrikuensis* Kanayama & Amaoka, 1983, included by Mecklenburg *et al.* 2002 as a junior synonym of *N. candida*.) North Pacific off northern Honshu, Japan and southern Kuril Islands to southern Bering Sea (Maslenikov *et al.* 2013), and Gulf of Alaska (Mecklenburg *et al.* 2002) to northern Baja California (30°N) (Kawaguchi and Butler 1984). Larvae captured as far south as about San Ignacio, southern Baja California (Funes-Rodríguez *et al.* 2011). Primarily epipelagic and mesopelagic; depth: near surface to 2,025 m (6,581 ft) (min.: Mecklenburg *et al.* 2002; max.: DFO). A record of 3,988 m (13,080 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Nansenia crassa Lavenberg, 1965. **Stout Argentine**. To 26.6 cm (10.5 in) SL (Kawaguchi and Butler 1984). Central California to southern Baja California and eastern tropical Pacific (Kawaguchi and Butler 1984). Mesopelagic (Kawaguchi and Butler 1984); depth: at least as shallow as 177 m (581 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to perhaps 550 m (1,804 ft) (Lavenberg 1965).

****Nansenia pelagica*** Kawaguchi & Butler, 1984. 10.8 cm (4.3 in) SL. Atlantic and Pacific Oceans; subtropical Pacific between Hawai'i and North America. Depth: mesopelagic. All in Kawaguchi and Butler (1984). We found no reports of juveniles or adults within our range, although larvae were reported taken between about Ensenada, northern Baja California and San Ignacio, southern Baja Columbia (Funes-Rodríguez *et al.* 2011).

Family Alepocephalidae—Slickheads

Alepocephalus tenebrosus Gilbert, 1892. **California Slickhead**. To 61 cm (24 in) TL (Fitch and Lavenberg 1968). Eastern Gulf of Alaska (59°33'N, 144°15'W) (Maslenikov *et al.* 2013) to southern Baja California (23°12.6'N) (Cruz-Acevedo *et al.* 2018); central America (Robertson *et al.* 2017); Chile (Ambrose in Moser 1996). Reports from eastern Bering Sea not verifiable (Mecklenburg *et al.* 2002). Benthopelagic; depth: 115–2,287 m (377–7,501 ft) (min.: Morera *et al.* 20019; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Mecklenburg *et al.* (2002) note that the depth range of 46–5,486 m (150–18,000 ft) given by Fitch and Lavenberg (1968) may apply to the family as a whole and not necessarily to *A. tenebrosus*.

Asquamiceps caeruleus Markle, 1980. To 33.7 cm (13.3 in) SL (Markle 1980). Circumglobal (Markle 1980); Gulf of Alaska (57°50'N, 148°24'W) (Stevenson *et al.* 2009); off Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic; depth: to perhaps 2,740 m (8,987 ft) (Markle 1980). Perhaps a synonym of *Asquamiceps pacificus* Parr, 1954; provisionally as *A. caeruleus* (Stevenson *et al.* 2009).

Asquamiceps pacificus Parr, 1954. To 8.5 cm (3.4 in) SL (Parr 1954). Off Bahía San Cristobal, southern Baja California (27°07'N, 115°08'W) (Markle 1980) to Gulf of Panama (Parr 1954). Deep water.

Asquamiceps velaris Zugmayer, 1911. To 17 cm (6.7 in) SL or more (Markle and Quéro in Whitehead *et al.* 1984). Circumglobal; off southern Baja California (Markle 1980). Depth: 1,300–3,660 m (4,290–12,004 ft) (Markle and Quéro in Whitehead *et al.* 1984).

Bajacalifornia burragei Townsend & Nichols, 1925. **Sharpchin Slickhead**. To 19.8 cm (7.8 in) SL (Childress *et al.* 1980). Indo-Pacific (Fricke *et al.* 2020); western Pacific Ocean north to Taiwan (Yeh *et al.* 2006); northern California (40°N) (Bradburn *et al.* 2011) to Chile (23°51'S, 71°01'W) (Chirichigno and Vélez 1998), including Gulf of California (Ambrose in Moser 1996), and questionably off Peru (Markle and Krefft 1985). Depth: 128–3,476 m (420–11,400 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Bajacalifornia megalops (Lütken, 1898). **Bigeye Smooth-head**. About 40 cm (15.7 in) (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to northern Japan (*B. erimoensis*, Nakabo in Nakabo 2002); south-eastern Bering Sea (54°08'N, 167°51'W); also three records from U.S. West Coast, off Washington (47°52'N, 125°52'W), Oregon (45°47'N, 124°46.8'W) (Maslenikov *et al.* 2013), and southern California (33°23.4'N, 119°58.2'W), southern California (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; as *Bajacalifornia erimoensis*). Depth: 150–3,200 m (492–10,496 ft) (Kamikawa 2017). *Bajacalifornia erimoensis* Amaoka & Abe, 1977 is a junior synonym.

Bathylaco nigricans Goode & Bean, 1896. To 36 cm (14.2 in) SL (Krefft 1985). Circumglobal; Washington (46°48'N) (Lauth 1999) to Colombia (Fitch and Lavenberg 1968). Depth: 450–4,540 (1,476–14,891 ft) (Markle and Quéro in Whitehead *et al.* 1984).

Bathytroctes macrolepis Günther, 1887. 40 cm (15.7 in) SL (Froese and Pauly 2019; note that we were unable to verify this record). Circumglobal; about 290 km (179.8 mi) west of Cape Mendocino, northern California (Stein 1985, as *Belocia alvifrons*) to Islas Tres Marias (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: about 740 to 5,850 m (2,427–19,188 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sazonov 1999).

Conocara salmoneum (Gill & Townsend, 1897). **Deepsea Slickhead**. To at least 73 cm (28.7 in) SL (Markle and Quéro in Whitehead *et al.* 1984). Atlantic and Pacific Oceans; three records from the Pacific: near Pribilof Islands, Bering Sea (Gill and Townsend 1897), off Oregon (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), and Santa Catalina Island, southern California (Gilbert 1915). Bathypelagic; depth: about 2,400–4,200 m (7,874–13,779 ft) (Markle and Quéro in Whitehead *et al.* 1984).

Leptochilichthys agassizi Garman, 1899. **Paperjaw**. To 30.8 cm (12.1 in) TL (Markle and Quéro in Whitehead *et al.* 1984). Circumglobal (Sazonov 1995); Oregon (Matarese *et al.* 1989) to Chile (°19'S, 71°15'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bathypelagic (Orrell and Hartel in Carpenter and De Angelis 2016); depth: 2,000–3,527 m (6,560–11,569 ft) (min.: Markle and Quéro in Smith and Heemstra 1986; max.: Porteiro *et al.* 2017).

Narcetes stomias (Gilbert, 1890). To 59.4 cm (23.4 in) SL (Porteiro *et al.* 2017). Circumglobal; Washington (Matarese *et al.* 1989) to Gulf of Panama (Sazonov 1998). Depth: 1,070–3,200 m (3,510–10,496 ft) (Roberts *et al.* 2015).

Photostylus pycnopterus Beebe, 1933. **Beaded Slickhead**. To 13 cm (5.1 in) SL (Tsukamoto *et al.* 1992). (We assume that in the range of "39.9–13.0 mm SL" given by Tsukomoto *et al.* for total specimens examined, the 13.0 mm is a misprint for 130 mm = 13 cm.) Circumglobal; Japan (Tsukamoto *et al.* 1992); San Clemente Island, southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to northern Baja California (32°36'N, 118°05'W) (Wisner 1967). Depth:

650–2,868 m (2,132–9,407 ft) (min.: Balanov *et al.* 2009; max.: Nakamura and Okamura in Okamura *et al.* 1995).

Rouleina sp. Monterey Bay, central California (Jeffrey Drazen, pers. comm. to M.L.).

Rouleina attrita (Vaillant, 1888). **Softskin Slickhead**. To 51 cm (20.1 in) TL (Parin *et al.* 2008). Circumglobal in temperate to tropical waters; Sea of Okhotsk, North Pacific Ocean; one record from western Bering Sea over Shirshov Ridge (Mecklenburg *et al.* 2002); eastern Bering Sea and Washington (44°09.51'N) (Kenaley and Orr 2006); Oregon (44°09.5'N, 125°03'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Depth: 450–2,300 m (1,476–7,544 ft) (Robertson *et al.* 2017).

Talismania bifurcata (Parr, 1951). **Threadfin Slickhead**. To 27.7 cm (11.1 in) SL (Kong and Meléndez 1991). Off north-western Vancouver Island (50°03'N, 129°31'W) (Gavin Hanke, pers. comm. to M.L.) to Chile (29°S) (Kong and Meléndez 1991). Depth: 300–2,155 m (984–7,068 ft) (min.: Robertson *et al.* 2017; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record of 4,335 m (14,220 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Family Platytroctidae—Tubeshoulders

Holtbyrnia innesi (Fowler, 1934). **Lanternjaw Tubeshoulder**. To 24 cm (9.4 in) SL (Quéro *et al.* in Quéro *et al.* 1990). Atlantic and Pacific Oceans (Fricke *et al.* 2020); South China Sea and Celebes Sea to Sea of Okhotsk, Pacific off northern Japan (Balanov *et al.* 2009), Kuril Islands and southern Kamchatka, central North Pacific to Bering Sea (Mecklenburg *et al.* 2002), and British Columbia (Gillespie 1993); Peru (Matsui and Rosenblatt 1987). Mesopelagic to benthopelagic; depth: about 100–1,500 m (328–4,921 ft) (Quéro *et al.* in Quéro *et al.* 1990).

Holtbyrnia laticauda Sazonov, 1976. **Tusked Tubeshoulder**. To 30 cm (11.8 in) SL (Matsui and Rosenblatt 1987). Most records from Southern Hemisphere; one record from northern Baja California (31°05'N, 117°58'W); Chile. About 30 m (98 ft) to 1,630 m (5,346 ft). All except length from de la Cruz-Agëro *et al.* (2016).

Holtbyrnia latifrons Sazonov, 1976. Streaklight Tubeshoulder or **Teardrop Tubeshoulder**. To 25 cm (9.8 in) SL (Sazonov *et al.* 1993). Western Bering Sea; Gulf of Alaska (Mecklenburg *et al.* 2002) to Chile (Matsui and Rosenblatt 1987). Mesopelagic and bathypelagic; depth: 59–1,400 m (193–4,620 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sazonov *et al.* 1993). There are many deeper records (i.e., 3,346 m, 10,974 ft (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)) but these are based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

****Maulisia acuticeps*** Sazonov, 1976. **Dark Tubeshoulder**. To 25.5 cm (10 in) SL (Sazonov *et al.* 1993). Circumglobal (Fricke *et al.* 2020); off Japan and Australia; western Bering Sea east of Karaginskiy Island; Peru and possibly off Islas Galápagos. Mesopelagic and bathypelagic; depth: about 200–1,500 m (656–4,921 ft), with possible records to 2,000–2,600 m (6,562–8,530 ft). All but maximum length in Mecklenburg *et al.* (2002).

Maulisia argipalla Matsui & Rosenblatt, 1979. **Pitted Tubeshoulder**. To 19.5 cm (7.7 in) SL (Sazonov *et al.* 1993). Atlantic and Pacific Oceans (Fricke *et al.* 2020); northern Pacific Japan (Balanov *et al.* 2009); Sea of Okhotsk; western Bering Sea near Karaginskiy Trench, eastern Bering Sea north of Semisopochnoi Island, and Gulf of Alaska (59°07'N, 146°54'W) (Stevenson *et al.* 2009) to Chile, including Gulf of California (Matsui and Rosenblatt 1987). Mesopelagic and bathypelagic; depth: 200–2,607 m (656–8,551 ft) (Porteiro *et al.* 2017).

Mentodus eubranchus (Matsui & Rosenblatt, 1987). To 11.4 cm (4.5 in) SL (Matsui and Rosenblatt 1987). Oregon (Matarese *et al.* 1989) to Gulf of California to Pacific coast of Mexico; central Pacific (Matsui and Rosenblatt 1987). Bathypelagic; depth: below 1,000 m (3,280 ft) (Matsui and Rosenblatt 1987).

Mentodus facilis (Parr, 1951). 12.5 cm (4.9 in) SL (Quéro *et al.* 1990). Circumglobal (Fricke *et al.* 2020); Southern California (33°45'N, 119°37'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Punta Abreojos, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), also Gulf of

California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and Peru (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Mesopelagic and bathypelagic; depth: 650–2,300 m (2,132–7,544 ft) (min.: Orrell and Hartel in Carpenter and De Angelis 2016; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Mirorictus taningi Parr, 1947. **Striped Tubeshoulder**. To at least 12.4 cm (5 in) SL (Matsui and Rosenblatt 1987). Indo-Pacific; northern California (41°17'N, 124°52'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Peru, including Gulf of California (Matsui and Rosenblatt 1987). Bathypelagic; depth: to 1,750 m (5,740 ft) (Kamikawa 2017). Sometimes seen as *M. taaningi*.

Platytroctes apus Günther, 1878. 19 cm (7.5 in) SL (Roberts *et al.* 2015). Circumglobal; southern California (33°10.2'N, 117°56.9'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Chile (Robertson *et al.* 2017) Depth: 103–5,393 m (338–17,689 ft) (min.: Morera *et al.* 2019; max.: Roberts *et al.* 2015).

Sagamichthys abei Parr, 1953. **Shining Tubeshoulder**. To 27.4 cm (10.8 in) SL (Matsui and Rosenblatt 1987). Southern Japan and Sea of Okhotsk (Mecklenburg *et al.* 2002) to south-eastern Bering Sea (Maslenikov *et al.* 2013) to southern Chile (Matsui and Rosenblatt 1987). Primarily mesopelagic; depth: adults about 168–2,088 m (551–4,849 ft) (min.: DFO; max.: Stein 1985), and perhaps to 4,268 m (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Reported from shallower depths, these records likely represent juveniles; e.g., a record from 37 m (121 ft) (Berry and Perkins 1966) was considered a mistake by Matsui and Rosenblatt (1987), and one from 94 m (308 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) is a specimen only 1.6 cm (0.6 in) in length.

Order Osmeriformes

Family Osmeridae—Smelts

Allosmerus elongatus (Ayres, 1854). **Whitebait Smelt**. To 22.9 cm (9 in) TL (Miller and Lea 1972). Vancouver Island, British Columbia (Pietsch and Orr 2019) to southern California (34°24'N) (Bradburn *et al.* 2011). Eschmeyer and Herald also list a questionable record from San Pedro, southern California. Depth: shallow water to 495 m (1,624 ft) (min.: Pietsch and Orr 2019; max.: NWFSC-FRAM). Although the maximum depth record comes from a bottom trawl catch, thus raising the question of whether that fish entered the net in the midwater during deployment and retrieval, we note that there are many bottom trawl catch records from between 300 (984 ft) and 495 m in the DFO and NWFSC-FRAM databases. Thus the maximum depth record of 495 m seems reasonable. An "*Allosmerus elongatus*" from Bristol Bay, Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) is an *Osmerus* sp. (Katherine Maslenikov).

****Hypomesus nipponensis*** McAllister, 1963. **Wakasagi.** To 19.5 cm (7.8 in) SL (Saruwatari *et al.* 1997). Widespread in Japan, Sakhalin Island and environs (Dyldin and Orlov 2016b); introduced to California lakes in 1959 (Saruwatari *et al.* 1997), now in Sacramento–San Joaquin Estuary (Aasen *et al.* 1998). Primarily a brackish-water species; found also in fresh water, commonly from transplants (Saruwatari *et al.* 1997); depth: shallow waters to 50 m (164 ft) (Kim and Kim 2019).

Hypomesus olidus (Pallas, 1814). **Pond Smelt**. To 20 cm (8 in) TL (Page and Burr 1991). North Korea and Japan to northern Siberia, and drainages of Canada and Alaska from Coronation Gulf, Northwest Territories to Copper River on the northeastern Gulf of Alaska coast (Mecklenburg *et al.* 2002). Freshwater species, only occasionally entering brackish water (Mecklenburg *et al.* 2002).

Hypomesus pretiosus (Girard, 1854). **Surf Smelt**. To 30.5 cm (12 in) TL (Hart 1973). North side of Alaska Peninsula at Izembek Bay, and Gulf of Alaska (Mecklenburg *et al.* 2002), to Long Beach, southern California (Miller and Lea 1972). Sometimes found in brackish water and rarely in fresh water (Mecklenburg *et al.* 2002); depth: intertidal to 185 m (607 ft) (min.: Mecklenburg *et al.* 2002; max.: NWFSC-FRAM).

Hypomesus transpacificus McAllister, 1963. **Delta Smelt**. To 12 cm (4.8 in) TL (Page and Burr 1991). Brackish and freshwater habitats of the Sacramento and San Joaquin river systems, California (Miller and Lea 1972, Saruwatari *et al.* 1997).

Mallotus catervarius (Pennant, 1784). **Pacific Capelin**. To at least 25 cm (9.8 in) TL (Pietsch and Orr 2019). Seas of Japan and Okhotsk, Commander, and Aleutian Islands, Gulf of Alaska to Strait of Juan de Fuca, and northward to Chukchi and Beaufort Seas eastwards to at least Davis Strait, and southern end of Baffin Island, eastern Canada. Presence in Siberian Seas unclear (Mecklenburg *et al.* 2016). Pelagic, nearshore; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 575 m (1,886 ft) (min.: Mecklenburg *et al.* 2016; max.: Kim and Kim 2019). Until recently believed to be a junior synonym of *Mallotus villosus* (Müller, 1776). However, molecular genetic studies demonstrate a substantial genetic distance between this species and other Arctic *Mallotus* spp. clades (Mecklenburg and Steinke 2015).

Osmerus dentex Steindachner & Kner, 1870. **Arctic Smelt**. To 34 cm (13.4 in) TL (Eriksen *et al.* 2020). White and Barents Seas eastward to Bathurst Inlet, Nunavut, also southward to North Korea, Japan, and Sea of Okhotsk, and in North America to Heceta Head, Oregon (Mecklenburg *et al.* 2011). Near coast; depth: surface to 194 m (636 ft) (min.: Mecklenburg *et al.* 2011; max.: NWFSC-FRAM). Also reported from deeper depths (i.e., 290 m, 951 ft, Federov *et al.* 2003), but deep records may represent fish entering nets nearer the surface than at the maximum depth of the tow. Anadromous. Previously as *Osmerus mordax* (Mitchill, 1814).

Spirinchus starksi (Fisk, 1913). **Night Smelt**. To 23 cm (9 in) TL (Eschmeyer and Herald 1983). Shelikof Bay, south-eastern Gulf of Alaska (McAllister 1963, Mecklenburg *et al.* 2002) to southern California (34°N) (Bradburn *et al.* 2011). Depth: intertidal, surface to 128 m (422 ft) (Coad 1995); a record from 594 m (1,948 ft) (Bradburn *et al.* 2011) was from a trawl survey and may represent a midwater capture or a fish left in the net from a shallower tow.

Spirinchus thaleichthys (Ayres, 1860). **Longfin Smelt**. To 20 cm (8 in) TL (Morrow 1980). Kodiak Island (Maslenikov *et al.* 2013) to southern California (33°54'N) (Bradburn *et al.* 2011). Marine, brackish, and fresh waters (Moyle 2002); depth: intertidal (Miller *et al.* 1980), surface to about 137 m (452 ft) (Mecklenburg *et al.* 2002). Anadromous.

Thaleichthys pacificus (Richardson, 1837). Candlefish, **Eulachon**, or Hooligan. To 25.4 cm (10 in) TL (Miller and Lea 1972). Eastern Bering Sea from west of Saint Matthew Island and off Kuskokwim Bay and Nushagak River, and Bowers Bank, central Aleutian Islands to southern California (34°N) (Bradburn *et al.* 2011). Near coast; depth: surface to 150 m (492 ft) (Pietsch and Orr 2019). However, there are a number of records from much greater depths, such as 625 m (2,050 ft) (Allen and Smith 1988), 613 m (2,011 ft) (NWFSC-FRAM), 533 m (1,748 ft) (Hoff and Britt 2003), 552 m (1,811 ft), 466 m (1,528 ft), and 463 ft (1,519 ft) (DFO). All of these records are from bottom trawls and while they all may represent fish that entered the nets above the maximum fishing depths the relative frequency of catches in these deep waters implies that at least some of these records are legitimate. Anadromous.

Order Salmoniformes

Family Salmonidae—Trouts and Salmons

Various alternatives for salmonid classification are in use, such as classifying the Pacific trouts in genus *Parasalmo* as preferred by some Russian taxonomists. The various proposals were summarized and referenced by Mecklenburg *et al.* (2002). Many of the West Coast trouts and salmons have been introduced elsewhere, including the East Coast and Europe. Only their native ranges are given here. At sea, trouts and salmons typically frequent epipelagic depths.

Coregonus autumnalis (Pallas, 1776). **Arctic Cisco**. To 64 cm (25 in) TL (Berg 1948). Arctic coasts from Siberia west to White Sea; Point Lay, Alaska (Craig and Schmidt 1985) to Ramussen Basin, Nunuvut, Canada (Reist in Coad and Reist 2018). Close to shore in estuaries (Mecklenburg *et al.* 2002). Anadromous and landlocked populations.

Coregonus laurettae Bean, 1881. **Bering Cisco**. To 48 cm (18.9 in) FL (Alt 1973). Chukchi Peninsula, eastern Siberia to Alaska; Oliktok Point, Beaufort Sea, Alaska to Kenai Peninsula, northern Gulf of Alaska. Primarily freshwater and coastal marine habitats, some populations anadromous. All except maximum length in Mecklenburg *et al.* (2002).

Coregonus nasus (Pallas, 1776). **Broad Whitefish**. To 83.5 cm (32.8 in) TL (George *et al.* 2007; confirmed by Lawrence Moulton, pers. comm.). Arctic coasts from Siberia to Queen Maud Gulf, Nunavut (Harris in Coad and Reist 2018); Beaufort, Chukchi, and Bering drainages of Alaska south to Kuskokwim Bay. Primarily in fresh water, not venturing far seaward in brackish water (Mecklenburg *et al.* 2002). Some authors (e.g., Reist in Coad and Reist 2018) consider this a species or subspecies complex.

Coregonus pidschian (Gmelin, 1789). **Humpback Whitefish**. To 54 cm (31.5 in) TL. Along Arctic coasts from Siberia, Russia, west to Kara Sea, and eastward along Alaska and Canadian coasts to Hudson Bay and New England (as *Clupea clupeaformis* of Canadian authors).

American biologists have generally referred to anadromous and Alaska-dwelling individuals of this species as "humpback" whitefish, *Coregonus pidschian*. Anadromous fish in northern Canada usually have been called "lake" whitefish (*Coregonus clupeaformis* (Mitchill, 1818)) by Canadian researchers. Following McDermid *et al.* (2007), we refer to the individuals residing from the Alaska Peninsula to the U.S. Chukchi and Beaufort Sea drainages and eastward at least to the lower Mackenzie River as this species. All in Love *et al.* (2016).

Coregonus sardinella Valenciennes, 1848. **Least Cisco**. To 47 cm (18.3 in) TL (Page and Burr 1991). Bering Strait and Siberia west to White Sea; Arctic coasts of Alaska east to Rasmussen Basin and Chantrey Inlet, King William Island, Nunuvut (Reist in Coad and Reist 2018) [records further east are without documentation—Reist in Coad and Reist 2018] and south to Bristol Bay, Bering Sea (Mecklenburg *et al.* 2002). Coastal waters near shore and fresh water. Anadromous and landlocked populations (Mecklenburg *et al.* 2002).

Oncorhynchus clarkii (Richardson, 1836). **Cutthroat Trout**. To 99.1 cm (39 in) TL (Morrow 1980). Outer coast of Kenai Peninsula, northern Gulf of Alaska (Behnke 1992) to Eel River, northern California (Morrow 1980). At sea, stays close to home streams (Mecklenburg *et al.* 2002). Anadromous.

Parasalmo clarkii (Richardson, 1836) is used by most Russian authors and by Fricke *et al.* (2020).

Oncorhynchus gorbuscha (Walbaum, 1792). Humpback Salmon or **Pink Salmon**. To 76 cm (2.5 ft) TL (Hart 1973). Northern Siberia to western Canada; North Korea and Japan to Beaufort Sea coast of Alaska (Mecklenburg *et al.* 2002) and Canada (westwards to Sachs Harbor, Banks Island) (Stephenson 2006), and south to La Jolla, California; throughout North Pacific and Bering Sea north of about 40°N (Mecklenburg *et al.* 2002). Successfully introduced in upper Great Lakes, and rivers of Norway and Russia (Pietsch and Orr 2019). Depth: maximum to 74 m (243 ft) (Walker *et al.* 2007); based on a bottom trawl collection, perhaps to 118 m (387 ft) (NWFSC-FRAM). Anadromous.

Oncorhynchus keta (Walbaum, 1792). Calico Salmon, **Chum Salmon**, or Dog Salmon. To 109 cm (42.9 in) TL (Salo in Groot and Margolis 1991). Arctic coasts of Siberia west to Laptev Sea and east across Alaskan and Canadian Arctic to Kugluktuk, Nunavut (Stephenson 2006); Korea and southern Japan to Beaufort Sea, Alaska to Del Mar, southern California near U.S.–Mexican border (Mecklenburg *et al.* 2002). Depth: at sea, surface to 253 m (830 ft) (Walker *et al.* 2007). Anadromous.

Oncorhynchus kisutch (Walbaum, 1792). **Coho Salmon** or Silver Salmon. To 108 cm (42.5 in) TL (Coad 1995). North Korea and Japan to Point Hope, Chukchi Sea, Alaska to Monterey Bay, central California (Mecklenburg *et al.* 2002), with strays to MacKenzie Delta, Northwest Territories (Stephenson 2006), to Bahía Camalu, northern Baja California (Messersmith 1965). Depth: surface to 97 m (318 m) (Walker *et al.* 2007). A much deeper record of 454 m (1,489 ft) (DFO) was recorded from a bottom longline survey; however, the fish could have been caught at a shallower depth as the hooks descended through the water column and a record from 421 m (1,381 ft) was from a bottom trawl (NWFSC-FRAM)

Oncorhynchus mykiss (Walbaum, 1792). Rainbow Trout or **Steelhead**. To 122 cm (48 in) TL (Coad 1995). Pacific off Kuril Islands (Kovalenko *et al.* 2005), Sea of Okhotsk, and Kamchatka to Kuskokwim Bay and Port Moller, south-eastern Bering Sea to northern Baja California near Cuidad Durango (Morrow 1980). Anadromous and freshwater populations. The anadromous form is typically called Steelhead, while freshwater populations are called Rainbow Trout. *Parasalmo* is used by many European authors. Recently as *Salmo gairdnerii* (Richardson, 1836).

Oncorhynchus nerka (Walbaum, 1792). Blueback, Red Salmon, or **Sockeye Salmon**. To 84 cm (33.1 in) TL (Coad 1995). Northern Japan and Sea of Okhotsk to Point Hope, Chukchi Sea, Alaska to Malibu Point, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) with strays along Arctic Alaska and Canada coasts to Bathurst Inlet (Craig and Haldorson 1986) and northward to Sachs Harbour, Banks Island (Stephenson 2006); across Pacific Ocean north of about 40°N. Depth: surface

to 83 m (272 ft) (Walker *et al.* 2007). Anadromous and freshwater populations. Range of the nonanadromous (freshwater) form, called Kokanee, not included here.

Oncorhynchus tshawytscha (Walbaum, 1792). **Chinook Salmon** or King Salmon. To 160 cm (63 in) TL (Coad 1995). Northern Japan to Point Hope, Chukchi Sea, Alaska, with strays across northern Alaska to Coppermine River in Canada (Morrow 1980), to central Baja California at Bahía de Sebastian Vizcaino (27°54'N, 114°17'W) (De La Cruz-Agüero 1999). Depth: at sea, surface to 538 m (1,765 ft) (Courtney *et al.* 2019). Anadromous.

Prosopium cylindraceum (Pennant, 1784). **Round Whitefish**. 56 cm (22 in) TL (Mecklenburg *et al.* 2002). In Asia, west to Yenisei River and southward to Kamchatka; throughout Alaska and British Columbia eastward across arctic Canada and southward to Connecticut (Mecklenburg *et al.* 2002). Some populations are anadromous and enter brackish waters of river deltas and estuaries (Reist in Coad and Reist 2018).

****Salmo salar*** Linnaeus, 1758. **Atlantic Salmon**. To 150 cm (59.1 in) TL (Coad 1995). Native to both sides of North Atlantic Ocean; introduced via net-pen farming to Washington and British Columbia in the 1980s (Mecklenburg *et al.* 2002). Escapees recorded and widespread from Puget Sound (Wayne Palsson, pers. comm. to M.L.) northward to south-eastern Alaska (Wing *et al.* 1992) to Bering Sea near Pribilof Islands (Brodeur and Busby 1998). Natural reproduction of *Salmo salar* in the Tsitika River, Vancouver Island, British Columbia, has been documented (Volpe *et al.* 2000). Anadromous.

****Salvelinus alpinus*** (Linnaeus, 1758). **Arctic Char**. To 96 cm (37.8 in) TL (Page and Burr 1991). Circumpolar; in Alaska, in Arctic, Bering Sea, and western Gulf of Alaska drainages. Anadromous on Chukchi Peninsula, Siberia; but lacustrine, not known to be anadromous, in Alaska. All except maximum length in Mecklenburg *et al.* (2002).

Salvelinus confluentus (Suckley, 1859). **Bull Trout**. To 91 cm (35.8 cm) TL. Mostly freshwater but spends perhaps two months in saltwater moving between freshwater drainages; headwaters of Mackenzie and Yukon Rivers to north-central Nevada, including Salish Sea, Columbia River, coastal drainages of Washington and British Columbia, and Klamath River drainage. All in Pietsch and Orr (2019).

Salvelinus malma (Walbaum, 1792). **Dolly Varden**, Dolly Varden Char, or Pacific Brook Char. To 100 cm (39.4 in) TL or more (Mecklenburg *et al.* 2002). Korean Peninsula and Japan to Chukchi Peninsula, Arctic Alaska, and Mackenzie River, Canada to northern Washington (Mecklenburg *et al.* 2002). However, Reist in Coad and Reist (2018) notes that, in marine waters, the species might also occur as far eastward as the Coronation Gulf, Nunavut. Migrates between freshwaters of Alaska and Siberia (DeCicco 1992). Anadromous and landlocked, lacustrine populations in Alaska.

Stenodus leucichthys (Güildenstädt, 1772). **Inconnu**. 150 cm (59 in) TL (Reist in Coad and Reist 2018). Arctic Alaska eastward to Anderson River, Northwest Territory, Canada, and southward to northern Bering Sea drainages; Siberia to White Sea and southward to Kamchatka; Caspian Sea drainages (Mecklenburg *et al.* 2002). Both anadromous (or amphidromous) and freshwater populations. The anadromous form will enter slightly brackish waters (Reist in Coad and Reist 2018).

Order Stomiiformes

Family Gonostomatidae—Bristlemouths

Cyclothone acclinidens Garman, 1899. **Benttooth Bristlemouth**. To 7.1 cm (2.8 in) TL (Miller and Lea 1972). Circumglobal; western Pacific Ocean north to southern Japan (Aizawa in Nakabo 2002); Oregon (Matarese *et al.* 1989) to central Chile (Fitch and Lavenberg 1968). Depth: 20–3,190 m (66–10,463 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Castellanos-Galindo *et al.* 2006b).

Cyclothone alba Brauer, 1906. **White Bristlemouth**. To 4.8 cm (1.9 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002), and Russian north-western Pacific (Orlov and Tokranov 2019); Bering Sea (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). Primarily mesopelagic (Mecklenburg *et al.* 2002); depth: near surface to about 4,000 m (13,100 ft).

Cyclothone atraria Gilbert, 1905. **Black Bristlemouth** or Yellow Bristlemouth. To 7.0 cm (2.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)**.** Sea of Okhotsk,

Bering Sea, and North Pacific Ocean (Mecklenburg *et al.* 2002) to Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: near surface to 3,400 m (11,155 ft) (min.: Mecklenburg *et al.* 2002; max.: Sheiko and Fedorov 2000).

Cyclothone braueri Jespersen & Tåning, 1926. 5.8 cm (2.3 in) SL (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Circumglobal; central California (35°18.7'N, 113°05.5'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); off southern Baja California (24°37.1'N, 113°14.3'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Peru-Chile Trench (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 10–2,000 m (33–6,560 ft) (Froese and Pauly 2019; note that we were unable to verify this).

Cyclothone microdon (Günther, 1878). 7.6 cm (3 in) TL (Hart 1973). Circumglobal; Haida Gwaii (54°11'N, 134°35'W), British Columbia (CMNFI 1965-0332.2) to Santa Cruz Island, southern California (33°46.8'N, 119°36.9'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 0–5,301 m (656–17,389 ft) (min.: Porteiro *et al.* 2017; max.: Froese and Pauly 2019; note that we were unable to verify this record).

Cyclothone pallida Brauer, 1902. **Tan Bristlemouth**. To 7.5 cm (3 in) SL (Mecklenburg *et al.* 2002)**.** Circumglobal primarily in warm waters; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002), Kuril Islands, and southern Bering Sea (Mecklenburg *et al.* 2002), to Chile (Pequeño 1989). Primarily mesopelagic and upper bathypelagic (Mecklenburg *et al.* 2002); depth: near surface to 3,190 m (10,463 ft) (min.: Mecklenburg *et al.* 2002; max.: Castellanos-Galindo *et al.* 2006b).

Cyclothone pseudopallida Mukhacheva, 1964. **Phantom Bristlemouth** or Slender Bristlemouth. To 7 cm (2.8 in) SL (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002), and Bering Sea (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). The first record from the Arctic Ocean, from the Laptev Sea at 77°41'N, is also the northernmost occurrence of gonostomatids in general (Balanov and Kasatkina 2003). Depth: surface to about 3,000 m (9,840 ft) (Mecklenburg *et al.* 2002).

Cyclothone signata Garman, 1899. **Showy Bristlemouth**. To 5.2 cm (2 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A 7.8 cm (3.1 in) SL fish (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) is a typographic error (Benjamin Frable). North and South Pacific Ocean; Bering Sea and eastern North Pacific Ocean (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989)**.** Depth: near surface to 1,130 m (3,707 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

The genus *Diplophos* was placed in the family Diplophidae by Roberts *et al.* (2015).

Diplophos proximus Parr, 1931. To 11.4 cm (4.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Southern California (Watson in Moser 1996) to Costa Rica (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Islas Galápagos (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 20–1,440 m (66–472 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Diplophos taenia Günther, 1873. **Pacific Portholefish**. To 27.6 cm (10.9 in) SL (Quéro *et al.* in Quéro *et al.* 1990). Circumglobal; western Pacific Ocean north to northern Japan (Aizawa in Nakabo 2002); eastern Pacific at 40°N to 30°S, not in tropical Pacific Ocean (Watson in Moser 1996). Depth: near surface to 800 m (2,624 ft) (Schaefer *et al.* in Smith and Heemstra 1986).

Gonostoma atlanticum Norman, 1930. **Atlantic Fangjaw**. To 6.7 cm (2.6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Oregon to at least Baja California (Watson in Moser 1996)**.** Depth: 50–2,500 m (164–8,200 ft) (min.: Quéro *et al.* in Quéro *et al.* 1990; max.: Grey 1964).

Sigmops elongatus (Günther, 1878). To 27.5 cm (10.8 in) TL (Quéro *et al.* in Quéro *et al.* 1990). Circumglobal; western Pacific Ocean north to northern Japan (Balanov *et al.* 2009); well offshore from California and Baja California (Watson in Moser 1996) to Chile (Pequeño 1989). Depth: 25–1,500 m (83–4,920 ft) (Quéro *et al.* in Quéro *et al.* 1990). A record of 4,500 m (14,760 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a bottom trawl and may represent a catch shallower than the maximum depth. Formerly *Gonostoma elongatum* Gunther, 1878.

Sigmops ebelingi (Grey, 1960). To 22.2 cm (8.7 in) SL (Roberts *et al.* 2015). Western and eastern Pacific; offshore California and Baja California (Watson in Moser 1996). Depth: 50–1,464 m (164–4,802 ft) (Roberts *et al.* 2015). A record of 3,000 m (9,840 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Sigmops gracilis (Günther, 1878). **Slender Fangjaw**. To 14.6 cm (6 in) SL (Sinclair and Stabeno 2002).; Central and northern Japan (Aizawa in Nakabo 2002); eastern Bering Sea (57°45'N, 173°56'W) (Maslenikov *et al.* 2013) and eastern North Pacific Ocean as far south as northern California (40°54'N, 124°29'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); confirmed by Katherine Maslenikov). Primarily mesopelagic; depth: near surface to 4,389 m (14,399 ft) (Mecklenburg *et al.* 2002).

Family Sternoptychidae—Marine Hatchetfishes

Argyropelecus aculeatus Valenciennes, 1850. **Lovely Hatchetfish**. To 8.3 cm (3.3 in) SL (Collette and Klein-MacPhee 2002). Circumglobal; western Pacific Ocean north to northern Japan (Aizawa in Nakabo 2002); central California (34°53.6'N, 121°30.2'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to at least Ecuador (01°59'N, 84°15'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 160–2,250 m (548–7,380 ft) (min.: Lima *et al.* 2011; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record of 100 m in Froese and Pauly (2019), attributed to Shinohara *et al.* (1996), appears to be in error as Shinohara *et al.* lists 785 m as the shallowest catch. Deeper records (e.g., 4,100 m (13,448 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); 5,178 m (16,984 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)) may represent fish caught by trawls based on the maximum depth fished and may represent a catch shallower than the maximum depth.

Argyropelecus affinis Garman, 1899. **Slender Hatchetfish**. To 9.4 cm (3.7 in) SL (Jesperson 1934). Circum-global; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Oregon (Matarese *et al.* 1989) to northern Chile (Sielfeld *et al.* 1995). Depth: 50–2,056 m (164–6,744 ft) (min.: Eduardo *et al.* 2020; max.: Cruz-Acevedo *et al.* 2018).

Argyropelecus hemigymnus Cocco, 1829. **Spurred Hatchetfish**. To 4.9 cm (1.9 in) TL or more (Mecklenburg *et al.* 2018). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002) and Russian north-western Pacific (Orlov and Tokranov 2019); Washington (Matarese *et al.* 1989) to Chile (Baird 1971). Depth: 50–3,065 m (164–10,053 ft) (min.: Mecklenburg *et al.* 2018; max.: Porteiro *et al.* 2017).

Argyropelecus lychnus Garman, 1899. **Tropical Hatchetfish**. To more than 7.6 cm (3 in) TL (Miller and Lea 1972). Eastern Pacific and possibly Indian Ocean; Gulf of Alaska (59.09°N, 147.01°W) (Stevens *et al.* 2009) to Chile (Baird 1971), including Islas Galápagos (McCosker *et al.* 1997). Depth: 66–2,124 m (216–6,967 ft) (min.: Castellanos-Galindo *et al.* 2006b; max. Cruz-Acevedo *et al.* 2018). Specimens previously reported as *A. lychnus* from British Columbia are *A. sladeni* (Mecklenburg *et al.* 2002).

Argyropelecus sladeni Regan, 1908. **Hatchetfish** or Silvery Hatchetfish. To 6.7 cm (2.6 in) SL (Fujii in Masuda *et al.* 1984). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); western Bering Sea (Balanov 1992); British Columbia (Gillespie 1993) to Chile (Baird 1971). The distribution of this species is perhaps antitropical (Baird 1971). Depth: 0–1,200 m (3,936 ft) (Roberts *et al.* 2015). A record in the University of Washington, Burke Museum of Natural History and Culture Fish Collection lists a capture of this species in

a midwater trawl fished at greater than 3,000 m (9,840 ft). However, the fish may have entered the trawl at any depth during deployment or retrieval.

Danaphos oculatus (Garman, 1899). **Bottlelight**. To 5.7 cm (2.3 in) TL (Miller and Lea 1972). Pacific Ocean [Indian Ocean record questionable] (Fricke *et al.* 2020); off the Brooks Peninsula (50°07'N, 128°18'W), British Columbia (Peden and Hughes 1986) to Chile (Pequeño 1989). Depth: 52–914 m (172–2,998 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Maurolicus muelleri (Gmelin, 1789). **Daisy Pearlside**. 8 cm (3.1 in) SL (Froese and Pauly 2019; note that we were unable to verify this record). Circumglobal; British Columbia (Page *et al.* 2013). Depth: 0–3,527 m (11,569 ft) (Porteiro *et al.* 2017). "*Maurolicus muelleri*" is likely a species complex (Rees *et al.* 2017).

Sternoptyx diaphana Hermann, 1781. **Longspine Hatchetfish**. To 6 cm (2.4 in) SL (Jesperson 1934). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984) to Kuril Islands (Parin *et al.* 1995); Oregon (Matarese *et al.* 1989) to northern Chile (31°55'S) (Kong and Meléndez 1991). Depth: surface to 2,374 m (7,787 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Porteiro *et al.* 2017). A maximum record of 4,667 m (15,308 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) was taken in a midwater trawl towed from this depth to the surface and thus the exact depth of capture is unknown.

Sternoptyx obscura Garman, 1899. **Dusky Hatchetfish**. To 5.5 cm (2.2 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); at least Monterey Bay, central California (Burton and Lea 2019) to Peru–Chile border (Baird 1971). Depth: surface to 1,393 m (4,569 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Cruz-Acevedo *et al.* 2018). A record of 4,268 m (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Sternoptyx pseudobscura Baird, 1971. **Highlight Hatchetfish**. To 7 cm (2.8 in) SL (Aizawa in Nakabo 2002). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); British Columbia (Peden 1975) to Chile (Baird 1971). Depth: 156–2,300 m (492–7,544 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Porteiro *et al.* 2017). A record of 5,041 m (16,383 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Valenciennellus tripunctulatus (Esmark, 1871). To 8 cm (3.1 in) SL (Harold in Carpenter and De Angelis 2016). Circumglobal; western Pacific Ocean north to central Japan (Aizawa in Nakabo 2002); well offshore California (e.g., Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and east side of Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 36–3,000 m (118–9,848 ft) (min.: Porteiro *et al.* 2017; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Phosichthyidae—Lightfishes

The family name is also seen as Photichthyidae. The correct spelling of the type genus for the family is *Phosichthys* (Eschmeyer 1998) and most authors now use the spelling Phosichthyidae.

Ichthyococcus elongatus Imai, 1941. **Slim Lightfish**. To 14 cm (5.5 in) SL (Balanov *et al.* 2009). Western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984) and southern Kuril Islands (Parin *et al.* 1995); near Vancouver Island, British Columbia (Peden and Hughes 1986) to southern Baja California (Berry and Perkins 1966). Mesopelagic (Fujii in Masuda *et al.* 1984); depth: 100–1,948 m (328–6,389 ft) (Kamikawa 2017). A record of a possible maximum depth of 5,488 m (18,000 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Ichthyococcus irregularis Rechnitzer & Böhlke, 1958. **Bulldog Lightfish**. To 7.6 cm (3 in) SL (Kamikawa 2017). Monterey, central California to Peru (Nakaya *et al.* 2009), including Islas Galápagos (Rechnitzer and Böhlke 1958). Mesopelagic and bathypelagic (Watson in Moser 1996); depth: 200–3,658 m (656–11,998 ft) (min.: Castellanos-Galindo *et al.* 2006b; max.: Kamikawa 2017).

Vinciguerria lucetia (Garman, 1899). **Panama Lightfish**. To 6.6 cm (2.6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Larvae found as far north as off San Francisco, northern California and metamorphosing individuals found as far north as central California (34°54'W) (Ahlstrom and Counts 1958) to northern Chile (Sielfeld *et al.* 1995), including Gulf of California (De La Cruz-Agüero and Galván-Magaña 1992). Depth: surface perhaps to 4,409 m (14,460 ft) (min.: Ahstrom and Counts 1958; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Deep records in both the Scripps Institution of Oceanography and Los Angeles County Natural History fish collection databases are based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Vinciguerria nimbaria (Jordan & Williams, 1895). **Oceanic Lightfish**. To 6 cm (2.4 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal**;** western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); within our range, well off San Simeon, central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Depth: surface to 3,000 m (9,840 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Vinciguerria poweriae (Cocco, 1838). **Highseas Lightfish**. To 5 cm (2 in) SL (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Vancouver Island, British Columbia (Ahlstrom and Counts 1958) to Chile (Pequeño 1989). Depth: 0–3,000 m (9,840 ft) (min: Roberts *et al.* 2015; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Woodsia nonsuchae (Beebe, 1932). To 12 cm (4.7 in) SL (Fujii in Masuda *et al.* 1984). Pacific and Atlantic, and probably Indian, Oceans (Fricke *et al.* 2020); western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); southern California (33°54'N, 120°38'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California. Depth: 530–1,335 m (1,738–4,379 ft) (Watson in Moser 1996).

Family Stomiidae—Barbeled Dragonfishes or Dragonfishes

We follow Cynthia Klepadlo (pers. comm. to M.L.) and Fricke (2019a) and retain all of the following species within the family Stomiidae. This family includes various forms such as loosejaws, viperfishes, and snaggletooths, and some of those names are appropriate for subfamilies.

Aristostomias scintillans (Gilbert, 1915). **Shining Loosejaw**. To 23 cm (9 in) TL (Fitch and Lavenberg 1968). Russian north-western Pacific (Orlov and Tokranov 2019); Gulf of Alaska (59°09'N, 146°06'W) (Stevenson *et al.* 2009) to southern Baja California (23°17'N, 120°33'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); also near equator (7°N) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Report from Bering Sea probably in error (Mecklenburg *et al.* 2002). Depth: 29–1,357 m (95–4,451 ft) (min.: Aron 1960; max.: NWFSC-FRAM), and perhaps surface (Orlov and Tokranov 2019) and 2,001 m (6,563 ft) (Milkova *et al.* 2016).

Bathophilus brevis Regan & Trewavas, 1930. **Deepbody Dragonfish**. To 5.5 cm (2.1 in) SL (Gibbs and Barnett in Quéro *et al.* 1990). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Ogasawara Islands (Aizawa in Nakabo 2002); Point Sal, central California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989). Depth: 75–1,650 m (246–5,412 ft) (Morrow and Gibbs 1964). A record of "0–3,000 m" (9,840 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was from an obliquely towed midwater trawl and may represent a catch shallower than the maximum depth.

Bathophilus filifer (Garman, 1899). To 10.4 cm (4.1 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Eastern and central tropical Pacific; Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989). Larvae taken as far north as off Ensenada, northern Baja California (Funes-Rodríguez *et al.* 2011). Depth: surface to perhaps 2,947 m (9,666 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The deepest record comes from a "rock dredge" and the specimen may have been captured as the dredge was retrieved.

Bathophilus flemingi Aron & McCrery, 1958. **Highfin Dragonfish**. To 16.5 cm (6.5 in) TL (Hart 1973). Gulf of Alaska (Mecklenburg *et al.* 2002) to 03°12'S, 119°26'W (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: less than 60 m to 1,372 m (197–4,501 ft) (min.: Peden *et al.* 1985; max.: Love *et al.* 2005), and perhaps to 2,287 m (7,501 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); this latter capture was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Borostomias panamensis Regan & Trewavas, 1929. **Panama Snaggletooth**. To just over 30 cm (12 in) TL (Fitch and Lavenberg 1968). Oregon (42°39'N, 124°55'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Chile (Pequeño 1989). Depth: 91–2,743 m (298–8,997 ft) (Kamikawa 2017). A record of 4,335 m (14,220 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Chauliodus macouni Bean, 1890. **Pacific Viperfish**. To 29.6 cm (11.6 in) TL (Balanov *et al.* 2009). Southern Japan (Fujii in Masuda *et al.* 1984) to Bering Sea (Parin and Novikova, 1974), to central Baja California (Eschmeyer and Herald 1983), and Gulf of California (Allen and Smith 1988). Larvae have been taken as far south as Cabo San Lucas, southern Baja California (Moser *et al.* 1993). Depth: 25–4,390 m (82–14,403 ft) (min.: Allen and Smith 1988; max.: Sheiko and Fedorov 2000).

Chauliodus sloani Bloch & Schneider, 1801. To at least 35 cm (13.8 in) TL (Bañon *et al.* 2016). Circumglobal; western Pacific Ocean north to northern Japan (Balanov *et al.* 2009), and Russian north-western Pacific Ocean (Orlov and Tokranov 2019); in eastern Pacific, well off southern California (33°29'N, 124°09'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 0–3,527 m (11,569 ft) (Porteiro *et al.* 2017).

****Eustomias perplexus*** Gibbs, Clarke, & Gomon, 1983. To 14.7 cm (5.8 in) SL. Indo-Pacific; perhaps one specimen captured well off southern Baja California (23°05'N, 119°08'W). Depth range poorly understood; a mesopelagic species with thus far a maximum known depth of about 300 m (984 ft). All in Gibbs *et al.* (1983).

Flagellostomias boureei (Zugmayer, 1913). **Threadbeard Dragonfish**. To 37.5 cm (14.6 in) SL (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); off Point Conception (Berry and Perkins 1966) and southern California (32°18'N, 121°44'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to southern Baja California (25°30'N, 116°W) (Parin and Scherbachev 1998). Depth: 0–1,825 m (5,986 ft) (min.: Porteiro *et al.* 2017; max.: Morrow and Gibbs 1964).

Idiacanthus antrostomus Gilbert, 1890. **Pacific Blackdragon**. Males to 7.6 cm (3 in) TL (Fitch and Lavenberg 1968) (Fujii in Masuda *et al.* 1984), females to 61 cm (24 in) SL (Kamikawa 2017). Western Pacific Ocean north to Hokkaido, Japan (Aizawa in Nakabo 2002); Triangle Island (50°48'N, 129°06'W), British Columbia (Milkova *et al.* 2016) to Chile (Pequeño 1989). Depth: surface to 2,161 m (7,088 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Castellanos-Galindo *et al.* 2006b), and perhaps to 4,100 m (13,448 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The latter record of 4,100 m was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Idiacanthus fasciola Peters, 1877. To 42 cm (16.5 in) SL (Roberts *et al.* 2015). Circumglobal; Oregon (Matarese *et al.* 1989) to off Ecuador (4°13'S, 85°01'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface to 2,000 m (6,560 ft) (Morrow and Gibbs 1964). A record

of 3,000 m (9,840 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Malacosteus niger Ayres, 1848. **Spotlight Loosejaw** or Shortnose Loosejaw. To 24 cm (9.4 in) SL (Mecklenburg *et al.* 2002)**.** Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); western Bering Sea northeast of Commander Islands (Balanov and Fedorov 1996); British Columbia (Gillespie 1993) to Chile (Pequeño 1989). Mesopelagic and bathypelagic; depth: surface to 3,886 m (12,824 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Machida in Okamura and Kitajima 1984).

Melanostomias valdiviae Brauer, 1902. To 23.2 cm (9.1 in) SL (Gibbs in Quéro *et al.* 1990). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); San Juan Seamount, southern California and well-off Point Conception, California (Berry and Perkins 1966), and Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Mesopelagic; depth: 0–1,460 m (4,789 ft) (Roberts *et al.* 2015). A record of 3,274 m (10,740 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Neonesthes capensis (Gilchrist & von Bonde, 1924). **Shortnose Snaggletooth**. To 22.6 cm (8.9 in) SL (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); central California (35°49'N) (Lauth 1999) to San Clemente Island, southern California (33°02'N, 117°54'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 0–1,975 m (230–6,478 ft) (min.: Porteiro *et al.* 2017; max.: Roberts *et al.* 2015).

Opostomias mitsuii Imai, 1941. **Pitgum Dragonfish**. To 40 cm (15.7 in) SL (Aizawa in Nakabo 2002). Western Pacific Ocean off Japan and southern Kuril Islands (Orlov and Tokranov 2019); British Columbia, 48°41'N, 126°29'W (Milkova *et al.* 2016) to off Point Conception, California (Berry and Perkins 1966). Depth: surface to 1,514 m (198–4,966 ft) (min.: Gillespie and Saunders 1994; max.: Shinohara *et al.* 2009).

Pachystomias microdon (Günther, 1878). **Large-eye Dragonfish**. To more than 22 cm (8.7 in) SL. Circumglobal; western Pacific Ocean north to northern Japan (Balanov *et al.* 2009), and Russian north-western Pacific (Orlov and Tokranov 2019); southern Bering Sea, Alaska, Gulf of Alaska and Washington (Stevenson *et al.* 2009); also eastern Pacific in North Central Gyre at latitude of central Baja California (27°27'N, 155°27'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic and bathypelagic; depth: 240–4,463 m (787–14,642 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Mecklenburg 2002).

Photonectes margarita (Goode & Bean, 1896). **Sooty Dragonfish**. To 39.6 cm (15.6 in) SL (Gibbs and Barnett in Quéro *et al.* 1990). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); Off northern California (40°54'N) (NWFSC-FRAM) to northern Baja California (Berry and Perkins 1966) and Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: surface to 3,290 m (10,791 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Note: *Photonectes intermedius* Parr, 1927, thought to be synonymous with *P. margarita* by some (i.e., Prokofiev 2019), may be a separate species and is found in California waters (Cynthia Klepadlo, pers. comm. to M.L.). Perhaps a species complex (Prokofiev 2019).

Rhadinesthes decimus (Zugmayer, 1911). **Slender Snaggletooth**. 41 cm (16.1 in) SL (Harold in Carpenter and De Angelis 2016). Circumglobal (Fricke *et al.* 2020); Central Japan (Aizawa in Nakabo 2002); Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); Oregon (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) (identifications confirmed by Katherine Maslenikov); Chile (Personal communication: National Museum of Natural History Fish Collection, Washington, D.C.). Depth range poorly known but likely bathypelagic; depth; perhaps as deep as 4,900 m (16,072 ft) (Froese and Pauly 2019; note that we were unable to verify this record).

Stomias atriventer Garman, 1899. **Blackbelly Dragonfish**. To 25 cm (10 in) TL (Fitch and Lavenberg 1968). Washington (48°N) (Bradburn *et al.* 2011) to Gulf of California to northern Chile (Moser in Moser 1996). Depth: 15–2,124 m (49–6,967 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish

Collection, La Jolla, California; max.: Cruz-Acevedo *et al.* 2018). A record of 4,335 m (14,220 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Tactostoma macropus Bolin, 1939. **Longfin Dragonfish**. To 45.5 cm (17.9 in) SL (Aizawa in Nakabo 2002). Japan (Fujii in Masuda *et al.* 1984), and Sea of Okhotsk to Bering Sea (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). Primarily mesopelagic and bathypelagic; depth: 25 m or less to 4,100 m (82–13,448 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Order Aulopiformes

Aulopidae—Flagfins

Aulopus bajacali Parin & Kotlyar, 1984. **Eastern Pacific Flagfin**. To 31 cm (12.2 in) (Robertson and Allen 2008). Banco de Tio Sam (Uncle Sam Bank), southern Baja California (Nakaya *et al.* 2009); Loreto, Gulf of California (John Snow, pers. comm. to M.L.) and southwest portion of Gulf of California (Robertson and Allen 2015). Reports from Isla del Cocos and Islas Galápagos are of a separate, undescribed, species (McCosker and Rosenblatt 2010). Depth: 75–513 m (246–1,683 ft) or more (min.: Castellanos-Galindo *et al.* 2006b; max.: Robertson and Allen 2008).

Family Synodontidae—Lizardfishes

Synodus evermanni Jordan & Bollman, 1890. **Spotted Lizardfish**. To 48 cm (18.9 in) TL (Amezcua Linares 1996). Bahía de Sebastian Vizcaino, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Bahía de Chilea, Peru (Chirichigno 1974), including Gulf of California (Robertson and Allen 2002). Benthic: depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 10–300 m (33–984 ft) (min.: Allen and Robertson 1994; max.: Morales-Nin 1992). Large genetic differences in fish taken off Central America imply that this may be a species complex (Robertson *et al.* 2017).

Synodus lacertinus Gilbert, 1890. Banded Lizardfish, **Calico Lizardfish**, or Reef Lizardfish. To 23.9 cm (9.4 in) TL (John Snow, pers. comm. to M.L.). From 6 km (4 mi) south of U.S.–Mexican border (Groce, Lagos, and Nestler 2001) to Chile (Pequeño 1989), including Gulf of California (Bussing and Lavenberg in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–156 m (3–512 ft) (min.: Robertson and Allen 2002; max.: Zeballos Flor *et al.* 1998).

Synodus lucioceps (Ayres, 1855). **California Lizardfish**. To 63.9 cm (25.2 in) TL (Miller and Lea 1972). Cape Beal, British Columbia (Fulton and LeBrasseur 1985) to Guaymas, Gulf of California (Miller and Lea 1972). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–250 m (4–820 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: NWFSC-FRAM).

Synodus scituliceps Jordan & Gilbert, 1882. **Lance Lizardfish** or Shorthead Lizardfish. To 55 cm (21.6 in) TL (Amezcua Linares 1996). Ensenada Bay (31°51'N, 116°38'W) (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California), northern Baja California, Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Laguna San Ignacio, southern Baja California (De La Cruz-Agüero and Cota-Gómez 1998) into Gulf of California (Bussing and Lavenberg in Fischer *et al.* 1995) to Chile (Pequeño 1989) and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Romero-Berny *et al.* 2021); benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 172 m (3–564 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Zeballos Flor *et al.* 1998).

Synodus sechurae Hildebrand, 1946. **Iguana Lizardfish**. To 47.6 cm (18.7 in) TL (Nieto-Navarro *et al.* 2010). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Bahía de Sechura, Peru (Chirichigno and Veléz 1974), including Gulf of California. Benthic; depth: 3–117 m (10–384 ft) (min.: Godínez-Domínguez *et al.* 2000; max.: Castellanos-Galindo *et al.* 2006b).

Family Scopelarchidae—Pearleyes

Benthalbella dentata (Chapman, 1939). **Northern Pearleye**. To 28 cm (11 in) TL or more (Mecklenburg *et al.* 2002)**.** Japan (Nakabo in Nakabo 2002), to Sea of Okhotsk, and western Bering Sea (Orlov 1998), eastern Bering Sea (58°30'N, 177°52'W) (Maslenikov *et al.* 2013), and Gulf of Alaska (Johnson 1974), to Isla Guadalupe, central Baja California (Watson and Sandknop in Moser 1996); also at 10°21'N, 96°12'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and 10°31.3'N, 126°00'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Primarily mesopelagic; depth: 59–1,502 m (196–4,927 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Shinohara *et al.* 2009) and perhaps to 2,083 m (6,832 ft) (Milkova *et al.* 2016). A report of a catch at 3,400 m (11,155 ft, Fedorov 2000 (Personal communication: Russian Academy of Science Ichthyological Collecton at Saint Petersberg)) may be problematic, as this is a mesopelagic species; the specimen may have entered the net above the maximum depth of the tow (Love *et al.* 2005).

Benthalbella linguidens (Mead & Böhlke, 1953). **Longfin Pearleye**. To about 36 cm (14.2 in) TL (Mecklenburg *et al.* 2002)**.** Northern Japan (Johnson 1974), and southern Kuril Islands (Parin *et al.* 1995); south-eastern Gulf of Alaska (Mecklenburg *et al.* 2002) and British Columbia (Peden 2003) to Gulf of California (Castro-Aguirre 1991). Mesopelagic and bathypelagic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to 3,660 m (12,008 ft) (Mecklenburg *et al.* 2002).

Rosenblattichthys volucris (Rofen, 1966). **Chubby Pearleye**. To 10.3 cm (4.1 in) SL (Johnson 1974). Southern California (33°50'N, 121°48'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to southern Baja California, eastern equatorial Pacific (Johnson 1974), and off Chile (Johnson 1982). Larvae have been taken well to the north of the current northernmost record, off central California at 36°N (Moser *et al.* 1994). Depth: 0–3,294 m (10,804 ft) (Kamikawa 2017).

Scopelarchoides nicholsi Parr, 1929. To 12.7 cm (5 in) SL (Kamikawa 2017). Atlantic and Pacific Oceans; Santa Catalina Basin, southern California (Kamikawa 2017) to Chile (Pequeño 1989). Depth: surface to 3,294 m (10,804 ft) (Kamikawa 2017).

Scopelarchus analis (Brauer, 1902). **Blackbelly Pearleye**. To 12.6 cm (5 in) SL (Johnson in Whitehead *et al.* 1984). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); southern California and Baja California (Johnson in Whitehead *et al.* 1984) to Chile (Pequeño 1989). Mesopelagic; depth: 0–4,000 m (13,120 ft) (Kamikawa 2017). While Fricke *et al.* (2020) question this species occurrence in the eastern Pacific, we note that there are many Scripps Institution of Oceanography fish collection specimens from both California and Baja California that were identified by Cynthia Klepadlo.

Scopelarchus guentheri Alcock, 1896. **Staring Pearleye**. To 12.7 cm (5 in) SL (Kamikawa 2017). Circumglobal; western Pacific Ocean north to southern-most Japan (Nakabo in Nakabo 2002); southern California to central Baja California and Peru to Chile (Johnson 1974). Larvae taken as far south as San Ignacio Lagoon, southern Baja California (Funes-Rodríguez *et al.* 2011). Depth: 0–4,000 m (13,120 ft) (Kamikawa 2017).

Family Evermannellidae—Sabertooth Fishes

Evermannella ahlstromi Johnson & Glodek, 1975. To 7 cm (2.8 in) SL (Johnson 1982). Northern Baja California to equatorial Pacific Ocean, and off Peru (Johnson 1982). Mesopelagic; depth: 200–1,830 m (656–6,000 ft) (min.: Castellanos-Galindo *et al.* 2006b; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Family Alepisauridae—Lancetfishes

Alepisaurus ferox Lowe, 1833. **Longnose Lancetfish**. To about 231 cm (90.9 in) TL (Mecklenburg *et al.* 2002). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984), and Sea of Okhotsk, to Bering Sea as far northward as 58°21'N, 175°19'W (Maslenikov *et al.* 2013), and Aleutian Islands (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). Epipelagic to bathypelagic; depth: near surface to 1,830 m (6,004 ft); primarily oceanic but often found close to shore (Mecklenburg *et al.* 2002).

Family Paralepididae—Barracudinas

Anotopterus nikparini Kukuev, 1998. Daggertooth or **North Pacific Daggertooth**. To 146 cm (57.5 in) TL (Miller and Lea 1972). South of Japan to southern Bering Sea, and Gulf of Alaska, to south of Baja California (Mecklenburg *et al.* 2002). An *Anotopterus* reported from the Gulf of California (Castro-Aguirre 1991) is likely this species. Primarily epipelagic and mesopelagic; depth: near surface (at night) to 2,750 m (9,022 ft) (Mecklenburg *et al.* 2002). Includes North Pacific records of *Anotopterus pharao.* Also placed in the family Anotopteridae (Fricke *et al.* 2020).

Arctozenus risso (Bonaparte, 1840). Ribbon Barracudina or **White Barracudina**. To 31 cm (12.2 in) SL (Fujii in Masuda *et al.* 1984). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984), Sea of Okhotsk, and western Bering Sea (Orlov 1998), to northern Gulf of Alaska (59°09'N, 146°06'W) (Maslenikov *et al.* 2013), and British Columbia (55°N) (Ambrose in Moser 1996) to southern Baja California (24°39'N, 121°12'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); 0°54'N, 82°00'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 0–3,465 m (11,365 ft) (Porteiro *et al.* 2017); young near surface (Post in Gon and Heemstra 1990). *Notolepis coruscans* Jordan & Gilbert, 1881, is a junior synonym. The spelling *rissoi* for this species, although frequently seen, is incorrect.

****Lestidiops neles*** (Harry, 1953). To 9 cm (3.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Vicinity of Cabo San Lucas, southern Baja California to Colombia (Beltrán-León and Rios Herrera 2000), and near Islas Galápagos (3°19'S, 98°05'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Larvae reported from along the Baja California coast from the Ensenada area, northern Baja California to San Ignacio, southern Baja California (Funes-Rodríguez *et al.* 2011). Epipelagic and mesopelagic; depth: 22–384 m (72–1,260 ft) (Robertson *et al.* 2017). A record of 2,000 m (6,560 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Lestidiops pacificus (Parr, 1931). To at least 16.4 cm (6.4 in) SL (Harry 1953). Southern California 32°29'N, 117°32'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Gulf of Panama; Chile; north of New Zealand (Ambrose in Moser 1996); Colombia (Beltrán-León and Rios Herrera 2000). Larvae captured along Baja California coast from Ensenada, northern Baja California to San Ignacio, southern Baja California (Funes-Rodríguez *et al.* 2011). Epipelagic to bathypelagic (Ambrose in Moser 1996); depth: 50 to perhaps 1,003 m (164–3,290 ft). The deepest record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. Considered a subspecies of *Lestidiops jayakari* by some authors (e.g., Mundy 2005).

Lestidiops ringens (Jordan & Gilbert, 1880). **Slender Barracudina**. To 25.2 cm (9.9 in) SL (Balanov *et al.* 2009). Northern Japan (Balanov *et al.* 2009); Pacific Ocean off southern Kuril Islands (Parin *et al.* 1995) to southern Kamchatka; western Bering Sea near Alaska border (Mecklenburg *et al.* 2002) to Gulf of Alaska (58°21'N, 147°51'W) (Stevenson *et al.* 2009) to southern Baja California (26°33'N, 115°41'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Gulf of California (Castro-Aguirre 1991). Larvae have been taken in a number of locations in southern Baja California waters, as far south as about 25°N (Moser *et al.* 1993). Primarily mesopelagic (Mecklenburg *et al.* 2002); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 9–3,920 m (30–12,861 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Hart 1973).

Lestidiops sphyraenopsis Hubbs, 1916. To 37.2 cm (14.6 in) SL (Balanov *et al.* 2009). Pacific and South Atlantic Oceans (Fricke *et al.* 2020); western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984), and southern Kuril Islands (Parin *et al.* 1995); Oregon (44°19'N, 125°12'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Golfo de Tehuantepec (14°31'N, 95°W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 25–1,440 m (82–4,723 ft) (min.: Balanov *et al.* 2009; max.: Nakabo in Nakabo 2002).

Lestidium nudum Gilbert, 1905. To 9.3 cm (3.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; southern California (34°N, 119°W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to off central America (8°22'N, 97°52'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: poorly known, at least as shallow as 183 m (600 ft) (Mundy 2005) and as deep as 1,450 m (4,757 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Macroparalepis johnfitchi (Rofen, 1960). **Black Barracudina**. To 39.3 cm (15.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). San Clemente Island, southern California (Rofen 1960) to northern Baja California (29°35'N, 115°48'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: poorly known; surf zone (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and perhaps as shallow as 15 m (49 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and as deep as 177 m (581 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Previously *Lestidium johnfitchi* Rofen, 1960.

Magnisudis atlantica (Krøyer, 1868). **Duckbill Barracudina**. To about 50 cm (19.7 in) SL (Mecklenburg *et al.* 2002). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Japan (Mecklenburg *et al.* 2002), Sea of Okhotsk, and western Bering Sea (Orlov 1998) and eastern Bering Sea to 52°32'N, 179°50'W (Maslenikov *et al.* 2013) to Chile (Pequeño 1989). Epipelagic to bathypelagic; depth: near surface, less than 6 m (19.7 m) (Mecklenburg *et al.* 2002), to 2,308 m (7,570 ft) (Porteiro *et al.* 2017).

Stemonosudis macrura (Ege, 1933). Probably to 25 cm (9.8 in) SL (Post in Smith and Heemstra 1986). Indo-Pacific; western Pacific Ocean north to Ryukyu Islands (Nakabo in Nakabo 2002); central California (36°46'N, 122°35'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Epipelagic and mesopelagic (Ambrose in Moser 1996); depth: 24 m (80 ft) to perhaps 2,100 m (6,888 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The maximum depth record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. "Probably valid as *Lestidiops macrurus* (Ege, 1933), (H.-C. Ho, pers. commun. 4/2020)" in Eschmeyer's Catalog of Fishes. Accessed 9 May 2020.

Sudis atrox Rofen, 1963. To more than 9 cm (3.5 in) SL (Russell in Carpenter and De Angelis 2016). Probably circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Ryukyu Islands (Nakabo in Nakabo 2002); at least southern California (32°N) to Chile (Ambrose in Moser 1996). Primarily mesopelagic to bathypelagic; depth: 30–2,250 m (98–7,382 ft) (Moore *et al.* 2003).

Family Bathysauridae—Deepsea Lizardfishes

Bathysaurus mollis Günther, 1878. To 85 cm (33.4 in) TL (Sulak in Whitehead *et al.* 1984). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); Oregon (Pearcy *et al.* 1982) to at least Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Clarion Clipperton Zone (Simon-Lledó *et al.* 2020). Depth: 1,252–4,981 m (4,107–16,0338 ft) (min.: Fricke *et al.* 2019; max.: Erik Simon-Lledó, pers. comm. to M.L.).

Family Notosudidae—Paperbones or Waryfishes

Ahliesaurus brevis Bertelsen, Krefft, & Marshall, 1976. To 28 cm (11 in) SL (McEachran and Fechhelm 1998). Indo-Pacific; western Pacific Ocean north to Japan and southern Kuril Islands (Parin *et al.* 1995); central Baja

California (Watson and Sandknop in Moser 1996). Deep mesopelagic to bathypelagic (Krefft in Whitehead *et al.* 1984); depth: to at least 1,000 m (3,280 ft) (Nakabo in Nakabo 2002).

Scopelosaurus adleri (Fedorov, 1967). 31 cm (12.2 in) SL. Taiwan to southern Japan; Bering Sea to California (Balanov and Savinykh 1999). Burton and Lea (2019) record a specimen tentatively identified as *S. adleri* from Davidson Seamount (about 35°43'N, 122°43'W), central California. Depth: 102–1,440 m (335–4,723 ft) (Federov *et al.* 2003).

Scopelosaurus harryi (Mead, 1953). Scaly Paperbone or **Scaly Waryfish**. To 32 cm (12.6 in) SL (Fujii in Masuda *et al.* 1984). Northern Japan (Balanov *et al.* 2009), Sea of Okhotsk (Fujii in Masuda *et al.* 1984), Pacific Ocean north of Japan, Bering Sea (Bertelsen *et al.* 1976), British Columbia (as far north as 53°25'N, 133°03'W) (Milkova *et al.* 2016) to southern Baja California (20°N) (Sazonov 1998). Primarily mesopelagic; depth: 0–1,310 m (4,298 ft) (min.: Orlov and Tokranov 2019; max.: Mecklenburg *et al.* 2002). A record of 4,500 m (14,760 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth

Family Ipnopidae—Tripodfishes

Bathypterois atricolor Alcock, 1896. To 20.4 cm (8 in) SL (Cruz-Acevedo *et al.* 2017). Circumglobal; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); northern Baja California (30°46'N, 116°41'W) (Cruz-Acevedo *et al.* 2017) to northern Chile (Sulak 1977). Depth: 153–5,150 m (502–16,892 ft) (min.: Robertson *et al.* 2017; max.: Sulak 1977).

Bathypterois ventralis Garman, 1899. To 16.7 cm (6.6 in) SL (Cruz-Acevedo *et al.* 2017). Indo-Pacific (Fricke *et al.* 2020); southern Baja California (27°07'N, 114°36'W) (Cruz-Acevedo *et al.* 2017) to Chile (33°S) (Sulak 1977). Depth: 165–1,406 m (2,519–4,612 ft) (min.: Robertson *et al.* 2017; max.: Morera *et al.* 2019). *Bathypterois ventralis* may be a junior synonym of *B. atricolor* (Robertson *et al.* 2017).

Family Giganturidae—Telescopefishes

Gigantura indica Brauer, 1901. **Pacific Telescopefish**. To 20 cm (8 in) TL (Fitch Lavenberg 1968). Circumglobal (Russell in Carpenter and De Angelis 2016); southern California (as far north as 34°31'N) (NWFSC-FRAM); northern Baja California; north of Hawai'i (Fitch and Lavenberg 1968). Depth: 17–3,915 m (56–12,840 ft) (min.: Johnson and Bertelsen 1991; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Bathyleptus lisae* Walters, 1961, is a junior synonym.

Order Myctophiformes

Family Neoscopelidae—Blackchins

Neoscopelus macrolepidotus Johnson, 1863. **Glowingfish** or Largescale Blackchin Glowingfish. To 27.3 cm (10.7 in) SL (Roberts *et al.* 2015). Circumglobal; western Pacific Ocean north to Japan (Savinykh and Balanov 1999); British Columbia, probably off Haida Gwaii (Peden and Hughes 1986) to northern California (41°54'N, 124°36'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Depth: 249–1,180 m (817–3,870 ft) (min.: Mejía-Mercado *et al.* 2019; max. Kamikawa 2017).

Scopelengys tristis Alcock, 1890. Blackchin or **Pacific Blackchin**. To 20 cm (7.9 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and Russian north-western Pacific Ocean (Orlov and Tokranov 2019); southern Bering Sea (Mecklenburg *et al.* 2002) and Gulf of Alaska (59°07'N, 146°55'W) (Stevenson *et al.* 2009) to northern Chile (30°S) (Kong and Meléndez 1991). Depth: minimum 400 m (1,312 ft) (Robertson *et*

al. 2017); adults tend to occur deeper than 1,000 m (3,280 ft) (Nafpaktitis 1977) to 3,350 m (10,990 ft) or more, and juveniles (less than 10 cm) at 500–800 m (1,640–2,625 ft) (Mecklenburg *et al.* 2002).

Family Myctophidae—Lanternfishes

Many lanternfishes are epipelagic and mesopelagic vertical migrators, with lower bathymetric limits not well known. They move toward the surface at night. We give the overall bathymetric range, not separate daytime and nighttime depths as sometimes given by authors.

Benthosema glaciale (Reinhardt, 1837). **Glacier Lanternfish**. To 10.3 cm (4.1 in) SL (Hulley in Okamura *et al.* 1995). (The maximum size of 10.3 cm has been reported as both TL and SL.) Atlantic Ocean and Mediterranean Sea (Hulley in Whitehead *et al.* 1984); one record from Point Barrow, Alaska (Mecklenburg *et al.* 2016); Canadian Arctic (Coad in Coad and Reist 201); Laptev Sea (Mecklenburg *et al.* 2016). Mesopelagic; depth: surface to 1,456 m (4,776 ft) (Mecklenburg *et al.* 2016).

Benthosema panamense (Tåning, 1932). To 6.0 cm (2.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). San Clemente Basin (32°26'N, 118°47'W), southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Peru (9°07'S, 80°01'W) (Chirichigno and Vélez 1998), including Gulf of California (Wisner 1976). Depth: surface to 600 m (1,968 ft) (min.: Wisner 1976; max.: Robertson *et al.* 2017). A deeper capture, 2,000 m (6,650 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), was made with a midwater trawl that may have taken the specimen shallower than the deepest tow depth.

****Benthosema pterotum*** (Alcock, 1890). To 5.5 cm (2.2 in) SL. Indo-Pacific (Nakabo in Nakabo 2002); western Pacific Ocean north to central Japan (Nakabo in Nakabo 2002). While adults have not been collected within our range, larvae identified as this species have been taken as far north as Isla de Cedros, central Baja California (Moser *et al.* 1994). Mesopelagic; depth: 10–300 m (33–984 ft) (Fricke *et al.* 2019).

Benthosema suborbitale (Gilbert, 1913). To 3.9 cm (1.5 in) SL (Hulley in Whitehead *et al.* 1984). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and Russian north-western Pacific Ocean (Orlov and Tokranov 2019); off northern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Mesopelagic; depth: surface to 2,500 m (8,200 ft) (Orlov and Tokranov 2019).

Bolinichthys longipes (Brauer, 1906). **Popeye Lampfish**. To 6.5 cm (2.6 in) SL (Roberts *et al.* 2015). Indo-Pacific; western Pacific Ocean north to northern Japan (Balanov *et al.* 2009); southern California to South America (20°S) (Wisner 1976). Depth: 50–1,440 m (164–4,723 ft) (min.: Wisner 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Bolinichthys pyrsobolus (Alcock, 1890). To 9.2 cm (3.6 in) SL (Hulley and Duhamel 2009). Indo-Pacific; well offshore of northern California to northern Baja California (Berry and Perkins 1966) and Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 60 to more than 490 m (1,968–1,607 ft) (Hulley and Duhamel 2009). A deeper capture, 2,000 m (6,650 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), was made with a midwater trawl that may have taken the specimen shallower than the deepest tow depth. Hulley and Duhamel (2009) report that specimens taken from the eastern Pacific may represent more than one species.

Centrobranchus nigroocellatus (Günther, 1873). **Roundnose Lanternfish**. 5 cm (2 in) SL (Froese and Pauly 2019; note that we were unable to verify this record). Circumglobal (Hulley and Paxton in Carpenter and De Angelis 2016); off Point Conception, California (34°12'N, 121°42.6'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) (originally identified as *Centrobranchus andreae* (Lütken, 1892) (Benjamin Frable); Chile (Froese and Pauly 2019; note that we were unable to verify this record). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 700 m (2,296 ft) (min.: Hulley and Paxton in Carpenter and De Angelis 2016; max.: Froese and Pauly 2019; note that we were unable to verify this).

Ceratoscopelus townsendi (Eigenmann & Eigenmann, 1889). **Dogtooth Lampfish**. To about 8.5 cm (3.3 in) SL (Savinykh 1999). Circumglobal; Gulf of Alaska (59°15'N, 142°08'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov) to southern Baja California (27°01'N, 115°15'W) (De La Cruz-Agüero and Galván-Magaña 1992) and Chile (Pequeño 1989). Larvae have been taken south of Cabo San Lucas, southern Baja California (Moser *et al.* 1993). Depth: surface to 800 m (2,625 ft) (Wisner 1976), reported but not confirmed to 923 m (3,028 ft) (Lauth 1999).

Diaphus anderseni Tåning, 1932. **Lowlights Headlightfish**. To 3.5 cm (1.4 in) SL (Wisner 1976). Circumglobal (Hulley and Paxton in Carpenter and De Angelis 2016); western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); southern California (32°21'N, 120°06'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to central Baja California (Berry and Perkins 1966) and Chile (Sielfeld and Kawaguchi 2004). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to perhaps 3,450 m (11,316 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

?Diaphus fulgens (Brauer, 1904). Indo-Pacific; southern California (33°50'N, 120°56'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Diaphus fulgens* is part of a species complex that includes *Diaphus rafinesquii* (Cocco, 1838), and thus records of the two species from our range require additional research (Benjamin Frable).

Diaphus kuroshio Kawaguchi & Nafpaktitis, 1978. 6.3 cm (2.5 in) SL (Shinohara *et al.* 1996). Western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); southern California (32°N, 119°16'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 100–1,537 m (328–5,041 ft) (Shinohara *et al.* 1996).

Diaphus pacificus Parr, 1931. To 4.4 cm (1.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Central California (34°34'N, 122°20'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Fricke *et al.* 2020), including Gulf of California (Galván-Magaña *et al.* 1996). Epipelagic and mesopelagic (Moser and Ahlstrom in Moser 1996); depth: 17–1,314 m (56–4,310 ft) (Castellanos-Galindo *et al.* 2006b).

Diaphus parri Tåning, 1932. Indo-Pacific; southern California (32°54'N, 117°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 150–1,071 m (492–3,512 ft) (Castellanos-Galindo *et al.* 2006b).

?Diaphus rafinesquii (Cocco, 1838). Indo-Pacific; southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Diaphus rafinesquii* is part of a species complex that includes *Diaphus fulgens* (Brauer, 1904) and thus records of the two species from our range require additional research (Benjamin Frable).

Diaphus theta Eigenmann & Eigenmann, 1890. **California Headlightfish**. To 11.7 cm (4.6 in) SL (Shelekhov 2004). Japan (Nakabo in Nakabo 2002), and southern Bering Sea (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). Depth: surface (Childress and Nygaard 1973) to 4,100 m (13,448 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); typically above 800 m (Mecklenburg *et al.* 2002).

Diaphus trachops Wisner, 1974. **Rougheye Headlightfish**. To 6.4 cm (2.5 in) SL (Wisner 1974). Central Pacific and central California (Wisner 1974). Depth: 100–686 m (328–2,250 ft) (Wisner 1974).

Diogenichthys atlanticus (Tåning, 1928). **Longfin Lanternfish**. To 3.6 cm (1.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); northern California (Berry and Perkins 1966) to northern Chile (Sielfeld *et al.* 1995). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 1,720 m (5,640 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record of 5,041 m (16,534 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a non-closing midwater trawl and may represent a catch shallower than the maximum depth.

Diogenichthys laternatus (Garman, 1899). **Diogenes Lanternfish**. To 3.9 cm (1.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Point Conception, California (Moser and Ahlstrom in Moser 1996) to Chile (Wisner 1976), including Gulf of California (Galván-Magaña *et al.* 1996). Depth: surface to 3,022 m (9,912 ft) (min.: Wisner 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Electrona risso (Cocco, 1829). **Chubby Flashlightfish** or Chubby Lanternfish. To 9 cm (3.5 in) SL (Wisner 1976). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002), southern Kuril Islands (Parin *et al.* 1995); Oregon (Matarese *et al.* 1989) to Chile (Nafpaktitis *et al.* 1977). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: 0–2,979 m (9,771 ft) (Porteiro *et al.* 2017).

Gonichthys tenuiculus (Garman, 1899). To 5.8 cm (2.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Southern California (33°01'N, 119°48'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989). Depth: surface to mesopelagic (Moser and Ahlstrom in Moser 1996); depth: 67–1,314 ft (220–4,310 ft) (Castellanos-Galindo *et al.* 2006b).

Hygophum atratum (Garman, 1899). **Thickhead Flashlightfish**. To 6 cm (2.4 in) SL (Wisner 1976). Southern California (Wisner 1976) to Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface to at least 488 m (1,600 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), perhaps as deep as 4,268 m (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The latter record from a midwater trawl that may have taken the specimen above the deepest tow depth.

X*Hygophum hanseni* (Tåning, 1932). Circumglobal, but apparently only in Southern Hemisphere at 30–43°S (Fricke *et al.* 2020). Reyes-Bonilla *et al.* (2010) report a record from Isla Guadalupe, central Baja California based on an Los Angeles County Natural History Museum fish collection record. However, this record, along with two others from the same institution, are in error (Richard Feeney, pers. comm. to M.L.)

Hygophum proximum Becker, 1965. To 5.8 cm (2.3 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); southern California (32°51.6'N, 123°56.1'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Epipelagic and mesopelagic (Moser and Ahlstrom in Moser 1996); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to perhaps as deep as 3,820 m (12,530 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Hygophum reinhardti (Lütken, 1892). **Broadhead Lanternfish** or Slender Lanternfish. To 6.4 cm (2.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); eastern Pacific Ocean from about 40°N (Bekker 1983) to Chile (Pequeño 1989). Reported from Gulf of Alaska (Wilimovsky 1954, 1958; Quast and Hall 1972) but documentation evidently lacking (Mecklenburg *et al.* 2002). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 3,346 m (10,974 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). This maximum depth was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Lampadena urophaos Paxton, 1963. **Sunbeam Lampfish** or Torchlight Lanternfish. To 23.7 cm (9.3 in) SL (Karnella 1987). Western Pacific Ocean north to Japan; British Columbia (Peden and Hughes 1986) to Chile (Pequeño 1989), and westward to Hawai'i (Wisner 1976). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: near surface to 1,000 m (3,280 ft) (Moore *et al.* 2003), and perhaps to 4,268 m (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). This latter record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Lampadena yaquinae (Coleman & Nafpaktitis, 1972). To 17.6 cm (6.9 in) SL (Savinykh and Balanov 1999). Japan (Fujii in Masuda *et al.* 1984) and Russian north-western Pacific (Orlov and Tokranov 2019); Oregon (Coleman

and Nafpaktitis 1972); California (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Depth: 130–1,515 m (426–4,969 ft) (min.: Fujii in Masuda *et al.* 1984; max.: Shinohara *et al.* 2009), and perhaps to 3,860 m (12,661 ft) (Coleman and Nafpaktitis 1972). This latter record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Lampanyctus festivus Tåning, 1928. **Festive Lanternfish**. To 15.7 cm (6.2 in) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan; in eastern Pacific Ocean as far northward as central California (35°58'N, 122°32'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic; depth: 0–1,800 m (5,904 ft) (Porteiro *et al.* 2017). A record of 3,600 m (11,808 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. The eastern Pacific form could be *L. festivus*, *Lampanyctus tenuiformis* (Brauer, 1906) or an unrecognized species (Benjamin Frable).

Lampanyctus jordani Gilbert, 1913. **Brokenline Lampfish**. To 15.2 cm (6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Japan and Sea of Okhotsk, to Bering Sea, and Gulf of Alaska (Mecklenburg *et al.* 2002), to southern California (Wisner 1976). Depth: surface to 3,400 m (11,152 ft) (Federov *et al.* 2003). A record of 5,700 m (18,696 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Lampanyctus nobilis Tåning, 1928. To 12.4 cm (4.9 in) SL (Hulley in Smith and Heemstra 1986). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002), and east of Kuril Islands (Savinykh *et al.* 2004); southern California (33°14'N, 121°24'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: 40–3,080 m (131–10,102 ft) (min.: Mundy 2005; max. Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Lampanyctus parvicauda Parr, 1931. To 11.2 cm (4.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Central Baja California to Chile (Wisner 1976). Larvae reported as far north as the Ensenada area, northern Baja California (Funes-Rodríquez *et al.* 2011). Depth: surface to mesopelagic (Wisner 1976); depth: 9–342 m (30–1,122 ft) (Castellanos-Galindo *et al.* 2006b). Several deeper records (e.g., 1,370 m (4,494 ft) (Morera *et al.* 2019) and 2,325 m (7,626 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)) were based on the maximum depth fished by a midwater and bottom trawls and may represent catches shallower than those maximum depths.

Lampanyctus steinbecki Bolin, 1939. **Longfin Lampfish**. To 12.4 cm (4.9 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; western Pacific Ocean to northern Japan (Balanov *et al.* 2009); northern California (Berry and Perkins 1966) to Chile (Wisner 1976). Depth: 70–1,830 m (230–6,002 ft) (min.: Clarke 1980; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Butler *et al.* (1997) note that this species is closely related to and may be confused with *L. tenuiformis* and *L. festivus,* and that the taxonomy of this species is not fully resolved.

Lampanyctus tenuiformis (Brauer, 1906). To 15.6 cm (6.1 in) SL (Parin in Fischer *et al.* 1995). Circumglobal (Hulley and Paxton in Carpenter and De Angelis 2016); western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and Russian north-western Pacific (Orlov and Tokranov 2019); northern California (37°06'N, 122°50'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to South America (Wisner 1976). Depth: 10–3,200 m (33–10,496 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The deepest record is based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Lobianchia gemellari (Cocco, 1838). To more than 10 cm (3.9 in) SL (Hulley in Whitehead *et al.* 1984). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); well off California (Savinykh 1999), northern Baja California (32°07'N, 119°29.2'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 800 m (2,625 ft) (min.: Personal communication: Scripps Institution of

Oceanography Fish Collection, La Jolla, California; max.: Hulley in Smith and Heemstra 1986) and perhaps to 3,820 m (12,530 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Loweina rara (Lütken, 1892). **Dwarf Lanternfish**. To 5 cm (2 in) SL (Nafpaktitis *et al.* 1977). Circumglobal; northern California (Matarese *et al.* 1989) to tropical eastern Pacific (Wisner 1976). Larvae as far north as Oregon (Matarese *et al.* 1989) and as far south as well-off Chile (about 20°S, 94°W) (Moser and Ahlstrom 1970). Depth: surface to 1,050 m (3,445 ft) (min.: Wisner 1976; max.: Nafpaktitis *et al.* 1977) or perhaps to 3,290 m (10,791 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The latter record is based on a midwater trawl catch and the depth of capture may have been above the maximum tow depth. Includes records of *Loweina laurae* Wisner, 1971.

Myctophum aurolaternatum Garman, 1899. To 11.5 cm (4.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); northern Baja California (29°46'N, 115°42'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989). Depth: surface to 342 m (1,122 ft) (min.: Hulley in Smith and Heemstra 1986; max.: Castellanos-Galindo *et al.* 2006b).

Myctophum nitidulum Garman, 1899. **Pearly Lanternfish**. To 10.5 cm (4.1 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and east of Kuril Islands (Savinykh *et al.* 2004); off Brookings, Oregon (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 1,537 m (5,041 ft) (Orlov and Tokranov 2019), and perhaps to 4,268 ft (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The latter record is based on a midwater trawl catch and the depth of capture may have been above the maximum tow depth

Nannobrachium bristori Zahuranec, 2000. To 14.2 cm (5.6 in) SL (Zahuranec 2000). Washington to southern Baja California and in tropical Pacific Ocean (Zahuranec 2000). Depth: 100–3,274 m (328–10,740 ft) (min.: Mundy 2005; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Considered *Lampanyctus bristori* (Zahuranec, 2000) in Fricke *et al.* (2019).

Nannobrachium fernae (Wisner, 1971). To 9.1 cm (3.6 in) SL (Zahuranec 2000). Oregon to northern California (Wisner 1976). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 200 m (656 ft) or more (Wisner 1976). A record of 4,939 m (16,200 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. Considered *Lampanyctus fernae* (Wisner, 1971) in Fricke *et al.* (2020).

Nannobrachium gibbsi Zahuranec, 2000. To 14.9 cm (5.9 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Primarily tropical North Pacific (Zahuranec 2000); near Isla Guadalupe (29°37.6'N, 117°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bathypelagic; depth: depth range poorly documented, perhaps to at least as deep as 4,796 m (15,731 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Considered *Lampanyctus gibbsi* (Zahuranec, 2000) in Fricke *et al.* (2020).

Nannobrachium hawaiiensis Zahuranec, 2000. To 11.1 cm (4.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Northern Pacific Ocean central water mass; southern California to central Baja California (Zahuranec 2000). Depth: 106–3,556 m (348–11,666 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Considered *Lampanyctus hawaiiensis* (Zahuranec, 2000) in Fricke *et al.* (2020).

Nannobrachium idostigma (Parr, 1931). To 9.6 cm (3.8 in) SL (Zahuranec 2000). Southern California (33°11'N, 118°29'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Wisner 1976). Depth: surface to mesopelagic (Wisner 1976). A record of 2,744 m (9,000 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. Considered *Lampanyctus idostigma* Parr, 1931 in Fricke *et al.* (2020).

Nannobrachium nigrum Günther, 1887. To 14.8 cm (5.8 in) SL (Wang *et al.* 2018). Indo-Pacific; western Pacific Ocean north to Honshu, Japan (Nakabo in Nakabo 2002); as far northward as northern California (40°54'N) (NWFSC-FRAM). Depth: 100–3,841 m (328–12,602 ft) (min.: Mundy 2005; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Considered *Lampanyctus niger* (Günther, 1887) in Fricke *et al.* (2020).

Nannobrachium regale (Gilbert, 1892). **Pinpoint Lampfish**. To 21 cm (8.3 in) TL (Orlov and Binohlan 2009). Hokkaido, Japan (Wisner 1976), and Russian north-western Pacific Ocean (Orlov and Tokranov 2019), to Bering Sea (Mecklenburg *et al.* 2002), to off Bahía Magdalena, southern Baja California (Moser and Ahlstrom in Moser 1996). Depth: 0–1,500 m (4,921 ft) (min.: Federov *et al.* 2003; max.: Mecklenburg *et al.* 2002). A record of 3,745 m (12,282 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. Considered *Lampanyctus regalis* (Gilbert, 1892) in Fricke *et al.* (2020).

Nannobrachium ritteri (Gilbert, 1915). **Broadfin Lampfish**. To 13.9 cm (5.5 in) SL (Savinykh 1999). Eastern North Pacific Ocean south of Aleutian Islands and Gulf of Alaska (Mecklenburg *et al.* 2002) to southwest of Cabo San Lucas, southern Baja California (about 19°N, 115°W) (Zahuranec 2000). Depth: 8–1,253 m (26–4,110 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: NWFSC-FRAM). Records from Central or South America have not been verified (Zahuranec 2000). A record of 3,988 m (13,080 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. Considered *Lampanyctus ritteri* Gilbert, 1892 in Fricke *et al.* (2020).

Notolychnus valdiviae (Brauer, 1904). **Topside Lampfish**. To 3.2 cm (1.3 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); northern California (Berry and Perkins 1966) to Chile (Pequeño 1989). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 850 m (2,789 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Nafpaktitis *et al.* 1977). A record of 3,346 m (10,975 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

****Notoscopelus japonicus*** (Tanaka, 1908). **Fluorescent Lampfish** or Spiny Lanternfish. To 14.8 cm (5.8 in) SL (Watanabe *et al.* 1999). Western Pacific Ocean north to Hokkado, Japan (Nakabo in Nakabo 2002); probable but not confirmed in eastern Pacific at latitudes west of southern British Columbia and California (Peden and Hughes 1986 (table 1: "probable") (Mecklenburg *et al.* 2002). Depth: 60–657 m (197–2,155 ft) (min.: Watanabe *et al.* 1999; max.: Balanov *et al.* 2009).

Notoscopelus resplendens (Richardson, 1845). **Patchwork Lampfish**. To 9.8 cm (3.9 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan and southern Kuril Islands (Parin *et al.* 1995) to British Columbia (Peden 2003) and to southern California and to Chile (Wisner 1976). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: surface to 4,268 m (13,999 ft) (min.: Hulley in Smith and Heemstra 1986; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Although Clemens and Wilby (1961) and Hart (1973) give 13.5 cm (5.3 in) for the maximum length, this evidently comes from a British Columbia fish (Hart's illustration (page 195) is of a 13-cm fish in the UBC collection) which is not this species but may be a misidentified *Lampanyctus* species (Peden *et al.* 1985, Peden and Hughes 1986).

Parvilux ingens Hubbs & Wisner, 1964. **Giant Lampfish**. To 20.4 cm (8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Oregon (Matarese *et al.* 1989) to southern Baja California (26°34'N, 114°40'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 2–2,350 m (7–7,708 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Stein 1985), and perhaps to 5,303 m (17,394 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), a specimen collected in a "dredge box."

Protomyctophum crockeri (Bolin, 1939). **California Flashlightfish**. To 5.5 cm (2.2 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Northern Japan (Nakabo in Nakabo 2002); southern British Columbia (Mecklenburg *et al.* 2002) to southern Baja California (26°32.5'N, 114°55.3'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); well offshore Baja California further southward (21°27.2'N, 123°07.2'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)**;** Chile (Pequeño 1989). Depth: surface to 950 m (3,117 ft) (min.: Matarese *et al.* 1989; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and perhaps to 4,268 m (13,999 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The latter record is based on a midwater trawl catch and the depth of capture may have been above the maximum tow depth

Protomyctophum thompsoni (Chapman, 1944). Bigeye Lanternfish, **Northern Flashlightfish**, or Northern Lanternfish. To 11.2 cm (4.4 in) TL (DFO)**.** Northern Japan (Fujii in Masuda *et al.* 1984), to southern Bering Sea (Mecklenburg *et al.* 2002), to central California (34°29'N, 122°28'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface to 1,370 m (4,495 ft) (min.: Wisner 1976; max.: Sheiko and Fedorov 2000).

Stenobrachius leucopsarus (Eigenmann & Eigenmann, 1890). **Northern Lampfish**. To 12.5 cm (4.9 in) TL (Gorbatenko and Il'inskii 1992). Southern Japan off Honshu (Fujii in Masuda *et al.* 1984), to southern Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002), to southern Baja California (about 26°N, 115°W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 0–3,824 m (12,543 ft) (min.: Federov *et al.* 2003; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). A record of 4,939 m (16,200 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Stenobrachius nannochir (Gilbert, 1890). **Garnet Lampfish**. To 13.5 cm (5.3 in) TL (Gorbatenko and Il'inskii 1992). Japan (Wisner 1976, Shinohara *et al.* 1994), to southern Bering Sea (Mecklenburg *et al.* 2002), to Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: surface to 3,400 m (11,152 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Federov *et al.* 2003). A record of 4,939 m (16,200 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Symbolophorus californiensis (Eigenmann & Eigenmann, 1889). **Bigfin Lanternfish** or California Lanternfish. To about 12.7 cm (5 in) TL (Fitch and Lavenberg 1968). Japan (Fujii in Masuda *et al.* 1984), and Russian north-western Pacific (Orlov and Tokranov 2019), to west of British Columbia (Peden *et al.* 1985), to southern Baja California (24°14'N, 114°12') (Personal communication: National Museum of Natural History Fish Collection, Washington, D.C). Not adequately documented for Alaska (Mecklenburg *et al.* 2002), but reported from northern British Columbia off Haida Gwaii, including one specimen very close to the Alaska border (Love *et al.* 2005). Depth: surface to 1,514 m (4,966 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Shinohara *et al.* 2009). Records of 2,744 m (9,000 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and 3,824 m (12,543 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Symbolophorus evermanni (Gilbert, 1905). To at least 11.7 cm (4.6 in) TL (Wang *et al.* 2018). Indo-Pacific; western Pacific Ocean north to Tohoku District, Japan (Nakabo in Nakabo 2002); central California (35°07'N, 121°29'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to an unclear maximum depth. There are numerous records in the Scripps Institution of Oceanography fish collection database in the range of 2,000–2,500 m (6,560–8,200 ft), and one as deep as 5,488 m (18,000 ft). All are based on the maximum depth fished by a midwater trawl and may represent catches shallower than the maximum depth.

Symbolophorus reversus Gago & Ricord, 2005. **Reverse Gland Lanternfish**. To 9.5 cm (3.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Eastern and central Pacific Ocean from 28°38'N (Gago and Ricord 2005) to Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: almost all specimens have been taken at the surface (Gago and Ricord 2005). One specimen may have been collected from as deep as 1,134 m (3,720 ft) (Gago and Ricord 2005).

Taaningichthys bathyphilus (Tåning, 1928). **Black Lampfish**. To 8 cm (3.1 in) SL (Nafpaktitis *et al.* 1977). Circumglobal; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984), to Oregon (Matarese *et al.* 1989), to southern Baja California (24°26'N, 113°18'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); South America (Wisner 1976). Mesopelagic and bathypelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: 36–2,500 m (118–8,200 ft) (min.: Porteiro *et al.* 2017; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The deepest record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Taaningichthys minimus (Tåning, 1928). To 7 cm (2.6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Ogasawara Islands, Japan (Fujii in Masuda *et al.* 1984); southern California (31°44'N, 120°07'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to well off Peru (Wisner 1976). Mesopelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: 0–5,041 m (16,534 ft) (min.: Porteiro *et al.* 2017; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The deepest record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Taaningichthys paurolychnus Davy, 1972. **Dimlight Lampfish**. To 9.5 cm (3.7 in) SL (Wisner 1976). Circumglobal; western Pacific Ocean north to Ogasawara Islands, Japan (Fujii in Masuda *et al.* 1984); central California (35°18.7'N, 123°05.5'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to southern Baja California (24°39.6'N, 113°17.9'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bathypelagic (Hulley and Paxton in Carpenter and De Angelis 2016); depth: 200–2,868 m (656–9,407 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Stein 1985). A record of 4,098 m (13,440 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Tarletonbeania crenularis (Jordan & Gilbert, 1880). **Blue Lanternfish** or Southern Blue Lanternfish. To 12.7 cm (5 in) TL (Miller and Lea 1972). South of Commander Islands (Love *et al.* 2005) and Aleutian Islands to Gulf of Alaska (Mecklenburg *et al.* 2002) to southern Baja California (25°34'N, 115°05'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); probably also in Bering Sea but voucher specimens are lacking (Mecklenburg *et al.* 2002). Reported by Bekker (1983) from Japan, but evidently those records are now considered to belong to *T. taylori* (Nakabo in Nakabo 2002). Depth: surface to 1,496 m (4,907 ft) (min.: Wisner 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record of 4,335 m (14,220 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Tarletonbeania taylori Mead, 1953. Northern Blue Lanternfish or **Taillight Lanternfish**. To 8.2 cm (3.2 in) SL (Sassa *et al.* 2002). Northern Honshu, Japan (Wisner 1976, Fujii in Masuda *et al.* 1984), and Russian north-western Pacific (Orlov and Tokranov 2019), to south-eastern Bering Sea, and Pacific Ocean south of Alaska (Shinohara *et al.* 1994), and west of British Columbia (Peden *et al.* 1985), to off Oregon (43°58'N, 176°24'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov). Surface to 1,500 m (4,920 ft) (min.: Wisner 1976; max.: Federov *et al.* 2003). Geographic range and depths are difficult to determine because *T. taylori* and *Tarletonbeanis crenularis* (Jordan & Gilbert, 1880) were for some time considered to be synonymous.

Triphoturus mexicanus (Gilbert, 1890). **Mexican Lampfish**. To 9 cm (3.5 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). British Columbia (Gillespie 1993) to off southern Mexico (Rodríguez-Graña *et al.* 2004), including Gulf of California (De La Cruz-Agüero and

Galván-Magaña 1992). Depth: surface to perhaps 2,882 m (9,453 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Maximum depth poorly known, most captures appear to be in 1,000 m (3,280 ft) or less. Deeper records, such as 4,100 m (13,448 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), are based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. *Triphoturus oculeus* (Garman 1899) has been considered to be synonymous with *Triphoturus mexicanus* Gilbert, 1890. However, on the basis of both DNA and larvae characters Rodríquez-Graña *et al.* (2004) separated the two species. *Triphoturus oculeus* is found from 13°N to 35°S.

Triphoturus nigrescens (Brauer, 1904). To 8.1 cm (3.2 in) SL (Cruz-Agüero and Cota Gómez 2006). Indo-Pacific; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002); northern California (Berry and Perkins 1966) to southern Baja California (23°00.6'N) (Cruz-Acevedo *et al.* 2018). Depth: surface to 3,000 m (9,840 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Order Lampridiformes

Family Lampridae—Opahs

We follow Underkoffler *et al.* (2018) and, in the eastern Pacific, separate the previously regarded single circumglobal species *Lampris guttatus* (Brünnich, 1788) into three species. Because of this, the data presented below is provisional.

Lampris incognitus Underkoffler, Luers, Hyde, & Craig, 2018. **Smalleye Pacific Opah**. Maximum length to at least 123 cm (48.4 in) FL (Matthew Craig, pers. comm. to M.L.), and undocumented to 183 cm (72 in) TL (Eschmeyer and Herald 1983). Geographic range unclear, but probably restricted to central and eastern North Pacific Ocean from at least Washington to well offshore south and east of Cabo San Lucas, Baja California (John Hyde, pers. comm. to M.L.). Pelagic, oceanic: depth: range unclear, but near surface to perhaps 736 m (2,414 ft) (Polovina *et al.* 2008).

Lampris megalopsis Underkoffler, Luers, Hyde, & Craig, 2018. **Bigeye Pacific Opah**. Maximum length to at least 124 cm (48.8 in) FL (Matthew Craig, pers. comm. to M.L.) and undocumented to 183 cm (72 in) TL (Eschmeyer and Herald 1983). Circumglobal; at least California and Chile (John Hyde, pers. comm. to M.L.). Pelagic, oceanic; depth: surface to perhaps 736 m (2,414 ft) (Polovina *et al.* 2008).

?Lampris sp. In the University of Washington fish database, there is a record (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) of a *Lampris* from Yakutat, Gulf of Alaska. That specimen is missing and its identity cannot be confirmed (Katherine Maslenikov).

Family Lophotidae—Crestfishes

Lophotus capellei Temminck & Schlegel, 1845. **North Pacific Crestfish**. To at least 100 cm (39.4 in) SL (Craig *et al.* 2004). Possibly circumglobal (Fricke *et al.* 2020); well offshore, to 610 km (379 mi) off Point Arena, northern California and near coast to San Diego, southern California (Craig *et al.* 2004). Depth: surface (Fitch and Lavenberg 1968), intertidal to at least 1,100 m (3,608 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: Fitch and Lavenberg 1968) and probably to greater depths. Previously regarded as belonging to the nearly worldwide species *Lophotus lacepede,* the North Pacific Ocean form was shown to be a different species (Craig *et al.* 2004).

Family Trachipteridae—Ribbonfishes

Desmodema lorum Rosenblatt & Butler, 1977. **Whiptail Ribbonfish**. To 110 cm (43.3 in) SL (Rosenblatt and Butler 1977) or 114 cm (44.9 in) TL (Eschmeyer and Herald 1983). Temperate waters of North Pacific Ocean; Japan (Fujii in Masuda *et al.* 1984); southern Kuril Islands (Parin *et al.* 1995); southern Oregon (44°26'N, 155°05'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Peru (Nakaya *et al.* 2009), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Epipelagic (Charter and Moser in Moser 1996) to mesopelagic (Rosenblatt and Butler 1977); depth: adults from a minimum of at least 30 to at least 1,162 m (98–3,811) (min.: Martin 2015; max: NWFSC-FRAM).

Trachipterus altivelis Kner, 1859. **King-of-the-Salmon**. To 245 cm (96 in) TL (Savinkyh and Baitalyuk 2011). South-eastern Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002) to Chile (Eschmeyer and Herald 1983). Primarily mesopelagic as adults (Mecklenburg *et al.* 2002); depth: surface to 1,231 m (4,038 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: NWFSC-FRAM). Considered a synonym of the circumglobal species *Trachipterus trachypterus* (Gmelin, 1789) by some (Savinykh and Baitalyuk 2011).

Trachipterus fukuzakii Fitch, 1964. **Tapertail Ribbonfish**. To 165 cm (65 in) TL (Kamikawa 2017). Just north of San Francisco, northern California (Kamikawa 2017) to Chile (Miller and Lea 1972), including Gulf of California (Galván-Magaña *et al.* 1996). Epipelagic and mesopelagic (Miller and Lea 1972); depth: as shallow as 5 m (16 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Zu cristatus (Bonelli, 1820). **Scalloped Ribbonfish**. To about 120 cm (47.2 in) TL (Olney and Hartel in Carpenter and De Angelis 2016). Circumglobal (Moore *et al.* 2003); western Pacific Ocean north to Japan (Hayashi in Nakabo 2002); central California (34°53'N, 124°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989) and Islas Galápagos (Miller and Lea 1972). Epipelagic to mesopelagic; depth: surface to about 1,200 m (3,936 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Martin 2015). Author's date listed as Bonelli, 1819 by some authorities.

Family Regalecidae—Oarfishes

Regalecus russelii (Cuvier, 1816). **Oarfish**. To 7–8 m (23–26 ft) (Roberts 2012). Western Pacific Ocean off Japan (Hiyashi in Nakabo 2002); Surf (34°41'N, 120°36'W), California (Richard Feeney, pers. comm. to M.L.) to Panama (Roberts 2012). Primarily epipelagic and mesopelagic (Roberts 2012). We follow Roberts (2012) and separate this species from *R. glesne* Ascanius, 1772. Also spelled *Regalecus russellii* by some authorities (Fricke *et al.* 2020).

Family Stylephoridae—Thread-tails or Tube-eyes

Stylephorus chordatus Shaw, 1791. Thread-tail or **Tube-eye**. To 32 cm (12.6 in) SL (Olney and Hartel in Carpenter and De Angelis 2016). Circumglobal; Yaquina Head, Oregon (44°45'N) (NWFSC-FRAM) to well offshore San Diego (32°N, 124°W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Larvae of this species have been reported off Colombia (Beltrán-León and Rios Herrera 2000). Mesopelagic and bathypelagic (Olney and Hartel in Carpenter and De Angelis 2016); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to perhaps 5,041 m (16,534 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The deepest record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Order Gadiformes

Family Bregmacerotidae—Codlets

Bregmaceros bathymaster Jordan & Bollman, 1890. **East Pacific Codlet**. To 10 cm (3.9 in) TL (De La Cruz-Agüero *et al.* 1997). Off Bahía Magdalena, southern Baja California to Chile (De La Cruz-Agüero *et al.* 1997), including Gulf of California (Galván-Magaña *et al.* 1996). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to 2,300 m (7,544 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record from near Cabo San Lucas (22°27'N, 110°59'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) identified as *Bregmaceros atlanticus* Good & Bean, 1886 is most probably *B. bathymaster* (Benjamin Frable).

Family Macrouridae—Grenadiers or Rattails

Coelorinchus scaphopsis (Gilbert, 1890). **Shoulderspot Grenadier**. To at least 34 cm (13.4 in) TL (Iwamoto in Cohen *et al.* 1990). Off northern California (41°14'N, 124°24'W) (Hoff 2002) to the Gulf of California (Iwamoto and Schneider in Fischer *et al.* 1995). Benthopelagic; depth: 166–1,158 m (544–3,798 ft) (min.: Bradburn *et al.* 2001; max.: Cruz-Acevedo and Aguirre-Villaseñor 2020). Although the genus is often seen spelled *Caelorhynchus or Caelorinchus*, the correct spelling is *Coelorinchus* (Tomio Iwamoto, pers. comm. to M.L.).

Coryphaenoides acrolepis (Bean, 1884). **Pacific Grenadier** or Roughscale Rattail. To 122 cm (48 in) TL (DFO). Sea of Okhotsk and Pacific Ocean off Japan, to southern Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002), to near central Baja California mainland (28°51'N, 115°46.7'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Isla Guadalupe, central Baja California (Miller and Lea 1972); southwest Atlantic near Falkland Islands (Laptikhovsky *et al.* 2013). Benthopelagic and bathypelagic; depth: typically at 600–2,500 m (1,968–8,202 ft) (Iwamoto and Stein 1974); reported as shallow as 38 m (125 ft) (DFO), and as deep as 3,700 m (12,136 ft) (Orlov and Tokranov 2019). The maximum depth may represent fish taken in midwater over deeper bottom, true maximum depth may be around 1,500 m (4,920 ft) (Tomio Iwamoto, pers. comm. to M.L.).

Coryphaenoides anguliceps (Garman, 1899). To more than 50 cm (19.7 in) TL (Iwamoto in Cohen *et al.* 1990). Northern Baja California (30°49.2'N) (Cruz-Acevedo *et al.* 2018); Gulf of California (Iwamoto and Schneider in Fischer *et al.* 1995) to northern Chile (26°S) (Sielfeld and Vargas 1996), and Islas Galápagos (Iwamoto in Cohen *et al.* 1990). Benthopelagic; depth: 153–2,418 m (502–7,933 ft) (min.: Robertson *et al.* 2017; max.: Iwamoto in Cohen *et al.* 1990).

Coryphaenoides armatus (Hector, 1875). **Abyssal Grenadier** or Smooth Abyssal Grenadier. To 102 cm (40.2 in) TL (Iwamoto in Cohen *et al.* 1990). All oceans except central Arctic (Renaud and Coad in Coad and Reist 2018); western Pacific Ocean north to Japan Trench (Nakabo in Nakabo 2002); south-eastern Bering Sea and Pacific Ocean south of Aleutian Islands (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). Benthopelagic to bathypelagic (Renaud and Coad in Coad and Reist 2018); depth: about 664–5,900 m (2,178–19,352 ft) (min.: DFO; max.: King and Priede 2008); reported from much shallower depths (257 m, 843 ft, Renaud and Coad in Coad and Reist 2018; 282 m, 931 ft, Grey 1956), but without documentation.

Coryphaenoides capito (Garman, 1899). **Bighead Grenadier**. To 32.4 cm (12.8 in) TL (Iwamoto and Schneider in Fischer *et al.* 1995). Southern Baja California (26°37.2'N) (Cruz-Acevedo *et al.* 2018), Gulf of California (Iwamoto and Schneider in Fischer *et al.* 1995), to northern Peru (Chirichigno and Vélez 1998), including southern tip of Baja California (Iwamoto and Schneider in Fischer *et al.* 1995). Benthopelagic; depth: 116–1,520 m (380–4,986 ft) (min.: Robertson *et al.* 2017; max.: Cruz-Acevedo and Aguirre-Villaseñor 2020).

Coryphaenoides cinereus (Gilbert, 1896). Gray Rattail or **Popeye Grenadier**. To 69 cm (27.2 in) TL (DFO). Northern Japan and southern Sea of Okhotsk, to Navarin Canyon, Bering Sea (Mecklenburg *et al.* 2002), to southern California (33°23'N) (Bradburn *et al.* 2011). Benthopelagic; depth: 135–2,832 m (443–9,291 ft) (min.: Orlov and Tokranov 2008a; max.: Allen and Smith 1988). Reported from trawl nets towed as deep as 3,480

m (11,417 ft), but in nonclosing nets which would allow fish to enter at any depth during retrieval of the net (Makushok 1970).

Coryphaenoides filifer (Gilbert, 1896). Filamented Rattail or **Threadfin Grenadier**. To 140 cm (55.1 in) TL (Benson and McFarlane 2008). Sea of Okhotsk off Hokkaido, Japan (Endo *et al.* 1994), and Russian north-western Pacific Ocean (Orlov and Tokranov 2019); Bering Sea (to 58°36'N, 177°57'W) (Maslenikov *et al.* 2013) and Aleutian Islands (Mecklenburg *et al.* 2002) to northern British Columbia (Love *et al.* 2005) to Monterey Bay, central California (Jeffrey Drazen, pers. comm. to M.L.). Although Ambrose (in Moser 1996) gives a southern range limit of 32°N, this evidently is a generalization from Matarese *et al.* (1989) and not based on a specific record. Benthopelagic; depth: 374–3,658 m (1,227–11,998 ft) (min.: Keller *et al.* 2006a; max.: Benson and McFarlane 2008). Recently as *Chalinura filifera*.

Coryphaenoides leptolepis Günther, 1877. **Ghostly Grenadier**. To 62 cm (24.4 in) TL or more (Geistdoerfer in Quéro *et al.* 1990). Atlantic and Pacific Oceans; western Pacific Ocean north to Japan (Iwamoto and Stein 1974); west of Prince of Wales Island in Gulf of Alaska (Bean 1890; locality corrected in Mecklenburg *et al.* 2002), and off Dixon Entrance, northern British Columbia (Love *et al.* 2005) to southwest of Cabo San Lucas, southern Baja California (Iwamoto and Stein 1974). Benthopelagic; depth: 145–4,300 m (476–14,104 ft) (min.: Benson and McFarlane 2008; max.: Gaither *et al.* 2016). In subgenus *Chalinura,* which some authors treat as a genus. This account includes *Coryphaenoides* (*Chalinura*) *liocephalus* (Günther, 1887) in the synonymy of *C. leptolepis*. The two forms could be distinct (although currently this is not considered likely), in which case *C. liocephalus* would be the name for the Pacific species; see discussion and citations in Mecklenburg *et al.* (2002).

Coryphaenoides longifilis Günther, 1877. **Longfin Grenadier**. To 93 cm (36.6 in) TL (Chuchukalo and Napazakov 2012). Southern Japan and Sea of Okhotsk off Kuril Islands to central Bering Sea (58°32'N, 176°50'W) (Maslenikov *et al.* 2013); south Pacific Ocean (Linley *et al.* 2017). Benthopelagic; depth: 508–3,000 m (1,666–9,840 ft) (min.: Maslenikov *et al.* 2013; max.: Federov *et al.* 2003). Date of publication of *Coryphaenoides longifilis* is sometimes given as 1887, but the correct date is 1877. Includes *Bogoslovius clarki* Jordan & Gilbert, 1898, from north of Bogoslof Island, Aleutian Islands, Alaska.

Coryphaenoides pectoralis (Gilbert, 1892). **Giant Grenadier** or Small-eyed Rattail. To 220 cm (86.6 in) TL (Orlov and Tokranov 2008). Sea of Okhotsk (Tuponogov 1997), south along Kuril Islands (Tomio Iwamoto, pers. comm. to M.L.), and northern Honshu, Japan to Bering Sea (Mecklenburg *et al.* 2002) to northern Baja California (Iwamoto in Cohen *et al.* 1990), including Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Also reported from Falkland Islands, south Atlantic (Tomio Iwamoto, pers. comm. to M.L.). Adults benthopelagic, young fish bathypelagic (Iwamoto and Stein 1974); depth: 140–3,500 m (459–11,480 ft) (min.: Iwamoto in Cohen *et al.* 1990; max: Kamikawa 2017). Also recently as *Albatrossia pectoralis* (Gilbert, 1892) (Fricke *et al.* 2020), we follow Gaither *et al.* (2016) in using *C. pectoralis*.

Coryphaenoides yaquinae Iwamoto & Stein, 1974. **Rough Abyssal Grenadier**. To 87.2 cm (34.3 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). North Pacific and eastern south Atlantic Oceans (Fricke *et al.* 2020); Japan Trench (Endo and Okamura 1992) and Kuril Islands (Orlov and Tokranov 2019); far offshore of Oregon to equator (Mecklenburg *et al.* 2002). Benthopelagic; depth: about 1,902–7,012 m (6,239–22,999 ft) (min.: DFO; max.: Priede *et al.* 2019).

Malacocephalus laevis (Lowe, 1843). **Softhead Grenadier** or Velvet Grenadier. To 65.5 cm (25.8 in) TL (Tomio Iwamoto, pers. comm. to M.L.). Circumglobal; Point Sur, central California (Hoff 1999) to Baja California (Sazonov and Iwamoto 1992); Chile (Pequeño 1989). Benthopelagic; depth: 50–1,200 m (164–3,936 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max. Pakhorukov 2008). Maximum depth perhaps of a specimen taken in midwaters over deeper waters (Tomio Iwamoto, pers. comm. to M.L.).

Mesovagus berryi (Hubbs & Iwamoto, 1977). Berry's Grenadier or **Midwater Grenadier**. To 41 cm (16.1 in) TL (Iwamoto and Williams 1999). Circumglobal (Fricke *et al.* 2020); southern California (Ambrose in Moser 1996) to southern Baja California (Iwamoto and Schneider in Fischer *et al.* 1995), to Hawai'i and Christmas Island (Ambrose in Moser 1996). Mainly bathypelagic; depth: surface to 2,700 m (8,858 ft) (min.: Iwamoto and Schneider in Fischer *et al.* 1995; max.: Ambrose in Moser 1996). Formerly *Mesobius berryi* (Hubbs & Iwamoto, 1977), we follow Nakayama and Endo (2017) in changing the genus name.

Nezumia convergens (Garman, 1899). **Peruvian Grenadier**. To at least 31 cm (12.2 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Central Baja California (28°40.2'N) (Cruz-Acevedo *et al.* 2018); Gulf of California to southern Chile (Robertson *et al.* 2017). Depth: 139–1,870 m (456–6,134 ft) (min.: Morera *et al.* 2019; max.: Robertson *et al.* 2017).

Nezumia kensmithi Wilson, 2001. **Blunt-nosed Grenadier**. To 39.8 cm (15.7 in) TL. Fieberling Guyot (32°28'N, 127°47'W). Depth: At 555 m (1,821 ft). Probably has also been taken at other seamounts in the same region. All in Wilson (2001).

Nezumia liolepis (Gilbert, 1890). **Smooth Grenadier**. To 35.7 cm (14.1 in) TL (Cruz-Acevedo and Aguirre-Villaseñor 2020). Southern Washington (47°49'N, 125°25'W) (NWFSC-FRAM) to Panama (Robertson *et al.* 2017), including Gulf of California (Iwamoto in Cohen *et al.* 1990). Benthopelagic; depth: 153–1,655 m (502–5,430 ft) (min.: Robertson *et al.* 2017; max.: Iwamoto in Cohen *et al.* 1990).

Nezumia stelgidolepis (Gilbert, 1890). **California Grenadier**. To at least 50 cm (19.7 in) TL (Cross 1987). Vancouver Island, British Columbia to northern Chile (26°S) (Kong and Meléndez 1991). Benthopelagic; depth: 116–1,418 m (380–4,651 ft) (min.: Robertson *et al.* 2017; max.: Cruz-Acevedo and Aguirre-Villaseñor 2020).

Pseudonezumia occidentalis (Iwamoto, 1979). 44.4 cm (17.5 in) TL (Stein 1985). Two records: off Cape Mendocino, northern California (Stein 1985); Peru (Iwamoto 1979). Depth: about 4,300–4,334 m (1,410–1,429 ft) (min.: Oregon State Ichthyology Collection 14,496; max.: Iwamoto 1979). Formerly *Echinomacrurus occidentalis* Iwamoto, 1979 and *Paracetonurus occidentalis* (Iwamoto, 1979).

Family Moridae—Codlings, Deepsea Cods, or Moras

Antimora microlepis Bean, 1890. **Pacific Flatnose** or Small-scaled Blue Hake. To 84 cm (33.1 in) TL (Korostelev *et al.* 2020). Southern Japan (not in Sea of Japan) to Sea of Okhotsk, to Bering Sea and Gulf of Alaska, to Gulf of California (Allen and Smith 1988, Cohen in Cohen *et al.* 1990). Benthopelagic over continental slope; depth: about 61–3,408 m (200–11,178 ft) (min.: NWFSC-FRAM; max.: Kamikawa 2017). For some time, *A. microlepis* was classified as a junior synonym of *Antimora rostrata* (Günther, 1878), and reports of much larger *A. microlepis* or specimens reported from the South Pacific likely pertain to *A. rostrata*. A report of an *Antimora rostrata* capture off the Pacific Coast of central America (Morera *et al.* 2019) may refer to *A. microlepis*.

Halargyreus johnsonii Günther, 1862. Dainty Mora, Slender Cod, or **Slender Codling**. To 56 cm (22 in) TL (Cohen in Cohen *et al.* 1990). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Japan (Okamura in Masuda *et al.* 1984), and Sea of Okhotsk to north-western Bering Sea (Mecklenburg *et al.* 2002), eastern Bering Sea, and Gulf of Alaska (Hoff 2002) to central California (35°09'N, 121°46'W) (Logan *et al.* 1993); Chile (Kong and Meléndez 1991). Mesopelagic, bathypelagic, and benthopelagic; depth: 450–3,111 m (1,476–10,204 ft) (min.: Orlov and Tokranov 2019; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Laemonema longipes Schmidt, 1938. **Longfin Codling** or Threadfin Hakeling. To about 70 cm (27.6 in) TL (Savin 1993). Southern Japan (not in Sea of Japan), to Sea of Okhotsk, Kuril Islands (Savin 1993), and south-eastern Kamchatka (Orlov 1998) to northern Bering Sea and southeast along continental slope to Aleutian Islands (Mecklenburg *et al.* 2002). Possibly reaching the Gulf of Alaska on feeding migrations (Savin 1993), but records documenting presence there are lacking (Mecklenburg *et al.* 2002). Benthopelagic; depth: 80–2,025 m (262–6,644 ft) (min.: Orlov and Tokranov 2019; max.: Dudnik and Dolganov 1992)**.**

Laemonema verecundum (Jordan & Cramer, 1897). **Bighead Mora**. To 11 cm (4.3 in) TL (Paulin in Fischer *et al.* 1995). Southern Baja California (24°19.8'N) (Cruz-Acevedo *et al.* 2018) to about 15°N and Isla Clarión, Islas Revillagigedo, Mexico (Ambrose in Moser 1996). Mesopelagic; depth: 137 m to perhaps 2,287 m (450–7,501 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Recently as *Microlepedium verecunda*.

****Lepidion schmidti*** Svetovidov, 1936. **Northern Gray Hakeling**. To 1.1 m (43.3 in) SL (Roberts *et al.* 2015). Atlantic and Pacific Oceans and possibly southern Indian Ocean (Fricke *et al.* 2020); Emperor Seamounts, Pacific off southern Japan, and Sea of Okhotsk (Nakaya *et al.* 1980), to western Bering Sea off Commander Islands (Sheiko and Tranbenkova 1998). Benthopelagic; depth: 315–2,404 m (1,033–7,885 ft) (min.: Dudnik

and Dolganov 1992; max.: Porteiro *et al.* 2017). Two individuals of this genus, observed with an ROV off Adak Island, Aleutian Islands, may be *L. schmidti* or, perhaps, *Lepidion inosimae* (Günther, 1887) (Alcorn and Stone 2012), a western and central Pacific Ocean species known from as far northward as Kamchatka Peninsula (Fricke *et al.* 2020).

Physiculus nematopus Gilbert, 1890. **Charcoal Codling**. To 29 cm (11.4 in) TL (McCosker *et al.* 1997). Monterey Bay, central California (Burton and Lea 2019) to Paita, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2015), and Islas Galápagos (McCosker *et al.* 1997). Depth: surface to 1,270 m (4,167 ft) (min.: Paulin 1989; max.: Robertson and Allen 2002).

Physiculus rastrelliger Gilbert, 1890. **Hundred-fathom Codling**. To 25.8 cm (10.2 in) TL (Rodríguez-Romero *et al.* 2008). Oregon (45°30'N, 124°48'W) (NWFSC-FRAM) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Gallo *et al.* 2020a). Depth: 21–1,369 m (68–4,490 ft) (min.: Jackie Patay, pers. comm. to M.L.: max.: Morera *et al.* 2019).

Physiculus talarae Hildebrand & Barton, 1949. **Peruvian Codling**. To 25 cm (9.8 in) TL (Paulin in Fischer *et al.* 1995). Central Baja California to Peru, not in Gulf of California (Robertson and Allen 2002). Depth: surface to 330 m (1,083 ft) (min.: Robertson and Allen 2002; max.: Zeballos Flor *et al.* 1998).

Family Melanonidae—Pelagic Cods

Melanonus zugmayeri Norman, 1930. **Arrowtail**, Black Pelagic Cod, or Coalfish. To 29.4 cm (11.6 in) TL (Henriques *et al.* 2001). Circumglobal; western Pacific Ocean north to Honshu, Japan (Nakabo in Nakabo 2002), and Russian north-western Pacific (Orlov and Tokranov 2019); near Alaska off Dixon Entrance, northern British Columbia (Love *et al.* 2005), southern British Columbia (Peden 1975), and northern Washington to southern California (NWFSC-FRAM) to northern Chile (21°05'S, 71°07'W) (Meléndez and Sielfeld 1991). Oceanic, mainly mesopelagic and bathypelagic; depth: 0–3,000 m (9,840 ft) (min: Moore *et al.* 2003; max.: Mundy 2005).

Family Merlucciidae—Merlucciid Hakes

The common name for this family is correctly spelled with two *i*s; often seen with one *i*.

Merluccius productus (Ayres, 1855). **Pacific Hake**. To 91.4 cm (36 in) TL (Miller and Lea 1972). Attu Island, Aleutian Islands (one record), eastern Bering Sea (54°43'N, 165°42'W) (Maslenikov *et al.* 2013) and Gulf of Alaska (Mecklenburg *et al.* 2002) to Bahía Magdalena, southern Baja California and Gulf of California (Miller and Lea 1972) to Colombia (Cohen in Cohen *et al.* 1990), and Islas Revillagigedo (Robertson and Allen 2008). Reported from continental slope of Bering Sea (Fedorov 1973), but vouchers are needed to confirm continued existence there (Mecklenburg *et al.* 2002). Oceanic and neritic pelagic (Inada in Cohen *et al.* 1990); depth: 12–1,437 m (39–4,713 ft) (min.: M.L., unpubl. data; max.: DFO). We also note that there is a much deeper record of 1,857 m (6,091 ft) (DFO) from a bottom trawl haul. Given that this species may occur well off the bottom, this latter catch may have occurred as the trawl was deployed or retrieved. We consider *Merluccius angustimanus* Garman, 1899 to be a synonym (Silva-Segundo *et al.* 2011).

Family Gadidae—Cods

****Arctogadus glacialis*** (Peters, 1874), often dated 1872 (Fricke *et al.* 2020). Arctic Cod or **Polar Cod**. To 60 cm (23.6 in) TL (Coad 1995). Circumpolar as far northward as 81°41'N (Mecklenburg *et al.* 2011); two records off Alaska in Beaufort Sea, but north of US territorial waters (Mecklenburg *et al.* 2002); a carcass washed up on the Chukchi coast near Wainwright, Alaska (Mecklenburg *et al.* 2014). Pelagic and probably also benthic (Jordan *et al.* 2003), typically far offshore beyond continental shelf under drifting ice and in ice cracks (Cohen in Cohen *et al.* 1990), also in river mouths (Jordan *et al.* 2003); depth: 0–930 m (3,051 ft (min.: Renaud in

Coad and Reist; max.: Jordan *et al.* 2003). Molecular studies showed no genetic difference between *A. glacialis* and *Arctogadus borisovi* Dryagin, 1932 (Møller *et al.* 2002), the so-called Toothed Cod. Jordan *et al.* (2003) examined morphology of both forms and revised the genus, classifying *A. borisovi* as a junior synonym of *A. glacialis*.

Boreogadus saida (Lepechin, 1774). **Arctic Cod** or Polar Cod. To 46 cm (18.1 in) TL (Wienerroither *et al.* 2011), usually less than 25 cm (9.8 in) (Cohen in Cohen *et al.* 1990). The largest we know of from our area is a specimen from the Chukchi Sea measuring 30 cm (12 in) TL (Alverson and Wilimovsky 1966). Circumpolar in Arctic (Cohen in Cohen *et al.* 1990); Arctic Siberia to Cape Olyutorskiy, western Bering Sea; Beaufort Sea (Frost and Lowry 1981) to Bristol Bay, south-eastern Bering Sea (Allen and Smith 1988). Taken as far north as 88°26'N, 126°26'E (Mecklenburg *et al.* 2007). Brackish lagoons, river mouths (Morrow 1980), and ocean; depth: surface to at least 1,390 m (4,559 ft) (min.: Renaud in Coad and Reist 2018; max.: Mecklenburg *et al.* 2011).

Eleginus gracilis (Tilesius, 1810). **Saffron Cod**. To 55 cm (21.7 in) TL (Cohen *et al.* 1990) and possibly to 63 cm (24.8 in) TL (Mecklenburg *et al.* 2016). North Pacific Ocean and adjacent Arctic; Yellow Sea to East Siberian Sea and east to Simpson Strait, Nunavut, Canada (Renaud in Coad and Reist 2018); Beaufort, Chukchi, and Bering Seas, and Gulf of Alaska to Sitka, south-eastern Alaska (Mecklenburg *et al.* 2002). Marine, brackish, and fresh waters (Dyldin and Orlov 2017); depth: to continental shelf edge at 200 m (656 ft) (Cohen in Cohen *et al.* 1990) or 360 m (1,181 ft) (Kim 2004). Based on genetic data from fish from the Chukchi Sea and Gulf of Alaska this may be a species complex comprised of two species (Sme *et al.* 2018). "Additional taxonomic study is needed to precisely delimit ranges" (Mecklenburg *et al.* 2016). Molecular evidence indicated to investigators that *Eleginus* should be synonymized with *Microgadus* (Carr *et al.* 1999); additional studies are needed for confirmation.

Gadus chalcogrammus Pallas, 1814. Pacific Pollock or **Walleye Pollock**. To 95 cm (37.4 in) TL (Mecklenberg *et al.* 2016). Pacific and Atlantic Oceans (Mecklenburg *et al.* 2011); western Pacific Ocean north to Seas of Okhotsk and Japan (Okamura in Masuda *et al.* 1984) to off Cape Halkett, Beaufort Sea (Logerwell and Rand 2008), Bering Sea, and Gulf of Alaska (Allen and Smith 1988) to Lopez Point, central California (Burton and Lea 2019). Apparently, a separate population off Norway (Mecklenburg *et al.* 2014). Byrkjedal and Langhelle (2020) speculated that a specimen captured north of Spitsbergen may have been derived from the Pacific Ocean population. Generally demersal, also taken pelagically near surface and in midwater (Mecklenburg *et al.* 2002); depth: intertidal to 1,280 m (4,198 ft) (min.: Miller *et al.* 1980; max: Orlov and Tokranov 2019). Recently as *Theragra chalcogramma*. *Theragra finnmarchica* Koefoed, 1956 is a synonym.

Gadus macrocephalus Tilesius, 1810. Gray Cod, **Pacific Cod**, or True Cod. To 120 cm (47.2 in) TL (Morrow 1980). Arctic-boreal waters of Pacific and Atlantic Oceans (Atlantic range now includes *Gadus ogac* Richardson, 1837) (Mecklenburg *et al.* 2011). Chukchi and Beaufort Seas (across Canada to west Greenland to Gulf of Saint Lawrence) (Mecklenburg *et al.* 2011); Yellow Sea off Manchuria, China to Bering Sea, Aleutian Islands, and Gulf of Alaska (Mecklenburg *et al.* 2002) to Carlsbad (33°08'N, 117°35'W), southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Perhaps also in White Sea (Mecklenburg and Steinke 2015). Benthic, also pelagic over deep water; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal (Miller *et al.* 1980), near surface to 1,280 m (4,198 ft) (Orlov and Tokranov 2019). We consider *Gadus ogac* Richardson, 1836 to be a synonym (Mecklenburg *et al.* 2018), but considered a separate species in Fricke *et al.* (2020).

Microgadus proximus (Girard, 1854). **Pacific Tomcod** or Tomcod. To 40 cm (15.7 in) TL (DFO). South-eastern Bering Sea, and eastern Aleutian Islands (Mecklenburg *et al.* 2002) to Point Sal, central California (Miller and Lea 1972). Demersal, sometimes enters brackish waters; depth: near surface (young fish) (Eschmeyer and Herald 1983), intertidal to 310 m (1,050 ft) (min.: Miller *et al.* 1980; max.: NWFSC-FRAM).

Family Lotidae—Burbots

Lota lota (Linnaeus, 1758). **Burbot.** To 152 cm (59.8 in) TL (Mecklenburg *et al.* 2002). Circumpolar; to southeastern Alaska (Mecklenburg *et al.* 2002). Mostly freshwater, but known to occur in brackish waters well to sea of various river mouths during Canadian summer (Renaud in Coad and Reist 2018). Depth: 0.3–300 m (1–984 ft) (Renaud in Coad and Reist 2018).

Order Ophidiiformes

Family Carapidae—Pearlfishes

Echiodon exsilium Rosenblatt, 1961. **Nocturnal Pearlfish**. To 14.2 cm (5.6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Tropical eastern Pacific Ocean (Markle in Nielsen *et al.* 1999); southern Baja California to Colombia (Beltrán-León and Rios Herrera 2000), including Gulf of California (Robertson and Allen 2015) and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 5–161 m (17–528 ft) (min.: Robertson and Allen 2002; max.: Castellanos-Galindo *et al.* 2006a).

Unidentified pearlfish. Jordan (1921) noted that a pearlfish identified as *Fierasfer dubius* Putnam, 1874, was collected "150 miles southwest of Point Loma," southern California, placing the collection off northern Baja California. *Fierasfer dubius*, now *Carapus dubius* (Putnam, 1874), is known from the Pacific coast of southern Baja California (23°33.6'N, 110°21.5'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Jordan described the specimen as "encrusted in mother of pearl" (as occasionally happens to the commensal pearlfishes), which would have made identification to species problematic.

Family Ophidiidae—Cusk-eels

Acanthonus armatus Günther, 1878. **Bony-eared Assfish**. To at least 37.5 cm (14.8 cm) SL (Nielsen *et al.* 1999). Circumglobal; western Pacific Ocean north to central Japan (Nakabo in Nakabo 2002); near Triangle Island (50°42'N, 129°23'W), British Columbia (Hanke *et al.* 2015); Gulf of Panama (Froese and Pauly 2019; note that we were unable to verify this record). Depth: 1,171–4,415 m (3,841–14,481 ft) (min. Mincarone *et al.* 2008; max.: Nielsen *et al.* 1999).

Bassozetus levistomatus Machida, 1989. 80.5 cm (31.7 in) SL. Circumglobal; western Pacific Ocean north to Izu-Ogasawara Trench (Nakabo in Nakabo 2002); central California (34°40'N, 125°05'W). Depth: 3,965–5,200 m (13,005–17,056 ft). All in Nielsen and Merrett (2000).

Bassozetus nasus Barman, 1899. To 46.5 cm (19.0 in) SL (Nielsen and Merrett 2000). Central California (34°50'N, 123°00'W) to Central America, and to near Hawai'i (Priede *et al.* 2019). Depth: 2,068–5,000 m (6,783–16,400 ft) (min.: Nielsen and Merrett 2000; max.: Priede *et al.* 2019).

Bassozetus zenkevitchi Rass, 1955. To 30.9 cm (12.2 in) TL (Hanke *et al.* 2015). Pacific coast of Honshu, Japan (Machida and Tachibana 1986), to south-eastern Kamchatka (Sheiko and Fedorov 2000); two records from south-eastern Bering Sea, Alaska at 56°N, 169°05'W (Orr *et al.* 2005) and 56°01'N, 168°55'W (Hoff 2013), to southwest of Hesquiat Peninsula (49°N, 127°18'W), Vancouver Island (Hanke *et al.* 2015). Depth: 200 to perhaps 2,620 m (656–8,954 ft) (min.: Sheiko and Fedorov 2000; max.: Machida and Tachibana 1986). A maximum depth of 6,930 m (22,730 ft) (Nielsen and Merrett 2000) is considered unlikely [see explanation in Fujii *et al.* 2010].

Brotula clarkae Hubbs, 1944. Clark's Brotula, **Pacific Bearded Brotula**, Pinkbeard Cusk-eel, or Redbearded Cusk-eel. To 130 cm (51.2 in) TL (Herrón *et al.* 2018). Palos Verdes, southern California (Lea *et al.* 2009) to Paita, Peru (Chirichigno 1974), including Gulf of California (Robertson and Allen 2002). Depth: 1–645 m (3–2,116 ft) (Robertson and Allen 2002).

Brotula ordwayi Hildebrand & Barton, 1949. **Fore-spotted Brotula**. 75 cm (29.5 in) (Robertson and Allen 2008). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), southeast Gulf of California to Peru, Islas Galápagos, and Islas Revillagigedo (Robertson and Allen 2008). Depth: 0–91 m (300 ft) (min.: Robertson and Allen 2008; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Brotulataenia nielseni Cohen, 1974. To 31.2 cm (12.3 in) SL (Machida *et al.* 1997). Indo-Pacific; western Pacific Ocean north to Miyagi Prefecture, Japan (Ohashi *et al.* 2012); northern Baja California (32°02'N, 117°48'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to south of equator (14°46'S, 93°38'W) (Cohen 1974). Pelagic and perhaps benthopelagic (Nielsen and Cohen in Nielsen *et al.* 1999); depth: taken in nets fished between surface and 300 m (984 ft) to 1,200 m (3,936 ft) (Cohen 1974). A record of 940 m (3,083 ft) (Personal communication: Scripps Institution of

Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Cherublemma emmelas (Gilbert, 1890). **Black Brotula**. To 32 cm (12.6 in) TL (Morales-Azpeitia *et al.* 2018). West of Vancouver Island, British Columbia (49°40'N, 127°46'W) (Hanke *et al.* 2015), southern Baja California (27°09'N) (Cruz-Acevedo *et al.* 2018) to northern Chile (20°S) (Sielfeld and Vargas 1996), including Gulf of California (Lea in Fischer *et al.* 1995). Postflexion larvae (about 3.0 cm, 1.2 in SL) captured off central (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Adults on bottom, juveniles pelagic; depth: 70–1,401 m (230–4,595 ft) (min.: Sielfeld and Vargas 1996; max.: Morera *et al.* 2019).

Chilara taylori (Girard, 1858). **Spotted Cusk-eel**. To 45.2 cm (17.8 in) TL (Rodríguez-Romero *et al.* 2008). Bowen Island (49°23'N, 123°24'W), British Columbia (Hanke *et al.* 2015) to 23°25'N, 110°14'W, southern Baja California (John Snow, pers. comm. to M.L.), into Gulf of California, and off Ecuador (Lea and Béarez 1999). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 1,128 m (3,700 ft) (min.: Love *et al.* 2005; max.: NWFSC-FRAM).

Dicrolene filamentosa Garman, 1899. **Threadfin Cusk-eel**. To 58 cm (22.8 in) SL (Kamikawa 2017). Oregon (45°54'N, 124°55'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); southern Mexico (Nakaya *et al.* 2009) to Huacho, Peru (Chirichigno and Vélez 1998). Depth: 137–1,867 m (449–6,114 ft) (min. NWFSC-FRAM; max.: Kamikawa 2017).

Holcomycteronus digittatus Garman, 1899. To at least 35 cm (13.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Southern Baja California (24°24.3'N, 113°16'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Colombia (Personal communication: Florida Museum of Natural History Fish Collection, Gainesville, Florida). Depth: 1,570–4,080 m (5,150–13.3823 ft) (Nielsen *et al.* 1999).

Holcomycteronus profundissimus (Roule, 1913). To 30 cm (11.8 in) TL (Nielsen in Quéro *et al.* 1990). Circumglobal (Nielsen and Cohen in Nielsen *et al.* 1999) or possibly circumglobal (Fricke *et al.* 2020); Oregon (Matarese *et al.* 1989). Depth: 5,180–7,160 m (16,990–23,485 ft) (min.: Pearcy *et al.* 1982; max.: Nielsen and Cohen in Nielsen *et al.* 1999).

Lamprogrammus niger Alcock, 1891. **Paperbone Cusk-eel**. To 61 cm (24 in) TL (Nielsen in Quéro *et al.* 1990). Circumglobal (Nielsen and Cohen in Nielsen *et al.* 1999) or possibly circumglobal (Fricke *et al.* 2020); Washington (47°12'N) to northern Peru (Nakaya *et al.* 2009); Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 165–2,670 m (541–8,758 ft) (min.: Robertson *et al.* 2017; max.: Porteiro *et al.* 2017).

?*Lepophidium hubbsi* Robins and Lea, 1978. **Panamic Cusk-eel.** 21.7 cm (8.5 in) SL. Costa Rica to Colombia. 73–209 m (239–686 ft). All in Robins *et al.* (2012). Listed as far northward as northern California in Fricke *et al.* (2020), but without documentation.

Lepophidium microlepis (Gilbert, 1890). **Finescale Cusk-eel** or Silver Cusk-eel. To 50.6 cm (19.9 in) TL (Rodríguez-Romero *et al.* 2008). Islas de Cedros, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Gulf of California (Lea in Fischer *et al.* 1995). Depth: 16–350 m (53–1,148 ft) (min.: Nakaya *et al.* 2009; max.: Jiménez Prado and Béarez 2004). The "*Lepophidium microlepis*" of Chirichigno and Vélez (1998), from Paita, Peru, refers to *Lepodophidium inca* Robins & Lea, 1978.

Lepophidium negropinna Hildebrand & Barton, 1949. Speckled Cusk-eel or **Specklefin Cusk-eel**. To 54 cm (21.2 in) TL (Robertson and Allen 2015). Bahía de Sebastian Vizcaino (28°34.5'N, 114°24'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California (Ambrose in Moser 1996) to Islas Lobos de Afuera, Peru (Chirichigno 1974). Depth: 10–390 m (33–1,280 ft) (min.: Castellanos-Galindo *et al.* 2006a; max.: Robins in Nielsen *et al.* 1999).

Lepophidium pardale (Gilbert, 1890). **Leopard Cusk-eel**. To 50 cm (19.7 in) TL (Jiménez Prado and Béarez 2004). Just north of Punta Abreojos, southern Baja California and southward along the outer Baja California coast (Rodríguez-Romero *et al.* 2008) and Gulf of California (Robertson and Allen 2002) to Isla Lobos de Tierra, Peru (Chirichigno and Veléz 1998). Depth: 6–250 m (20–820 ft) (min.: Robins in Nielsen *et al.* 1999; max.: Jiménez Prado and Béarez 2004).

Lepophidium prorates (Jordan & Bollman, 1890). **Prowspine Cusk-eel** or Spinesnout Brotula. To 35.5 cm (14 in) TL (Rodríguez-Romero *et al.* 2008). Isla de Cedros, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); Gulf of California (Robins *et al.* 2012) to Paita, Peru (Chirichigno 1974), including Gulf of California (Allen and Robertson 1994). Depth: 3–367 m (10–1,204 ft) (min.: Robins *et al.* 2012; max.: Zeballos Flor *et al.* 1998).

Lepophidium stigmatistium (Gilbert, 1890). Blotchfin Cusk-eel or **Mexican Cusk-eel**. To 28 cm (11 in) TL (Rodríguez-Romero *et al.* 2008). Isla de Cedros, central Baja California (Ambrose in Moser 1996); along southern Baja California coast (25°35.8'N, 112°18.5'W) (Robins *et al.* 2012), and Gulf of California (Lea in Fischer *et al.* 1995). Benthic; depth: 20–238 m (66–781 ft) (Ambrose in Moser 1996).

***Luciobrotula* sp.** Observed in deep water off central California (Lundsten *et al.* 2009).

Neobythites stelliferoides Gilbert, 1890. **Thread Brotula**. To a minimum of 17.8 cm (7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Off Punta Marquez (23°58.9'N, 111°01.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Gulf of California to northern Peru (Nielsen *et al.* 1999). Depth: 90–833 m (295–2,732 ft) (min.: Nielsen *et al.* 1999; max.: Morera *et al.* 2019).

Ophidion galeoides (Gilbert, 1890). Shark Brotula, **Spotfin Cusk-eel**, or Striped Cusk-eel. To 21.5 cm (8.5 in) TL (Lea in Fischer *et al.* 1995) or 44.3 cm (17.4 in) TL (Rodríguez-Romero *et al.* 2008). Bahía de Sebastian Vizcaino, central Baja California (Lea 1980) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen and Robertson 1994). Benthic; depth: from less than 1 m (3 ft) to 75 m (246 ft) (min.: Lea 1980; max.: Robins in Nielsen *et al.* 1999).

****Ophidion imitator*** Lea, 1997. **Mimic Cusk-eel**. To 20 cm (7.9 in) TL (Robertson and Allen 2002). Off Cabo San Lucas, southern Baja California and Mazatlán to Gulf of Panama (Lea 1997). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 18–402 m (59–1,319 ft) (min.: Lea 1997; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). All adults have been taken in waters greater than 40 m (132 ft) deep (Lea 1980).

Ophidion iris Breder, 1936. **Brighteye Cusk-eel** or Rainbow Cusk-eel. To 25 cm (9.8 in) TL (Lea in Fischer *et al.* 1995). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), Gulf of California to about Puerto Vallarta (Robertson and Allen 2015). Benthic; depth: 2–86 m (7–279 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robins in Nielsen *et al.* 1999).

Ophidion scrippsae (Hubbs, 1916). **Basketweave Cusk-eel**. To nearly 28 cm (11 in) TL (Eschmeyer and Herald 1983). Point Arguello, central California (Miller and Lea 1972) to Bahía Magdalena (24°35.9'N, 112°02.6'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Records from north of Point Arguello are without documentation (Robert Lea, pers. comm. to M.L.), and a Gulf of California record is in error (Robins in Nielsen *et al.* 1999). Benthic; depth: 2–1,098 m (5–3,601 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: NWFSC-FRAM). A record from Santa Cruz County coast (37°38'N, 120°39.2'W) (A specimen in the University of Washington, Burke Museum of Natural History and Culture Fish Collection is in error (Burton and Lea 2019)).

Otophidium indefatigabile Jordan & Bollman, 1890. Bighead Cusk-eel or **Panamic Cusk-eel**. To 11.7 cm (4.6 in) TL (Lea in Fischer *et al.* 1995). Punta Marquez (24°05.7'N, 111°05.7'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Gulf of California (Lea in Fischer *et al.* 1995) to Ecuador (Béarez 1996); Islas Galápagos (Lea in Fischer *et al.* 1995). Benthic; depth: 5–1,401 m (17–4,595 ft) (min.: Robertson and Allen 2002; max.: Morera *et al.* 2019).

****Petrotyx hopkinsi*** Heller & Snodgrass, 1903. **Velvetnose Brotula**. 22.6 cm (8.9 in) TL (Robertson and Allen 2015). Southern tip of Baja California, Gulf of California to Peru, Islas Galápagos and some other offshore islands (Robertson and Allen 2008). Depth: 3 to at least 18 m (10–60 ft) (min.: Robertson and Allen 2008; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Porogadus promelas Gilbert, 1891. 31.9 cm TL (12.6 in) TL. Queen Charlotte Sound, British Columbia (51°26'N, 130°41'W); Gulf of California. Depth: 1,838–1,967 m (6,029–6,452 ft). All in Hanke *et al.* (2015). Perhaps a junior synonym of *Porogadus catena* (Goode & Bean, 1885) (Hanke *et al.* 2015).

Spectrunculus crassus (Vaillant, 1888). To about 60 cm (23.6 in) SL (Kamikawa 2017). Atlantic and eastern Pacific Oceans; 170 km west of Juan de Fuca Strait (48°16'N, 127°W) (Hanke *et al.* 2015) to Peru (8°23'N, 80°25'W) (Uiblein *et al.* 2008). Depth: 1,772–3,677 m (5,812–12,061 ft) (Uiblein *et al.* 2008).

Spectrunculus grandis (Günther, 1877). **Giant Cusk-eel**. To 138 cm (54.3 in) TL (Abe and Hiramoto 1984)**.** Circumglobal (Nielsen and Cohen in Nielsen *et al.* 1999); western Pacific Ocean north to Japan (Machida *et al.* 1987), and Russian north-western Pacific (Orlov and Tokranov 2019); northern Gulf of Alaska to central California (34°50'N, 123°00'W) (Priede *et al.* 2019), and to northern Chile (23°29'S) (Kong *et al.* 1988), including Gulf of California. Benthopelagic at bathyal and abyssal depths (Nielsen and Cohen in Nielsen *et al.* 1999); depth: voucher specimens from depths of about 800–4,332 m (2,625–14,209 ft) (min.: Nielsen and Hureau 1980; max.: Linley *et al.* 2017), and photographs of individuals just above the bottom as deep as 6,273 m (20,580 ft) (Machida *et al.* 1987).

Family Bythitidae—Livebearing Brotulas or Viviparous Brotulas

Barathronus pacificus Nielson & Eagle, 1974. To 12.8 cm (5 in) SL (Nielsen and Eagle 1974). North and southeast Atlantic, southwest and northeast Pacific Ocean (Fricke *et al.* 2020); between Australia and New Zealand (Okiyama and Kato 1997); Oregon to northern California (Matarese *et al.* 1989). Benthopelagic (Nielsen and Cohen in Nielsen *et al.* 1999); depth: 3,334–3,860 m (10,938–12,664 ft) (min.: Nielsen and Eagle 1974; max.: Pearcy *et al.* 1982). We follow Møller *et al.* (2016) and place this species (previously in the family Aphyonidae) in the Bythitidae.

Brosmophycis marginata (Ayres, 1854). **Red Brotula**. To 46 cm (18 in) TL (Eschmeyer and Herald 1983), reported to 50.8 cm (20 in) TL (Miller and Lea 1976). Petersburg, south-eastern Alaska (Schultz and Delacy 1936; documented in the University of Washington, Burke Museum of Natural History and Culture Fish Collection (Mecklenburg *et al.* 2002)) to Ensenada, northern Baja California (Miller and Lea 1972). However, larvae have been taken along much of the northern and central Baja California coast south to Punta Eugenia (Moser *et al.* 1993). Benthic; depth: 3–256 m (10–840 ft) (Miller and Lea 1972).

Cataetyx rubrirostris Gilbert, 1890. **Rubynose Brotula**. To 15.7 cm (6.2 in) TL (Kong *et al.* 1988). If the South American form is not this species, the maximum length is 13 cm (5.2 in) TL (Eschmeyer and Herald 1983). Queen Charlotte Sound, British Columbia (51°25'N, 130°46'W) (Hanke *et al.* 2015) to central Baja California (28°48'N) (Cruz-Acevedo *et al.* 2018) and Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Punta Coles, Peru (Chirichigno and Vélez 1998) to central Chile (Sielfeld and Vargas 1996). Specimens from South America may be this or an undescribed species (Nielsen and Cohen in Nielsen *et al.* 1999). Juveniles mesopelagic, larger individuals benthic at 212–3,824 m (695–12,543 ft) (min. Keller *et al.* 2006b; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Cataetyx simus Garman, 1899. 63.2 cm (24.8 in) TL (Froese and Pauly 2019; note that we were unable to verify this record). San Nicolas Island, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and as far south as Chile (35°32'S, 73°07'W) (Kong *et al.* 1988). 690–2,690 m (2,263–8,823 ft) (min.: Kong *et al.* 1988; max.: Personal communication: The Database of the Zoological Collections, Harvard University, Cambridge, Massachusetts). An apparently abnormally shallow depth range of 19–33 m (62–108 ft) is reported in Castellanos-Galindo *et al.* (2006a).

Grammonus diagrammus (Heller & Snodgrass, 1903). **Purple Brotula**. To 20.3 cm (8 in) TL (Miller and Lea 1972). San Clemente Island (Miller and Lea 1972) and Santa Catalina Island (Richards and Engle 2001) to Ecuador (Béarez 1996), including Gulf of California, Islas Galápagos (Miller and Lea 1972), and Islas Revillagigedo (Robertson and Allen 2002). Depth: 3–81 m (10–266 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max. Castellanos-Galindo *et al.* 2006a).

Sciadonus pedicellaris Garman, 1899. To 12.6 cm (5 in) TL (Nielsen 2018). North Atlantic and south-western and eastern Pacific Oceans (Fricke *et al.* 2020); Oregon (Matarese *et al.* 1989) to Chile (Pequeño 1989). Benthopelagic (Nielsen and Cohen in Nielsen *et al.* 1999); depth: 1,169–5,440 m (3,834–17,843 ft) (Nielsen 2018). We follow Møller *et al.* (2016) and place this species (previously in the family Aphyonidae) in the Bythitidae.

Thalassobathia pelagica Cohen, 1963. **Pelagic Brotula**. To 26 cm (10.2 in) SL. North Atlantic Ocean and Gulf of Guinea (Fricke *et al.* 2020); one possible record from Commander Basin, western Bering Sea. Mesopelagic; depth: about 500–1,000 m (1,640–3,281 ft). The Bering Sea specimen, which is the only one reported from the Pacific, was reported by Balanov and Fedorov (1996), who cautioned that the identification is disputable. If not *T. pelagica,* it may be an undescribed species. All in Mecklenburg *et al.* (2002).

Family Dinematichthyidae

We follow Møller *et al.* (2016) and place these species (previously in the family Bythitidae) in the Dinematichthyidae

Ogilbia nigromarginata Møller, Schwarzhans, & Nielson, 2005. **Black-edge Brotula**. 8.6 cm (3.4 in) TL. Tip of Baja California and Gulf of California. Depth: 0–33 m (108 ft). All in Robertson and Allen (2008).

Ogilbia nudiceps Møller, Schwarzhans, & Nielson, 2005. **Naked Brotula**. 8.3 cm (3.3 in) TL. Tip of Baja California and Gulf of California. Depth: 0–30 m (98 ft). All in Robertson and Allen (2008).

Ogilbia ventralis (Gill, 1863). **Gulf Brotula** or Gulf Cusk-eel. To 10 cm (3.9 in) TL (Grove and Lavenberg 1997). Bahía Magdalena, southern Baja California (Thomson *et al.* 1979) to Panama, including Gulf of California (Allen and Robertson 1994) and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 10 m (33 ft) (min.: Grove and Lavenberg 1997; max.: Robertson and Allen 2008).

***Ogilbia* spp.** Numerous undescribed species of *Ogilbia* exist (Nielsen and Cohen in Nielsen *et al.* 1999), and at least one ranges as far north in eastern North Pacific as Bahía de Todos Santos, northern Baja California (Thomson *et al.* 2000).

Order Batrachoidiformes

Family Batrachoididae—Toadfishes

Porichthys analis Hubbs & Schultz, 1939. **Darkedge Midshipman**. To 32.7 cm (12.9 in) TL (Rodríguez-Romero *et al.* 2008). Bahía Magdalena, southern Baja California (Watson in Moser 1996) to Bahía de Tenacatita, southern Mexico (Walker and Rosenblatt 1988) and Peru (Nakaya *et al.* 2009), including Gulf of California (Walker and Rosenblatt 1988). Depth: intertidal to 224 m (735 ft) (Walker and Rosenblatt 1988).

Porichthys ephippiatus Walker & Rosenblatt, 1988. **Saddle Midshipman**. To 13.5 cm (5.3 in) TL (Robertson and Allen 2002). Cabo San Lucas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), slightly into Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Pacific coast of Mexico to Guatemala (Robertson and Allen 2002). Depth: 15–242 m (50–794 ft) (Walker and Rosenblatt 1988).

Porichthys margaritatus (Richardson, 1844). Blotched Midshipman, Bronze Midshipman, Daisy Midshipman, or **Pearlspot Midshipman**. To 19 cm (7.5 in) TL (Robertson and Allen 2002) or 28.2 cm (11.1 in) TL (Rodríguez-Romero *et al.* 2008). Bahía de Sebastian Vizcaino (about 27°52'N, 114°38'W) (Cabrera Mancilla *et al.* 1988) to Bahía de Sechura, Peru (Chirichigno 1974), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Collette in Fischer *et al.* 1995). Depth: 1–210 m (4–689 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Porichthys mimeticus Walker & Rosenblatt, 1988. **Mimetic Midshipman** or Mimic Midshipman. To 28 cm (11 in) SL (John Snow, pers. comm. to M.L.). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California (Walker and Rosenblatt 1988) to about Puerto Vallarta (Robertson and Allen 2015). Depth: 82–298 m (269–977 ft) (min.: Walker and Rosenblatt 1988; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Porichthys myriaster Hubbs & Schultz, 1939. **Specklefin Midshipman** or Speckled Midshipman. To 51 cm (20 in) TL (Eschmeyer and Herald 1983). Near Point Arguello, California (Walker and Rosenblatt 1988) to at least Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994). Also reported in northern Peru (Chirichigno and Vélez 1998). Depth: intertidal to 126 m (414 ft) (min.: Walker and Rosenblatt 1988; max.: Miller and Lea 1972).

Porichthys notatus Girard, 1854. **Plainfin Midshipman**. To 46 cm (18.1 in) SL (Williams *et al.* 2014). Smith Sound, southern British Columbia (Pietsch and Orr 2019) to southern Baja California (about 24°12'N, 111°21'W) (Cabrera Mancilla *et al.* 1988). Depth: intertidal to 464 m (1,522 ft) (min.: Eschmeyer and Herald 1983; max.: Bradburn *et al.* 2011). Records south of Baja California and into the Gulf of California are misidentifications (Allen and Smith 1988); *P. notatus* is replaced by *Porichthys mimeticus* in the Gulf of California (Walker and Rosenblatt 1988). Although reported from Sitka, south-eastern Alaska, no one has been able to confirm an Alaskan record; see discussion by Mecklenburg *et al.* (2002).

Order Lophiiformes

Family Lophiidae—Goosefishes or Monkfishes

Reviewed by: Theodore Pietsch

Lophiodes caulinaris (Garman, 1899). Pacific Anglerfish, Pacific Goosefish, **Spottedtail Goosefish**, or Whitespotted Goosefish. To 44.5 cm (17.5 in) TL (Moncayo-Estrada *et al.* 2006). Central California (about 37°N, 122°W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Callao, Peru (Chirichigno and Vélez 1998), including Gulf of California (Caruso 1981), and various offshore islands (Robertson and Allen 2002). One record, possibly in error, from Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 15–888 m (49–2,913 ft) (min.: Caruso 1981; max.: Jacobsen Stout *et al.* 2016).

Lophiodes spilurus (Garman, 1899). **Threadfin Goosefish**. To 35.4 cm (13.9 in) TL (Lea *et al.* 1984). Off Monterey Bay, central California (Lea *et al.* 1984) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Fitch and Lavenberg 1968). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 55–850 m (180–2,788 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson *et al.* 2017).

Lophiomus setigerus (Vahl, 1797). **Blackmouth Anglerfish**. To 1 m (39.4 in) SL (Nakabo in Masuda *et al.* 1984). Indo-Pacific; western Pacific Ocean north to Japan (Nakabo in Masuda *et al.* 1984); Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994). Benthic; depth: 7–500 m (23–1,640 ft) (min.: Kharin and Cheblukov 2005; max.: Yamada in Nakabo 2002).

Family Antennariidae—Frogfishes

?*Antennarius commerson* (Latreille, 1804). A single record from California (Personal communication: National Museum of Natural History Fish Collection, Washington, D.C) is doubtful (Pietsch and Arnold 2020).

?*Abantennarius coccineus* (Lesson, 1831). To 9.1 cm (3.6 in) SL. Indo-Pacific; western Pacific Ocean north to Ryukyus Islands; perhaps questionable observation off southern tip of Baja California; Puerto Vallerta, Mexico to Desventuradas Island, Chile. Benthic; depth: surface to 75 m (246 m). All in Pietsch and Arnold (2020).

Abantennarius sanguineus (Gill, 1863). **Sanguine Frogfish** or Bloody Frogfish. To 13 cm (5.1 in) SL (Mejía-Ladino *et al.* 2007). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), lower Gulf of California and southern tip of Baja California (Schneider and Lavenburg in Carpenter and Niem 1995) to Chile (Allen and Robertson 1994), and various offshore islands, including Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 40 m (131 ft) (min.: Weaver 1970; max.: Schneider and Lavenberg in Fischer *et al.* 1995). Previously as *Antennatus sanguineus* (Gill, 1863), named changed by Pietsch and Arnold (2020).

Antennatus strigatus (Gill, 1863). **Bandtail Frogfish**. To 7.8 cm (3.1 in) SL (Theodore Pietsch). A record of 15 cm (5.9 in) SL (Mejía-Ladino *et al.* 2007) is very likely an error. Lower Gulf of California and southern tip of Baja California (Schneider and Lavenberg in Fischer *et al.* 1995) to Ecuador (Béarez 1996), including Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Depth: intertidal to 50 m (164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Mejía-Ladino *et al.* 2007).

Fowlerichthys avalonis (Jordan & Starks, 1907). **Roughjaw Frogfish**. To 53 cm (20.9 in) TL (John Snow, pers. comm. to M.L.). Santa Monica Bay, southern California (Merit McCrea, pers. comm. to M.L.) and Santa Catalina Island, southern California (Miller and Lea 1972), to Iquique, Chile (Sielfeld 2010), including Gulf of California (Watson in Moser 1996), Islas Galápagos (Grove and Lavenberg 1997), and Isla del Cocos (Robertson and Allen 2002). Depth: intertidal to 311 m (1,020 ft) (min.: Eschmeyer and Herald 1983; max.: Mejía-Ladino *et al.* 2007). Previously as *Antennarius avalonis* (Jordan & Starks, 1907), named changed by Arnold and Pietsch (2012).

Family Chaunacidae—Coffinfishes or Sea Toads

Chaunacops coloratus (Garman, 1899). To 19 cm (7.5 in) SL (Caruso 1989). Indo-Pacific; Taney Seamount chain and Davidson Seamount, well off central California and Cocos Ridge, South America (Lundsten *et al.* 2012). Depth: 1,250–3,297 m (4,100–10,814 ft) (Lundsten *et al.* 2012).

Family Ogcocephalidae—Batfishes

Dibranchus spinosus (Garman, 1899). To 14.9 cm (5.5 in) SL (Bradbury 1999). Southern Baja California (23°22.8'N) (Cruz-Acevedo *et al.* 2018); central Gulf of California (Cruz-Acevedo *et al.* 2019a) to southern Peru (Robertson *et al.* 2017). Depth: at least 528–2,286 m (1,732–7,498 ft) (min.: Personal communication: California Academy of Sciences Fish Collection, San Francisco, California; max.: Castellanos-Galindo *et al.* 2006a).

Dibranchus spongiosa (Gilbert, 1890). To 15.6 cm (6.1 in) SL (Cruz-Acevedo *et al.* 2019a). Southern Baja California (26°37.2'N) (Cruz-Acevedo *et al.* 2018) to Gulf of Tehuantepec and Islas Revillagigedo, Mexico (Bradbury 1999). Depth: 479–1,244 m (1,571–4,080 ft) (min.: Cruz-Acevedo *et al.* 2019a; max.: Bradbury 1999).

Zalieutes elater (Jordan & Gilbert, 1882). **Roundel Batfish**. To 16.5 cm (6.5 in) TL (Amezcua Linares 1996). Southern Oregon (Love *et al.* 2005); Point Conception, California (Miller and Lea 1972) to Paita, Peru (Chirichigno 1974), including Gulf of California (Watson in Moser 1996), Isla del Cocos, and Isla Malpelo (Robertson and Allen 2002). Depth: about 10–251 m (33–823 ft) (min.: Aguilar-Palomino 2001: max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Family Caulophrynidae—Fanfins

Caulophryne jordani Goode & Bean, 1896. **Fanfin**. To 16.5 cm (6.5 in) (Pietsch 2009) or to slightly more than 20 cm (8 in) TL (Fitch and Lavenberg 1968). Circumglobal; northern California (40°36'N, 124°50'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to southern California (32°42'N, 118°14'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); Guerrero, Mexico (17°35.5'N, 101°56.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 275–3,000 m (902–9,840 ft) (Kamikawa 2017).

Caulophryne pelagica (Brauer, 1902). To 18.3 cm (7.2 in) SL (Pietsch 2009). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and Russian north-western Pacific (Orlov and Tokranov 2019); Gulf of Alaska, Isla Guadalupe, central Baja California, Panama, and Ecuador (Pietsch 2009). Depth: 500–3,500 m (1,640–11,480 ft) (min.: Nakabo in Nakabo 2002; max.: Robertson *et al.* 2017).

Caulophryne polynema Regan, 1930. To 14.2 cm (5.6 in) SL. Circumglobal; southern California as far north as 33°10'N. Depth: to at least 1,000 m (3,280 ft) and probably deeper. All in Pietsch (1979).

Family Melanocetidae—Blackdevils

Melanocetus johnsonii Günther, 1864. **Blackdevil**. To 15.4 cm (6.1 in) SL (Theodore Pietsch), 18 cm (7.1 in) TL (Pietsch 1986). A record of 64 cm (25.2 in) SL (Kong and Meléndez 1991) is an error. Circumglobal (Pietsch in Smith and Heemstra 1986); western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and Russian North Pacific (Orlov and Tokranov 2019); as far north as off British Columbia (48°41'N, 126°30'W) (Weil *et al.* 2015) and south to northern Chile (31°14'S) (Kong and Meléndez 1991). Depth: about 100–3,603 m (328–11,818 ft) (min.: Bertelsen in Whitehead *et al.* 1986; max.: Porteiro *et al.* 2017). A record of 4,500 m (14,760 ft) (Froese and Pauly 2019) is an error (Theodore Pietsch).

Family Himantolophidae—Footballfishes
Reviewed by: Theodore Pietsch

Himantolophus nigricornis Bertelsen & Krefft, 1988. **Black Horned Footballfish**. To 19.7 cm (7.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; Monterey Bay, central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); San Clemente Basin, southern California. Depth: scanty catch data imply this species may live at between at least 219–2,500 m (720–8,200 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Bertelsen and Krefft 1988).

Himantolophus sagamius (Tanaka, 1918). **Pacific Footballfish**. To 38 cm (15 in) SL (Klepadlo *et al.* 2003). Indo-Pacific; western Pacific Ocean north to Japan; off Kamchatka (Kharin 2006a); northern California (Bertelsen and Krefft 1988) to Chile (Pequeño 1997). Depth: 300–1,300 m (984–4,264 ft) (min.: Michael Schaadt, pers. comm. to M.L.; max.: Bertelsen and Krefft 1988). Reported as *Himantolophus* sp. in Lea (1988). Classified by some authors as a synonym of *Himantolophus groenlandicus* Reinhardt, 1837.

Family Oneirodidae—Dreamers
Reviewed by: Theodore Pietsch

Bertella idiomorpha Pietsch, 1973. **Spikehead Dreamer**. To about 10.1 cm (4 in) SL (Balanov and Fedorov 1996). Northern Japan (Pietsch 1973), and southern Kuril Islands (Parin *et al.* 1995), to Bering Sea (Balanov and Fedorov 1996), and western Gulf of Alaska, to Gulf of California (Pietsch 1973). Depth: 410–1,160 m (1,345–3,805 ft) (Pietsch 2009); reported from 0–3,475 m (11,398 ft) (Orlov and Tokranov 2019), but without documentation.

Chaenophryne draco Beebe, 1932. **Smoothhead Dreamer**. To 12.3 cm (4.8 in) SL (Pietsch 2009). Circumglobal; western Pacific Ocean north to Japan (Pietsch 2009), and Russian Bering Sea (Orlov and Tokranov 2019); Washington (47°09'N, 125°04'W) (NWFSC-FRAM) to northern Peru (4°10'S, 81°27'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), midocean west of Peru (4°20'S, 116°46'W) (Pietsch 1975), and near Islas Galápagos (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Hawaiian Islands (Pietsch 1975). Depth: about 350 m (1,148 ft) to perhaps 2,000 m (6,560 ft) (Nakaya *et al.* 2009), or 3,000 m (9,840 ft) (Castellanos-Galindo *et al.* 2006a).

Chaenophryne longiceps Regan, 1925. To 24.5 cm (10.0 in) SL (Pietsch 2009). Circumglobal; western Pacific Ocean north to northern Japan (Balanov *et al.* 2009); north of Clayoquot Canyon (49°03'N, 127°00'W), British Columbia (Weil *et al.* 2015) to Chile (23°29'S, 72°20'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 84–1,174 m (276–3,852 ft) (min.: NWFSC-FRAM; max.: Stearn and Pietsch in Okamura *et al.* 1995), or perhaps to 1,800 m (5,904 ft) (Weil *et al.* 2015).

Chaenophryne melanorhabdus Regan & Trewavas, 1932. Blobby Dreamer or **Smooth Dreamer**. To 16.8 cm (6.6 in) SL (Weil *et al.* 2015). Indo-Pacific; west of Nootka Sound (49°41'N, 127°43'W), British Columbia (Weil *et al.* 2015) to Peru (Personal communication: National Museum of Natural History Fish Collection, Washington, D.C.). Depth: about 200 m (656 ft) to perhaps 2,000 m (6,560 ft) (Nakaya *et al.* 2009)

Dolopichthys longicornis Parr, 1927. **Longhorn Dreamer**. To 15.9 cm (6.3 in) SL (Pietsch 2009). Circumglobal; northern California (Pietsch 2009). Mesopelagic and bathypelagic; depth: collected by nets fished as deep as 6,420 m (21,063 ft) (Pietsch 1972).

Dolopichthys pullatus Regan & Trewavas, 1932. To 11.5 cm (4.5 in) SL (Pietsch 1972). Circumglobal; southern California to Chile, including Gulf of California, and west to about 180°W between about 34°N and 34°S (Pietsch 1972). Depth: about 800–2,080 m (2,624–6,822 ft) (Pietsch 2009).

Leptacanthichthys gracilispinis (Regan, 1925). 10.3 cm (4.1 in) SL. Atlantic and Pacific Oceans; isolated catches from Japan, central Pacific, northern California, Gulf of Panama, and Equator. Depth: mostly below 1,000 m (3,280 ft). All in Pietsch (2009).

Microlophichthys microlophus (Regan, 1925). To 11.3 cm (4.4 in) SL (Poulsen 2019). Circumglobal; well off southern California (32°00'N, 136°12'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic and bathypelagic; depth: taken as deep as 2,200 m (7,216 ft) or more (Pietsch 2009), and perhaps to 4,000 m (13,123 ft) (Moore *et al.* 2003).

Oneirodes acanthias (Gilbert, 1915). **Southern Spiny Dreamer**. To 16.7 cm (6.6 in) SL (Pietsch 1974), perhaps to 20 cm (8 in) TL (Fitch and Lavenberg 1968). West of north end of Vancouver Island (50°13'N, 129°46'W) (Weil *et al.* 2015) to southern Baja California (26°51'N) (Pietsch 1974). Mesopelagic and bathypelagic; depth: concentrated at 500–1,250 m (1,650–4,125 ft) (Pietsch 1974), and perhaps to 3,290 ft (10,791 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Oneirodes basili Pietsch, 1974. **Ladlepole Dreamer**. To 15.9 cm (6.3 in) SL. Southern California (33°06'N, 118°22'W) to Isla Guadalupe, central Baja California. Described from three individuals. Probably mesopelagic and bathypelagic, but not enough data to be certain; depth: taken in nets fished to maximum depths of 700–1,400 m (2,296–4,593 ft). All in Pietsch (1974).

Oneirodes bulbosus Chapman, 1939. **Bulbous Dreamer**. To 23 cm (9.1 in) TL (Orlov and Tokranov 2005). Western Pacific Ocean in Sea of Okhotsk off Hokkaido, Japan (Nakabo in Nakabo 2002), to northern Bering Sea, Aleutian Islands, and Gulf of Alaska (Pietsch 1974, Mecklenburg *et al.* 2002); one record in mid-ocean west of Oregon (Pietsch 1974). Depth: 200–2,000 m (656–6,560 ft) (Orlov and Tokranov 2019).

Oneirodes eschrichtii Lütken, 1871. **Cosmopolitan Dreamer** or Twopole Dreamer. To 21.3 cm (8.4 in) SL (Pietsch 1974). Circumglobal; western Pacific Ocean in Kuril–Kamchatka Trench (49°29'N, 158°41'E) (Pietsch 1974); near U.S.—Canada border (48°12'N, 125°59'W) (Weil *et al.* 2015) to Chile (34°S) (Pietsch 1974). Mesopelagic to bathypelagic; depth: taken in nets fished to maximum depths of 150–6,200 m (492–20,336 ft) (Mecklenburg *et al.* 2002).

Oneirodes thompsoni (Schultz, 1934). **Alaska Dreamer** or Spiny Dreamer. To 21 cm (7.1 in) TL (Orlov and Tokranov 2005). Honshu, Japan (Shinohara *et al.* 1996, Mecklenburg *et al.* 2002), to northern California (41°20'N, 144°10'W) (Pietsch 1974), and perhaps to southern California (32°00'N, 118°20'W) (NWFSC-FRAM), but without documentation. Depth: about 100–2,014 m (328–6,606 ft) (Orlov and Tokranov 2019) or perhaps to 2,250 m (7,380 ft) (Weil *et al.* 2015), with most collected at 600–1,250 m (1,968–4,101 ft) (Pietsch 1974).

Phyllorhinichthys micractis Pietsch, 1969. To 18.3 cm (7.2 in) SL (Pietsch 2009). Circumglobal; western Pacific Ocean off Japan (Pietsch 1972); Emperor Seamounts, and Line Islands (Pietsch 2004); off Isla Guadalupe, central Baja California (Pietsch 1969). Probably mesopelagic and bathypelagic; depth: taken by open nets fishing to maximum depth of 3,600 m (11,811 ft) (Pietsch 2004); at least as shallow as 1,800 m (5,904 ft) (Porteiro *et al.* 2017).

Family Thaumatichthyidae—Wolftrap Anglers

Reviewed by: Theodore Pietsch

Thaumatichthys axeli (Bruun, 1953). To 36.5 cm (14.4 in) SL. Two known specimens: one from Patton escarpment, well off southern California; the other from 9°23'N, 87°32'W. Both specimens from deep water; the southern

California fish was taken in an otter trawl at 3,578–3,671 m (11,736–12,041 ft), the second fish in a herring otter trawl at 3,570 m (11,710 ft). All in Bertelsen and Struhsaker (1977).

Family Centrophrynidae—Deepsea Anglerfishes
Reviewed by: Theodore Pietsch

Centrophryne spinulosa Regan & Trewavas, 1932. To 36.9 cm (14.5 in) SL (Vieira *et al.* 2013). Circumglobal; off Punta Abreojos, southern Baja California to Gulf of Panama (Pietsch 1972). Depth: about 590–2,325 m (1,935–7,626 ft) (Pietsch 1972).

Family Ceratiidae—Seadevils
Reviewed by: Theodore Pietsch

Ceratias holboelli Krøyer, 1845. Northern Giant Seadevil or **Northern Seadevil**. To at least 85.5 cm (33.7 in) SL (Theodore Pietsch). A maximum size of 152.4 cm (60 in) TL in Kamikawa (2017) is a misprint. Circumglobal; western Pacific Ocean north to Japan; Bering Sea, Gulf of Alaska, and off British Columbia and central California; Hawai'i (Mecklenburg *et al.* 2002). Larvae reported from off Punta Eugenia, southern Baja California (Funes-Rodríguez *et al.* 2011). Depth: 120–3,400 m (394–11,154 ft) (Mecklenburg *et al.* 2002); also reported at surface (Porteiro *et al.* 2017), but without documentation.

Cryptopsaras couesii Gill, 1883. **Triplewart Seadevil**. To 35.8 cm (14.1 in) TL (Pietsch 2009). Circumglobal, with overall latitudinal range of 63°N to 43°S (Pietsch 1986); Greenland; western Pacific Ocean north to Japan; New Zealand; Hawai'i (Pietsch 1986); British Columbia (49°29'N, 127°17'W) (Weil *et al.* 2015) to Peru (Pietsch 1986). Depth: 75–4,000 m (246–13,123 ft), but mostly taken at 500–1,250 m (1,640–4,101 ft) (Pietsch 1986); reported at surface (Orlov and Tokranov 2019), but without documentation. Based on analyses of mtDNA, Bañón *et al.* (2019) found that Pacific and Atlantic specimens might represent cryptic species.

Family Gigantactinidae—Whipnoses
Reviewed by: Theodore Pietsch

Gigantactis gargantua Bertelsen, Pietsch, & Lavenberg, 1981. To 40.8 cm (16.1 in) SL (Bertelsen *et al.* 1981). Indo-Pacific; western Pacific Ocean north to northern Honshu, Japan (Amaoka in Amaoka *et al.* 1983); Hawai'i; and southern California (Bertelsen *et al.* 1981), also offshore of Morro Bay, central California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). One probable record off northern Oregon (Mecklenburg *et al.* 2002). Mesopelagic to bathypelagic; depth: taken in open nets fished to maximum depths of 500–1,535 m (1,640–5,036 ft) (min.: Bertelsen *et al.* 1981; max.: Amaoka in Amaoka *et al.* 1983).

Gigantactis macronema Regan, 1925. **Longpole Whipnose**. To 35.4 cm (13.9 in) SL (Bertelsen *et al.* 1981). Eastern North Pacific and Atlantic Oceans; Hawai'i; northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California), southern California, and Baja California (Bertelsen *et al.* 1981). Mesopelagic to bathypelagic; depth: taken in open nets fished to maximum depths of 650–2,500 m (2,132–8,202 ft) (Bertelsen *et al.* 1981).

Gigantactis microdontis Bertelsen, Pietsch, & Lavenberg, 1981. To 31 cm (12.2 in) SL (Pietsch 2009). Western Pacific (Prokofiev and Pietsch 2019); Oregon (43°31'N, 124°54'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to southern California (Bertelsen *et al.* 1981); Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California); Peru (Bertelsen *et al.* 1981). Mesopelagic to bathypelagic; depth: taken in open nets fished above 1,200 m (3,937 ft) (Bertelsen *et al.* 1981).

Gigantactis savagei Bertelsen, Pietsch, & Lavenberg, 1981. To 15 cm (5.9 in) SL (Bertelson *et al.* 1981). Hawai'i; southern California (Bertelsen *et al.* 1981), and Isla Guadalupe (Personal communication: Los Angeles County

Museum of Natural History Fish Collection, Los Angeles, California), central Baja California. Mesopelagic to bathypelagic; depth: taken in open nets fished above 700 m (2,297 ft) (Bertelsen *et al.* 1981), and at maximum depths of 5,396 m (17,700 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Gigantactis vanhoeffeni Brauer, 1902. **Cosmopolitan Whipnose**. To 62 cm (24.4 in) TL (Kamikawa 2017). Circumglobal; western Pacific Ocean north to Japan (Bertelsen *et al.* 1981); Bering Sea (58°09'N, 175°36'W) (Maslenikov *et al.* 2013) to Chile (Pequeño 1989). Mesopelagic to bathypelagic; depth: taken in open nets fished at maximum depths of 300–5,300 m (984–17,388 ft) (Bertelsen *et al.* 1981).

Family Linophrynidae—Netdevils

Reviewed by: Theodore Pietsch

Borophryne apogon Regan, 1925. **Netdevil Anglerfish**. To 10.1 cm (4 in) SL (Pietsch 2009). Southern Baja California (26°31'N, 114°34'W) (De La Cruz-Agüero and Galván-Magaña 1992) to south of equator (4°25'S, 81°51'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Primarily mesopelagic; depth: As shallow as 54 m (177 ft) (Castellanos-Galindo *et al.* 2006a) and deep tows include 1,900 m (6,233 ft) (De La Cruz-Agüero 1998) and 2,086 m (6,842 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Linophryne coronata Parr, 1927. To 22.5 cm (8.9 in) SL (Pietsch 2009). Atlantic and Pacific Oceans; three individuals within our range, from southern California (34°33'N, 121°06'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), northern Baja California (32°39'N, 117°33'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and off central Baja California (27°10'N, 138°11'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: to at least 1,180 m (3,870 ft) (Stearn and Pietsch in Okamura *et al.* 1995).

Linophryne racemifera Regan & Trewavas, 1932. To 8.1 cm (3.2 in) SL (Bertelsen 1982). Atlantic and Pacific Oceans; southern California (Bertelsen 1982). Depth: 210–1,500 m (689–4,920 ft) (Pietsch 2009).

Order Mugiliformes

Family Mugilidae—Mullets

Chaenomugil proboscideus (Günther, 1861). **Snouted Mullet** or Thick-lipped Mullet. To 22 cm (8.7 in) TL (Harrison in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Panama, including lower Gulf of California (Harrison in Fischer *et al.* 1995). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 46 m (151 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

****Dojaus monticola*** (Bancroft, 1834). **Mountain Mullet**. To 36 cm (14.2 in) TL (Harrison in Fischer *et al.* 1995). Southern tip of Baja California (Robertson and Allen 2015) to northern Peru, including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Fricke *et al.* 2020). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: intertidal (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Formerly *Agonostomus monticola* (Bancroft, 1834), we follow Durand in Crosetti and Blaber (2016) and place this species in the genus *Dojaus*.

Mugil cephalus Linnaeus, 1758. Flathead Mullet, Grey Mullet, or **Striped Mullet**. To 135 cm (53.1 in) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north to Japan (Senou in Nakabo 2002), Sea of Okhotsk, and southern Kuril Islands (Parin 2003); Humboldt Bay, northern California (Wallace *et al.* 2015) to Chile and Islas Galápagos (Eschmeyer and Herald 1983). Coastal, marine, brackish, fresh waters (Fricke *et*

al. 2020); depth: in sea, intertidal to 122 m (400 ft) (min.: Robertson and Allen 2002; max.: Eschmeyer and Herald 1983). *Mugil cephalus* appears to be a species complex (Neves *et al.* 2020).

Mugil hospes Jordan & Culver, 1895. **Hospe Mullet**. To 30 cm (11.8 in) TL (Robertson and Allen 2002). Atlantic and Pacific sides of Americas (Robertson and Allen 2002); just inside Punta Pequena (26°14'N, 112°27'W), southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and Gulf of California to Ecuador (Robertson and Allen 2002). Depth: 0 to 10 m (33 ft) Robertson and Allen 2002).

Mugil setosus Gilbert, 1892. **Liseta Mullet**. Because the previous reported maximum length record, 91 cm (15.8 in) TL (McEachran and Fechhelm 1998), likely represents *Mugil curema*, the maximum size of this species is unclear. The largest specimen in the Scripps Institution of Oceanography Fish Collection is 39 cm (15.4 in) SL. Mission Creek, Santa Barbara County, southern California (Camm Swift, pers. comm. to M.L.) to Chile (Harrison in Fischer *et al.* 1995), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Shallow marine, brackish, and fresh waters (Harrison in Fischer *et al.* 1995, Argulo *et al.* 2020); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 25 m (82 ft) (min.: Thomson and Lehner 1976; max.: Amezcua Linares 1996). We note that Britzke *et al.* (2019) determined that fish identified as "*Mugil curema* Valenciennes, 1836" from the eastern Pacific are, in fact, *Mugil setosus* Gilbert, 1892. Their work, and that of Menezes *et al.* (2015), limit the geographic range of *M. curema* to the western South Atlantic. Further research (Neves *et al.* 2020) suggests that *Mugil curema* is a species complex.

Order Atheriniformes

Family Atherinopsidae—New World Silversides

Formerly with Old World silversides in a family Atherinidae, the New World silversides were removed and placed in their own family, Atherinopsidae; Nelson *et al.* (2004:215) cite the relevant literature.

Atherinella eriarcha Jordan & Gilbert, 1882. **Longfin Silverside**. To at least 8.5 cm (3.3 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía San Hipólito, southern Baja California (Watson in Moser 1996) to Colombia (Lavenberg and Chernoff in Fischer *et al.* 1995), including lower Gulf of California (Lavenberg and Chernoff in Fischer *et al.* 1995). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 15 m (50 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Atherinella nepenthe (Myers & Wade, 1942). **Pitcher Silverside**. To 10 cm (3.9 in) TL (Lavenberg and Chernoff in Fischer *et al.* 1995). Punta Abreojos, southern Baja California (Watson in Moser 1996) to Peru (10°34'S, 77°56'W) (Chirichigno and Vélez 1998), including southeast corner of Baja California (Robertson and Allen 2015). Depth: surf, upper water column near shore to 10 m (33 ft) (min.: Watson in Moser 1996; max.: Robertson and Allen 2002).

Atherinops affinis (Ayres, 1860). **Topsmelt**. To 38.8 cm (15.3 in) TL (M.L., unpubl. data). Near Sooke Harbour, Vancouver Island, British Columbia to Gulf of California (Miller and Lea 1972); not in central or southern Gulf of California (Robertson and Allen 2002). Nearshore; marine, brackish, and very occasionally nearly fresh waters (Moyle 2002); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 26 m (85 ft) (min: Chotkowski 1994; max.: Limbaugh 1955). A maximum depth record of 63 m (207 ft) (NWFSC-FRAM), from a bottom trawl haul, is likely in error and represents a midwater catch on deployment or retrieval.

Atherinopsis californiensis Girard, 1854. **Jacksmelt**. To 48.6 cm (19.1 in) TL (Love *et al.* 2005). Yaquina Bay, Oregon (Miller and Lea 1972) to at least Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994), and in western and northeastern Gulf of California (Robertson and Allen 2002). Nearshore; marine, brackish, and occasionally fresh water (Moyle 2002); depth: surface and intertidal to at least 29 m (95 ft) (min.: Carlisle *et al.* 1960; max.: Limbaugh 1955); also found in hypersaline ponds (Ruiz-Campos *et al.* 2000). A

maximum depth record of 103 m (338 ft) (NWFSC-FRAM), from a bottom trawl haul, is likely in error and represents a midwater catch on deployment or retrieval.

Leuresthes tenuis (Ayres, 1860). **California Grunion**. To 19 cm (7.5 in) TL (Eschmeyer and Herald 1983). Tomales Bay, northern California (Roberts *et al.* 2007) to Bahía Magdalena, southern Baja California (Miller and Lea 1972). Depth: intertidal to 18 m (60 ft) (Miller and Lea 1972).

*****Menidia audens*** Hay, 1882. **Mississippi Silverside**. To 15 cm (3.9 in) TL (Page and Burr 2011). Native to the greater Mississippi Valley. Found in San Francisco Bay and in various freshwater systems in California (Moyle 2002). California specimens sometimes, and apparently erroneously, referred to as *Menidia beryllina* (Cope, 1867).

Order Beloniformes

Family Exocoetidae—Flyingfishes

Cheilopogon dorsomacula (Fowler, 1944). **Blackspot Flyingfish**. To about 23 cm (9.1 in) SL (Parin in Carpenter and Niem 1999). Pacific Ocean; southern Baja California (24°20'N, 113°14.0'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: epipelagic.

Cheilopogon furcatus (Mitchill, 1815). **Spotfin Flyingfish**. To 35 cm (13.8 in) TL (Cervigón in Cervigón *et al.* 1992). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); central Baja California (28°00'N, 117°25'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to well off Peru (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: epipelagic.

Cheilopogon heterurus (Rafinesque, 1810). **Blotchwing Flyingfish** or Mediterranean Flyingfish. To 34.8 cm (13.7 in) SL (Parin and Beljanina 2000). Circumglobal; including various subspecies: western Pacific Ocean north to Peter the Great Bay, Sea of Japan (Saveliev *et al.* 2015); Santa Catalina Island, southern California to Chile (Pequeño 1989). Oceanic (Eschmeyer and Herald 1983) and neritic (Watson in Moser 1996); depth: surface.

Cheilopogon papilio (Clark, 1936). **Butterfly Flyingfish**. To 22.2 cm (8.7 in) TL (John Snow, pers. comm. to M.L.). Southern Baja California (27°28'N, 115°08'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California to central America (Parin in Fischer *et al.* 1995). Depth: surface to 20 m (66 ft) (Robertson and Allen 2002).

Cheilopogon pinnatibarbatus (Bennett, 1831). California Flyingfish or **Smallhead Flyingfish**. To 48 cm (18.9 in) TL (Eschmeyer and Herald 1983). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); Astoria, Oregon (Eschmeyer and Herald 1983) to southern Baja California (Parin in Fischer *et al.* 1995) and into Gulf of California (Robertson and Allen 2002); Chile (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Oceanic (Eschmeyer and Herald 1983) and neritic (Watson in Moser 1996); depth: surface to 10 m (33 ft) (Robertson and Allen 2002). *Cypselurus californicus* (Cooper, 1863) is a junior synonym.

Cheilopogon spilonotopterus (Bleeker, 1865). **Stained Flyingfish**. 40 cm (15.7 in) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; western Pacific Ocean north to Ryukyu Islands (Aizawa in Nakabo 2002); Rocos Alijos, southern Baja California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California). 0–15 m (16 ft) (Robertson and Allen 2008).

Cheilopogon xenopterus (Gilbert, 1890). Sparrow Flyingfish or **Whitetip Flyingfish**. To 22 cm (8.7 in) TL (Parin in Fischer *et al.* 1995). Southernmost Baja California (Robertson and Allen 2008) to at least Peru (Chirichigno 1974), including Islas Galápagos (Grove and Lavenberg 1997). Surface to 5 m (17 ft) (Robertson and Allen 2002).

Cypselurus angusticeps Nichols & Breder, 1935. **Narrowhead Flyingfish**. 24 cm (9.4 in) SL (Robertson and Allen 2015). Indo-Pacific (Fricke *et al.* 2020); western Pacific Ocean north to Ryukuyu Islands (Aizawa in Nakabo 2002); off Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.). Epipelagic.

Cypselurus callopterus (Günther, 1866). **Beautyfin Flyingfish**, Ornamental Flyingfish, or Spotted Flyingfish. To 28 cm (10.9 in) TL (Parin in Fischer *et al.* 1995). Southern Baja California (Robertson and Allen 2008) to Ecuador (Robertson and Allen 2015), including Islas Galápagos (Grove and Lavenberg 1997). Surface to 5 m (17 ft) (Robertson and Allen 2002).

Exocoetus monocirrhus Richardson, 1846. **Barbel Flyingfish**. To 23 cm (9.1 in) TL (Aizawa in Nakabo 2002). Circumglobal (Shakhovskoy 2018); western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); southern Baja California (25°22'N, 113°08'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Surface to 20 m (66 ft) (Robertson and Allen 2002). Characterized as Indo-Pacific in Fricke *et al.* (2020).

Exocoetus volitans Linnaeus, 1758. **Tropical Two-wing Flyingfish**. To about 24 cm (9.4 in) TL (Parin 2003). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.) to Chile (Pequeño 1989), including Islas Galápagos (Grove and Lavenberg 1997). Primarily oceanic, also neritic (Watson in Moser 1996); depth: surface to 20 m (66 ft) (Robertson and Allen 2002).

Fodiator rostratus (Günther, 1866). Pacific Flyingfish or **Sharpchin Flyingfish**. To 25 cm (9.8 in) TL (McEachran and Fechhelm 1998). Point Conception (34°12'N, 120°57'W) (Kyle Evans, pers. comm. to M.L.) and Goleta, southern California (Miller and Lea 1972) to Chile (Pequeño 1989), including Gulf of California (Parin in Fischer *et al.* 1995), and Islas Galápagos (Eschmeyer and Herald 1983). Neritic and oceanic at surface, usually in coastal waters (Watson in Moser 1996), and sometimes intertidal (Love *et al.* 2005).

Hirundichthys albimaculatus (Fowler, 1934). **Whitespot Flyingfish.** To 24.6 cm (9.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Western Pacific Ocean north to southern Japan (Aizawa in Nakabo 2002); northern Baja California (30°15'N, 118°12'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: at least surface.

Hirundichthys marginatus (Nichols & Breder, 1928). Banded Flyingfish, **Bladewing Flyingfish**, or Whitewing Flyingfish. To 24.7 cm (9.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Central Baja California (28°53'N, 115°53'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to at least Peru (Chirichigno 1974), including Islas Galápagos (Grove and Lavenberg 1997). Surface to 5 m (17 ft) (Robertson and Allen 2002).

Hirundichthys rondeletii (Valenciennes, 1847). **Blackwing Flyingfish**. To about 32 cm (12.6 in) TL (Robertson and Allen 2015). Circumglobal; northern Baja California (30°30'N, 114°20'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (42°S, 74°W) (Vera S. and Pequeño R. 2002), including Islas Galápagos (Grove and Lavenberg 1997). Oceanic and neritic (Watson in Moser 1996).

****Hirundichthys speculiger*** (Valenciennes, 1847). **Mirrorwing Flyingfish**. To about 31 cm (12.2 in) TL (Parin in Carpenter 2003). Circumglobal; western Pacific Ocean north to southeast of southern Kuril Islands (42°00'N, 147°00'W) (Saveliev *et al.* 2015); just south of Cabo San Lucas, southern Baja California and westward well offshore (Parin in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Primarily oceanic (Watson in Moser 1996); depth: surface to 20 m (66 ft) (Robertson and Allen 2002).

Parexocoetus brachypterus (Richardson, 1846). **Sailfin Flyingfish**. To 22.8 cm (9 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific (Parin *et al.* 2019); western Pacific Ocean north to southern Japan (Aizawa in Nakabo 2002); southern Baja California (23°12'N, 110°28'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to at least Ecuador (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth; at least at surface. While Fricke *et al.* (2020) imply this species is not in eastern Pacific, that is in error.

Prognichthys tringa Breder, 1928. **Panamic Flyingfish** or Tringa Flyingfish. To 20.2 cm (8 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Southern Baja California (Parin in Fischer *et al.* 1995) to Ecuador (Béarez 1996), including Gulf of California (Parin in Fischer

et al. 1995), and Islas Galápagos (Grove and Lavenberg 1997). Neritic; depth: surface to 5 m (17 ft) (min.: Watson in Moser 1996; max.: Robertson and Allen 2002).

Family Hemiramphidae—Halfbeaks

Euleptorhamphus viridis (van Hasselt, 1823). **Ribbon Halfbeak**. To 53 cm (20.9 in) TL (Collette in Fischer *et al.* 1995). Indo-Pacific (Collette 2004); western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); southern California (Miller and Lea 1972) to Easter Island (Pequeño 1989), including lower Gulf of California (Collette in Fischer *et al.* 1995) and Islas Galápagos (Eschmeyer and Herald 1983). Epipelagic, at and near surface (Fricke *et al.* 2019). *Euleptorhamphus longirostris* (Cuvier, 1829) is a junior synonym.

Hemiramphus saltator Gilbert & Starks, 1904. **Longfin Halfbeak**. To 55 cm (21.7 in) TL (Robertson and Allen 2002). Long Beach Harbor, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Isla de Cedros, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to northern Chile (Sielfeld *et al.* 2010), including Gulf of California (Collette in Fischer *et al.* 1995) and Islas Galápagos (Eschmeyer and Herald 1983). Epipelagic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to 27 m (89 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Hyporhamphus gilli Meek & Hildebrand, 1923. **Choelo Halfbeak**. To 21 cm (8.3 in) TL (Robertson and Allen 2002). Bahía Abreojos, southern Baja California (26°42'N, 113°35'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Talara, northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal (Personal communication: Academy of Natural Sciences Fish Collection, Drexel University, Philadelphia, Pennsylvania), surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Hyporhamphus naos Banford & Collette, 2001. Naos Halfbeak, Pacific Silverside Halfbeak, or **Pacific Silverstripe Halfbeak**. To 31 cm (12.2 in) TL (Robertson and Allen 2002). San Diego, southern California to Paita, Peru, including Islas Galápagos (Banford and Collette 2001) and Gulf of California (Robertson and Allen 2002). The Galápagos fish may be an undescribed species (Banford and Collette 2001). Marine and brackish waters (Romero-Berny *et al.* 2018); depth: surface to 30 m (99 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Hyporhamphus rosae (Jordan & Gilbert, 1880). **California Halfbeak**. To 22 cm (8.7 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Marina del Rey, southern California (Williams *et al.* 2018) to Gulf of California (Collette in Fischer *et al.* 1995), and Bahía Nonura, Peru (Chirichigno and Vélez 1998). Marine, brackish, and fresh waters (Watson in Moser 1996); depth: surface to 2 m (6 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Oxyporhamphus micropterus (Valenciennes, 1847). **Smallwing Flyingfish**. To 22 cm (8.7 in) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); central Baja California (28°10'N, 115°54'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California (Robertson and Allen 2008) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Collette in Fischer *et al.* 1995) and Islas Galápagos (Allen and Robertson 1994). Epipelagic; depth: surface to 6 m (20 ft) (min.: Watson in Moser 1996; max.: Fricke *et al.* 2019).

Family Belonidae—Needlefishes

Ablennes hians (Valenciennes, 1846). Barred Needlefish or **Flat Needlefish**. To 122 cm (48 in) TL (Roul *et al.* 2018). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); central Baja California (Collette in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Fricke *et al.* 2011); depth: typically at surface, to 12 m (39 ft) (Godínez-Domínguez *et al.* 2000).

Platybelone argalus (Lesueur, 1821). **Keeltail Needlefish**. To 50 cm (19.7 in) SL (Collette and Parin in Whitehead *et al.* 1986). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Islas San Benito (28°28'N, 115°35'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Bahía de Sebastian Vizcaino (28°15'N, 114°10'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California to Chile (Pequeño 1989), including lower Gulf of California (Collette in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Fricke *et al.* 2020); depth: surface to 5 m (17 ft) (Robertson and Allen 2002).

Strongylura exilis (Girard, 1854). **California Needlefish** or Pike Needlefish. To 91.4 cm (3 ft) TL (Miller and Lea 1972). San Francisco, northern California (Eschmeyer and Herald 1983) to northern Chile (Sielfeld 2010), including Islas Galápagos (Eschmeyer and Herald 1983) and Gulf of California (Collette in Fischer *et al.* 1995). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: surface (nightlight; 47-158), intertidal to 100 m (328 ft) (min.: Allen 1999; max.: Amezcua Linares 1996).

Tylosurus crocodilus (Péron & Lesueur, 1821). Crocodile Needlefish, **Houndfish**, Hound Needlefish, or Mexican Needlefish. To 159 cm (62.6 in) (Robertson and Allen 2008). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015) to Gulf of California (Collette in Fischer *et al.* 1995) to northern Chile (Grove and Lavenberg 1997) and Islas Galápagos (Collette in Fischer *et al.* 1995). Marine and brackish waters (Fricke *et al.* 2011); depth: 0–3 m (10 ft) (Mundy 2005).

Tylosurus pacificus (Steindachner, 1876). **Pacific Agujón**. To 130 cm (51.8 in) TL (Robertson and Allen 2002). Punta San Juanico (26°53'N, 112°17'W), southern Baja California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California), and Gulf of California to Cabo Blanco, Peru, including one record from Islas Galápagos (Collette and Banford 2001). Surface to 10 m (33 ft) (Robertson and Allen 2002). Previously known in the eastern North Pacific as *Tylosurus acus* (Lacepède, 1803) or *T. acus imperiali*s (Lacepède, 1803); Collette and Banford (2001) confirmed full species rank as *T. pacificus.*

Family Scomberesocidae—Sauries

?*Cololabis adoceta* Böhlke, 1951. To 6.8 cm (2.7 in) SL (Hubbs and Wisner 1980). Northern Baja California (31°07'N, 118°07'W (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Hubbs and Wisner 1980); Hawaiian Islands (Fricke *et al.* 2020). Epipelagic (Hubbs and Wisner 1980). Although it is listed in the database, we cannot locate the northern Baja California Scripps Institution of Oceanography specimen.

Cololabis saira (Brevoort, 1856). **Pacific Saury**. To about 44 cm (17.3 in) TL (Mecklenburg *et al.* 2002). Yellow Sea, Sea of Japan, Sea of Okhotsk, and Pacific Ocean off Japan and Kuril Islands (Hubbs and Wisner 1980, Yoshino in Masuda *et al.* 1984), to Olyutorskiy Bay in the western Bering Sea (Hubbs and Wisner 1980), to south-eastern Bering Sea (Brodeur 1988), Pacific Ocean south of Aleutian Islands, and offshore Gulf of Alaska (Mecklenburg *et al.* 2002), to Islas Revillagigedo, Mexico (Eschmeyer and Herald 1983), including Gulf of California (Robertson and Allen 2015). Oceanic and neritic epipelagic (Parin 1960); marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal (Suda *et al.* 2002), surface to 295 m (968 ft) (DFO), typically far offshore, although schools sometimes wash ashore (Chapman 1943).

Order Cyprinodontiformes

Family Fundulidae—Topminnows

Fundulus parvipinnis Girard, 1854. **California Killifish**. To 13.3 cm (5.2 in) TL (Robertson and Allen 2015). Morro Bay, central California (Miller and Lea 1972) to southern tip of Baja California (Robertson and Allen 2015). Marine, brackish, and fresh waters (Moyle 2002).

Lucania goodei Jordan, 1880. **Bluefin Killifish**. 5 cm (2 in) TL. Native range uncertain, at least South Carolina to Alabama. All in USGS Nonindiginous Aquatic Species (http://nas.er.usgs.gov/queries/factsheet.

aspx?SpeciesID=6960. San Dieguito River Lagoon, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****_Lucania parva_** (Baird & Girard, 1855). **Rainwater Killifish**. To 6.2 cm (2.3 in) TL (Moyle 2002). Native to Atlantic Ocean and Gulf of Mexico; brackish portions of Yaquina Bay, Oregon and San Francisco Bay, northern California (Dill and Cordone 1997). Hypersaline, marine, brackish, and fresh waters (Moyle 2002).

Family Poeciliidae—Livebearers

****_Gambusia affinis_** (Baird and Girard, 1853). **Western Mosquitofish**. To 6 cm (2.4 in) TL. Native to tributaries running into Gulf of Mexico from southern Illinois to eastern Mexico, now introduced worldwide for mosquito control. Occasionally in brackish waters. All in Moyle (2002).

****_Poecilia latipinna_** (Lesueur, 1821). **Sailfin Molly**. To 15 cm (5.9 in) TL (Moyle 2002). Native to southern Atlantic United States and Gulf of Mexico, now introduced into much of warmer Pacific Rim. In California, known from Salton Sea, Ballona Marsh (Los Angeles County), intertidal wetlands of San Diego Bay, southern California (Williams *et al.* 1998), and other sloughs and estuaries in Ventura, Los Angeles, and San Diego counties (Moyle 2002). Shallow marine waters and freshwaters (McEachran and Fechhelm 1998).

Order Stephanoberyciformes

Family Melamphaidae—Bigscales

Melamphaes acanthomus Ebeling, 1962. **Shoulderspine Bigscale**. To 11.2 cm (4.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Northern California (40°11'N, 125°12'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Pequeño 1989). Mesopelagic and bathypelagic; depth: 320–3,500 m (1,050–11,480 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Ebeling 1962); young fish shallower.

Melamphaes janae Ebeling, 1962. 8.6 cm (3.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Indo-Pacific; southern California (33°15'N, 120°54'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Peru (Nakaya *et al.* 2009). Mesopelagic; depth: 200–3,329 m (656–10,920) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The maximum depth record was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than that depth.

Melamphaes laeviceps Ebeling, 1962. To 13.4 cm (5.3 in) SL (Ebeling 1962). Southern California (32°10'N, 120°37'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and off northern Baja California (Berry and Perkins 1966), to Chile (Pequeño 1989). Depth: adults probably below 400–500 m (1,312–1,640 ft) (Ebeling 1962) to perhaps 2,000 m (6,650 ft) (Kotlyar 2014).

Melamphaes longivelis Parr, 1933. **Longfin Bigscale**. To 12.7 cm (5 in) SL (Moore in Carpenter and De Angelis 2016). Atlantic and Pacific Oceans; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); southern California (Berry and Perkins 1966) to Chile (Pequeño 1989). Depth: adults at 500–1,500 m (1,640–4,920 ft) (min.: Ebeling 1962; max.: Fujii in Masuda *et al.* 1984); young fish as shallow as 150 m (492 ft) (Ebeling 1962).

Melamphaes lugubris Gilbert, 1891. **Highsnout Bigscale** or Highsnout Ridgehead. To 10.9 cm (4.3 in) SL (Sinclair and Stabeno 2002). Subarctic North Pacific from Japan (Fujii in Masuda *et al.* 1984), and Sea of Okhotsk, to Bering Sea (about 56°N), and Gulf of Alaska (Mecklenburg *et al.* 2002), to southern Baja California (25°30'N, 115°17'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); one record from off Michoacán (17°54.1'N, 103°23.8'W), Mexico (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Adults mesopelagic and bathypelagic; depths: 150–2,287 m (492–7,501 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: Los Angeles County

Museum of Natural History Fish Collection, Los Angeles, California); juveniles as shallow as 30 m (98 ft) (Personal communication: Russian Academy of Science Ichthyological Collecton at Saint Petersberg). A record of 4,393 m (16,200 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Melamphaes macrocephalus Parr, 1931. To 13.3 cm (5.2 in) SL (Kotlyar 2011). Southern California (33°54'N, 121°42'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Depth: upper range of adults and half-grown fish is about 400–500 m (1,312–1,640 ft) (Ebeling 1962).

Melamphaes parvus Ebeling, 1962. **Little Bigscale**. To 8.4 cm (3.3 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Northern California (Ebeling 1962) to southern Baja California (24°29'N, 113°22'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and into tropics (3°10'N, 84°10'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: juveniles as shallow as 75 m (246 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); adults mostly below 200 m (656 ft) (Sandknop and Watson in Moser 1996) to at least 2,350 m (7,708 ft) (Stein 1985). A record of 3,915 m (12,840 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Melamphaes spinifer Ebeling, 1962. To 7.4 cm (2.9 in) SL (Kotlyar 2014). Southern Baja California (27°N) (Ebeling 1962) to Chile (Pequeño 1989), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: young fish down to about 100–200 m (328–656 ft) (Ebeling 1962); adults below 400–500 m (1,312–1,640 ft).

Melamphaes suborbitalis (Gill, 1883). To 12 cm (4.7) SL (Fujii in Masuda *et al.* 1984). Circumglobal (Kotlyar 1999); western Pacific Ocean north to Sea of Okhotsk (Parin and Kotlyar 1998); as far northward as near the U.S.-Mexican Border (31°15'N, 119°59'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to at least southeast of Cabo San Lucas (22°25'N, 108°30'W), southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 100–3,200 m (328–10,496 ft) (Kotlyar 1999).

Poromitra crassiceps (Günther, 1878). **Crested Bigscale** or Crested Ridgehead. To 19 cm (7.5 in) SL (Kotlyar, 2009). Atlantic, Pacific, and Southern Oceans (Fricke *et al.* 2020)**;** western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984), and Russian north-western Pacific Ocean (Orlov and Tokranov 2019), to southern Bering Sea, and Gulf of Alaska (Mecklenburg *et al.* 2002), to Chile (Pequeño 1989). Primarily mesopelagic and bathypelagic; depth: 0–4,000 m (13,120 ft) (Orlov and Tokranov 2019). Considered a separate species, *Poromitra rugosa* (Chapman, 1939), by some authors. However, we follow Robertson *et al.* (2017) and consider this *P. crassiceps*. This species was split into many taxa by Kotlyar (2009).

Poromitra curilensis Kotlyar, 2008. To 11.2 cm (4.4 in) SL (Kotlyar 2008). Japan and Kuril Islands (Kotlyar 2008) to northern Gulf of Alaska (Raring and Stevenson 2010). Depth: very near surface to at least 1,000 m (3,280 ft) (min.: Kotlyar 2008; max.: Raring and Stevenson 2010).

Poromitra jucunda Kotlyar, 2010. To 5 cm (2 in) SL (Kotlyar 2010). Southern California (33°23'N, 118°47'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Chile (Sielfeld *et al.* 1995). Mesopelagic and bathypelagic; depth: primarily 150 to perhaps 2,000 m (495–6,560 ft) (min.: Sandknop and Watson in Moser 1996; max.: Aizawa in Nakabo 2002). Previously thought to be the circumglobal species *Poromitra megalops* (Lütken, 1877), Kotlyar (2010) referred to eastern and some central Pacific Ocean individuals as *P. jucunda*, and Indian Ocean and western and some central Pacific Ocean individuals as *Poromitra macrophthalma* (Gilchrist, 1903).

Poromitra oscitans Ebeling, 1975. **Sluggish Bigscale**. To 10.2 cm (4 in) SL (Roberts *et al.* 2015). Indo-Pacific; western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984); central California to Ecuador (Ebeling 1975). Mesopelagic and bathypelagic; depth: 645 to perhaps 5,320 m (2,116–17,450 ft) (min.: Roberts *et al.* 2015; max.: Mundy 2005).

Scopeloberyx opisthopterus (Parr, 1933). 6.9 cm (2.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal (Kotlyar 2005); western Pacific Ocean

north to Japan (Kotlyar 2005); southern California (32°51'N, 121°14.9'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Kotlyar 2005). Bathypelagic; depth: at least 180–3,000 m (590–9,840 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); 0–6,120 m (20,074 ft) based on fish taken by non-closing trawls (Kotlyar 2005).

Scopeloberyx robustus (Günther, 1887). **Longjaw Bigscale**. To 22 cm (8.7 in) SL (Porteiro *et al.* 2017). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Japan (Fujii in Masuda *et al.* 1984), Kuril Islands (Savinykh and Tuponogov 2004), and Sea of Okhotsk across subarctic North Pacific to Chile (Pequeño 1989). Mesopelagic and bathypelagic; depth: 500–4,500 m (1,640–14,760 ft) (min.: Kamikawa 2016; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); juveniles shallower, as shallow as 190 m (623 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The deepest record was based on the maximum depth fished by a bottom trawl and may represent a catch shallower than the maximum depth.

Scopelogadus bispinosus (Gilbert, 1915). **Twospine Bigscale**. To 17.5 cm (6.9 in) SL (Roberts *et al.* 2015). Southwest of La Perouse Bank (48°08'N, 126°36'W), British Columbia (Peden and Jamieson 1988) to Chile (Ebeling and Weed 1963). Mesopelagic and bathypelagic; depth: surface to 4,335 m (14,220 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Previously considered a subspecies of *Scopelogadus mizolepis* (Günther, 1878). A record of 6,200 m (20,336 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a beam trawl and may represent a catch shallower than the maximum depth.

Family Cetomimidae—Flabby Whalefishes or Whalefishes

Cetichthys parini Paxton, 1989. To 19.6 cm (7.7 in) SL (Paxton 1989). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Kuril Islands (Aizawa in Nakabo 2002); central California (34°49'N, 123°07'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and southern California (32°50'N, 124°07'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 2,700–3,300 m (8,858–10,827 ft) in closing nets, also collected in open nets fishing to 4,500 m (14,764 ft) or more (Paxton 1989).

Cetostoma regani Zugmayer, 1914. **Pink Flabby Whalefish**. To 25 cm (9.8 in) TL (Paxton and Johnson in Carpenter and De Angelis 2016). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Oregon (Matarese *et al.* 1989) to southern Baja California (25°48'N, 114°46'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic and bathypelagic (Paxton and Johnson in Carpenter and De Angelis 2016); depth: 400 to about 3,700 m (1,312–12,136 ft) (min.: Paxton 1989; max.: Paxton and Johnson in Carpenter and De Angelis 2016), and perhaps shallower (Paxton 1989).

Ditropichthys storeri (Goode & Bean, 1895). To 13.1 cm (5.2 in) SL (Roberts *et al.* 2015). Circumglobal; western North Pacific Ocean east of Japan, Kuril Islands (Paxton 1989), and Kamchatka (Sheiko and Fedorov 2000); northern California (Paxton 1989) to southern Baja California (Pequeño 1989). Mesopelagic and bathypelagic (Paxton and Johnson in Carpenter and De Angelis 2016); depth: about 607 to about 5,000 m (1,991–16,400 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Paxton and Johnson in Carpenter and De Angelis 2016).

Gyrinomimus **sp.** To 39 cm (15.3 in) TL. Circumglobal at low latitudes; as far south in Pacific as 39°N, including Sea of Okhotsk; southern Bering Sea off Aleutian Islands, offshore from British Columbia and Oregon, and midocean. Primarily bathypelagic; depth: 240–3,400 m (787–11,155 ft). This is Paxton's (1989) "*Gyrinomimus* sp. nov. B2," as yet undescribed and named. All in Mecklenburg *et al.* (2002).

Parataeniophorus brevis Bertelsen & Marshall, 1956. **Short Tapetail**. 4.6 cm (1.8 in) TL (Froese and Pauly 2019; note that we were unable to verify this record). Indo-Pacific (Fricke *et al.* 2020); southern California (34°09.6'N, 121°01.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Epipelagic, mesopelagic, and bathypelagic; depth: 0–1,400 m (Mundy 2005).

Family Rondeletiidae—Redmouth Whalefishes

Rondeletia loricata Abe & Hotta, 1963. **Armored Redmouth Whalefish** or Redmouth Whalefish. To 15 cm (6 in) TL (Fitch and Lavenberg 1968). Circumglobal; western Pacific Ocean north to Japan (Uyeno in Masuda *et al.* 1984) and Sea of Okhotsk (44°20'N, 148°37'E) (Kharin 2006b); Washington (47°12'N) (Lauth 2001) to Chile (27°04'S, 71°45'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Islas Galápagos (1°46'S, 89°56'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Mesopelagic (Paxton in Carpenter and De Angelis 2016); depth: 100–3,500 m (328–11,480 ft) (min.: Clarke and Wagner 1976; max.: Kamikawa 2017); juveniles in shallower part of depth range (Kotlyar 1996).

Family Barbourisiidae—Velvet Whalefishes

Barbourisia rufa Parr, 1945. **Red Whalefish**. To 41 cm (16.1 in) TL (Melendez C. *et al.* 1991). Circumglobal at low latitudes; recorded as far north as Greenland (Amaoka in Okamura *et al.* 1995); western Pacific Ocean north to Japan (Amaoka in Masuda *et al.* 1984), Russian north-western Pacific (Orlov and Tokranov 2019); Emperor Seamounts; Hawai'i (Mecklenburg *et al.* 2002); Bering Sea (55°59'N, 168°45'W) (Maslenikov *et al.* 2013), and Pacific Ocean south of Amukta Pass, Aleutian Islands (Mecklenburg *et al.* 2002); off Washington (Mecklenburg *et al.* 2002) to north-central California (Eschmeyer and Herald 1983) to southern Chile (44°53'S, 73°30'W) (Meléndez C. *et al.* 1991). Pelagic and benthopelagic; depth: 120–2,000 m (394–6,562 ft) (Mecklenburg *et al.* 2002).

Family Mirapinnidae—Hairyfish and Ribbonbearers or Tapetails

Eutaeniophorus festivus (Bertelsen & Marshall, 1956). **Festive Ribbontail**. To 5.7 cm (2.2 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Oregon to Ecuador (Charter and Moser in Moser 1996). Depth: perhaps 0–200 m (656 ft) (Mundy 2005). A record of 2,887 m (9,468 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth. We note that Fricke *et al.* (2020) state that this species is not found in the eastern Pacific.

Order Beryciformes

Family Anoplogastridae—Fangtooths

Anoplogaster cornuta (Valenciennes, 1833). Fangfish, Fangtooth, or **Longhorn Fangtooth**. To 16.4 cm (6.5 in) SL (Porteiro *et al.* 2017). Circumglobal; western Pacific Ocean north to northern Japan (Shimizu 1978) and Sea of Okhotsk (Kotlyar 1986); western Gulf of Alaska (53°37'N, 154°19'W) (Maslenikov *et al.* 2013) to northern Chile (18°26'S) (Kong and Meléndez 1991). Mesopelagic to bathypelagic; depth: adults at 75–4,992 m (246–16,378 ft); juveniles as shallow as 2 m (7 ft) (Mecklenburg *et al.* 2002).

Family Diretmidae—Spinyfins

Diretmoides pauciradiatus (Woods, 1973). To about 40 cm (15.8 in) TL (Eschmeyer and Herald 1983). Circumglobal; western Pacific Ocean north to Kyashu–Palau Ridge, southern Japan (Hayashi in Nakabo 2002), and Washington (Eschmeyer and Herald 1983). Depth: about 198 m to at least 1,880 m (650–6,168 ft) (min.: Eschmeyer and Herald 1983; max.: Hayashi in Nakabo 2002). Adults mainly below 500 m (1,640 ft) (Post in Whitehead *et al.* 1986), juveniles as shallow as 50 m (165 ft) (Post and Quéro 1981).

Diretmus argenteus Johnson, 1864. **Silver Discfish**. To 26 cm (10.2 in) TL (Bañon *et al.* 2016). Circumglobal; off Fort Bragg (39°26'N, 123°48'W), northern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Depth: 0–2,607 m (8,551 ft) (Porteiro *et al.* 2017).

Family Anomalopidae—Flashlightfishes

Phthanophaneron harveyi (Rosenblatt & Montgomery, 1976). **Panamic Flashlightfish**. To 26 cm (10.2 in) TL (Robertson and Allen 2002). Thetis Bank, southern Baja California (McCosker and Rosenblatt 1987); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); Gulf of California (Rosenblatt and Montgomery 1976). Depth: surface to 105 m (344 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Holocentridae—Squirrelfishes

****Myripristis berndti*** Jordan & Evermann, 1903. **Bigscale Soldierfish** or Blotcheye Solderfish. To 31 cm (12.2 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); tip of Baja California, Costa Rica to Colombia, and offshore islands (Robertson and Allen 2015). Marine and brackish waters (Koeda *et al.* 2016); depth: 1–159 m (3–522 ft) (min.: Robertson and Allen 2002; max.: Myers 1999).

Myripristis leiognathus Valenciennes, 1846. **Panamic Soldierfish**. To 19.2 cm (7.6 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Isla de Cedros (Ramírez-Valdez *et al.* 2015), and on mainland, Rocas Chester, central Baja California (M.L., unpubl. data) to upper Gulf of California (Schneider and Krupp in Fischer *et al.* 1995) to Peru (Robertson and Allen 2015), including Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–33 m (3–108 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Sargocentron suborbitale (Gill, 1863). **Tinsel Squirrelfish**. To 25.4 cm (10 in) TL (Schneider and Krupp in Fischer *et al.* 1995). San Juanico, southern Baja California (Ruiz-Campos *et al.* 2010b) and central Gulf of California (Schneider and Krupp in Fischer *et al.* 1995) to Ecuador (Grove and Lavenberg 1997), including southern tip of Baja California (Schneider and Krupp in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 25 m (82 ft) (min.: Castellanos-Galindo 2005; max.: Robertson and Allen 2002). Widely seen as *Sargocentron suborbitalis* (Gill, 1863) (Fricke *et al.* 2020).

Order Zeiformes

Family Oreosomatidae—Oreos

Allocyttus folletti Myers, 1960. **Oxeye Oreo**. To 47 cm (18.5 in) TL (Nishida *et al.* 2016). Honshu, Japan, to Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002), to near Point Arguello (34°36'N, 120°40'W), central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface to 1,800 m (5,905 ft) (Tokranov *et al.* 2003). Prejuveniles taken near surface offshore and midocean. Records of *Allocyttus verrucosus* from California are treated as identical with *A. folletti* (Mecklenburg *et al.* 2002).

Family Zeidae—Dories

Zenopsis nebulosa (Temminck & Schlegel, 1845). **Mirror Dory**. To 70 cm (27.6 in) TL (Roberts *et al.* 2015). Indo-Pacific (Fricke *et al.* 2020); western Pacific Ocean north to Peter the Great Bay, Sea of Japan (Kim and Milovankin 2019); central and southern California (Eschmeyer and Herald 1983) to Chile (Pequeño 1989). Off-bottom pelagic (Parin and Pakhorukov 2003). Depth: 30–800 m (100–2,624 ft) (min.: Fitch and Lavenberg 1968; max.: Nakabo in Nakabo 2002). We note that some records of this species may have been confused with the recently described *Zenopsis filimentosa* Kai and Tashiro, 2019.

Order Gasterosteiformes

Family Aulorhynchidae—Tubesnouts

Aulorhynchus flavidus Gill, 1861. **Tubesnout**. To 18.8 cm (7.4 in) TL (Coad 1995). Pavlof Bay, southwest Alaska Peninsula, and Kodiak Island, Gulf of Alaska (Mecklenburg *et al.* 2002), to Punta Rompiente (27°42'N, 115°W), central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Record from Captains Bay, Unalaska Island, is uncertain (Mecklenburg *et al.* 2002). Depth: surface to at least 40 m (130 ft) (Limbaugh 1962), from shoreline (e.g., beach seine in less than 1 m of water; Mecklenburg *et al.* 2002) to well offshore (Eschmeyer and Herald 1983).

Family Gasterosteidae—Sticklebacks

Gasterosteus aculeatus Linnaeus, 1758. **Threespine Stickleback**. To 11 cm (4.3 in) TL (Eriksen *et al.* 2020). Widespread Northern Europe and North America (Fricke *et al.* 2020); Korean Peninsula to Seas of Japan and Okhotsk to Bering, Chukchi, and Beaufort Seas, and Gulf of Alaska to Monterey Bay, central California (Love *et al.* 2016b). In fresh water as far south as Rio Rosario, northern Baja California (Miller and Lea 1972). Anadromous and resident freshwater forms; shallow vegetated areas, including marshes; depth: to about 27 m (90 ft), recorded near surface as far as 805 km (500 mi) offshore (Love *et al.* 2016b). Single records at 61 m (200 ft) (NWFSC-FRAM) and, particularly, 505 m (1,656 ft) from western Sakhalin Island (Kim and Kim 2019), were made with bottom trawls and may represent catches made in midwaters upon deployment or retrieval.

Pungitius pungitius (Linnaeus, 1758). **Ninespine Stickleback**. To 9 cm (3.5 in) TL. Circumboreal; Korea to Seas of Japan and Okhotsk to Bering, Chukchi, and Beaufort Seas, and western and northern Gulf of Alaska coasts into northeastern British Columbia. Anadromous and resident freshwater forms; marine populations most common in marshes and estuaries; depth: very shallow waters to 110 m (361 ft). All in Mecklenburg *et al.* (2002), Page and Burr (1991), and Coad (1995).

Family Syngnathidae—Pipefishes

Cosmocampus arctus (Jenkins & Evermann, 1889). **Snubnose Pipefish**. To 13 cm (5.1 in) TL (Allen and Robertson 1994). Humboldt Bay, northern California (Fritzsche and Cavanagh 1995) to Chile (Robertson and Allen 2015), and throughout Gulf of California (Miller and Lea 1972). Depth: intertidal to 20 m (66 ft) or more (min.: Fritzsche 1980; max.: Allen and Robertson 1994).

Doryrhamphus excisus Kaup, 1856. Bluestripe Pipefish or **Fantail Pipefish**. To 7 cm (2.8 in) TL (Allen and Robertson 1994). Indo-Pacific; Japan (Senou in Nakabo 2002); Bahía Magdalena, southern Baja California (Fritzche 1980) into Gulf of California (Thomson *et al.* 1979) and south to northern Peru (Robertson and Allen 2015), including Islas Galápagos (Fritzsche 1980). Depth: intertidal to 45 m (147 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Allen and Robertson 1994).

Hippocampus ingens Girard, 1858. **Pacific Seahorse**. To 30.5 cm (12 in) TL (Amezcua Linares 1996). Beached specimen on Pismo Beach, California (35°08'N, 120°38'W) (M.L., unpubl. data); Point Conception (M.L., unpubl. data) to Chile (Pequeño 1989), including Isla Guadalupe (Becerril-García *et al.* 2018), central Baja California, Gulf of California, and Islas Galápagos (Miller and Lea 1972); old record from San Francisco Bay (Eschmeyer and Herald 1983). Marine and brackish waters (Romero-Berny *et al.* 2021); depth: surface (Fritzsche 1980), intertidal to 107 m (351 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Syngnathus auliscus (Swain, 1882). **Barred Pipefish**. To 19 cm (7.5 in) TL (Allen and Robertson 1994). Santa Barbara Channel, southern California (Fritzsche 1980) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including Gulf of California (Fritzsche 1980). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 20 m (66 ft) (min.: Allen 1999; max.: Robertson and Allen 2002).

Syngnathus californiensis Storer, 1845. **Kelp Pipefish**. To 53.3 cm (21 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bodega Bay, northern California (Fritzsche 1980) to Bahía Santa Maria, southern Baja California (Miller and Lea 1972). Depth: surface (M.L., pers. obs.), intertidal to 15 m (48 ft) (min.: Allen 1999; max.: Eschmeyer and Herald 1983).

Syngnathus euchrous Fritzsche, 1980. **Chocolate Pipefish**. To 31.2 cm (12.3 in) TL (Kristy Forsgren, pers. comm. to M.L.). Santa Rosa Island (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Redondo Beach, southern California to Bahía Ballenas, southern Baja California (Fritzsche 1980). Depth: surface, intertidal to 18 m (60 ft) (Fritzsche 1980). Garcia *et al.* (2019) proposed that this species is a junior synonym of *Syngnathus californiensis* Storer, 1845.

Syngnathus exilis (Osburn & Nichols, 1916). **Barcheek Pipefish**. To 30.2 cm (11.9 in) TL (Kristy Forsgren, pers. comm. to M.L.). Half Moon Bay, central California to Bahía Magdalena, southern Baja California including offshore islands (Fritzche 1980). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California, nightlight), intertidal to perhaps 37 m (120 ft) (min.: Allen 1999; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Garcia *et al.* (2019) proposed that this species is a junior synonym of *Syngnathus californiensis* Storer, 1845.

Syngnathus insulae Fritzsche, 1980. **Guadalupe Pipefish**. To 20.4 cm (8 in) SL. Isla Guadalupe, central Baja California. Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 22–50 m (73–165 ft). All in Fritzsche (1980).

Syngnathus leptorhynchus Girard, 1854. **Bay Pipefish**. To 38.5 cm (15.2 in) TL (Bayer 1980). Prince William Sound (Orsi *et al.* 1991) to eastern Gulf of Alaska (Mecklenburg *et al.* 2002) to Bahía Santa Maria, southern Baja California (Fritzsche 1980). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 18 m (60 ft) (min.: Chotkowski 1994; max.: Love *et al.* 1986). Garcia *et al.* (2019) proposed that this species is a junior synonym of *Syngnathus californiensis* Storer, 1845.

Family Aulostomidae—Trumpetfishes

****Aulostomus chinensis*** (Linnaeus, 1766). **Chinese Trumpetfish** or Pacific Trumpetfish. To 80 cm (31.5 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); tip of Baja California (Robertson and Allen 2015), and Costa Rica (Sánchez-Jiménez *et al.* 2018) to Ecuador (Robertson and Allen 2015). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 243 m (797 ft) (min.: Arndt and Fricke 2019; max.: Roberts *et al.* 2015).

Family Fistulariidae—Cornetfishes

Fistularia commersonii Rüppell, 1838. Bluespotted Cornetfish, Cornetfish, or **Reef Cornetfish**. To 1.6 m (63 in) TL (Fritzche and Schneider in Fischer *et al.* 1995). Circumglobal; western Pacific Ocean north to Japan (Senou

in Nakabo 2002); Laguna Beach and San Clemente Island, southern California (Love 2016); Bahía Magdalena, southern Baja California (Thomson *et al.* 1979) to Iquique, northern Chile (Sielfeld *et al.* 2010), including Gulf of California (Fritzche and Schneider in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (Mundy 2005), intertidal to 132 m (433 ft) (min.: Arndt and Fricke 2019; max.: Mundy 2005).

Fistularia corneta Gilbert & Starks, 1904. **Deepwater Cornetfish** or Pacific Cornetfish. To 128 cm (50.4 in) TL (Myers 1999). Huntington Beach, southern California (Curtis and Herbinson 2001) to Callao, Peru (Chirichigno and Vélez 1998), including Gulf of California (Fritzche and Schneider in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 50 m (164 ft) (Robertson and Allen 2002).

Family Macroramphosidae—Snipefishes

Classified by some authors in Centriscidae.

Macroramphosus scolopax (Linnaeus, 1758). Longnosed Snipefish, **Longspine Snipefish**, or Slender Snipefish. To 22.8 cm (9 in) TL (Borges 2001). Circumglobal; western Pacific Ocean north to Japan (Senou in Nakabo 2002); between Santa Rosa and Santa Cruz Islands, southern California (Mary Nishimoto, pers. comm. to M.L.) to Chile (Pequeño 1989). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), also seen near bottom (Parin and Pakhorukov 2003) to 600 m (1,968 ft) (Fritzsche and Thiesfeld in Carpenter and Niem 1999). Also recently as *Macroramphosus gracilis* (Lowe, 1839). Mundy (2005) presents arguments for and against synonymizing *M. scolopax* with *M. gracilis*.

Order Scorpaeniformes

Family Scorpaenidae—Rockfishes or Scorpionfishes

We follow Smith *et al.* (2018) and place all of the following genera in the family Scorpaenidae.

Adelosebastes latens Eschmeyer, Abe, & Nakano, 1979. Aleutian Scorpionfish or **Emperor Rockfish**. To 41 cm (13.2 in) TL (Orr *et al.* 2000). North Pacific Ocean at Emperor Seamounts (Eschmeyer *et al.* 1979, Barsukov *et al.* 1983); south of Amlia Island (51°29'N, 173°29'W), Aleutian Islands, Alaska (Maslenikov *et al.* 2013). Benthic; depth: 352–1,200 m (1,155–3,937 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Amaoka in Masuda *et al.* 1984).

Pontinus furcirhinus Garman, 1899. **Red Scorpionfish**. To 33.2 cm (13.1 in) TL (Robertson and Allen 2015). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno 1974), including Gulf of California, Islas Galápagos, and Isla del Cocos (Robertson and Allen 2002). Benthic; depth: 40–390 m (132–1,287 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Pontinus sierra (Gilbert, 1890). **Speckled Scorpionfish**. To 33 cm (13 in) TL (John Snow, pers. comm. to M.L.). At least as far north as Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.) to Peru (4°55'S, 81°19'W) (Chirichigno 1974), including Gulf of California (Poss in Fischer *et al.* 1995). Benthic; depth: about 20 m (66 ft) (Aguilar-Palomino *et al.* 2001) to 351 m (1,151 ft) (Robertson and Allen 2008).

Pontinus vaughani Barnhart & Hubbs, 1946. **Spotback Scorpionfish**. To 57 cm (22.4 in) TL (Robertson and Allen 2002). Isla de Cedros, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Zeballos Flor *et al.* 1998), including southwest part of Gulf of California, Islas Revillagigedo (Robertson and Allen 2002), and Islas Galápagos (McCosker and Rosenblatt 2010). Benthic; depth: 30–120 m (100–394 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Zeballos Flor *et al.* 1998).

***Pontinus* sp. A**. **Rosy Scorpionfish**. To at least 30 cm (11.8 in) TL (John Snow, pers. comm. to M.L.). At least as far north as Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (J. Snow, pers. comm. to M.L.),

mouth of Gulf of California, and central Mexico to Peru (Robertson and Allen 2002). Benthic; depth: 50–150 m (164–492 ft) (Robertson and Allen 2002).

Scorpaena afuerae Hildebrand, 1946. **Peruvian Scorpionfish**. To 38 cm (15 in) (John Snow, pers. comm. to M.L.). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), southern Gulf of California (John Snow, pers. comm. to M.L.), to Costa Rica through to Peru; Isla del Cocos (Robertson and Allen 2008). Benthic; depth: 35–100 m (115–320 ft) (Robertson and Allen 2015).

Scorpaena guttata Girard, 1854. **California Scorpionfish**. To 47 cm (18.5 in) SL (Gartman and Groce 1998); about 57.9 cm (22.3 in) TL based on conversion factors in Love *et al.* (1987). Santa Cruz, central California to Gulf of California (Miller and Lea 1972). Benthic; depth: intertidal to 266 m (872 ft) (min.: Metz 1912; max.: City of San Diego 2020). A maximum depth record from the NWFSC-FRAM database of 861 m (2,824 ft) is very probably in error.

Scorpaena histrio Jenyns, 1840. Bandfin Scorpionfish, Darkblotch Scorpionfish, or **Player Scorpionfish**. To 27.3 cm (10.7 in) TL (John Snow, pers. comm. to M.L.). Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 5–200 m (17–656 ft) (Robertson and Allen 2015).

Scorpaena mystes Jordan & Starks, 1895. Pacific Spotted Scorpionfish or **Stone Scorpionfish**. To 51 cm (20 in) TL (Robertson and Allen 2015). Redondo Beach, southern California (Swift 1986) to Chile (Pequeño 1989), including Gulf of California (Poss in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Benthic; depth: intertidal to 100 m (328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Scorpaena russula Jordan & Bollman, 1890. **Reddish Scorpionfish** or Shortspine Red Scorpionfish. To 23 cm (9.1 in) TL (Moncayo-Estrada *et al.* 2006). Bahía Abreojos (26°48'N, 113°25'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chimbote, Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen and Robertson 1994). Benthic; depth: 7–160 m (23–525 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Robertson and Allen 2002).

Scorpaena sonorae Jenkins & Evermann, 1889. **Sonora Scorpionfish**. To 18 cm (7.1 in) TL (Allen and Robertson 1994). Southern Baja California (26°07.7'N, 113°04.2'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), to Gulf of California (Poss in Fischer *et al.* 1995), to Guerrero State, Mexico (Amezcua Linares 1996). Benthic; depth: surface (nightlight; Personal Communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–91 m (4–300 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Scorpaenodes xyris (Jordan & Gilbert, 1882). **Rainbow Scorpionfish**. To 15 cm (6 in) TL (Eschmeyer and Herald 1983). Anacapa and Santa Barbara Islands, southern California (Richards and Engle 2001) to Islas Chincha, Peru (Chirichigno 1974), including Gulf of California (Poss in Fischer *et al.* 1995), and Islas Galápagos (Eschmeyer and Herald 1983). Depth: intertidal to 50 m (164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Grove and Lavenberg 1997).

Sebastes aleutianus (Jordan & Evermann, 1898). **Rougheye Rockfish**. To 74 cm (29.1 in) FL (Conrath 2017); 76.8 cm (30.2 in) TL based on conversion factors provided by James Orr. North Pacific Ocean from at least the eastern Aleutian Islands off Unalaska Island (Orr and Hawkins 2008), to the eastern Bering Sea at Pribilof Canyon at 59°18''N, 177°41'W (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), to northern California (Keller *et al.* 2016). Benthic: depth: 45 to at least 765 m (148–2,509 ft) (min.: Orr and Hawkins 2008; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). A previous maximum size of 96.5 cm (38 in) TL, as well as geographic and depth ranges, were based on specimens identified before the distinction between *S. aleutianus* and *S. melanostictus* was recognized and therefore these parameters are probably not well known.

Sebastes alutus (Gilbert, 1890). **Pacific Ocean Perch**. To 75 cm (29.5 in) FL (DFO); about 78.8 cm (31 in) TL based on conversion factors in Echeverria and Lenarz (1984). Southern Japan and Sea of Okhotsk to Bering Sea

at Navarin Canyon, and Commander Islands and Aleutian Islands (Mecklenburg *et al.* 2002), to Punta Blanca (29°08'N, 115°26'W), central Baja California (Snytko 1986). Benthic; depth: near surface to 1,151 m (3,775 ft) (min.: Mecklenburg *et al.* 2002; NWFSC-FRAM). Larvae and juveniles may drift into the Chukchi Sea (Mecklenburg *et al.* 2002). We note that the southernmost record is hundreds of miles below the previous one (Point Loma, southern California, Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) and is the only record from Baja California. While this might cast doubt on the Punta Blanca record, we note that the Baja California coast has been very poorly surveyed and this species may be an occasional resident there.

Sebastes atrovirens (Jordan & Gilbert, 1880). **Kelp Rockfish**. To 48.3 cm (19 in) TL (Rodríguez-Santiago 2021). Fort Bragg, northern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Bahía San Carlos (29°36'N, 115°12'W) (Phillips 1957), and Islas de Cedros and San Benito (28°19'N, 115°35'W) (Ramírez-Valdez *et al.* 2015), central Baja California. Benthic; depth: surface (nightlight; Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–144 m (10–472 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: NWFSC-FRAM). This species was reportedly taken in 190–300 m (623–984 ft) by Snytko (1986). However, this is much deeper than any other records and we are somewhat sceptical of its validity.

Sebastes auriculatus Girard, 1854. **Brown Rockfish**. To 56 cm (22 in) TL (Kramer and O'Connell 1995). Prince William Sound, northern Gulf of Alaska (Rosenthal 1980) to Bahía Magdalena (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 287 m (941 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: DFO).

Sebastes aurora (Gilbert, 1890). **Aurora Rockfish**. To 41 cm (16 in) TL (Kramer and O'Connell 1995). Southeast Alaska (about 55°56'N, 135°26'W) (Laman and Orr 2011) to Isla de Cedros, central Baja California (Kramer and O'Connell 1995). Larvae have been taken off Banco Thetis (24°40'N, 112°18'W), southern Baja California (Moser *et al.* 1985), strongly implying that this species lives considerably farther south than its southernmost adult record. While Nelson *et al.* (2004) notes that records of this species from off Baja California may be based on errors in field identification, the presence of *Sebastes aurora* larvae many hundreds of miles below the U.S.–Mexico border strongly suggests the presence of adult fish in Mexican waters. If the species is not found in Mexican waters, the southernmost range is San Diego, southern California (Phillips 1957). Benthic; depth: 81–1,176 m (266–3,857 ft) (min.: Wilkins *et al.* 1998; max.: NWFSC-FRAM).

Sebastes babcocki (Thompson, 1915). **Redbanded Rockfish**. To 92 cm (36.2 in) FL (DFO); 94.8 cm (37.3 in) TL based on conversion factors in Echeverria and Lenarz (1984). Bering Sea at Zhemchug Canyon (Allen and Smith 1988), and Amchitka Island, Aleutian Islands (Mecklenburg *et al.* 2002) to San Diego, southern California (Miller and Lea 1972). Benthic; depth: 21–1,150 m (69–3,772 ft) (min.: DFO; max.: NWFSC-FRAM). Between the time of its description and the early 1970s, researchers considered the Redbanded Rockfish to be synonymous with the Flag Rockfish, *Sebastes rubrivinctus* (Jordan & Gilbert, 1880). Work by Rosenblatt and Chen (1972) distinguished these species. However, this misidentification added confusion to various fishery studies and it is now assumed that most or all "Flag Rockfish" previously reported from Oregon to Alaska are Redbanded Rockfish.

Sebastes baramenuke (Wakiya, 1917). **Brickred Rockfish**. To 51.7 cm (20.3 in) TL (Matsubara 1943). Sea of Japan off Korean Peninsula and Pacific Ocean off Honshu, Japan; Kiska Pass, western Aleutian Islands (51°57'N, 176°32'E), Alaska (Lindberg and Krasyukova 1987). Antonenko *et al.* (2003) described the first records from the north-western part of the Sea of Japan. Benthic; depth: 100–760 m (328–2,493 ft) (min.: Sheiko and Fedorov 2000; max. Kim 2004).

Sebastes borealis Barsukov, 1970. **Shortraker Rockfish**. To 120 cm (47.2 in) TL (Novikov 1974). Sea of Okhotsk, Pacific Ocean off northern Hokkaido, Japan, to Kamchatka, and western Bering Sea (Tokranov and Davydov 1998), to Navarin Canyon and Aleutian Islands (Mecklenburg *et al.* 2002), to Point Conception, California (Allen and Smith 1988). A juvenile specimen (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska) taken in the Bering Strait southwest of Cape Prince of Wales (65°21'N, 168°18'W), examined by both Lloyd Chen and Catherine Mecklenburg, may be this species. Benthic; depth: 25–1,200 m (82–3,937 ft) (min.: Allen and Smith 1988; max.: Sheiko and Fedorov 2000); also reported at surface (Orlov and Tokranov 2019), but without documentation.

Sebastes brevispinis (Bean, 1884). **Silvergray Rockfish**. To a documented length of 75 cm (29.5 in) TL (Willy Dunne, pers. comm. to M.L.) and 74.4 cm (29.3 in) FL (DFO). South-eastern Bering Sea (Mecklenburg *et al.* 2002) to Bahía de Sebastian Vizcaino, central Baja California (Snytko and Fedorov 1974). Benthic; depth: surface to 622 m (2,040 ft) (min.: Mecklenburg *et al.* 2002; max.: NWFSC-FRAM).

Sebastes carnatus (Jordan & Gilbert, 1880). **Gopher Rockfish**. To 43 cm (156.9 in) TL (Kamikawa 2017). Cape Blanco, Oregon (Butler *et al.* 2012) to Punta San Roque (27°12'N, 114°26'W), southern Baja California (Miller and Lea 1972). Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California, collected from the Salish Sea, and labled *Sebastes carnatus*, cannot be identified to species. Benthic; depth: intertidal to 88 m (289 ft) (min.: Chotkowski 1994; max.: NWFSC-FRAM).

Sebastes caurinus Richardson, 1844. **Copper Rockfish**. To 66 cm (26 in) TL (Mecklenburg *et al.* 2002). Western Gulf of Alaska east of Kodiak Island (Mecklenburg *et al.* 2002) to Islas San Benito, central Baja California (Chen 1971). Benthic; depth: intertidal to 408 m (1,338 ft) (min.: Cross 1981; max.: Bradburn *et al.* 2011).

Sebastes chlorostictus (Jordan & Gilbert, 1880). **Greenspotted Rockfish**. 53.4 cm (21 in) FL (Don Pearson, pers. comm. to M.L.); 54.2 cm (21.3 in) TL based on conversion factors in Echeverria and Lenarz (1984). Central Vancouver Island (49°04'N, 126°43'W) (Butler *et al.* 2012) to at least Isla de Cedros (28°23'N, 115°17'W), central Baja California (collected by M.L.), or perhaps to southern Baja California (25°32'N, 113°04'W) (Snytko 1986), but without documentation. Benthic; depth: 30–431 m (98–1,414 ft) (min.: M.L., unpubl. data; max.: NWFSC-FRAM).

Sebastes chrysomelas (Jordan & Gilbert, 1881). **Black-and-Yellow Rockfish**. To 38.7 cm (15.3 in) TL (Miller and Lea 1972). Cape Blanco, Oregon to Bahía Santa Maria (24°46'N, 112°15'W), southern Baja California (Butler *et al.* 2012). Benthic; depth: intertidal to 37 m (120 ft) (min.: Miller and Lea 1972; max.: Phillips 1957).

Sebastes ciliatus (Tilesius, 1813). **Dark Rockfish**. To 47 cm (18.5 in) FL (Orr and Blackburn 2004); 48 cm (18.9 in) TL based on conversion factor provided by James Orr. Western Aleutian Islands and eastern Bering Sea to Johnstone Strait, British Columbia (Orr and Blackburn 2004), or Whidbey Island, Washington (based on underwater observation by Jan Kocian, pers. comm. to M.L.). Depth: 5–160 m (17–528 ft) (Orr and Blackburn 2004).

Sebastes constellatus (Jordan & Gilbert, 1880). **Starry Rockfish**. To 46 cm (18 in) TL (Phillips 1957). Sea Lion Gulch State Marine Reserve, northern California (Lauermann *et al.* 2017) to southern Baja California (Merit McCrea, pers. comm. to M.L.). Tentatively identified from photographs taken at Rocas Alijos (about 25°N, 115°45'W) (Robert Lea, pers. comm. to M.L.). Benthic; depth: 15–274 m (50–900 ft) (min.: Butler *et al.* 2012; max.: Miller and Lea 1972).

Sebastes crameri (Jordan, 1897). **Darkblotched Rockfish**. To 59.5 cm (23.4 in) TL (Arn Aarreberg, pers. comm. to M.L.). Eastern Bering Sea southeast of Zhemchug Canyon, and Aleutian Islands off Tanaga Island (Mecklenburg *et al.* 2002) to near Santa Catalina Island, southern California (Miller and Lea 1972), and Laguna Beach, southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 29–915 m (95–3,001 ft) (min.: Mecklenburg *et al.* 2002; max.: M.L., unpubl. data).

Sebastes dallii (Eigenmann & Beeson, 1894). **Calico Rockfish**. To 25.4 cm (10 in) TL (Julius Phillips, unpubl. data). Northern California (37°52'N) (NWFSC-FRAM) to Punta Rompiente, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: intertidal to 305 m (1,000 ft) (min.: Chotkowski 1994; max.: LACSD 2002).

Sebastes diaconus Frable, Wagman, Frierson, Aguilar, & Sidlauskas, 2015. **Deacon Rockfish**. The maximum size, geographic, and depth ranges of this species are unclear due to previous confusion with *Sebastes mystinus* and *Sebastes ciliatus*. Thus, the values presented here should be regarded as tentative. To at least 41 cm (16.1 in) FL (Hannah *et al.* 2015). Vancouver Island, British Columbia (Frable *et al.* 2015) to at least Santa Rosa Island, southern California (John Butler, pers. comm to M.L.). Records of "blue rockfish" from Alaska (i.e., Chatham Strait and Kruzof Island, south-eastern Alaska) (Victoria O'Connell, pers. comm. to M.L.), and perhaps to Elfin Cove, south-eastern Alaska (Scott Meyer, pers. comm. to M.L.) are likely either this species or *S. ciliatus*. It is likely that all "Blue Rockfish" from the Bering Sea and the western Gulf of Alaska refer to *S. ciliatus* (referred to as dusky rockfish in Mecklenburg *et al.* 2002). Depth: at least 8–86 m (26–282 ft) (min.: Frable *et al.* 2015; max.: NWFSC-FRAM).

Sebastes diploproa (Gilbert, 1890). **Splitnose Rockfish**. To 45.7 cm (18 in) TL (Phillips 1957). Sanak Islands, western Gulf of Alaska (Mecklenburg *et al.* 2002) to Isla de Cedros, central Baja California (Kramer and O'Connell 1995). Voucher specimens are known from as far west in the Gulf of Alaska as 54°20'N, 159°55'W (Maslenikov *et al.* 2013). Benthic; depth: 50–1,050 m (164–3,444 ft) (min.: DFO; max.: NWFSC-FRAM). Young fish often found near surface under drifting kelp (Eschmeyer and Herald 1983).

Sebastes elongatus Ayres, 1859. **Greenstriped Rockfish**. To 47.5 cm (18.7 in) FL (DFO); about 49.6 cm TL (19.5 in) based on conversion factors in Echeverria and Lenarz (1984). Chirikof Island, western Gulf of Alaska (Allen and Smith 1988) to Isla de Cedros, central Baja California (Phillips 1957). Benthic; depth: 12–1,151 m (39–3,775 ft) (min.: Shaw 1999; max.: NWFSC-FRAM).

Sebastes emphaeus (Starks, 1911). **Puget Sound Rockfish**. To 19 cm (7.5 in) TL (Butler *et al.* 2012). Outer coast of Kenai Peninsula and Prince William Sound, northern Gulf of Alaska (Mecklenburg *et al.* 2002) to central California (34°26'N) (NWFSC-FRAM). Depth: 3–470 m (10–1,542 ft) (min.: Love *et al.* 2005; max.: DFO).

Sebastes ensifer Chen, 1971. **Swordspine Rockfish**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Oregon (43°56'N) (NWFSC-FRAM) to Banco Ranger (28°25'N, 115°32'W), central Baja California (Chen 1971). Benthic; depth: 50–433 m (164–1,420 ft) (min.: M.L., unpubl. data; max.: Miller and Lea 1972).

Sebastes entomelas (Jordan & Gilbert, 1880). **Widow Rockfish**. To 64.2 cm (25.3 in) FL (DFO); 68.1 cm (26.8 in) TL based on conversion factors in Echeverria and Lenarz (1984). Albatross Bank, western Gulf of Alaska (Allen and Smith 1988) to Bahía de Todos Santos, northern Baja California (Miller and Lea 1972). Depth: near surface (juveniles and adults) to 800 m (2,625 ft) (min.: M.L., unpubl. data; max.: Mecklenburg *et al.* 2002); young-of-the-year rarely intertidal (Studebaker and Mulligan 2008).

Sebastes eos (Eigenmann & Eigenmann, 1890). **Pink Rockfish**. To 56 cm (22 in) TL (Phillips 1957). Central Oregon (44°34'N) (NWFSC-FRAM) to southern Baja California (27°01'N, 114°16'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), or perhaps to 25°24'N, 113°01'W (Snytko 1986), but without documentation, and Isla Guadalupe, central Baja California (Love *et al.* 2002). Benthic; depth: 45–366 m (150–1,200 ft) (min.: Allen *et al.* 2002; max.: Miller and Lea 1972).

Sebastes flavidus (Ayres, 1862). **Yellowtail Rockfish**. To 66 cm (26 in) TL (Phillips 1957). Eastern Aleutian Islands south of Unalaska Island (Mecklenburg *et al.* 2002) to Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015). Depth: surface (Miller and Lea 1972), intertidal to 549 m (1,801 ft) (min.: Chotkowski 1994; max.: Allen and Smith 1988). The extremely outlier maximum depth of 1,150 m (3,772 ft) in the NWFSC-FRAM database is without any documentation and is almost certainly in error.

Sebastes gilli (Eigenmann, 1891). **Bronzespotted Rockfish**. To at least 85 cm (33.5 in) TL (John Field, pers. comm. to M.L.). West coast of Vancouver Island (about 49°N, 127°W), British Columbia (Schon Acheson, pers. comm. to M.L.) to off Punta Colnett (30°53'N, 116°30'W), northern Baja California (M.L., unpubl. data). Benthic; depth: 75–413 m (246–1,354 ft) (min.: Eschmeyer and Herald 1983; max.: M.L., unpubl. data). Spelled two ways in the original description, with a double *i* and with a single *i* at the end of the name. In accordance with the rules of zoological nomenclature, Nelson *et al.* (2004) selected the spelling with one *i* as the correct original spelling.

Sebastes glaucus Hilgendorf, 1880. **Gray Rockfish**. To 59 cm (23.2 in) TL (Mecklenburg *et al.* 2002). Northern Sea of Japan and Sea of Okhotsk (Lindberg and Krasyukova 1987) to Commander Islands (Love *et al.* 2005), and western Bering Sea north to Amayan Bay, Koryak coast (about 60°50'N) (Taranetz 1933); south of Atka Island, Aleutian Islands (Orr and Baker 1996) and eastern Bering Sea (60°22'N, 177°45'W) (Maslenikov *et al.* 2013). Benthic; depth: 2–550 m (7–1,804 ft) (min.: Kondrat'ev 1996; max.: Orr *et al.* 1998).

Sebastes goodei (Eigenmann & Eigenmann, 1890). **Chilipepper**. To 59 cm (23.2 in) TL (Mecklenburg *et al.* 2002). Pratt and Durgin Seamounts, eastern Gulf of Alaska (Mecklenburg *et al.* 2002), and northeast of Graham Island, British Columbia (54°37'N, 131°24'W) (Lynne Yamanaka, pers. comm. to M.L.), to off Bahía Magdalena, southern Baja California (Phillips 1957). Depth: near surface to 515 m (1,689 ft) (min.: Allen and Smith 1988; max.: Keller *et al.* 2006a).

Sebastes helvomaculatus Ayres, 1859. **Rosethorn Rockfish**. To 43 cm (16.9 in) TL (Yamanaka 2005). Western Gulf of Alaska east of Sitkinak Island (Mecklenburg *et al.* 2002) to at least about U.S.-Mexican border (32°26.1'N, 119°06.6'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), or perhaps to Banco Ranger (28°33'N, 115°25'W), central Baja California (Snytko 1986), but without documentation. Benthic; depth: 27–1,151 m (89–3,775 ft**)** (min.: DFO; max.: NWFSC-FRAM).

Sebastes hopkinsi (Cramer, 1895). **Squarespot Rockfish**. To 29 cm (11.5 in) TL (Eschmeyer and Herald 1983). A 38 cm (15 in) FL record (Keller *et al.* 2019) is likely in error (Aimee Keller, pers. comm. to M.L.). Washington (47°20'N) (NWFSC-FRAM) to Isla de Cedros and Islas de San Benitos (Ramírez-Valdez *et al.* 2015) and Punta Eugenia - Isla Natividad, central Baja California (Christopher Dewees, pers. comm. to M.L.), and Isla Guadalupe, central Baja California (Chen 1971). Benthic; depth: 15–305 m (50–1,000 ft) (min.: M.L., unpubl. data; max.: LACSD 2002).

Sebastes jordani (Gilbert, 1896). **Shortbelly Rockfish**. To 35 cm (13.8 in) TL or more (Mecklenburg *et al.* 2002). North of Graham Island, British Columbia (54°23'N, 133°27'W) (Lynne Yamanaka, pers. comm. to M.L.) to southern Baja California (23°28'N, 110°43'W) (Snytko 1986). Granite Island, northern Gulf of Alaska record is questionable (Allen and Smith 1988); a number of larvae have been collected from south-eastern Bering Sea (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Depth: surface (nightlight: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), adults at about 26–515 m (85–1,689 ft) (NWFSC-FRAM).

Sebastes lentiginosus Chen, 1971. **Freckled Rockfish**. To about 23 cm (9 in) TL (Miller and Lea 1972). Point Conception, California (34°37'N) (NWFSC-FRAM) to southern Baja California (25°37'N, 113°24'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 22–311 m (73–1,020 ft) (min.: M.L., unpubl. data; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Sebastes levis (Eigenmann & Eigenmann, 1889). **Cowcod**. Reported to 100 cm (39.4 in) TL (Butler *et al.* 2003). Northern Oregon (45°23'N, 124°35'W) (NWFSC-FRAM) to Rocas Alijos, southern Baja California (photographs of two fish by Dharyl Shelbourne, 29 June 2017, http://royalpolaris.com/news/grouper-wahoo-yellowtail-make-day/) and Isla Guadalupe, central Baja California (Miller and Lea 1972). Benthic; depth: juveniles as shallow as 40 m (132 ft) (Johnson 1997); adults 72–522 m (236–1,712 ft) (min.: M.L., unpubl. data; max.: NWFSC-FRAM).

Sebastes macdonaldi (Eigenmann & Beeson, 1893). **Mexican Rockfish**. To 66 cm (26 in) TL (Miller and Lea 1972). Santa Cruz, central California (Burton and Lea 2019) to southern Baja California (23°24'N, 111°11'W) (Chen 1971), and central Gulf of California (Poss in Fischer *et al.* 1995). Benthic; depth: 73–354 m (240–1,161 ft) (min.: M.L., unpubl. data; max.: NWFSC-FRAM).

Sebastes maliger (Jordan & Gilbert, 1880). **Quillback Rockfish**. To 64.8 cm (25.5 in) FL (DFO), 66.1 cm (26 in) TL based on conversion factors in Echeverria and Lenarz (1984). West of Shumagin Islands (54°36'N, 161°30'W), Gulf of Alaska (Maslenikov *et al.* 2013) to Anacapa Passage, southern California (Love and Lea 1997). Benthic; depth: intertidal to 398 m (1,305 ft) (min.: Read 1968; max.: NWFSC-FRAM).

Sebastes melanops Girard, 1856. **Black Rockfish**. To 69 cm (27.2 in) TL (Butler *et al.* 2012). Southern Bering Sea (Orr and Blackburn 2004) and Rat Island, Aleutian Islands (Brenda Konar, pers. comm. to M.L.) to northern Baja California (Kramer and O'Connell 1995). Depth: surface to 366 m (1,200 ft) (min.: Kramer and O'Connell 1995; max.: Eschmeyer and Herald 1983).

Sebastes melanosema Lea & Fitch, 1979. **Semaphore Rockfish**. To 39 cm (15.4 in) TL (Snytko 1986). Central Oregon (44°41'N, 124°48'W) (Snytko 1986), but without documentation; documented from Santa Barbara Channel (Mary Nishimoto, pers. comm. to M.L.) to Punta San Pablo (27°13'N, 114°30'W), central Baja California (Lea and Fitch 1979). Benthic; depth: 88–659 m (287–2,162 ft) (NWFSC-FRAM).

Sebastes melanostictus (Matsubara, 1934). **Blackspotted Rockfish**. To at least 78 cm (30.7 in) FL (Keller *et al.* 2016); 79.9 cm (31.5 in) TL based on conversion factors provided by James Orr. Pacific coast of Japan, at about 35°N, north through the Kuril Islands, Aleutian Islands, and the Bering Sea to 60°30'N, and southward to southern California on Coronado Bank (at 32°36'N) (Orr and Hawkins 2008). Benthic; depth: at least 25–1,000 m (82–3,280 ft) (min.: Orlov and Tokranov 2019; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). This species and *S. aleutianus* have only recently been recognized as distinct and thus it is not possible to use older estimates of maximum size, as well as geographic and depth ranges.

Sebastes melanostomus (Eigenmann & Eigenmann, 1890). **Blackgill Rockfish**. To 61 cm (24 in) TL (Phillips 1957). Northern British Columbia off west coast of Haida Gwaii (Workman *et al.* 1998) to Isla de Cedros, central Baja California (Miller and Lea 1972). Pelagic juveniles have been taken as far south as Punta Abreojos (26°06'N, 114°05'W), southern Baja California (Moser and Ahlstrom 1978), strongly implying that adults live

in southern Baja California. Benthic; depth: 88–768 m (289–2,520 ft) (min.: NWFSC-FRAM; max.: Eschmeyer and Herald 1983).

Sebastes miniatus (Jordan & Gilbert, 1880). **Vermilion Rockfish**. To 76 cm (30 in) TL (Phillips 1957). Zaikof Bay, Montague Island, Prince William Sound, Alaska (O'Connell *et al.* 1992) to Islas San Benito, central Baja California (Chen 1971). Benthic; depth: juveniles in shallow water (M.L., unpubl. data); adults 12–478 m (39–1,568 ft) (min.: O'Connell *et al.* 1992; max.: Bradburn *et al.* 2011). A single juvenile was captured in a Fort Bragg, northern California, tide pool (Craig *et al.* 2017). Note, this "taxon" is composed of two species, Vermilion Rockfish (*Sebastes miniatus*) and the tentatively denoted *Sebastes crocotulus*, Sunset Rockfish (Hyde *et al.* 2008). Because of previous confusion between the two species, the precise maximum sizes, geographic ranges, and depth ranges of each species is unknown. Genetically identified *S. miniatus* are known from Neah Bay, Washington to Punta Baja, northern Baja California and S. *crocotulus* from Monterey, central California to Colnett Bank, northern Baja California.

Sebastes moseri Eitner, Kimbrell, & Vetter, 1999. **Whitespotted Rockfish** or Whitespeckled Rockfish. To 23.5 cm (9.3 in) FL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Off Big Creek, central California (36°03'N, 121°36.8'W) (Donna Schroeder, pers. comm. to M.L.) to off Punta Colnett (30°53'N, 116°30'W), northern Baja California (Butler *et al.* 2012), and Isla Guadalupe, central Baja California (John Butler, per. comm. to M.L.). Benthic; depth: 50–274 m (165–900 ft) (min.: Love *et al.* 2005; max.: Butler *et al.* 2012).

Sebastes mystinus (Jordan & Gilbert, 1881). **Blue Rockfish**. The maximum size and geographic and depth ranges of this species are unclear due to previous confusion with *Sebastes diaconus* and *S. ciliatus*. Thus the values presented here should be regarded as tentative. To at least 38.5 cm (15.2 in) TL (Schmidt 2014), but perhaps to 53.3 cm (21 in) TL (Phillips 1957). At least central Oregon (44.5°N) to northern Baja California (32.5°N) (Frable *et al.* 2015), and probably to just south of Punta Baja (29°54'42"N, 115°49'W), northern Baja California (Klingbeil and Knaggs 1976). Records from Alaska (i.e., Chatham Strait and Kruzof Island, south-eastern Alaska and perhaps Elfin Cove, south-eastern Alaska (Love *et al.* 2005)) are likely *S. diaconus*. It is likely that all "Blue Rockfish" from the Bering Sea and the western Gulf of Alaska refer to *S. ciliatus* (referred to as Dusky Rockfish in Mecklenburg *et al.* 2002). Depth: surface to at least 156 m (512 ft) (M.L., unpubl. data), and probably including the intertidal (Moring 1972); a record of about 549 m (1,800 ft) (Eschmeyer and Herald 1983) seems anomalously deep and is without documentation.

Sebastes nebulosus Ayres, 1854. **China Rockfish**. To 47.7 cm (18.8 in) TL (Lea *et al.* 1999). Kodiak Island, western Gulf of Alaska (Mecklenburg *et al.* 2002) to Redondo Beach (Fitch and Schultz 1978), and San Nicolas Island, southern California (Mecklenburg *et al.* 2002). Benthic; depth: 3–177 m (10–581 ft) (min.: Eschmeyer and Herald 1983; max.: DFO).

Sebastes nigrocinctus Ayres, 1859. **Tiger Rockfish**. To 61 cm (24 in) TL (Phillips 1957). Off Eider Point, Unalaska Island, Aleutian Islands (Love *et al.* 2005) to Santa Monica Bay (Merit McCrea, pers. comm. to M.L.), and to Tanner and Cortes Banks, southern California (Lissner and Dorsey 1986). Depth: 2–298 m (7–978 ft) (min.: Chalifour *et al.* 2019, precise depth from David Scott, pers. comm. to M.L.; max.: M.L., unpubl. data).

Sebastes notius Chen, 1971. **Guadalupe Rockfish** or Southern Rockfish. To 21.9 cm (8.6 in) SL (Chen 1971). This species has been collected at two sites: Isla Guadalupe (Chen 1971), central Baja California and in the vicinity of Banco del Tio Sam (Uncle Sam Bank) (25°35'N), southern Baja California (Rocha-Olivares 1998). Benthic; depth: 165–250 m (541–820 ft) (Chen 1971).

Sebastes ovalis (Ayres, 1862). **Speckled Rockfish**. To 56 cm (22 in) TL (Phillips 1957). Northern Washington (47°38'N) (Nichol *et al.* 1989) to Arrecife Sacramento (29°40'N, 115°47'W), central Baja California (Julius Phillips, unpubl. data). Depth: 30–366 m (100–1,200 ft) (min.: Miller and Lea 1972; max.: Phillips 1957).

Sebastes paucispinis Ayres, 1854. **Bocaccio**. To 98.1 cm (38.6 in) TL (M.L., unpubl. data). Western Gulf of Alaska south of Shumagin Islands and Alaska Peninsula (Mecklenburg *et al.* 2002) to Isla de Cedros (Ramírez-Valdez *et al.* 2015), central Baja California (Chen 1971). Larvae have been taken further southward at about 26°N, 115°W, in southern Baja California (Moser *et al.* 1977), and a pelagic juvenile was taken in a purse seine at 26°39'N, 114°33'W, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: juveniles near surface and in inshore waters; adults at about 20–475 m (66–1,558 ft) (min.: Mecklenburg *et al.* 2002; max.: Allen and Smith 1988); one juvenile reported from tide pool (Moring 1972).

Sebastes phillipsi (Fitch, 1964). **Chameleon Rockfish**. To 52 cm (20.3 in) TL (M.L., unpubl. data). Point Saint George, northern California (41°35'N) (NWFSC-FRAM) to Nine Mile Bank (32°39'N, 117°28'W), southern California (Love *et al.* 2005). Benthic; depth: 174–390 m (570–1,279 ft). (min.: Miller and Lea 1972; max.: Butler *et al.* 2012).

Sebastes pinniger (Gill, 1864). **Canary Rockfish**. To 76 cm (30 in) TL (Phillips 1957). Pribilof Islands (56°47'N, 170°19'W), Bering Sea (Maslenikov *et al.* 2013), and western Gulf of Alaska south of Shelikof Strait (Mecklenburg *et al.* 2002), to Punta Colnett, northern Baja California (Phillips 1957). Depth: young fish intertidal (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and in shallow, subtidal waters; adults at about 18 m (59 ft) (Mecklenburg *et al.* 2002) to at least 458 m (1,502 ft) (min.: Mecklenburg *et al.* 2002; max.: DFO). The NWFSC-FRAM database contains one extreme outlier maximum depth of 838 m (2,749 ft), but the next deepest depth in that database is 439 m (1,440 ft). Without additional documentation the 838 m datum is likely in error.

Sebastes polyspinis (Taranetz & Moiseev, 1933). **Northern Rockfish**. To 48 cm (18.9 in) TL (Love *et al.* 2005). Kuril Islands to Bering Sea at Pervenets Canyon and Commander–Aleutian chain to Graham Island, northern British Columbia (Mecklenburg *et al.* 2002, partly after Allen and Smith 1988). Benthic; depth: 10–1,151 m (33–3,775 ft) (min.: Love *et al.* 2005; max.: NWFSC-FRAM). The minimum depth of 10 m is from a collection of four small fish (8.6–9.3 cm, 3.3–3.7 in, FL) in Kalsin Bay, Kodiak Island, Alaska.

Sebastes proriger (Jordan & Gilbert, 1880). **Redstripe Rockfish**. To 61 cm (24 in) TL (Kramer and O'Connell 1995). Pribilof Canyon, south-eastern Bering Sea and Amchitka Island, Aleutian Islands (Mecklenburg *et al.* 2002) to southern Baja California (26°46'N, 114°07'W) (Snytko and Fedorov 1975). Benthic; depth: 4–550 m (13–1,804 ft) (DFO).

Sebastes rastrelliger (Jordan & Gilbert, 1880). **Grass Rockfish**. To 55.9 cm (22 in) TL (Miller and Lea 1972). Ucluelet, Vancouver Island, British Columbia (Jeffrey Marliave, pers. comm. to M.L.) to Bahía Playa Maria (28°50'N), central Baja California (Phillips 1957). Benthic; depth: intertidal to 68 m (223 ft) (min.: Miller and Lea 1972; max.: NWFSC-FRAM).

Sebastes reedi (Westrheim & Tsuyuki, 1967). **Yellowmouth Rockfish**. To 60 cm (23.6 in) FL (DFO). Aleutian Islands (54°20'N, 165°21'W), Alaska (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska), to near San Francisco, northern California (Snytko 1986). Benthic; depth: 52–585 m (171–1,919 ft) (DFO). The NWFSC-FRAM database lists a much deeper record—1,073 m (3,519 ft)—however, because that database contains no other records between 452 m (1,483 ft) and 1,073 m, we consider this a likely error.

Sebastes rosaceus Girard, 1854. **Rosy Rockfish**. To 35 cm (13.8 in) FL (Keller *et al.* 2019); 36.9 cm (14.5 in) TL based on conversion factors in Echeverria and Lenarz (1984). Marrowstone Point, Puget Sound (Pietsch and Orr 2019) to Bahía Tortugas (27°30'N, 114°50'W), southern Baja California (Phillips 1957). Benthic; depth: 7–328 m (24–1,076 ft) (min.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys; max.: Bradburn *et al.* 2011).

Sebastes rosenblatti Chen, 1971. **Greenblotched Rockfish**. To 54 cm (21.3 in) TL (Love *et al.* 1990). Point Delgada, northern California (40°05'N) (NWFSC-FRAM) to southern Baja California (27°01.4'N, 114°16.3'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 55–500 m (180–1,640 ft) (min.: M.L., unpubl. data; max.: NWFSC-FRAM).

Sebastes ruberrimus (Cramer, 1895). Red Snapper, Turkey-Red Rockfish, or **Yelloweye Rockfish**. To 105 cm (41.3 in) FL (DFO); 107 cm (42.1 in) TL based on conversion factors in Echeverria and Lenarz (1984). South of Umnak Island, Aleutian Islands (Mecklenburg *et al.* 2002) to Ensenada, northern Baja California (Phillips 1957). Benthic; depth: 11–732 m (36–2,401 ft) (min.: Love *et al.* 2002; max.: DFO).

Sebastes rubrivinctus (Jordan & Gilbert, 1880). **Flag Rockfish**. To 44 cm (17.2 in) TL (Love *et al.* 2005). Stonewall Bank (44°31'N, 124°26'W), Oregon (Robert Hannah, pers. comm. to M.L.) to southern Bahía de Sebastian Vizcaino, central Baja California (28°06'W) (Rodríguez-Romero *et al.* 2009). Benthic; depth: 30–431 m (100–1,414 ft) (min.: Eschmeyer and Herald 1983; max.: Bradburn *et al.* 2011). Young juveniles frequently live under drifting kelp. It is now assumed that most records of *S. rubrivinctus* from Oregon to Alaska, and fish identified as *S. rubrivinctus* larger than about 45 cm, refer to *Sebastes babcocki* (Thompson, 1915).

Sebastes rufinanus Lea & Fitch, 1972. **Dwarf-red Rockfish**. To 17 cm (6.8 in) TL (Lea and Fitch 1972). San Miguel Island (Love *et al.* 2005) to 60 Mile Bank (32°01'N, 118°13'W) (Butler *et al.* 2012). Benthic; depth: 58–220 m (190–722 ft) (min.: M.L., unpubl. data; max.: max.: Butler *et al.* 2012).

Sebastes rufus (Eigenmann & Eigenmann, 1890). **Bank Rockfish**. To 56 cm (22 in) TL (Keller *et al.* 2019); 56.9 cm (22.4 in) TL based on conversion factors in Echeverria and Lenarz (1984). Haida Gwaii, British Columbia (Love *et al.* 2005) to Isla Guadalupe (29°01.5'N, 118°12.5'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Isla Guadalupe (Miller and Lea 1972). Benthic; depth: 31–512 m (102–1,680 ft) (min.: Miller and Lea 1972; max.: Butler *et al.* 2012).

Sebastes saxicola (Gilbert, 1890). **Stripetail Rockfish**. To 41 cm (16.1 in) TL (Kramer and O'Connell 1995). Afognak Island (58°12.4'N, 152°15.6'W), Gulf of Alaska (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Punta Rompiente (27°41'N, 115°01'W), southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 25–547 m (82–1,795 ft) (Mecklenburg *et al.* 2002). An undescribed, apparently close-related cryptic species was noted in Hyde and Vetter (2007).

Sebastes semicinctus (Gilbert, 1897). **Halfbanded Rockfish**. To 25 cm (10 in) TL (Phillips 1957). Strait of Juan de Fuca, Washington (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Bahía Asuncion, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 15–440 m (48–1,443 ft) (min.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys; max.: NWFSC-FRAM).

Sebastes serranoides (Eigenmann & Eigenmann, 1890). **Olive Rockfish**. To 61 cm (24 in) TL (Miller and Lea 1972). Southern Oregon (M.L., unpubl. data) to Islas San Benito, central Baja California (Chen 1971). Depth: surface (M.L., pers. obs.), intertidal to 172 m (564 ft) (min.: Studebaker *et al.* 2009; max.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys).

Sebastes serriceps (Jordan & Gilbert, 1880). **Treefish**. To 41 cm (16 in) TL (Phillips 1957). San Francisco, northern California to Isla de Cedros, central Baja California (Phillips 1957). Benthic; depth: intertidal to 103 m (338 ft) (min. Milton Love, unpubl. data; max.: Butler *et al.* 2012). Young juveniles frequently live under drifting kelp.

Sebastes simulator Chen, 1971. **Pinkrose Rockfish**. Largest documented individual 34.5 cm (13.6 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); one undocumented record at 42.1 cm (16.4 in) TL (León-Castro *et al.* 1993). Mattole Canyon State Marine Reserve, northern California (Lauermann *et al.* 2017) to Punta Colnett (30°53'N, 116°30'W), northern Baja California (M.L., unpubl. data) and Isla Guadalupe, central Baja California (León-Castro *et al.* 1993). Benthic; depth: 99–450 m (325–1,476 ft) (min.: Eschmeyer and Herald 1983; max.: Chen 1971).

Sebastes umbrosus (Jordan & Gilbert, 1882). **Honeycomb Rockfish**. To 30 cm (11.8 in) TL (Rodríguez-Santiago 2021). Point Pinos, central California (Miller and Lea 1972) to Rocas Alijos (24°57'N, 15°44'W), southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 18–270 m (60–886 ft) (min.: M.L., unpubl. data; max.: León-Castro 1993).

Sebastes variabilis Pallas, 1814. **Dusky Rockfish**. To 59 cm (23.2 in) FL; 60.9 cm (24 in) TL based on conversion factor provided by James Orr. Hokkaido, Japan and eastern Kamchatka to about 60°N in the Bering Sea and along the Aleutian Islands to Johnstone Strait, British Columbia; one record from Oregon (44°24'N, 124°47'W) (Love *et al.* 2005). Depth: 6–675 m (20–2,214 ft). All in Orr and Blackburn (2004) except the Oregon coordinates.

Sebastes variegatus Quast, 1971. **Harlequin Rockfish**. To 38 cm (15 in) TL (Kramer and O'Connell 1995). Bering Sea (to 60°08'N, 178°52'W), and west of Buldir Island, western Aleutian Islands (Maslenikov *et al.* 2013), to 95 km (59 mi) southwest of Newport, Oregon (44°32'N, 124°39'W) (Orr and Baker 1996). Benthic; depth: 6–558 m (20–1,831 ft). The 6 m record is from a juvenile; the shallowest adult record is 49 m (161 ft) (min.: Gillespie *et al.* 1993; max.: Allen and Smith 1988).

Sebastes wilsoni (Gilbert, 1915). **Pygmy Rockfish**. To 25 cm (9.8 in) FL, 28.5 cm (11.2 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Kodiak Island, northern Gulf of Alaska (Maslenikov *et al.* 2013) to 60 Mile Bank, southern California (32°01'N, 118°13'W) (Butler *et al.* 2012). Benthic; depth: 29–391 m (95–1,282 ft) (min.: Mecklenburg *et al.* 2002; max.: DFO).

Sebastes zacentrus (Gilbert, 1890). **Sharpchin Rockfish**. To 49 cm (19.3 in) FL (DFO). Saint George Island, eastern Bering Sea (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska) and

Attu Island, Aleutian Islands (Mecklenburg *et al.* 2002) to San Diego, southern California (Phillips 1957). Benthic; depth: 25 to between 610–660 m (83–2,001–2,164 ft) (min.: Allen and Smith 1988; max.: Snytko 1986).

Sebastolobus alascanus Bean, 1890. **Shortspine Thornyhead**. To 88.7 cm (34.9 in) TL (DFO). Northern Honshu Island, Japan (Tsuruoka *et al.* 2010) and Seas of Okhotsk and Japan to Pacific Ocean and Bering Sea off Kamchatka (Tokranov and Novikov 1997) to Navarin Canyon and Aleutian Islands (Mecklenburg *et al.* 2002) to Pacific off Boca de Santo Domingo (25°32'N, 113°04'W), southern Baja California (Snytko 1987); Costa Rica (Robertson *et al.* 2017). Benthic; depth: 17–1,524 m (56–5,000 ft) (min.: Sheiko and Fedorov 2000; max.: Eschmeyer and Herald 1983).

Sebastolobus altivelis Gilbert, 1896. **Longspine Thornyhead**. To 39 cm (15.4 in) TL (Kamikawa 2017). Bering Sea (59°20'N, 178°17'W) (Maslenikov *et al.* 2013) and Shumagin Islands, western Gulf of Alaska to Cabo San Lucas, southern Baja California (Mecklenburg *et al.* 2002). Benthic; depth: 72–1,756 m (236–5,760 ft) (min.: NWFSC-FRAM; max.: Kramer and O'Connell 1995).

Sebastolobus macrochir (Günther, 1877). Broadbanded Thornyhead or **Broadfin Thornyhead**. To 41 cm (16.1 in) TL (Poltev 2011). Seas of Japan and Okhotsk to Commander Islands (Mecklenburg *et al.* 2002), Pacific Ocean south of Aleutian Islands (eastward to 54°22'N, 166°21'W) (Maslenikov *et al.* 2013), and Bering Sea south of Cape Navarin to eastern Bering Sea (Mecklenburg *et al.* 2002). Benthic; depth: 100–1,504 m (328–4,934 ft) (min.: Orlov and Kochkin 1995; max.: Mecklenburg *et al.* 2002). Many of the earlier records for this species in the eastern Bering Sea pertain to *S. alascanus.* The vernacular "broadbanded thornyhead" may have originated as a typographical error for broadhanded (translation of *macrochir*), in reference to the pectoral fins (Mecklenburg *et al.* 2002); the fish does not have any bands of color. The AFS–ASIH list of North American fish names (Nelson *et al.* 2004) now gives the name Broadfin Thornyhead for this species.

Family Triglidae—Searobins

Bellator gymnostethus (Gilbert, 1892). **Nakedbelly Searobin** or Short-Spine Searobin. To 16.7 cm (6.6 in) TL (Rodríguez-Romero *et al.* 2008). Northern Baja California (30°58'N, 116°18'W) (Personal communication: Universidad National Autonoma de Mexico, Colleccion Nacional de Peces, Mexico City, Mexico) to Isla San Lorenzo, Callao, Peru (Chirichigno 1974), including Gulf of California (Galván-Magaña *et al.* 1996). Benthic; depth: 6–200 m (20–656 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Bellator loxias (Jordan, 1897). Barred Searobin or **Chevron Searobin**. To 15 cm (5.9 in) TL (Bussing in Fischer *et al.* 1995). Southern Baja California (26°59'N, 114°W) (Personal communication: Universidad National Autonoma de Mexico, Colleccion Nacional de Peces, Mexico City, Mexico) to Isla San Lorenzo, Callao, Peru (Chirichigno 1974), including Gulf of California (Bussing in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: about 20–1,369 m (66–4,490 ft) (min.: Aguilar-Palomino *et al.* 2001; max.: Morera *et al.* 2019).

Bellator xenisma (Jordan & Bollman, 1890). **Splitnose Searobin**. To 17.5 cm (6.9 in) TL (Moncayo-Estrada *et al.* 2006). Three reported off Santa Barbara, southern California (Eschmeyer and Herald 1983); Todos Santos (23°24.6'N, 110°13.8'W) (John Snow, pers. comm. to M.L.), and Gulf of California (Bussing in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998). Benthic; depth: 17–200 m (55–656 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Prionotus albirostris Jordan & Bollman, 1890. **Whitesnout Searobin**. To 30 cm (11.8 in) TL (Rodríguez-Romero *et al.* 2008). Tanner Basin, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Bahía San Hipólito (26°57'N, 113°53'W), southern Baja California (González-Acosta *et al.* 1999) and Gulf of California (Bussing in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Depth: 6–134 m (18–440 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Prionotus birostratus Richardson, 1844. **Twobeak Searobin**. To 18 cm (7.1 in) TL (Bussing in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Playas, Ecuador (Bussing in Fischer *et al.* 1995), including Gulf of California (Bussing in Fischer *et al.* 1995). Depth: 18–61 m (60–200 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Prionotus horrens Richardson, 1844. **Bristly Searobin**. To 35 cm (13.8 in) TL (Bussing in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Peru (Bussing in Fischer *et al.* 1995), including Gulf of California (Robertson and Allen 2002). Depth: 3–105 m (9–344 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Prionotus ruscarius Gilbert & Starks, 1904. Common Searobin or **Rough Searobin**. To 41 cm (16.1 in) TL (John Snow, pers. comm. to M.L.). Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015) and on mainland at Punta Pequeña (26°14'N, 112°28.5'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into northern Gulf of California to Chile (Pequeño 1989). Depth: 4–1,369 m (13–4,490 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Morera *et al.* 2019).

Prionotus stephanophrys Lockington, 1881. **Lumptail Searobin**. To 43 cm (16.9 in) TL (Robertson and Allen 2002). La Perouse Bank, British Columbia (Gavin Hanke, pers. comm. to M.L.) to Chile (Pequeño 1989), including Gulf of California (Bussing in Fischer *et al.* 1995). Depth: 2–255 m (7–836 ft) (min.: Love *et al.* 2005; max.: Robertson and Allen 2002). *Prionotus quiescens* Jordan & Bollman, 1890, is a junior synonym.

Family Anoplopomatidae—Sablefishes

Anoplopoma fimbria (Pallas, 1814). Blackcod or **Sablefish**. To 120 cm (47.2 in) FL (DFO); about 122.5 cm (48.2 in) TL. Central Honshu, Japan (Sasaki 1985), and Russian north-western Pacific Ocean (Orlov and Tokranov 2019), to Aleutian Islands and Bowers Bank, to Bering Sea south of Saint Lawrence Island, Alaska (Allen and Smith 1988), to west of Bahía San Bartolome (27°41'N, 115°36'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: juveniles often near shore, as shallow as surface (M.L., pers. obs.); adults at least as shallow as 12 m to 2,740 m (39–8,989 ft) (min.: Sigler *et al.* 2019; max.: McFarlane and Beamish 1983).

Erilepis zonifer (Lockington, 1880). Priestfish or **Skilfish**. To 188 cm (74 in) TL (Zolotov *et al.* 2014). Sagami Bay, Pacific coast of central Honshu, Japan (Mecklenburg 2003), to south of Commander–Aleutian chain, and southern Gulf of Alaska (Mecklenburg *et al.* 2002), to Monterey Bay, central California (Eschmeyer and Herald 1983). Depth: juveniles and young adults to about 110 cm (43 in) TL collected near surface, sometimes close to shore (Mecklenburg *et al.* 2002); adults close to bottom; depth: 200–1,047 m (656–3,438 ft), usually far from shore (min.: Mecklenburg *et al.* 2002; max.: Zolotov *et al.* 2014).

Family Zaniolepididae—Combfishes

Previously placed in the family Hexagrammidae, we follow Smith and Busby (2014) and place these species in the Zaniolepididae.

Oxylebius pictus Gill, 1862. **Painted Greenling**. To 25.4 cm (10 in) TL (Miller and Lea 1972)**.** Kachemak Bay (Abookire 2002), and Prince William Sound (Orsi *et al.* 1991), northern Gulf of Alaska to Punta San Pablo (27°14'N, 114°29'W), southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Existing statements of range to Bering Sea are based on older reports that have been discounted (Mecklenburg *et al.* 2002). Although the Kachemak Bay report lacks a voucher specimen, this species is distinctive and not likely to be misidentified. Benthic; depth: intertidal to 249 m (816 ft) (min.: Eschmeyer and Herald 1983; max.: Love *et al.* 2005).

Zaniolepis frenata Eigenmann & Eigenmann, 1889. **Shortspine Combfish**. To 25 cm (10 in) TL (Eschmeyer and Herald 1983). Southern Oregon (Miller and Lea 1972) to Bahía Asuncion (27°01'N, 114°16.3'W), southern Baja California

(Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and in Gulf of California (Castro-Aguirre 1991). Benthic; depth: 7–450 m (23–1,476 ft) (min.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys; max. NWFSC-FRAM). The NWFSC-FRAM database also lists a single, much deeper, record of 966 m (3,168 ft), but we think this is likely in error.

The species name is correctly spelled *frenata* to agree in gender (feminine) with the genus name, not *frenatus* as originally spelled (Mecklenburg and Eschmeyer 2003).

Zaniolepis latipinnis Girard, 1858. **Longspine Combfish**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Vancouver Island, southern British Columbia (Miller and Lea 1972) to southern Baja California (25°45'N, 112°23'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 16–421 m (53–1,381 ft) (min.: Eric Miller, pers. comm., to M.L.; max.: NWFSC-FRAM)

Family Hexagrammidae—Greenlings

Hexagrammos decagrammus (Pallas, 1810). **Kelp Greenling**. To 62.9 cm (24.8 in) TL (Richards *et al.* 1988). Eastern Bering Sea (58°27.9'N, 169°06'W) (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska) and Attu Island, Aleutian Islands, to Gulf of Alaska (Mecklenburg *et al.* 2002), to La Jolla, southern California (Miller and Lea 1972). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 303 m (994 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: NWFSC-FRAM).

Hexagrammos lagocephalus (Pallas, 1810). **Rock Greenling**. To 61 cm (24 in) TL (Miller and Lea 1972). Yellow and Japan Seas, and Sea of Okhotsk to Commander–Aleutian Chain (Mecklenburg *et al.* 2002), to southern California (34°15'N) (NWFSC-FRAM). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 80 m (262 ft) in eastern Pacific (min.: Miller and Lea 1972; max.: Mecklenburg *et al.* 2002) to 596 m (1,955 ft) in western Pacific (Orlov 1998). Following Mecklenburg *et al.* (2002), Mecklenburg and Eschmeyer (2003), and some earlier authors, treatment here includes *Hexagrammos superciliosus* (Pallas, 1810), which is classified by some authors as a distinct species. Molecular evidence presented by Crow *et al.* (2004) supports the existence of a single, widely distributed species.

Hexagrammos octogrammus (Pallas, 1814). **Masked Greenling**. To 31.8 cm (12.5 in) FL (Abookire and Rose 2005). Miscalled *Pleurogrammus azonus* in the English translation of Vdovin and Antonenko (1998). Seas of Okhotsk and Japan, to Commander–Aleutian Chain, and Saint Lawrence Island, northern Bering Sea (Mecklenburg *et al.* 2002), to Banks Island, northern British Columbia (Peden and Wilson 1976). Benthic; marine, brackish, and fresh waters (Dyldin and Orlov 2017); depth: 0–200 m (656 ft) (Federov *et al.* 2003).

Hexagrammos stelleri Tilesius, 1810. **Whitespotted Greenling**. To about 48 cm (18.9 in) TL (Miller and Lea 1972). Northern Sea of Japan, Hokkaido Island to Commander–Aleutian Chain (Mecklenburg *et al.* 2002), and northeast to Simpson Cove (about 69°57'N, 144°54'W), Beaufort Sea; Bering Sea to Salish Sea, Washington (Mecklenburg *et al.* 2016) and to central California (37°24'N) (NWFSC-FRAM). Marine and brackish waters (Fricke *et al.* 2020); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 305 m (1,010 ft) (min.: Mecklenburg *et al.* 2002; max.: Panchenko *et al.* 2016).

Ophiodon elongatus Girard, 1854. **Lingcod**. To 152 cm (60 in) TL (Wilby 1937). Just north of Alaska Peninsula (56°31.2'N, 161°00.6'W) (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska), Shumagin Islands, south-western Gulf of Alaska to Punta San Carlos, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Isla Natividad (Ramírez-Valdez *et al.* 2015). Fall *et al.* (2007) reported that lingcod were taken in the eastern Bering Sea from 2003–2006 in the subsistence Pacific halibut fishery; catches were made as far north as the Yukon-Kuskokwim Delta. Benthic; depth: intertidal to 750 m (2,460 ft) (min.: confirmed by M.L., unpubl. data; max.: NWFSC-FRAM).

Pleurogrammus monopterygius (Pallas, 1810). **Atka Mackerel** or Northern Atka Mackerel. To at least 54 cm (21.3 in) TL (Robert Lauth, pers. comm to M.L.). Sea of Japan (Antonenko *et al.* 2003) and Sea of Okhotsk (Chereshnev and Nazarkin 2004) to Commander–Aleutian chain, and northern Bering Sea (Mecklenburg *et al.* 2002) to Bering Strait (Mecklenburg *et al.* 2011) to Redondo Beach, southern California (Eschmeyer and Herald 1983); rare in eastern North Pacific south of Alaska (Mecklenburg *et al.* 2002). Depth: lower intertidal to 720 m (2,362 ft) (Hoff and Britt 2003). However, this latter is a record from a trawl-caught fish that might have been taken in midwater. Following Mecklenburg and Eschmeyer (2003), we treat *Pleurogrammus azonus* Jordan & Metz, 1913, a western Pacific form sometimes classified as a junior synonym of *P. monopterygius* (e.g., Nelson 1994, Mecklenburg *et al.* 2002), as a distinct species with common name Southern Atka Mackerel or Arabesque Greenling. Molecular evidence recently presented by Crow *et al.* (2004) supports the existence of two distinct species.

Family Jordaniidae—Longfin Sculpins[1]

We follow Smith and Busby (2014) and remove these species from the Cottidae.
[1]Name suggested by Leo Smith.

Jordania zonope Starks, 1895. **Longfin Sculpin**. To 15 cm (6 in) TL (Eschmeyer and Herald 1983). Danger Island, Prince William Sound (Mecklenburg *et al.* 2002) to Diablo Canyon, central California (Eschmeyer and Herald 1983); one record from southern California (33°41'N, 120°01'W) (NWFSC-FRAM). Benthic; depth: intertidal to 497 m (1,630 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Bradburn *et al.* 2011).

Paricelinus hopliticus Eigenmann & Eigenmann, 1889. **Thornback Sculpin**. To about 20 cm (7.9 in) TL (Kamikawa 2017). Gulf of Alaska (55°29'N, 134°10'W) (Maslenikov *et al.* 2013), Bering Sea to off Point Loma, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and northwest of Cortes Bank, southern California (Miller and Lea 1972). Benthic; depth: 16–352 m (55–1,155 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: NWFSC-FRAM).

Family Scorpaenichthyidae—Cabezon

We follow Smith and Busby (2014) and remove this species from the Cottidae.

Scorpaenichthys marmoratus (Ayres, 1854). **Cabezon** or Giant Marbled Sculpin. To 99 cm (39 in) TL (Miller and Lea 1972). Icy Bay, Prince William Sound (60°15'N, 148°19'W), Alaska (Mayuma Arimitzu, pers. comm. to Catherine Mecklenburg) to Bahía Magdalena, southern Baja California (64-981), and Isla de Cedros, Islas San Benito, and Isla Natividad (Ramírez-Valdez *et al.* 2015). Larvae have been collected from the western Gulf of Alaska along the shelf east of Kodiak Island (Matarese *et al.* 2003). Benthic; depth: intertidal to 226 m (741 ft) (min.: Miller and Lea 1972; max.: DFO).

Family Rhamphocottidae—Grunt Sculpins

Rhamphocottus richardsonii Günther, 1874. **Grunt Sculpin**. To 9.3 cm (3.7 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Japan (Yabe in Masuda *et al.* 1984); western Gulf of Alaska near Unalaska Island (Maslenikov *et al.* 2013), Sanak Islands (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), and Semidi Islands (Love *et al.* 2005) to Santa Monica Bay, southern California (Eschmeyer and Herald 1983), and Tanner Bank (32°38'N, 119°09'W; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Reported in Bering Sea by Clemens and Wilby (1946) as "north-western Alaska," Wilimovsky (1954), and subsequent authors, but specific documentation has not been found (Mecklenburg *et*

al. 2002). However, occurrence near Unimak Pass in the south-westernmost part of the Gulf of Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) is well documented, and indicates the species likely does occur in the southern area of the Bering Sea. Benthic; depth: intertidal to 258 m (846 ft) (min.: Clemens and Wilby 1946; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Cottidae—Freshwater Sculpins[1]

We follow Smith and Busby (2014) and place most of the Pacific Coast "Cottidae" variously in the families Jordaniidae, Scorpaenichthyidae, and Psychrolutidae. For this survey, only members of the genera *Leptocottus* and *Cottus* remain in the family Cottidae.

[1]Name suggested by Leo Smith.

Cottus aleuticus Gilbert, 1896. **Coastrange Sculpin**. To 17.2 cm (6.8 in) TL (Hubbs 1921). Kobuk River (drains to Kotzebue Sound, eastern Chukchi Sea) (Morrow 1980); Bristol Bay, Alaska Peninsula, and Aleutian Islands drainages (Mecklenburg *et al.* 2002) to Oso Flaco Creek, Santa Barbara County, central California (Swift *et al.* 1993). Brackish and fresh waters (Wydoski and Whitney 1979) and nearshore coastal marine waters (Pietsch and Orr 2019); migrates downstream to estuaries and lower reaches of rivers in spring to spawn (Morrow 1980).

Cottus asper Richardson, 1837. **Prickly Sculpin**. To 19.2 cm (7.7 in) SL (Coad 1995). Seward, Alaska (coast of northern Gulf of Alaska) to Ventura River, southern California (Morrow 1980). Benthic, usually in fresh water, occasionally in estuaries and nearshore marine waters (Mecklenburg *et al.* 2002); depth: to 92 m (300 ft) (Pietsch and Orr 2019).

Leptocottus armatus Girard, 1854. **Pacific Staghorn Sculpin**. To 48 cm (18.9 in) TL (Coad 1995). Pribilof Islands (Dragoo and Byrd 1998) and Port Moller, south-eastern Bering Sea (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Punta Baja, northern Baja California (Rosales-Casián 2011). Benthic; marine, brackish, and fresh waters (Moyle 2002); depth: intertidal to 335 m (1,099 ft) (min.: Clemens and Wilby 1946; max.: Bradburn *et al.* 2011).

Family Psychrolutidae—Marine Sculpins[1]

We follow Smith and Busby (2014) and place the marine species formerly in the Cottidae in this family.

[1]Name suggested by Leo Smith.

Archistes biseriatus (Gilbert & Burke, 1912). **Scaled Sculpin**. To 16 cm (6.3 in) SL (Orlov *et al.* 2001). Central and northern Kuril Islands (Yabe and Soma 2000, Orlov *et al.* 2001), Bering Sea (to 56°22'N, 164°27'W) (Maslenikov *et al.* 2013), and along Aleutian Islands as far eastward as Yunaska Island (52°34.8'N, 170°37.2'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 75–156 m (246–512 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Maslenikov *et al.* 2013).

****Archistes plumarius*** Jordan & Gilbert, 1898. **Plumed Sculpin**. To 7.2 cm (2.8 in) TL. Two records known, each of a single fish: Ushishir Island, Kuril Islands and Medny Island, Commander Islands. Benthic; depth: 40 m (131 ft) was reported for the Medny Island specimen. All in Mecklenburg *et al.* (2002).

Artediellichthys nigripinnis (Schmidt, 1937). **Blackfin Hookear Sculpin**. To 15.9 cm (6.3 in) TL (Tokranov 2001). Sea of Okhotsk and Pacific Ocean off Kuril Islands to Cape Navarin, western Bering Sea; southern Bering Sea north of Rat Islands, western Aleutian Islands; eastern Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 200–815 m (656–2,673 ft) (min.: Neyelov 1979; max.: Federov *et al.* 2003).

Artediellus atlanticus Jordan & Evermann, 1898. **Atlantic Hookear Sculpin**. To 16.8 cm (6.6 in) TL (Mecklenburg *et al.* 2016) or perhaps to 25 cm (9.8 in) TL (Coad in Coad and Reist 2018). Arctic-boreal; Baffin Island, Greenland, east to northern Kara Sea and on both sides of Atlantic; Chukchi Borderland off Alaska (Mecklenburg *et al.* 2011). Benthic; depth: 11–1,450 m (36–4,756 ft) (Mecklenburg *et al.* 2016).

Artediellus camchaticus Gilbert & Burke, 1912. **Clownfin Sculpin**. To 16 cm (6.3 in) TL (Tokranov 1988). Sea of Okhotsk coast of Hokkaido to Pacific Ocean off Kuril Islands and south-eastern Kamchatka, to Commander Islands and western Bering Sea (Mecklenburg *et al.* 2002) north to northeastern Gulf of Anadyr, Russia (Mecklenburg *et al.* 2011) and western Aleutian Islands (52°02'N, 177°39'W) (Maslenikov *et al.* 2013). Benthic; depth: 25–520 m (82–1,706 ft) (min.: Federov *et al.* 2003; max.: Sheiko and Fedorov 2000).

Artediellus gomojunovi Taranetz, 1933. **Spinyhook Sculpin**. To 7.6 cm (3 in) TL (Mecklenburg *et al.* 2002). Kuril Islands (Mecklenburg *et al.* 2002) to Bering Strait (Mecklenburg *et al.* 2011). Benthic; depth: 37–380 m (121–1,246 ft) (Mecklenburg *et al.* 2002).

?*Artediellus miacanthus* Gilbert & Burke, 1912. Northern Hookear Sculpin or **Smallhook Sculpin**. To 7.2 cm (2.8 in) TL. Paramushir Island, northern Kuril Islands to western Bering Sea off Cape Navarin, and unconfirmed or unverifiable records from Gulf of Anadyr, Russia and southeast of Saint Lawrence Island, Alaska. Benthic; depth: 33–293 m (108–961 ft). All in Mecklenburg *et al.* (2002).

Artediellus ochotensis Gilbert & Burke, 1912. **Okhotsk Hookear Sculpin**. To 10.2 cm (4 in) TL (Mecklenburg *et al.* 2002). Sea of Japan at Peter the Great Bay to Sea of Okhotsk, Kuril Islands, and Commander Islands, to Gulf of Anadyr, western Bering Sea (Mecklenburg *et al.* 2002); northeastern Chukchi Sea, north of Lisburne Peninsula (Mecklenburg *et al.* 2011). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 4–100 m (12–328 ft) (Mecklenburg *et al.* 2002); perhaps to 913 m (2,995 ft) (Dudnik and Dolganov 1992), but without documentation.

Artediellus pacificus Gilbert, 1896. **Hookhorn Sculpin**, Pacific Hookear Sculpin, or Paddled Sculpin. To 8.7 cm (3.4 in) SL—about 10.5 cm (4.1 in) TL (Mecklenburg *et al.* 2002). Northern Sea of Japan and Sea of Okhotsk to northern Bering Sea (to southern Gulf of Anadyr), and northeast of Saint Lawrence Island (Mecklenburg *et al.* 2011), to Limestone Inlet, south-eastern Alaska; one record, unconfirmed, from eastern Chukchi Sea (Mecklenburg *et al.* 2002). Benthic; depth: 15–250 m (50–820 ft) (min.: Eschmeyer and Herald 1983; max.: Mecklenburg *et al.* 2002).

Artediellus scaber Knipowitsch, 1907. **Hamecon**. To 11.3 cm (4.4 in) TL (Forster *et al.* 2020)**.** Bering Sea south of Saint Lawrence Island, and Cape Navarin, to Chukchi and Beaufort Seas (Mecklenburg *et al.* 2007), eastward to Somerset Island and Boothia Peninsula, Nunavut (Mecklenburg *et al.* 2011), and west to Barents and Kara seas. A Cook Inlet, northern Gulf of Alaska record (Mecklenburg *et al.* 2002) is in error (Mecklenburg *et al.* 2007)**.** Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 0–124 m (407 ft) (min.: Coad in Coad and Reist 2018; max.: Mecklenburg *et al.* 2016).

Artedius corallinus (Hubbs, 1926). **Coralline Sculpin**. To 14 cm (5.5 in) TL (Miller and Lea 1972). Trinidad Harbor, northern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Punta Rocasa (28°45'N, 114°24'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record from Orcas Island, Salish Sea (Miller and Lea 1972) is likely in error (Pietsch and Orr 2019). Benthic; depth: lower intertidal to 70 m (230 ft) (min.: Bolin 1944; max.: Love *et al.* 2005).

Artedius fenestralis Jordan & Gilbert, 1883. **Padded Sculpin**. To 14 cm (5.5 in) TL (Miller and Lea 1972). Tanaga Island, Aleutian Islands (Brenda Konar, pers. comm. to M.L.), to north side of Alaska Peninsula at Herendeen Bay (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), and likely to San Francisco Bay (Richard Feeney, pers. comm. to M.L.). A Diablo Cove, central California record (Miller and Lea 1972) is in error (Richard Feeney, pers. comm. to M.L.). Benthic; depth: intertidal to 122 m (402 ft) (min.: Gilbert and Burke 1912; max.: Love *et al.* 2005).

Artedius harringtoni (Starks, 1896). **Scalyhead Sculpin**. To 11.2 cm (4.4 in) TL (Gotshall *et al.* 1980)**.** Unalaska Island, Aleutian Islands; Kodiak Island, western Gulf of Alaska (Mecklenburg *et al.* 2002) to San Miguel Island, southern California (Miller and Lea 1972). Benthic; depth: intertidal to 40 m (131 ft) (min.: Bolin 1944; max.: Demetropoulos *et al.* 1990).

Artedius lateralis (Girard, 1854). **Smoothhead Sculpin**. To 14 cm (5.5 in) TL (Peden and Wilson 1976). Sanak Island, western Gulf of Alaska (Mecklenburg *et al.* 2002) to Bahía Playa Maria (28°52'N, 114°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: intertidal to 70 m (228 ft) (min.: Bolin 1944; max.: Love *et al.* 2005).

Artedius notospilotus Girard, 1856. Bonehead Sculpin or **Bonyhead Sculpin**. To 25.4 cm (10 in) TL (Miller and Lea 1972). Puget Sound, Washington (Miller and Lea 1972) to Punta Rocosa (28°45'N, 114°24'W), central

Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Reports of occurrence in Alaska are incorrect (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 52 m (170 ft) (min.: Bolin 1944; max.: Eschmeyer and Herald 1983).

Ascelichthys rhodorus Jordan & Gilbert, 1880. **Rosylip Sculpin**. To 18.8 cm (7.4 in) TL (Richard Feeney, pers. comm. to M.L.)**.** Olsen Bay, Prince William Sound, northern Gulf of Alaska (Mecklenburg *et al.* 2002) to Pillar Point, central California (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 15 m (50 ft) (min.: Bolin 1944; max.: Mecklenburg *et al.* 2002).

Asemichthys taylori Gilbert, 1912. **Spinynose Sculpin**. To 7.4 cm (2.9 in) TL (Peden and Wilson 1976). At junction of Sumner and Clarence Straits off Strait Creek (56°12'N, 133°15'W) (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska), Warm Chuck Inlet (55°46'N, 133°32'W) (Personal communication: National Marine Fisheries Service Fish Collection, Auke Bay Laboratory, Auke Bay, Alaska), and Sombrero Island (55°35'N, 133°12'W) (Personal communication: National Marine Fisheries Service Fish Collection, Auke Bay Laboratory, Auke Bay, Alaska), south-eastern Alaska to Keystone Jetty, Whidbey Island, Puget Sound (Kent *et al.* 2011); Esalen Pinnacle (36°08'N, 121°39'W), central California (Love *et al.* 2018b). Benthic; depth: intertidal to 212 m (695 ft) (min.: Kent *et al.* 2011; max.: NWFSC-FRAM. Classified by some authors in *Asemichthys,* as it was originally named, and others in *Radulinus.*

Bolinia euryptera Yabe, 1991. **Broadfin Sculpin**. To 18.9 cm (7.4 in) SL (Yabe 1991). Southern Bering Sea (off Aleutian Islands from Near Strait (52°11'N, 175°16'E) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Akutan Pass (54°14'N, 165°54'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 61–410 m (232–1,345 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Yabe 1991).

Chitonotus pugetensis (Steindachner, 1876). **Roughback Sculpin**. To 22.9 cm (9 in) TL (Miller and Lea 1972). Mears Pass (55°17'N, 133°11'W) (Personal communication: National Marine Fisheries Service Fish Collection, Auke Bay Laboratory, Auke Bay, Alaska), and Coco Harbor (55°03'N, 133°02'W), south-eastern Alaska (Personal communication: National Marine Fisheries Service Fish Collection, Auke Bay Laboratory, Auke Bay, Alaska) to Isla de Cedros, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: intertidal to 329 m (1,079 ft) (min.: Miller and Lea 1972; max.: NWFSC-FRAM).

Clinocottus acuticeps (Gilbert, 1896). **Sharpnose Sculpin**. To 6.4 cm (2.5 in) TL (Miller and Lea 1972). Attu Island, Aleutian Islands (Gilbert and Burke 1912) to Big Sur River, central California (Miller and Lea 1972); one record from Santa Catalina Island (33°18'N, 118°21'W) (NWFSC-FRAM). Benthic; depth: intertidal to 114 m (373 ft) (min.: Mecklenburg *et al.* 2002; max. NWFSC-FRAM). Although previously thought to be an intertidal and shallow subtidal species, we note that the NWFSC-FRAM database records 34 individuals captured between 49 and 114 m (161–373 ft). Often in brackish water, occasionally in fresh water (Morrow 1980). Perhaps more properly in the genus *Artedius* (Knope 2013). *Clinocottus* (*Oxycottus*) *acuticeps* (Buser and López 2015).

Clinocottus analis (Girard, 1858). **Woolly Sculpin**. To 17.8 cm (7 in) TL (Miller and Lea 1972). Cape Mendocino, northern California (Eschmeyer and Herald 1983) to Punta Abreojos, southern Baja California (Ruiz-Campos *et al.* 2010b) and Isla de Cedros, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: intertidal to 18 m (60 ft) (Miller and Lea 1972). This species is likely not in the genus *Clinocottus* (Knope 2013). *Clinocottus* (*Clinocottus*) *analis* (Buser and López 2015).

Clinocottus embryum (Jordan & Starks, 1895). **Calico Sculpin**. To 7 cm (2.8 in) TL (Miller and Lea 1972). Attu Island, Aleutian Islands (Gilbert and Burke 1912) to Punta Banda, northern Baja California (Miller and Lea 1972). Benthic; depth: intertidal to at least 2 m (5 ft) (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Clinocottus* (*Blennicottus*) *embryum* (Buser and López 2015).

Clinocottus globiceps (Girard, 1858). **Mosshead Sculpin**. To 19 cm (7.5 in) TL (Miller and Lea 1972). Chernabura and Kodiak Islands, western Gulf of Alaska (Mecklenburg *et al.* 2002) to Gaviota, southern California (Miller and Lea 1972). Benthic; depth: intertidal to at least 44 m (144 ft) (min.: Miller and Lea 1972; max.: Pietsch and Orr 2019). *Clinocottus* (*Blennicottus*) *globiceps* (Buser and López 2015).

Clinocottus recalvus (Greeley, 1899). **Bald Sculpin**. To 13 cm (5.1 in) TL (Miller and Lea 1972). Shelter Cove, northern California (Richard Feeney, pers. comm. to M.L.) to Punta Rompiente, southern Baja California (Miller and Lea 1972). The Oregon record in Miller and Lea (1972) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) has been shown to be *Clinocottus globiceps*. Benthic; depth: intertidal to 2 m (6 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Clinocottus* (*Blennicottus*) *recalvus* (Buser and López 2015).

Cottunculus microps Collett, 1875. **Polar Sculpin**. 33 cm (13.0 in) TL (Wienerroither *et al.* 2011). Circumpolar; Alaskan Beaufort Sea, Chukchi Borderland (Mecklenburg and Steinke 2015). Benthic; depth: 159–1,476 m (522–4,841 ft) (Mecklenburg *et al.* 2016). We follow Mecklenburg and Steinke (2015) and consider *Cottunculus sadko* Essipov, 1937 to be a junior synonym.

Dasycottus setiger Bean, 1890. **Spinyhead Sculpin** or Spiny Fathead. To 73 cm (28.7 in) TL (Orlov and Binohlan 2009). Seas of Japan and Okhotsk, Pacific coast of northern Honshu, Japan, to Commander–Aleutian chain, and Bering Sea, Alaska, to Navarin Canyon, to Washington (Mecklenburg *et al.* 2002), and perhaps to northern California (37°47.4'N, 122°52.9'W) (Daniel Pondella, pers. comm. to M.L.; but apparently without documentation). Benthic; depth: 15–1,205 m (49–3,952 ft) (min.: Sheiko and Fedorov 2000; max.: Kamikawa 2017).

Enophrys bison (Girard, 1854). **Buffalo Sculpin**. To 39 cm (15.4 in) TL (DFO). Amchitka Island, Aleutian Islands (Brenda Konar, pers. comm. to M.L.) to southern California (33°18'N) (NWFSC-FRAM). Benthic; depth: intertidal to 194 m (636 ft) (min.: Sandercock and Wilimovsky 1968; max.: Burnside *et al.* 2011).

Enophrys diceraus (Pallas, 1787). **Antlered Sculpin**. To 38 cm (15 in) TL (Panchenko 2005). Sea of Japan and Sea of Okhotsk to Commander–Aleutian chain, Bering Sea, and Chukchi Sea, to Beaufort Sea as far east as (71°41'N, 154°31'W) (Mecklenburg *et al.* 2016), to Fort Tongass, south-eastern Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 0–635 m (2,083 ft) (min.: Federov *et al.* 2003; max.: Panchenko 2005). Fricke *et al.* (2020) noted that the year the description was published may be 1788.

Enophrys lucasi (Jordan & Gilbert, 1898). **Leister Sculpin**. To about 25 cm (9.8 in) TL (Mecklenburg *et al.* 2002). South-eastern Kamchatka, Commander-Aleutian Chain, to Bering Strait, Alaska (Mecklenburg *et al.* 2016), to northern British Columbia near Port McNeill (Peden and Wilson 1976). Benthic; depth: 7–198 m (23–650 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Identifications of this species north of the Aleutian Islands may not be accurate due to confusion with *Enophrys diceraus* (Mecklenburg *et al.* 2016).

Enophrys taurina Gilbert, 1914. **Bull Sculpin**. To 17 cm (6.8 in) TL (Eschmeyer and Herald 1983). Fort Bragg, northern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Santa Catalina and San Nicolas Islands, southern California (Sandercock and Wilimovsky 1968). Benthic; depth: 11–439 m (36–1,440 ft) (min.: Miller and Lea 1972; max.: NWFSC-FRAM).

Eurymen gyrinus Gilbert & Burke, 1912. **Smoothcheek Sculpin**. To 38.8 cm (15.3 in) TL (Lindberg and Krasyukova 1987). Seas of Japan and Okhotsk, and Pacific coast of Hokkaido, Japan, to Commander–Aleutian Chain, and Bering Sea, Alaska, to eastern Chukchi Sea (70°26'N, 164°38'W) (Mecklenburg *et al.* 2018), to Cook Inlet, northern Gulf of Alaska (Maslenikov *et al.* 2013). Benthic; depth: at least 2–180 m (7–590 ft) (min.: Chereshnev *et al.* 2001; max.: Panchenko *et al.* 2016). Mecklenburg *et al.* (2018), citing others, give maximum depths ranging from 400–500 m (1,312–1,640 ft).

Gymnocanthus detrisus Gilbert & Burke, 1912. **Purplegray Sculpin**. To 48 cm (18.9 in) TL (Tokranov and Orlov 2012). Pacific and Okhotsk coasts of Hokkaido, Japan (Nakabo in Nakabo 2002) to eastern Bering Sea, Alaska (Mecklenburg *et al.* 2002), to at least 62°39'N, 172°24'W (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 15–595 m (49–1,952 ft) (min.: Sheiko and Federov 2000; max.: Tokranov and Orlov 2012).

Gymnocanthus galeatus Bean, 1881. **Armorhead Sculpin**. To 49 cm (19.3 in) TL (Tokranov and Orlov 2012). Northern Sea of Japan off Hokkaido, and Kuril Islands to Commander–Aleutian Chain, and Bering Sea as far north as Norton Sound, and Saint Lawrence Island (Mecklenburg *et al.* 2016) to Wales Island, British Columbia (Peden and Wilson 1976). Benthic; depth: intertidal to 625 m (2,050 ft) (min.: Mecklenburg *et al.*

2016; max.: Allen and Smith 1988). The author and publication date are sometimes given in parentheses, which would indicate the species is classified in a genus other than that in which it was originally described. However, *Gymnocanthus* was misspelled *Gymnacanthus* in the original species description and changing from the incorrect to the correct spelling is just a correction, not a move to another genus.

Gymnocanthus pistilliger (Pallas, 1814). **Threaded Sculpin**. To 31 cm (12.2 in) TL (Shelekhov and Panchenko 2007). Southern Sea of Japan off South Korea, and Sea of Okhotsk to Commander–Aleutian Chain, Bering Sea, to northern Chukchi Sea (70°29.4'N, 162°30'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), to Oliver Inlet, Stephens Passage, south-eastern Alaska (Mecklenburg *et al.* 2016). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 456 m (1,496 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Keller 2006a).

Gymnocanthus tricuspis (Reinhardt, 1830). **Arctic Staghorn Sculpin**. To 29.9 cm (11.8 in) TL (Mecklenburg *et al.* 2002). Circumpolar; Beaufort and Chukchi Seas (Mecklenburg *et al.* 2002) to Saint Matthew Island (60°18.6'N, 169°19.8'W), eastern Bering Sea (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). A record from Oregon (44°02'N) (NWFSC-FRAM) is without a voucher specimen. Benthic; depth: about 2 m (7 ft) to 556 m (1,824 ft) (min.: Ennis 1968; max.: Coad in Coad and Reist 2018).

Icelinus borealis Gilbert, 1896. **Northern Sculpin**. To 18 cm (7.1 in) TL (DFO). Pribilof Islands (Dragoo and Byrd 1998), and Bristol Bay, south-eastern Bering Sea, and Attu Island, Aleutian Islands, to southern Puget Sound, Washington (Mecklenburg *et al.* 2002); there is one record from south of Puget Sound, in central California (36°19'N) (NWFSC-FRAM), but without a voucher specimen. Benthic; depth: 5–453 m (2–1,486 ft) (min.: Mecklenburg *et al.* 2002; max.: DFO). In addition, the DFO database contains a capture record from much deeper, 803 m (2,634 ft), but without a voucher specimen.

Icelinus burchami Evermann & Goldsborough, 1907. **Dusky Sculpin**. To 12.9 cm (5.1 in) TL (Miller and Lea 1972). South-eastern Alaska (55°56'N, 135°26'W) (Maslenikov *et al.* 2013) to La Jolla, southern California (Miller and Lea 1972). Benthic; depth: 61–622 m (200–2,040 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Icelinus cavifrons Gilbert, 1890. **Pit-head Sculpin**. To 8.9 cm (3.5 in) TL (Miller and Lea 1972). Monterey Bay, central California (Miller and Lea 1972) almost to southern tip of Baja California (22°54'N) (Castro-Aguirre *et al.* 1993). Benthic; depth: 11–110 m (36–361 ft) (min.: Miller and Lea 1972; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Icelinus filamentosus Gilbert, 1890. **Threadfin Sculpin**. To 31.5 cm (12.4 in) TL (DFO). Near Chirikof Island, western Gulf of Alaska (Allen and Smith 1988) to Cortes Bank (Miller and Lea 1972) and Point Loma, southern California (Allen and Smith 1988). Benthic; depth: 18–482 m (60–1,581 ft) (min.: Miller and Lea 1972; max.: Bradburn *et al.* 2011), also reported to much deeper waters, 1,145 m (3,756 ft) (Ramsey *et al.* 2002), and 1,201 m (3,940 ft) (Lauth 1999), but without documentation.

Icelinus fimbriatus Gilbert, 1890. **Fringed Sculpin**. To 22 cm (8.7 in) TL (Rodríguez-Romero *et al.* 2008). Pendrell Sound, southern British Columbia to San Diego, California (Peden 1984), and perhaps to Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015). Benthic; depth: 30–265 m (98–869 ft) (Peden 1984).

Icelinus limbaughi Rosenblatt & Smith, 2004. Canyon Sculpin. To 8.2 cm (3.2 in) SL (Rosenblatt and Smith 2004). Anacapa Island area to San Diego and at Cortes Bank, southern California (Rosenblatt and Smith 2004). Benthic; depth: 16–86 m (52–282 ft) (min.: David Andrew, pers. comm. to M.L.; max.: Rosenblatt and Smith 2004).

Icelinus oculatus Gilbert, 1890. **Frogmouth Sculpin**. To 17.1 cm (6.7 in) SL, 19.8 cm (7.8 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Oregon (44°53'N, 124°47'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to southern California (32°35'N, 117°25'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 110–350 m (360–1,1,48 ft) (min.: Peden 1984; max.: Shelly Moore, pers. comm. to M.L.).

Icelinus quadriseriatus (Lockington, 1880). **Yellowchin Sculpin**. To 11 cm (4.4 in) TL (Ami Groce, pers. comm. to M.L.). Sonoma County, northern California (Eschmeyer and Herald 1983) to Cabo San Lucas, southern Baja

California (Miller and Lea 1972). Benthic; depth: intertidal to 201 m (660 ft) (min.: Feeney 1987; max.: Eschmeyer and Herald 1983).

Icelinus tenuis Gilbert, 1890. **Spotfin Sculpin**. To 18 cm (7.1 in) TL (Eric Miller, pers. comm. to M.L.). We note that the DFO database lists a number of specimens much larger than 18 cm (e.g., 29 cm, 11.4 in, 28 cm, 11 in, and 27 cm, 10.6 in). Maria Cornthwaite reports that all of these fish were caught in a single tow (that contained an unusually large number of this species), on 2 August 2009, south-east of Cape Saint James, British Columbia. The field supervisor was experienced, and thus we have no reason to doubt the identifications. However, the lack of voucher specimens does give us pause. Gulf of Alaska (57°42'N, 136°29'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov) to Islas San Benito, central Baja California (Miller and Lea 1972). Benthic; depth: 7–375 m (23–1,230 ft) (min.: Fay *et al.* 1978; max.: Drazen *et al.* 2015).

Icelus bicornis (Reinhardt, 1840). **Twohorn Sculpin**. To 17 cm (6.7 in) TL (Mecklenburg *et al.* 2016). Circumpolar in Arctic Ocean (Mecklenburg *et al.* 2011); Beaufort Sea off Alaska (Mecklenburg *et al.* 2002); not recorded from Chukchi Sea (Mecklenburg *et al.* 2016). Benthic; depth: 2–930 m (7–3,050 ft) (min.: Andriyashev 1954; max.: Mecklenburg *et al.* 2018).

Icelus canaliculatus Gilbert, 1896. **Blacknose Sculpin**. To 23.2 cm (9.1 in) TL. Sea of Okhotsk off Hokkaido to Bering Sea at Navarin Canyon, southeast along continental slope and in Bristol Bay to Akutan Island, Aleutian Islands and west to Commander Islands. Benthic; depth: 20–1,005 m (66–3,297 ft). All in Mecklenburg *et al.* (2002).

Icelus euryops Bean, 1890. **Wide-eye Sculpin**. To 16.4 cm (6.5 in) TL (Mecklenburg *et al.* 2002). Bering Sea from Navarin Canyon along continental slope to Near Islands (52°49'N, 172°07'W), western Aleutian Islands (Maslenikov *et al.* 2013), and in western Gulf of Alaska near Trinity Islands (Bean 1890). Benthic; depth: 200–740 m (656–2,428 ft) (Nelson 1984).

Icelus spatula Gilbert & Burke, 1912. **Spatulate Sculpin**. To about 21 cm (7.1 in) TL (Tokranov and Orlov 2005). Circumpolar; Sea of Okhotsk (Schmidt 1950), Kuril Islands (Tokranov and Orlov 2005), and western North Pacific off Kamchatka (Gilbert and Burke 1912), to Arctic Seas off Russia, Alaska (Chukchi and Beaufort Seas), and Canada to western Greenland and Labrador (D. W. Nelson 1984); Bering Sea, Aleutian Islands west to Atka Island (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), and eastern Gulf of Alaska at Glacier Bay (Quast and Hall 1972). Benthic; depth: 12–930 m (39–3,050 ft) (Mecklenburg *et al.* 2011). Ten years (1993–2002) of intensive sampling off the Kuril Islands found *I. spatula* at 100–300 m (328–984 ft) (Tokranov and Orlov 2005). Mecklenburg and Steinke (2015) note that *I. spatula* and *I. spiniger* are so similar in appearance that "the relationship [between the two taxa]…should be reevaluated."

Icelus spiniger Gilbert, 1896. **Thorny Sculpin**. To 28 cm (11 in) TL (Mecklenburg *et al.* 2002). Sea of Okhotsk to Commander–Aleutian Chain, and Bering Sea to Cape Navarin, western Bering Sea (Mecklenburg *et al.* 2002), to northern Chukchi Sea (Mecklenburg *et al.* 2015), and eastern Bering Sea at least as far northward as 61°20'N (Lauth and Nichol 2013), to La Perouse Bank, southern British Columbia (Mecklenburg *et al.* 2002). Benthic; depth: 30–770 m (98–2,526 ft) (Mecklenburg *et al.* 2002). Mecklenburg *et al.* (2016) report that an undescribed *Icelus*, closely related to *I. spiniger*, likely lives at least in the northern Bering and Chukchi Seas.

Icelus uncinalis Gilbert & Burke, 1912. **Uncinate Sculpin**. To 16.1 cm (6.3 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Commander Islands (Gilbert and Burke 1912); Aleutian Islands from Attu Island (Gilbert and Burke 1912) to Unalaska Island (54°14'N, 165°54'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), and south-eastern Bering Sea east of Pribilof Islands (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 70–389 m (230–1,276 ft) (min.: Sheiko and Fedorov 2000; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Leiocottus hirundo Girard, 1856. **Lavender Sculpin**. To 25.4 cm (10 in) TL (Miller and Lea 1972). Gaviota Pier, southern California to Punta Banda, northern Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 37 m (8–120 ft) (min.: Richard Feeney, pers. comm. to M.L.; max.: Miller and Lea 1972).

Malacocottus kincaidi Gilbert & Thompson, 1905. **Blackfin Sculpin** or Blackfin Fathead. To 17.5 cm (6.9 in) TL. Salish Sea, from Hood Canal to southern Strait of Georgia. A report by Weinberg *et al.* (2002) from off Oregon (45°53'N) is without a voucher specimen. Benthic; depth: 97–119 m (318–390 ft). All in Stevenson (2015).

Malacocottus zonurus Bean, 1890. **Darkfin Sculpin** or Darkfin Fathead. To 39 cm (15.4 in) TL (Glubokov *et al.* 2019). Honshu, Japan, Sea of Okhotsk, and Bering Sea to outer coast of Washington and in Salish Sea (Stevenson 2015); reported from northern Oregon (44°53'N) (NWFSC-FRAM), but catch made before Stevenson's revision of the genus. Benthic; depth: 30–1,172 m (98–3,844 ft) (DFO—as *Malacocottus aleuticus*), reported as 27–1,980 m (89–6,494 ft) from the western Pacific (Federov *et al.* 2003). *Malacocottus aleuticus* (Smith, 1904) is a synonym (Stevenson 2015).

Megalocottus platycephalus (Pallas, 1814). **Belligerent Sculpin**. To 42 cm (16.5 in) TL (Tokranov 1994). Sea of Japan at Peter the Great Bay to Sea of Okhotsk, and western Bering Sea, to Chukchi Sea off Chukchi Peninsula, and Beaufort Sea, off Point Barrow (Mecklenburg *et al.* 2011), and south to Herendeen Bay, eastern Bering Sea (Mecklenburg *et al.* 2002). Benthic; depth: 0–120 m (394 ft) (Federov *et al.* 2003). Often entering lower reaches of rivers (Mecklenburg *et al.* 2016).

Microcottus sellaris (Gilbert, 1896). **Brightbelly Sculpin**. To 17 cm (6.7 in) TL (Tokranov 2013). Northern Sea of Japan, Sea of Okhotsk, Kuril Islands to Commander–Aleutian Chain, to northern Chukchi Sea (as far north as 71°30'N, 167°06'W) (Mecklenburg *et al.* 2016), eastern Bering Sea (Lauth and Nichol 2013); two records from Prince William Sound, Gulf of Alaska (Johnson *et al.* 2012). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 60 m (197 ft) (min.: Mecklenburg *et al.* 2016; max.: Federov *et al.* 2003).

Myoxocephalus jaok (Cuvier, 1829). **Plain Sculpin**. To 75 cm (29.5 in) TL (Spies *et al.* 2012). Seas of Japan and Okhotsk to western and eastern Bering Sea to western Beaufort Sea at least to 71°15'N, 153°07'W to eastern Aleutian Islands, and Limestone Inlet, south-eastern Alaska (Mecklenburg *et al.* 2016). Benthic; depth: intertidal to 680 m (2,231 ft) (min.: Mecklenburg *et al.* 2016; max.: Sheiko and Fedorov 2000).

Myoxocephalus niger (Bean, 1881). **Warthead Sculpin**. To 27 cm (10.6 in) TL (Mecklenburg *et al.* 2002). Coasts of Sea of Okhotsk, and northern Sea of Japan to Commander–Aleutian Chain, and Pribilof Islands, southern Bering Sea to Sanak and Shumagin Islands, western Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 50 m (164 ft) (min.: Mecklenburg *et al.* 2002; max: Federov *et al.* 2003).

Myoxocephalus polyacanthocephalus (Pallas, 1814). **Great Sculpin**. To 91.5 cm (36 cm) TL (Datsky 2017). Seas of Japan and Okhotsk to Kamchatka to Commander–Aleutian Chain to northern Chukchi Sea (70°20'N, 163°06'W) (Mecklenburg *et al.* 2018) to Puget Sound, Washington (Eschmeyer and Herald 1983); northern California (43°05'N) (NWFSC-FRAM). Benthic; depth: intertidal to 825 m (2,707 ft) (min.: Eschmeyer and Herald 1983; max.: Kim 2001). *Myoxocephalus ensiger* Jordan & Starks, 1904, classified as either a subspecies or junior synonym, may be a valid species (Mecklenburg *et al.* 2007).

Myoxocephalus quadricornis (Linnaeus, 1758). **Fourhorn Sculpin**. To 36.5 cm (14.4 in) TL (Mecklenburg *et al.* 2016). Circumpolar; Arctic coasts of Russia to Gulf of Anadyr; Alaska from Beaufort Sea to Saint Lawrence Island, and northern Bristol Bay, Bering Sea (Mecklenburg *et al.* 2016). Coastal marine and estuarine waters and ascends rivers as far up as 100 km (62 mi) (Mecklenburg *et al.* 2016); benthic; depth: at least as shallow as 5 m (16 ft) to 55 m (180 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Mecklenburg *et al.* 2016). While recognized in the genus *Triglopsis* by some authors, genetic data supports classification in *Myoxocephalus* (Mecklenburg *et al.* 2018).

Myoxocephalus scorpioides (Fabricius, 1780). **Arctic Sculpin**. To 36.5 cm (14.3 in), SL, 43.5 cm (17.1 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Coasts of East Siberian and Chukchi Seas to Gulf of Anadyr, and Norton Sound, Bering Sea, to Beaufort Sea, and along Arctic Canada coasts to Greenland and Gulf of Saint Lawrence in Atlantic (Mecklenburg *et al.* 2002). Also confirmed 19th Century records from Bristol Bay (eastern Bering Sea) and Chignik Bay (Gulf of Alaska) (Mecklenburg *et al.* 2011). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: shallow waters near shore to 40 m (131 ft) (Mecklenburg *et al.* 2016). A much deeper maximum record of 280 m (918 ft) (Coad in Coad and Reist 2018) is without documentation. Male *Myoxocephalus scorpius* (Linnaeus, 1758) in breeding coloration have often been incorrectly identified (e.g., in museum collections) as *M. scorpioides* (Catherine W. Mecklenburg, unpubl. data). *Boreocottus axillaris* Gill, 1859 is a junior synonym (Mecklenburg *et al.* 2018).

Myoxocephalus scorpius (Linnaeus, 1758). **Shorthorn Sculpin** or Warty Sculpin. To at least 60 cm (18.3 in) TL (Eriksen *et al.* 2020) or, but without documention, to 90 cm (35.4 in) TL (Coad and Reist 2004). Circumpolar;

Laptev Sea to East Siberian, Chukchi, and Beaufort Seas to Greenland, and northern North Atlantic, and Arctic seas of Europe; Sea of Okhotsk off south-western Kamchatka, Commander, and Aleutian Islands to Bering Sea, and northern British Columbia (Mecklenburg *et al.* 2016). Benthic; depth: intertidal (McAllister 1975), adults as shallow as 3 m (10 ft) or less (Ennis 1970) to 550 m (1,804 ft) (Mecklenburg *et al.* 2018). All information other than maximum length and maximum depth from Mecklenburg *et al.* (2002). Includes records formerly attributed to *Myoxocephalus verrucosus* (Bean, 1881), as a junior synonym of *M. scorpius* (Mecklenburg *et al.* 2002, 2007, 2011; Eschmeyer 2005).

Myoxocephalus stelleri Tilesius, 1811. **Frog Sculpin**. To 62 cm (24.4 in) FL (Kulik *et al.* 2016). Sea of Japan coast of South Korea to Sea of Okhotsk, east coast of Kamchatka, and Commander Islands. A species endemic to the north-western Pacific (Mecklenburg *et al.* 2015), only unconfirmed records from Arctic and Alaska (Mecklenburg *et al.* 2011). Benthic; marine, brackish, and fresh waters (Dyldin and Orlov 2017); depth: intertidal to 65 m (213 ft) (min.: Mecklenburg *et al.* 2002; max.: Panchenko *et al.* 2016). Off North America, both *Myoxocephalus scorpius* and *M. polyacanthocephalus* have been mistaken for this species (Mecklenburg *et al.* 2015). Various records of this species in U.S. waters (e.g., Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) are of other species (Katherine Maslenikov).

Oligocottus maculosus Girard, 1856. **Tidepool Sculpin**. To 13 cm (5.2 in) SL (Anthony *et al.* 2000). Pribilof Islands, south-eastern Bering Sea; Shumagin Islands, western Gulf of Alaska (Mecklenburg *et al.* 2002) to Palos Verdes Peninsula, southern California (Miller and Lea 1972). Benthic; depth: intertidal to 9 m (30 ft) (min.: Miller and Lea 1972; max.: Pietsch and Orr 2019).

Oligocottus rimensis (Greeley, 1899). **Saddleback Sculpin**. To 6.5 cm (2.6 in) TL (Miller and Lea 1972). Prince William Sound, Gulf of Alaska (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska) to northern Baja California (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 21 m (70 ft) (min.: Peden and Wilson 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Oligocottus rubellio (Greeley, 1899). **Rosy Sculpin**. To 10 cm (4 in) TL (Eschmeyer and Herald 1983). Fort Bragg, northern California (Miller and Lea 1972) to Punta Baja, northern Baja California (Ruiz-Campos *et al.* 2010b). Benthic; depth: intertidal to 34 m (111 ft) (min.: Bolin 1944; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Oligocottus snyderi Greeley, 1898. **Fluffy Sculpin**. To 9.2 cm (3.6 in) SL, about 11 cm (4.3 in) TL (Cox *et al.* 2006). Chernabura Island, western Gulf of Alaska (Mecklenburg *et al.* 2002); Samsing Cove, near Sitka, south-eastern Alaska (Quast 1968) to Punta Cono (29°06'N, 114°42'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: intertidal to 6 m (20 ft) or more (min.: Bolin 1944; max.: Burge and Schultz 1973). We also note that there is a considerably deeper record of 155 m (508 ft) (DFO) from the "2006 multi-species small mesh bottom trawl survey." While without documentation, the difficulty of sampling this quite small, rocky-reef species make this record at least plausible.

Orthonopias triacis Starks & Mann, 1911. **Snubnose Sculpin**. To 9.6 cm (4 in) TL (Miller and Lea 1972). Solander Island (northwest Vancouver Island) (Lamb and Edgell 2010) to Bahía Tortugas (27°38'N, 114°51'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: intertidal to 30 m (100 ft) (Miller and Lea 1972).

Phallocottus obtusus Schultz, 1938. **Spineless Sculpin**. To 6.9 cm (2.7 in) TL (Mecklenburg *et al.* 2002). Central Kuril Islands (Fedorov 2000); Aleutian Islands as far east as Umnak Islands, Alaska (Brenda Konar, pers. comm. to M.L.). Benthic; depth: intertidal to 50 m (164 ft) (min.: Mecklenburg *et al.* 2002; max.: Fedorov 2000).

Porocottus mednius (Bean, 1898). **Aleutian Fringed Sculpin**. To 8.2 cm (3.2 in) TL. Coasts of Kuril Islands and south-eastern Kamchatka to Commander–Aleutian Chain and western Bering Sea to Chukchi Peninsula at Bering Strait, Pribilof Islands, and Gulf of Alaska to Frederick Sound, south-eastern Alaska. Benthic; depth: intertidal. All in Mecklenburg *et al.* (2002).

Porocottus quadrifilis Gill, 1859. **Gill's Fringed Sculpin**. To about 5.1 cm (2 in) TL. One record; catch locality uncertain, probably Bering Strait but could be either Russian or Alaskan coast. All in Mecklenburg *et al.* (2002; see pages 405, 484 for discussion of taxonomy and locality problems).

Psychrolutes paradoxus Günther, 1861. **Tadpole Sculpin** or Tadpole Fathead. To 7 cm (2.8 in) TL (DFO). Seas of Okhotsk, and Japan to Norton Sound, Bering Sea, and Commander–Aleutian Chain to Puget Sound, Washington (Mecklenburg *et al.* 2002); Oregon (45°22'N) (NWFSC-FRAM). Benthic; depth: 3–419 m (10–1,374 ft) (min.: Dinnel *et al.* 1990; max.: NWFSC-FRAM). A record from 1,100 m (3,609 ft) (Fedorov 2000) was later determined to represent *Psychrolutes phrictus* Stein & Bond, 1978 (Love *et al.* 2005).

Psychrolutes phrictus Stein & Bond, 1978. Blob Sculpin or **Giant Blob Sculpin**. To about 70 cm (27.5 in) TL (Eschmeyer and Herald 1983). Sea of Okhotsk and Pacific side of Honshu, Japan to Commander Islands, and western Bering Sea north to Cape Navarin (Mecklenburg *et al.* 2002), to Bering Sea as far northward as 59°20'N, 178°20'W (Maslenikov *et al.* 2013) to Pacific Ocean off San Diego, southern California (Eschmeyer and Herald 1983); one record from off the coast of Guerrero, Mexico (17°45'N, 101°59'W) (Aguirre-Villaseñor *et al.* 2016). Benthic; depth: 114–2,800 m (374–9,186 ft) (min.: DFO; max.: Stein and Bond 1978). Although washed up on a beach once at Adak Island in Alaska (Mecklenburg *et al.* 2002) and caught once in shallow water off Westport, Washington (Schoener and Fluharty in Wooster and Fluharty 1985), these are rare records for this bottom-dwelling, deepwater species, and likely reflect abnormal circumstances. Coad in Coad and Reist (2018) report on two captures from the Canadian Beaufort Sea (CMNFI 2013-0029) and CMNFI 2013-0030).

Psychrolutes sigalutes (Jordan & Starks, 1895). **Soft Sculpin** or Soft Fathead. To 8.3 cm (3.3 in) TL (Clemens and Wilby 1946). Commander Islands, Russia; Aleutian Islands off Adak Island, Alaska to southern Puget Sound, Washington (Mecklenburg *et al.* 2002). Larvae of this species have been taken in the eastern Bering Sea (Matarese *et al.* 2003). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–500 m (10–1,640 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: DFO).

Radulinus asprellus Gilbert, 1890. **Slim Sculpin**. To 15.2 cm (6 in) TL (Clemens and Wilby 1961). The DFO database lists a number of specimens much larger than 15.2 cm (e.g., 23 cm, 9.1 in, 20 cm, 7.9 in, and 19 cm, 7.5 in). Maria Cornthwaite reports that all of these fish were caught in a single tow in Hecate Strait on 28 May 2009. Although this is a poorly understood species, and these lengths may be correct, without any voucher specimens we are hesitant to accept these records. Pribilof Islands (56°40'N, 171°59'W), and Aleutian Islands off Amchitka Island (Maslenikov *et al.* 2013) to Islas Coronados, northern Baja California (Bolin 1944). Benthic; depth: 9–699 m (30–2,293 ft) (min.: Levings 1973; max.: NWFSC-FRAM).

Radulinus boleoides Gilbert, 1898. **Darter Sculpin**. To 12.7 cm (5 in) SL, about 14.9 cm (5.9 in) (Mecklenburg *et al.* 2002) TL. Western Gulf of Alaska east of Kodiak Island (Mecklenburg *et al.* 2002); Langara Island, northern British Columbia (Peden 1972) to Santa Catalina Island (Bolin 1944), and Tanner Bank (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 15–182 m (50–597 ft) (min.: McPhail 1969; max.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys).

Radulinus vinculus Bolin, 1950. **Smoothgum Sculpin**. To 10.4 cm (4.1 in) TL (Richard Feeney, pers. comm. to M.L.). Near San Simeon Point (35°38'N, 121°13'W), central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to between Santa Cruz and Anacapa Islands, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 21–100 m (70–328 ft) (min.: Miller and Lea 1972; max.: Richard Feeney, pers. comm. to M.L.).

Rastrinus scutiger (Bean, 1890). **Roughskin Sculpin**. To 9.3 cm (3.7 in) SL, 11.2 cm (4.4 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Near Pribilof Islands (56°56'N, 173°22'W), Bering Sea (Maslenikov *et al.* 2013), and Commander Islands and Aleutian Islands, southern Bering Sea to Trinity Islands, western Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 116–512 m (380–1,680 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: D. W. Nelson 1984). *Stlegicottus xenogrammus* Bolin, 1936 is a junior synonym.

Ruscarius creaseri (Hubbs, 1926). **Roughcheek Sculpin**. To 7.7 cm (3 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Monterey Bay, central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Punta San Pablo, southern Baja California (Miller and Lea 1972), Islas San Benito (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and Isla de Cedros (Personal

communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), central Baja California. Benthic; depth: intertidal to 37 m (120 ft) (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Originally named and still sometimes seen as *Artedius creaseri* (Hubbs, 1926).

Ruscarius meanyi Jordan & Starks, 1895. **Puget Sound Sculpin**. To 5.9 cm (2.3 in) TL (Eschmeyer and Herald 1983). Unimak Pass (54°12'N, 165°22'W), western Gulf of Alaska (Maslenikov *et al.* 2013) to Cordell Bank, northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California). Many larvae have been taken in the Bering Sea (Maslenikov *et al.* 2013). Benthic; depth: intertidal to 82 m (269 ft) (min.: Eschmeyer and Herald 1983; max.: Peden 1972). Classified by some authors in *Artedius.*

Sigmistes caulias Rutter, 1898. **Kelp Sculpin**. To 7.6 cm (3 in) TL. South-eastern Bering Sea at Pribilof Islands, Aleutian Islands from Attu Island to Tigalda Island, and Kodiak Island, western Gulf of Alaska. Benthic; depth: intertidal. All in Mecklenburg *et al.* (2002).

Sigmistes smithi Schultz, 1938. **Arched Sculpin**. To about 5.5 cm (2.2 in) TL (Mecklenburg *et al.* 2002). Urup Island, southern Kuril Islands (Yabe *et al.* 2001); Attu Island to Chagulak Island, Aleutian Islands (Mecklenburg *et al.* 2002). Benthic; depth: intertidal (Mecklenburg *et al.* 2002).

Stelgistrum beringianum Gilbert & Burke, 1912. **Smallplate Sculpin**. To about 9.4 cm (3.7 in) TL. Cape Olyutorskiy, western Bering Sea; Commander Islands; western Aleutian Islands at Attu Island and Petrel Bank, Alaska. Benthic; depth: 32–95 m (105–312 ft). All in Mecklenburg *et al.* (2002).

Stelgistrum concinnum Andriashev, 1935. **Largeplate Sculpin**. To about 6.2 cm (2.4 in) TL. Cape Olyutorskiy, western Bering Sea; Pribilof Islands, south-eastern Bering Sea; and Near Islands and Unalaska Island, Aleutian Islands, Alaska. Benthic; depth: to 32 m (105 ft). All in Mecklenburg *et al.* (2002).

Synchirus gilli Bean, 1890. **Manacled Sculpin**. To 6.9 cm (2.7 in) TL (Mecklenburg *et al.* 2002). Chuginadak Island, Aleutian Islands (Brenda Konar, pers. comm. to M.L.) to San Miguel Island, southern California (Miller and Lea 1972). Benthic; depth: intertidal to 21 m (70 ft) or more (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A very deep record of 1,061 m (3,480 ft) from the DFO database is without documentation.

Thyriscus anoplus Gilbert & Burke, 1912. **Sponge Sculpin**. To 16.5 cm (6.5 in) SL, 19 cm (7.5 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Northern Kuril Islands to Commander Islands, Russia and Aleutian Islands, Alaska east to Islands of Four Mountains. Benthic; depth: 104–800 m (341–2,625 ft). All in Mecklenburg *et al.* (2002).

Trichocottus brashnikovi Soldatov & Pavlenko, 1915. **Hairhead Sculpin**. To 22.5 cm (8.9 in) TL (Mecklenburg *et al.* 2002). Sea of Okhotsk and Tatar Strait, Sea of Japan (Mecklenburg *et al.* 2011) to Chukchi Sea as far north as 70°54'N, 164°34'W (Mecklenburg *et al.* 2011), and eastern Beaufort Sea as far east as 71°36'N, 155°02'W (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska), and eastern Bering Sea at Saint Matthew Island (60°39'N, 172°43'W) (Maslenikov *et al.* 2013). Benthic; depth: 7–90 m (23–295 ft), or perhaps to 320 m (1,050 ft) (Mecklenburg *et al.* 2016).

Triglops forficatus (Gilbert, 1896). **Scissortail Sculpin**. To 27.5 cm (10.8 in) SL, about 32.3 cm TL (12.7 in) (Mecklenburg *et al.* 2002). Northern Kuril Islands to Commander Islands, Aleutian Islands, and Bering Sea off Cape Navarin to Cook Inlet, north-western Gulf of Alaska; single record from False Point Retreat, eastern Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 20–470 m (66–1,542 ft) (Federov *et al.* 2003).

****Triglops jordani*** (Schmidt, 1904). **Sakhalin Sculpin**. To 20 cm (7.9 in) FL (Pushchina *et al.* 2021) Sea of Japan off South Korea to Sea of Okhotsk to western Pacific at Avacha Bay, south-eastern Kamchatka (Mecklenburg *et al.* 2002). Reports of occurrence in eastern Bering Sea are doubtful and not verifiable. Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 15–460 m (49–1,509 ft) (min.: Panchenko *et al.* 2016; max.: Federov *et al.* 2003).

Triglops macellus (Bean, 1884). **Roughspine Sculpin**. To about 30 cm (11.8 in) TL (Mecklenburg *et al.* 2002). Near Islands (52°49'N, 173°32'W), Aleutian Islands (Maslenikov *et al.* 2013) to eastern Bering Sea north of Saint Matthew, and Nunivak Islands, Alaska to Washington (Mecklenburg *et al.* 2002); central Oregon (44°35'N) (NWFSC-FRAM). Benthic; depth: 18–350 m (59–1,148 ft) (min.: Mecklenburg *et al.* 2002; max. Pietsch and Orr 2019).

Triglops metopias Gilbert & Burke, 1912. **Highbrow Sculpin**. To 20.5 cm (8.1 in) SL, 22.8 cm (9 in) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection,

Seattle, Washington). Amchitka and Semisopochnoi Islands, Aleutian Islands to Auke Bay, south-eastern Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 13–136 m (43–446 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Triglops nybelini Jensen, 1944. **Bigeye Sculpin**. To 17 cm (6.7 in) TL (Mecklenburg *et al.* 2002). Arctic Ocean, practically circumpolar; Chukchi Sea north of Alaska, western Beaufort Sea slope between 152°W and 155°W (Mecklenburg *et al.* 2011). Benthic; depth: 0–1,354 m (4,441 ft) (min.: Coad in Coad and Reist 2018; max.: Mecklenburg *et al.* 2011), usually deeper than 200 m (656 ft) (Mecklenburg *et al.* 2002).

Triglops pingelii Reinhardt, 1837. **Ribbed Sculpin**. To 23.2 cm (9.3 in) TL; reported but not verifiable to 24.2 cm TL (9.5 in) (Mecklenburg *et al.* 2016). Circumpolar; Beaufort and Chukchi Seas to Bering Sea and Commander–Aleutian Chain to Puget Sound, Washington; isolated population in Sea of Okhotsk (Mecklenburg *et al.* 2016). Benthic; depth: 4–930 m (13–3,050 ft) (min.: Allen and Smith 1988; max.: Coad and Reist 2004), typically at less than 200 m (656 ft) (Mecklenburg *et al.* 2011).

Triglops scepticus Gilbert, 1896. **Spectacled Sculpin**. To 30.8 cm (12.1 in) SL, about 35.4 cm TL (13.9 in) (Mecklenburg *et al.* 2002). Sea of Japan off North Korea and Pacific Ocean off Honshu, Japan to southern Sea of Okhotsk, to Commander–Aleutian Chain, and Bering Sea to Cape Navarin, to Cape Ommaney, south-eastern Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 25–925 m (82–3,034 ft) (Allen and Smith 1988), rarely deeper than 400 m.

Triglops xenostethus Gilbert, 1896. **Scalybreasted Sculpin**. To 9.7 cm (3.8 in) SL, about 11.4 cm TL (4.5 in) (Mecklenburg *et al.* 2002). Kuril Islands and Commander Islands; Aleutian Islands; reported but not confirmed from Pribilof Islands, south-eastern Bering Sea (Mecklenburg *et al.* 2002). Benthic; depth: 49–178 m (161–584 ft) (min.: Dragoo *et al.* 2010; max.: Mecklenburg *et al.* 2002).

Zesticelus profundorum (Gilbert, 1896). **Flabby Sculpin**. To 6.4 cm (2.5 in) TL (Eschmeyer and Herald 1983). Sea of Okhotsk, northern Kuril Islands (Sheiko and Fedorov 2000), and Pacific Ocean off south-eastern Kamchatka (Bolin 1944) to south-eastern Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002) and off Vancouver Island, southern British Columbia (Love *et al.* 2005) to northern Baja California (Bolin 1944). Benthic; depth: 422–2,580 m (1,384–8,465 ft) (min.: Hoff 2013; max.: Eschmeyer and Herald 1983). A reported minimum depth of 88 m (289 ft) (Eschmeyer and Herald 1983) is evidently a printer's error (Mecklenburg *et al.* 2002).

Family Agonidae—Poachers

A few of the species names in this family differ from those given by Nelson *et al.* (2004), who followed a review of the family (Kanayama 1991) based primarily on study of the western Pacific forms. The classification used here follows Sheiko (1993) and Sheiko and Mecklenburg (2004).

Agonomalus mozinoi Willimovsky & Wilson, 1979. **Kelp Poacher**. To 8.9 cm (3.5 in) TL (Eschmeyer and Herald 1983). Sitka, Alaska (photographed by Jackie Hilderling, pers. comm. to M.L.) to San Simeon, central California (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 15 m (50 ft) (min.: Wilimovsky and Wilson 1978; max.: Fred Swanson, pers. comm. to M.L.). Classified in *Hypsagonus* by some authors. The correct date of the original description is 1979 (Eschmeyer 1998). Although the volume in which it appeared is for 1978, the back cover reads "Released May 1, 1979."

Agonopsis sterletus (Gilbert, 1898). **Southern Spearnose Poacher**. To 15.1 cm (5.9 in) SL (Orange County Sanitation District, unpublished data, from Danny Tang, pers. comm. to M.L.); about 17 cm (6.7 in) TL. San Simeon Point, central California (Miller and Lea 1972) to near southern tip of Baja California (22°54'N) (Castro-Aguirre *et al.* 1993). Benthic; depth: 3–213 m (10–699 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: NWFSC-FRAM).

Agonopsis vulsa (Jordan & Gilbert, 1880). **Northern Spearnose Poacher**. To 20.3 cm (8 in) TL (Miller and Lea 1972). Kachemak Bay, northern Gulf of Alaska (Mecklenburg *et al.* 2002) to Point Loma, southern California (Miller and Lea 1972). Benthic; depth: intertidal to 581 m (1,906 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: NWFSC-FRAM). *Agonopsis emmelane* (Jordan & Starks, 1895) is a junior synonym.

Anoplagonus inermis (Günther, 1860). **Smooth Alligatorfish**. To 15 cm (6 in) TL (Hart 1973). Aleutian Islands at Petrel Bank (Mecklenburg *et al.* 2002) to Point Arena, northern California (Eschmeyer and Herald 1983). Benthic; depth: 2 m (7 ft) or less to 465 m (1,525 ft) (min.: Read 1968; max.: NWFSC-FRAM).

Aspidophoroides monopterygius (Bloch, 1786). **Alligatorfish**. To 22 cm (8.7 in) TL (Mecklenburg *et al.* 2016). Atlantic and Pacific Oceans; Seas of Japan and Okhotsk to Gulf of Anadyr, to Bering Sea, and Aleutian Islands, to Chukchi Sea, and Beaufort Sea eastward (to about 71°20'N, 151°06'W), and to Prince William Sound, Gulf of Alaska (Mecklenburg *et al.* 2016). Benthic; depth: 8–340 m (26–1,115 ft) (min.: Mecklenburg *et al.* 2002; max.: Mecklenburg *et al.* 2018). A maximum depth of 500 m (1,640 ft) reported in Mecklenburg *et al.* (2002) cannot be verified and a record of 695 m (2,280 ft) (Coad in Coad and Reist 2018) is without documentation. While we consider *Aspidophorides bartoni* Gilbert, 1896 to be a junior synonym (Mecklenburg *et al.* 2018), some authors consider it a valid species (e.g., Tohkairin *et al.* 2015).

Aspidophoroides olrikii Lütken, 1877. **Arctic Alligatorfish**. To at least 10 cm (3.9 in) TL (Mecklenburg *et al.* 2016). Nearly circumpolar; Arctic Ocean from eastern Barents Sea and White Sea eastward to Greenland (but not Canada High Arctic Archipelago), south in western Atlantic, to Newfoundland, and south in Pacific through Bering Sea, to northern Gulf of Alaska in Prince William Sound (Mecklenburg *et al.* 2011) and Chukchi and Beaufort Seas (Forster *et al.* 2020). Benthic; depth: 3–520 m (10–1,706 ft) (Mecklenburg *et al.* 2016). A maximum depth of 632 m (2,073 ft) (Coad in Coad and Reist 2018) is without documentation. Sometimes seen spelled *olriki,* but the original, correct spelling is *olrikii.* The correct date for the species description is 1877, although sometimes seen as 1876 (Sheiko and Mecklenburg 2004). Recently as *Ulcina olrickii* but, genetically, very closely related to *Aspidophoroides monopterygius* (Bloch, 1786), thus validating its inclusion in *Aspidophoroides*.

Bathyagonus alascanus (Gilbert, 1896). **Gray Starsnout.** To 14.1 cm (5.6 in) TL (Mecklenburg *et al.* 2002). Bering Sea northwest of Saint Matthew Island (60°30'N, 178°51'W), and Adreanof Islands (52°15'N, 172°59'W), Aleutian Islands (Maslenikov *et al.* 2013), to northern California (40°44.5'N) (NWFSC-FRAM). Benthic; depth: 18–332 m (60–1,089 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). A University of Washington, Burke Museum of Natural History and Culture Fish Collection specimen, UW 113536, lists a capture in a bottom trawl net of this species at a depth of 728 m (1,738 ft), much deeper than the previous maximum depth recorded. Katherine Maslenikov has checked the specimen and, unless this is a washdown from a previous, shallower haul, the specimen was identified correctly and the underlying data appears to be correct.

Bathyagonus infraspinatus (Gilbert, 1904). **Spinycheek Starsnout**. To 14.3 cm (5.6 in) TL (Mecklenburg *et al.* 2002)**.** South-eastern Bering Sea from vicinity of Pribilof Islands and Islands of Four Mountains, Aleutian Islands, Alaska to northern California (38°26.8'N) (NWFSC-FRAM). Benthic; depth: 6–415 m (20–1,361 ft) (min.: Mecklenburg *et al.* 2002; max. NWFSC-FRAM). Recently classified by some authors in *Asterotheca,* as *A. infraspinata* (e.g., Miller and Lea 1972); originally in *Xeneretmus.*

Bathyagonus nigripinnis Gilbert, 1890. **Blackfin Poacher**. To 29 cm (11.4 in) TL (Snytko 1987). Pacific coast of northern Japan (Imamura and Kitagawa 1999), northern Kuril Islands and south-eastern Kamchatka (Tokranov 2000), to Commander–Aleutian Chain, and northern Bering Sea near Cape Navarin (Mecklenburg *et al.* 2002), to near Point Arguello, California (34°34'N) (Daniel Pondella, pers. comm. to M.L.); one record from southern California (33°04'N, 117°25'W) (NWFSC-FRAM). Benthic; depth: 18–1,596 m (59–5,235 ft) (min.: Allen and Smith 1988; max.: DFO).

Bathyagonus pentacanthus (Gilbert, 1890). **Bigeye Poacher** or Bigeye Starsnout. To 26.2 cm (10.3 in) TL (Mecklenburg *et al.* 2002). Near Islands (52°23'N, 174°19'W), Aleutian Islands (Maslenikov *et al.* 2013), to Cortes Bank (Miller and Lea 1972), and off Point Loma, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 50–1,197 m (164–3,926 ft) (min.: Drazen *et al.* 2015; max.: NWFSC-FRAM).

We follow Smith and Busby (2014) and remove members of the genus *Blepsias* from the family Hemitripteridae.

Blepsias bilobus Cuvier, 1829. **Crested Sculpin**. To 27 cm (10.6 in) TL (Mecklenburg *et al.* 2002). Seas of Okhotsk and Japan to northeastern Chukchi Sea (70°30'N, 165°30'W), Bering Sea, and Commander–Aleutian chain (Mecklenburg *et al.* 2018), to southern British Columbia near Port Hardy (Love *et al.* 2005). Benthic; depth: 0–285 m (936 ft) (min: Panchenko *et al.* 2016; Saveliev *et al.* 2019). Juveniles collected at the shallower depths

and near surface (e.g., 60 cm, 2 ft) depth by neuston net) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Blepsias cirrhosus (Pallas, 1814). **Silverspotted Sculpin** or Silverspotted Sea Raven. To 26 cm (10.2 in) TL (Pietsch and Orr 2019). Seas of Okhotsk and Japan to western Bering Sea near Cape Olyutorskiy (59°44'N, 170°20'E) (Personal communication: Russian Academy of Science Ichthyological Collecton at Saint Petersberg), and Commander–Aleutian Chain, and Pribilof Islands, Bering Sea, Alaska (Mecklenburg *et al.* 2002), to San Simeon, central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth; intertidal to 97 m (318 ft) (min.: Bolin 1944; max.: Panchenko *et al.* 2016). Reported to 150 m (492 ft) (Sheiko and Fedorov 2000), but voucher or other documentation lacking (Love *et al.* 2005).

Bothragonus swanii (Steindachner, 1876). **Rockhead**. To 8.9 cm (3.5 in) TL (Hart 1973). Kodiak Island, Gulf of Alaska (Hubbard and Reeder 1965) to Santa Monica Bay (33°56'N, 118°27'W) (Personal communication: Santa Barbara Natural History Museum Fish Collection, Santa Barbara, California), southern California. Benthic; depth: intertidal to 21 m (70 ft) (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The frequently seen spelling *swani* is incorrect (Sheiko and Mecklenburg 2004).

Chesnonia verrucosa (Lockington, 1880). **Warty Poacher**. To 20 cm (8 in) TL (Jordan and Evermann 1898). Bristol Bay, south-eastern Bering Sea, Alaska, Shelikof Bay, eastern Gulf of Alaska (Mecklenburg *et al.* (2002), to Purisima Point (34°45'N, 120°42'W), central California (Personal communication: Santa Barbara Natural History Museum Fish Collection, Santa Barbara, California). Benthic; depth: intertidal to 337 m (1,105 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: NWFSC-FRAM). Originally described as a species in *Occa,* but the name *Occa* was already used for a genus of bird. *Chesnonia* was chosen as a replacement name. Some authors classify the species in *Occella.* Further study is needed to determine its correct placement (Sheiko and Mecklenburg 2004).

We follow Smith and Busby (2014) and have removed members of the genus *Hemilepidotus* from the Cottidae.

****Hemilepidotus gilberti*** Jordan & Starks, 1904. **Banded Irish Lord**. To about 43 cm (16.9 in) TL (Mecklenburg *et al.* 2002). Sea of Japan off North Korea (Lindberg and Krasyukova 1987) and Pacific Ocean off northern Honshu (Shinohara *et al.* 1996) to Sea of Okhotsk, to western Bering Sea off Commander Islands (Peden 1978) to Cape Olyutorskiy (59°44'N, 170°20'E) (Personal communication: Russian Academy of Science Ichthyological Collecton at Saint Petersberg). Benthic; depth: intertidal to 668 m (2,191 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; a juvenile from an upper intertidal tide pool; max.: Panchenko and Pushchina 2018).

Hemilepidotus hemilepidotus (Tilesius, 1811). **Red Irish Lord**. To 50.8 cm (20 in) TL (Miller and Lea 1972). Commander–Aleutian Chain, and south-eastern Bering Sea (Mecklenburg *et al.* 2002) to Mussel Point, Monterey Bay, central California (Bolin 1944, Peden 1978). Benthic; depth: intertidal to 235 m (771 ft) (min.: Peden 1978; max.: Pucunski *et al.* 2013). A Diablo Cove, central California, observation (Burge and Schultz 1973) predates the revision of this group by Peden (1978) and cannot be confirmed. Contrary to previous reports, has not been documented from the Pacific Ocean off south-eastern Kamchatka or the western Bering Sea except off the Commander Islands (Tokranov *et al.* 2003).

Hemilepidotus jordani Bean, 1881. **Yellow Irish Lord**. To 65 cm (25.6 in) TL (Spies *et al.* 2012). Sea of Okhotsk off Hokkaido to Commander–Aleutian Chain, to nearly the Bering Strait to Port Conclusion, south-eastern Alaska (Mecklenburg *et al.* 2016). Benthic; depth: intertidal to 917 m (3,008 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). An *H. jordani* reported from the Chukchi Sea (Mecklenburg *et al.* 2002) was reidentified as *Hemilepidotus papilio* (Bean, 1880) (Mecklenburg *et al.* 2016).

Hemilepidotus papilio (Bean, 1880). **Butterfly Sculpin**. To 45 cm (17.7 in) FL (Kulik *et al.* 2016). Sea of Okhotsk, and Kuril Islands, and south-eastern Kamchatka to Chukchi Sea as far north as 72°29'N, 158°26'W (misprinted as 158°60'W in Mecklenburg *et al.* 2016), eastern Bering Sea, and Aleutian Islands west to Buldir Island (Mecklenburg *et al.* 2016). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to

320 m (1,050 ft) (min.: Bean 1880; max.: Mecklenburg *et al.* 2002), typically at less than 150 m (Allen and Smith 1988). Originally named *Melletes papilio*, a name that is still occasionally seen in the literature.

Hemilepidotus spinosus Ayres, 1854. **Brown Irish Lord**. To 33 cm (13 in) TL (DFO). Southern Bering Sea (Matarese *et al.* 2003) and northern Gulf of Alaska (Mecklenburg *et al.* 2002) to Santa Barbara Island, southern California (Bolin 1944); on mainland to Ventura, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: intertidal to 175 m (574 ft) (min.: Mecklenburg *et al.* 2002; max.: DFO). As the species has not been moved from the genus in which it was placed when first described, the author name and date of publication should not be in parentheses (as occasionally seen in literature).

Hemilepidotus zapus Gilbert & Burke, 1912. **Longfin Irish Lord**. To 28.7 cm (11.3 in) TL (Mecklenburg *et al.* 2002). Northern Kuril Islands, and Commander Islands (Tokranov *et al.* 2003); Attu Island, Aleutian Islands to south-western Gulf of Alaska off Chernabura Island (Mecklenburg *et al.* 2002), and northern Gulf of Alaska at Prince William Sound (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Larvae have been collected from south-central and south-eastern Bering Sea (Matarese *et al.* 2003; Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 25–530 m (82–1,739 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Tokranov *et al.* 2003).

We follow Smith and Busby (2014) and remove members of the genus *Hemitripterus* from the family Cottidae.

Hemitripterus bolini (Myers, 1934). **Bigmouth Sculpin**. To 83 cm (32.7 in) TL (Spies *et al.* 2012). Eastern Sea of Okhotsk (Vinnikov *et al.* 2004), and northern Kuril Islands to Commander–Aleutian Chain, Bering Sea to Cape Navarin, to north side of Alaska Peninsula (Mecklenburg *et al.* 2002), to Eureka, northern California (Allen and Smith 1988). Benthic; depth: 25–925 m (82–3,034 ft) (Allen and Smith 1988).

Hemitripterus villosus (Pallas, 1814). **Shaggy Sea Raven**. To 75 cm (29.5 in) TL (Tokranov and Orlov 2006). Sea of Japan off South Korea to Sea of Okhotsk, to Commander Islands, western Bering Sea to Cape Olyutorskiy; one record from Kodiak Island, western Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 0.7–525 m (2–1,722 ft) (min.: Markevich 2000; max.: Kim 2001); abundant to 50 m (164 ft) (Vinnikov *et al.* 2004).

Hypsagonus quadricornis (Valenciennes, 1829). **Fourhorn Poacher**. To 12 cm (4.7 in) TL (Tokranov and Orlov 2004). Northern Japan and Sea of Okhotsk, to Commander–Aleutian Chain, and Bering Sea (Mecklenburg *et al.* 2002), to northeastern Chukchi Sea as far north as 71°01'N, 164°52'W (Mecklenburg *et al.* 2016), to Puget Sound, Washington (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 452 m (1,483 ft) (Mecklenburg *et al.* 2016). The species name is often attributed to Cuvier, but Valenciennes provided both the species name and the description; the full citation is Valenciennes in Cuvier & Valenciennes, 1829 (Sheiko 1993; see also Mecklenburg *et al.* 2002, Sheiko and Mecklenburg 2004).

Leptagonus decagonus (Bloch & Schneider, 1801). **Atlantic Poacher**. To 25 cm (9.8 in) TL (Coad and Reist 2004) or 27 cm (10.6 in) TL as recorded from a video survey: "Fish lengths were estimated using the software ImageJ…for all fishes that swam along the seafloor in plane with the camera reference lasers, providing scale for measurements" Devine *et al.* (2019). Nearly circumpolar (Mecklenburg *et al.* 2011); no records from East Siberian and western Chukchi Seas; eastern Chukchi and Beaufort Seas eastwards around Arctic to Laptev Sea; isolated population in Sea of Okhotsk (Sheiko and Mecklenburg 2004), and Bering Sea to Aleutian Islands with southernmost record in eastern Pacific Ocean in Bristol Bay, Alaska, and Unalaska Island (Mecklenburg *et al.* 2016). Benthic; depth: 0–820 m (72,690 ft) (min.: Federov *et al.* 2003; max.: Coad in Coad and Reist 2018).

Leptagonus frenatus (Gilbert, 1896). **Sawback Poacher**. To 32 cm (12.6 in) TL (Glubokov and Orlov 2008). Pacific coast of Hokkaido, Japan, Sea of Okhotsk, Kuril Islands to Norton Sound, Bering Sea, including Commander–Aleutian Islands Chain, and Stalemate and Bowers Banks (Mecklenburg *et al.* 2002) to Observatory Inlet, northern British Columbia (Mecklenburg *et al.* 2002). Benthic; depth: 18–1,124 m (60–3,687 ft) (min.: Eschmeyer and Herald 1983; max.: Hoff and Britt 2005). Recently classified by some authors in *Sarritor* (e.g., Saveliev *et al.* 2019)*;* originally in *Odontopyxis* (see Sheiko and Mecklenburg 2004). A specimen in the University of Washington, Burke Museum of Natural History and Culture Fish Collection, UW 028802, captured in Puget Sound, was a misidentified *Bathyagonus pentacanthus* (Gilbert, 1890).

We follow Smith and Busby (2014) and remove members of the genus *Nautichthys* from the Hemitripteridae.

Nautichthys oculofasciatus (Girard, 1858). **Sailfin Sculpin** or Sailfin Sea Raven. To 20.3 cm (8 in) TL (Mecklenburg *et al.* 2002). Shumagin Islands (54°56'N, 160°24'W), western Gulf of Alaska (Maslenikov *et al.* 2013) to San Miguel Island, southern California (Miller and Lea 1972). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 208 m (682 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). A specimen was reported caught in the eastern Bering Sea at about 57°30'N, 169°20'W. However, the specimen was not retained (Duane Stevenson, pers. comm. to M.L.). A specimen in the University of Washington, Burke Museum of Natural History and Culture Fish Collection database, UW 014324, as *N. oculofasciatus* from the Bering Sea, is actually *Nautichthys pribilovius* (Jordan & Gilbert in Jordan & Gilbert, 1898) (Katherine Maslenikov).

Nautichthys pribilovius (Jordan & Gilbert in Jordan & Evermann, 1898). **Eyeshade Sculpin**. To 10.9 cm (4.3 in) TL (Mecklenburg *et al.* 2002). Japan and Okhotsk Seas to Commander–Aleutian Chain, throughout Bering Sea to northern Chukchi Sea (71°12'N, 163°05'W), and western Beaufort Sea (71°45'N, 153°57'W), north-western Alaska, to Steamer Bay, south-eastern Alaska (Mecklenburg *et al.* 2018). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 11 m (36 ft) or less to 422 m (1,385 ft) (min.: Mecklenburg *et al.* 2016; max.: Mecklenburg *et al.* 2002). Mistakenly reported from Russia (Mecklenburg *et al.* 2002); the 422-m depth is from Unimak Pass, Alaska (Personal communication: Russian Academy of Science Ichthyological Collecton at Saint Petersberg).

Nautichthys robustus Peden, 1970. **Shortmast Sculpin**. To 8 cm (3.2 in) TL. Southern Bering Sea, Alaska to northern Washington (Mecklenburg *et al.* 2016). Benthic; depth: nearshore to 97 m (318 ft). All in Mecklenburg *et al.* (2002). Perhaps a junior synonym of *Nautichthys pribilovius* (Jordan & Gilbert in Jordan & Gilbert, 1898) and needing further study (Mecklenburg *et al.* 2018).

Occella dodecaedron (Tilesius, 1813). **Bering Poacher**. To 23 cm (9.1 in) TL (Tokranov 1992). Seas of Japan and Okhotsk, and Kuril Islands to Kamchatka, and western Bering Sea at Gulf of Anadyr; south-eastern Chukchi Sea (66°16'N, 161°21'W) (Mecklenburg *et al.* 2011), and eastern Bering Sea at Norton Sound (Mecklenburg *et al.* 2002), and Bristol Bay (Johnson *et al.* 2012) to western Gulf of Alaska (Mecklenburg *et al.* 2002). Northeastern Chukchi Sea (Barber *et al.* 1997) is unverified (Mecklenburg *et al.* 2011). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: at least intertidal to 100 m (320 ft) (min.: Mecklenburg *et al.* 2016; max.: Kim and Kim 2019). Panchenko *et al.* (2016) list a maximum depth of 280 m (918 ft), but without attribution. One aberrant, questionable record from 375 m (1,230 ft) (Allen and Smith 1988), perhaps from contamination of sample such as fish left in net from a previous, shallower tow, or fish entering the net above maximum depth of tow.

Odontopyxis trispinosa Lockington, 1880. **Pygmy Poacher**. To 15 cm (5.9 in) SL, about 17 cm (7 in) TL (City of San Diego 2020). Prince William Sound, northern Gulf of Alaska (Mecklenburg *et al.* 2002) to Laguna Guerrero Negro, central Baja California, including Isla de Cedros, central Baja California (Miller and Lea 1972). One possible record from south-eastern Bering Sea, but voucher specimen has been lost (Mecklenburg *et al.* 2002). Benthic; depth: 5–373 m (16–1,224 ft) (min.: Mecklenburg *et al.* 2002; max.: Gilbert 1896).

Pallasina aix Starks, 1896. **Southern Tubenose Poacher**. To 14.8 cm (5.8 in) TL. Southeast Alaska to just north of San Francisco, northern California. Benthic; intertidal to 63 m (207 ft). All in Stevenson *et al.* (2021).

Pallasina barbata (Steindachner, 1876). **Tubenose Poacher**. To 16.8 cm (6.6 in) TL (Stevenson *et al.* 2021). Sea of Okhotsk, Hokkaido Island, Japan, Kuril Islands, and Kamchatka to eastern Chukchi (as far northward as Point Barrow), and eastern Bering Sea, Aleutian Islands, as far eastward as central Gulf of Alaska (Stevenson *et al.* 2021). Benthic; marine and brackish waters (Dyldin and Orlov 2017—probably this species); depth: intertidal to 128 m (420 ft) (min.: Stevenson *et al.* 2021; max.: Personal communication: National Museum of Natural History Fish Collection, Washington, D.C.).

Percis japonica (Pallas, 1769). **Dragon Poacher**. To 46 cm (18.1 in) TL (Mecklenburg *et al.* 2016). Seas of Japan and Okhotsk to Commander and Aleutian Islands and Bering Sea to Gulf of Alaska to Juneau, Alaska; only two Gulf of Alaska records (Mecklenburg *et al.* 2016). Benthic; depth: 19–770 m (63–2,526 ft) (min.: Mecklenburg *et al.* 2016; max.: Tokranov and Orlov 2008). Sometimes seen spelled *japonicus,* the specific name is correctly spelled *japonica* to agree in gender (feminine) with *Percis*.

Podothecus accipenserinus (Tilesius, 1813). **Sturgeon Poacher**. To 38 cm (15 in) TL (Tokranov and Orlov 2014). Pacific coast of Hokkaido, Kuril Islands, south-eastern Kamchatka, Commander, and Aleutian Islands to northern Bering Sea, Alaska near Saint Lawrence Island (Mecklenburg *et al.* 2016) to Point Reyes, northern California (Allen and Smith 1988). Benthic; depth: intertidal to 570 m (1,870 ft) (Mecklenburg *et al.* 2016) or perhaps to 710 m (2,329 ft) (Mecklenburg *et al.* 2016). Originally placed in genus *Agonus.* Usually seen spelled *acipenserinus* but the original, correct spelling is *accipenserinus* (Sheiko 1993, Sheiko and Mecklenburg 2004).

Podothecus veternus Jordan & Starks, 1895. **Veteran Poacher**. To 28.5 cm (11.2 ft) TL (Lindberg and Krasyukova 1987). Seas of Japan and Okhotsk, northern Kuril Islands, south-eastern Kamchatka to western and eastern Bering Sea, eastern Chukchi Sea to western Beaufort Sea (to 71°36'N, 153°57'W) (Mecklenburg *et al.* 2016); one unconfirmed record from the eastern Beaufort Sea (at 70°13'N, 147°35'W) (Mecklenburg *et al.* 2018). Benthic; depth: intertidal to 310 m (1,017 ft) (min.: Mecklenburg *et al.* 2016; max.: Panchenko *et al.* 2016). Federov *et al.* (2003) list an additional, outlying, maximum depth of 605 (1,984 ft).

Sarritor leptorhynchus (Gilbert, 1896). **Longnose Poacher**. To 20 cm (7.9 in) SL (Kanayama 1991), or about 22.6 cm (8.9 in) TL (Catherine W. Mecklenburg, unpubl. data). Seas of Japan and Okhotsk and Pacific coast of northern Japan to Commander–Aleutian Chain, to 61°N in western Bering Sea off Russia to Pribilof Islands and Bristol Bay in eastern Bering Sea off Alaska, to Prince William Sound, northern Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 15–460 m (48–1,509 ft) (min.: Mecklenburg *et al.* 2002; max.: Orlov 1998); reported but not confirmed to 974 m (3,195 ft) (Mecklenburg *et al.* 2002). Recently classified by some authors in *Leptagonus;* originally in *Odontopyxis* (see Sheiko and Mecklenburg 2004).

Stellerina xyosterna (Jordan & Gilbert, 1880). **Pricklebreast Poacher**. To 16.5 cm (6.5 in) TL (Jordan and Evermann 1898). Icy Bay, northern Gulf of Alaska (Mecklenburg *et al.* 2002), and northern British Columbia near Alaska border (Barraclough and Peden 1976) to Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 2 m (7 ft) (Mecklenburg *et al.* 2002) to at least 100 m (330 ft) (Gotshall and Geibel 2005). *Occella impi* Gruchy, 1970, originally described from a single juvenile specimen from British Columbia, was shown to be a junior synonym of *S. xyosterna* (Mecklenburg *et al.* 2002).

Xeneretmus latifrons (Gilbert, 1890). **Blacktip Poacher**. To 19 cm (7.5 in) TL (Miller and Lea 1972). Near Haida Gwaii (54°16'N, 133°17'W), British Columbia (DFO) to off Bahía San Quintin (30°13.3'N, 116°03.7'W), northern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The presence of larvae in the northern Gulf of Alaska indicates adults likely are also present there (Matarese *et al.* 2003). Benthic; depth: 2 m (7 ft) or less to 1,291 m (4,235 ft) (min.: Miller *et al.* 1980 and a specimen in the University of Washington, Burke Museum of Natural History and Culture Fish Collection, UW 002915 (beach seine); max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Xeneretmus leiops Gilbert, 1915. **Smootheye Poacher**. To 27 cm (10.8 in) TL (Barraclough and Peden 1976). Northern Gulf of Alaska (59°16'N, 141°07'W) (Maslenikov *et al.* 2013) to Santa Catalina Island, southern California (Miller and Lea 1972). Benthic; depth: 24–803 m (79–2,634 ft) (DFO).

Xeneretmus ritteri Gilbert, 1915. **Stripefin Poacher**. To 15.9 cm (6.3 in) TL (Miller and Lea 1972). Malibu, southern California to Isla de Cedros, central Baja California; Gulf of California (Miller and Lea 1972). Benthic; depth: 105–405 m (344–1,328 ft) (min.: Allen *et al.* 2002; max.: City of San Diego 2020).

Xeneretmus triacanthus (Gilbert, 1890). **Bluespotted Poacher**. To 20 cm (7.9 in) TL (Toole *et al.* 2011). Near Haida Gwaii (54°18'N, 132°38'W), British Columbia (DFO) to Punta Baja, northern Baja California (Leipertz 1985). Benthic; depth: 15–624 m (49–2,047 ft) (min.: Fay *et al.* 1978; max.: NWFSC-FRAM).

Family Cyclopteridae—Lumpfishes or Lumpsuckers

Reviewed by: Duane Stevenson

Lumpsuckers are sometimes called lumpfishes after an Atlantic coast species called Lumpfish (C*yclopterus lumpus* Linnaeus, 1758).

Aptocyclus ventricosus (Pallas, 1769). **Smooth Lumpsucker**. To 45 cm (17.7 in) TL (Solomatov and Orlov 2018). Japan and Okhotsk Seas to Providence Bay, Gulf of Anadyr; northern Bering Sea, Alaska to North Pacific Ocean south of Aleutian Islands and Gulf of Alaska to Mathieson Channel, British Columbia (Mecklenburg *et al.* 2002). Pelagic; depth: usually found in deep waters from near surface to at least 940 m (3,083 ft) (Solomatov and Orlov 2018). Also taken in a bottom trawl towed at 1,556 m (5,104 ft) (Hoff and Britt 2003), but the fish may have entered the net above the bottom; also listed to depth of 1,700 m (5,576 ft) in Federov *et al.* (2003). Kido and Shinohara (1996) showed that the species named *Pelagocyclus vitiazi* Lindberg & Legeza, 1955 is the juvenile stage of *A. ventricosus.* Genetic data recently presented by Okazaki *et al.* (2020) indicates that this species may consist of distinct eastern and western populations.

Eumicrotremus andriashevi Perminov, 1936. **Pimpled Lumpsucker**. To 9.7 cm TL (3.8 in) Mecklenburg *et al.* 2002). Karaginskiy Bay, western Bering Sea to northeastern Chukchi Sea (71°00'N, 159°21'W) (Mecklenburg *et al.* 2018) to eastern Bering Sea as far south as Saint Matthew Island (Mecklenburg and Sheiko 2003). Depth: 20–93 m (66–305 ft) (min.: Mecklenburg *et al.* 2002; max.: Voskoboinikova and Nazarkin 2015). Specimens from the Sea of Okhotsk and Kuril Islands previously attributed to *E. andriashevi* represent the western Pacific forms *Eumicrotremus schmidti* Lindberg & Legeza, 1955, and *Eumicrotremus fedorovi* Mandrytsa, 1991, respectively. Conversely, many specimens from the northeastern Bering Sea, Alaska, recorded as *Eumicrotremus orbis* (Günther, 1861) are *E. andriashevi* (Mecklenburg and Sheiko 2003).

Eumicrotremus barbatus (Lindberg & Legeza, 1955). **Papillose Lumpsucker**. To 7 cm (2.8 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Sea of Okhotsk off Hokkaido, Japan (Kido 1984); Pacific Ocean off Paramushir Island, Kuril Islands (Lindberg and Legeza 1955); Aleutian Islands from Near Islands (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to south of Unimak Island (Mecklenburg and Sheiko 2003). Depth: "At the shore" (Ueno 1970) to 210 m (693 ft) (Kido 1984). "(DNA) sequences for papillose lumpsucker *E. barbatus* from the Aleutian Islands unexpectedly fell within the *E. orbis* clade and it is evident that the relationship between these two forms needs to be reevaluated" (Mecklenburg and Steinke 2015). This is one of several species of *Eumicrotremus* known only from males (Voskoboinikova *et al.*, 2020; Duane Stevenson, pers. obs.). It also has a DNA barcode sequence essentially indistinguishable from *Eumicrotremus orbis* (Günther, 1861) (Mecklenburg and Steinke 2015; Kai *et al.*, 2015); thus the relationship between these two forms is uncertain. Despite this similarity, Voskoboinikova and Nazarkin (2015) established a new genus, *Georgimarinus*, for this species.

Eumicrotremus derjugini Popov, 1926. **Leatherfin Lumpsucker**. To 12.7 cm (5 in) TL (Mecklenburg *et al.* 2002). Most Arctic seas, including East Siberian Sea (Mecklenburg *et al.* 2011), Beaufort Sea (Mecklenburg *et al.* 2002), and one record from the eastern Chukchi Sea (71°41'N, 156°42'W; a specimen in the University of Washington, Burke Museum of Natural History and Culture Fish Collection database, UW 153106); across Arctic Canada (Coad in Coad and Reist 2018); isolated population in northern Sea of Okhotsk (Mecklenberg *et al.* 2016). Depth: 39–930 m (128–3,069 ft) (min.: Chernova *et al.* 2019; max.: Jensen 1944). Listed as shallow as 20 m (66 ft) (Federov *et al.* 2003).

Eumicrotremus gyrinops (Garman, 1892). **Alaskan Lumpsucker**. To at least 9.2 cm (3.6 in) SL (Stevenson *et al.* 2017). Paramushir Island, Russia (Voskoboinikova 2019b) and at least west-central, central, and eastern Bering Sea (in vicinity of Saint Paul Island) and throughout Aleutian Islands to off Kodiak Island (Stevenson *et al.* 2017). Depth: 59–329 m (193–1,079 ft) (min.: Stevenson *et al.* 2017; max: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California as *Lethotremus muticus*). We follow Stevenson *et al.* (2017) and consider *Eumicrotremus muticus* (*Lethotremus muticus*) (Garman, 1892) and *Eumicrotremus phrynoides* Gilbert & Burke, 1912 to be junior synonyms. However, we note that Voskoboinikova (2019a) retains the species status of both of these taxa. In addition to species now recognized as its junior synonyms, *Eumicrotremus gyrinops* has often been misidentified as *Eumicrotremus asperrimus* (Tanaka, 1912) or *E. birulai* Popov, 1928. However, these two species, if they are both valid, are part of the Western Pacific clade of the *E. asperrimus* complex (Kai *et al.*, 2015), and their distributions appear to be restricted to the western Pacific, Sea of Okhotsk, and Sea of Japan.

****Eumicrotremus lindbergi*** (Soldatov, 1930). **Lindberg's Lumpsucker**. To 7.4 cm (2.9 in) TL. Sea of Japan off Korean Peninsula to Sea of Okhotsk and western Bering Sea (Mecklenburg *et al.* 2002); one possible record from the Aleutian Islands south of the Islands of Four Mountains, Alaska (Catherine W. Mecklenburg, unpubl. data). Depth: 37–143 m (121–469 ft) (Panchenko *et al.* 2016). Panchenko *et al.* (2016) list a minimum depth of

20 m (66 ft) but without attribution. Perhaps a synonym of *Eumicrotremus asperrimus* (Hatano *et al.* 2015, Kai *et al.* 2015); this form is known only from males (Voskoboinikova *et al.* 2020). Also known as *Cyclopteropsis lindbergi* Soldatov, 1930. We follow Oku *et al.* (2017) in recognizing *Cyclopteropsis* as a junior synonym of *Eumicrotremus*.

Eumicrotremus orbis (Günther, 1861). **Pacific Spiny Lumpsucker**. To 16.3 cm (6.4 in) TL (Mecklenburg *et al.* 2016). Pacific coast of Hokkaido, Japan to Commander and Aleutian Islands to Bering Sea as far north as Bering Strait to Puget Sound, Washington (Mecklenberg *et al.* 2016). Shallow water, at 2 m (6.6 ft) or less (Miller *et al.* 1980), to 447 m (1,466 ft) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); reported as deep as 575 m (1,898 ft) (Allen and Smith 1988) but without documentation. Many specimens previously recorded in the literature as *E. orbis* were misidentified, including those from Sea of Okhotsk, Kuril Islands, Pacific Ocean off south-eastern Kamchatka, and northeastern Bering Sea (Mecklenburg and Sheiko 2003).

Eumicrotremus soldatovi Popov, 1930. **Soldatov's Lumpsucke**r. To about 26 cm (10.2 in) TL (Mecklenburg *et al.* 2002). Northern Sea of Okhotsk and North Pacific Ocean off south-eastern Kamchatka (Mecklenburg and Sheiko 2003); one record from Bering Sea, Alaska near northwest end of Bowers Ridge (Ueno 1970). Pelagic; depth: 10–350 m (33–1,148 ft) (min.: Federov *et al.* 2003; max.: Orlov 1994). Referred to as *Proeumicrotremus soldatovi* (Popov, 1930) by Voskoboinikova and Orlov (2020).

****Eumicrotremus spinosus*** (Fabricius, 1776). **Atlantic Spiny Lumpsucker**. To about 14 cm (5.5 in) TL (Mecklenburg *et al.* 2018). Near Alaska in eastern Beaufort Sea off Canada at Mackenzie River Delta (Mecklenburg *et al.* 2016) to Greenland and western Atlantic to Cape Cod; eastern North Atlantic, Kara and Barents seas, and Novaya Zemlya (Mecklenburg *et al.* 2002). Depth: 5–930 m (16–2,983 ft) (min.: Scott and Scott 1988; max.: Andriashev 1954); adults typically at 60–200 m (197–656 ft) (Andriashev 1954). *Eumicrotremus eggvinii* Koefoed, 1956 is a synonym, originally based on spawning males of *Eumicrotremus spinosus* (Byrkiedal *et al.* 2007, Voskoboinikova and Balanov 2019). Historical confusion between this species and *E. eggvinii*, *Eumicrotrema derjugini* Popov, 1926, and *Eumicrotremus terraenovae* Myers and Böhlke, 1950 means that it is difficult to parse out valid capture data.

Family Liparidae—Snailfishes

Reviewed by: James Orr

A study of the phylogenetic relationships of many species in this family, based on COI and Radseq analyses (Orr *et al.* 2019a), implies that some species may belong in different genera.

Acantholiparis caecus Grinols, 1969. Caecal Spiny Snailfish or **Fanged Snailfish**. To 7.4 cm (2.9 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Central Vancouver Island (49°19'N, 126°23'W) (Gavin Hanke, pers. comm. to M.L.); Oregon (Grinols 1969, Stein 1978); and Cortes Basin, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 1,175–2,122 m (3,854–6,962 ft) (min.: Gavin Hanke, pers. comm. to M.L.; max.: Grinols 1969).

Acantholiparis opercularis Gilbert & Burke, 1912. **Spiny Snailfish**. To 8.5 cm (3.3 in) SL (Maslenikov *et al.* 2013). South-eastern Kamchatka, North Pacific Ocean (Gilbert and Burke 1912); northeastern Kamchatka (Mecklenburg *et al.* 2002) and Commander Islands (Parin *et al.* 2002); eastern Bering Sea (56°42'N, 173°18'W) (Maslenikov *et al.* 2013); Moresby Island (52°24'N, 132°12'W), Vancouver Island (Gavin Hanke, pers. comm. to M.L.); Oregon (Stein 1978); Farallon Islands, central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 300–3,609 m (984–11,840 ft) (min.: Maslenikov *et al.* 2013; max.: Gilbert and Burke 1912).

Allocareproctus jordani (Burke, 1930). **Cherry Snailfish.** To 38 cm (15 in) SL (Orlov and Tokranov 2011). Sagami Bay, Japan, along Kuril Islands, eastern Sea of Okhotsk, off the southern tip of Kamchatka, Aleutian Islands eastwards to Amukta Island and eastern Bering Sea (Orr and Busby 2006). Depth: 75–750 m (244–2,460 ft) (min.: Orr and Busby 2006; max.: Orlov and Tokranov 2011).

Allocareproctus kallaion Orr & Busby, 2006. **Combed Snailfish**. To 19.5 cm (7.7 in) SL (Orr and Busby 2006). Aleutian Islands, Seguam Pass to Yunaska Island (Orr and Busby 2006). Depth: 278–463 m (912–1,519 ft) (min: Orr and Busby 2006; max. Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Allocareproctus tanix Orr & Busby, 2006. **Peach Snailfish**. To 7.8 cm (3.1 in) SL. Aleutian Islands, from Kiska to Umnak islands. Depth: 104–620 m (341–2,034 ft). All in Orr and Busby (2006). We follow Orr and Busby (2006) and consider *Careproctus pycnosoma* Gilbert & Burke, 1912 a synonym. *Careproctus pycnosoma* is considered a valid species by some (e.g., Fricke *et al.* 2020).

Allocareproctus unangas Orr & Busby, 2006. **Goldeneye Snailfish.** To 13 cm (5.1 in) SL (Orr and Busby 2006). Aleutian Islands, Buldir Pass to Islands of Four Mountains (Orr and Busby 2006). Depth: 176–465 m (577–1,525 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Orr and Busby 2006).

Allocareproctus ungak Orr & Busby, 2006. **Whiskered Snailfish**. To 12.9 cm (5.1 in) SL. Aleutian Islands, Seguam Pass to the Islands of Four Mountains, Aleutian Islands, Alaska. Depth: 318–461 m (1,043–1,512 ft). All in Orr and Busby (2006).

Bathyphasma ovigerum Gilbert, 1896. **Abyssal Snailfish**. To 42 cm (16.5 in) SL, 47.5 cm (18.7 in) TL (Orr 2012). Haida Gwaii, British Columbia (Gilbert 1896) to central California (37°38'N, 123°23'W) (Orr 2012). Depth: at least (2,039–2,904 m) (6,688–9,525 ft) (Orr 2012) or perhaps to 3,602 m (11,815 ft) (Jacobsen Stout *et al.* 2016). Some of the depths listed in such papers as Stein *et al.* (2006) may be in error, the result of confusing this species with other similar-appearing ones (Orr 2012). Previously recognized as *Careproctus ovigerus* (Gilbert, 1896), we follow Fricke *et al.* (2020) and have moved this species to the genus *Bathyphasma*.

Careproctus abbreviatus Burke, 1930. **Short Snailfish**. To 10 cm (3.9 in) TL. Northern Sea of Okhotsk (Mecklenburg *et al.* 2002); Rat Island (51°34'N, 178°20'W), western Aleutian Islands (Maslenikov *et al.* 2013), and eastern North Pacific south of Alaska Peninsula (Mecklenburg *et al.* 2002). Depth: 325–1,143 m (1,066–3,749 ft) (Mecklenburg *et al.* 2002). Chernova *et al.* (2004) consider the Sea of Okhotsk record questionable.

Careproctus ambustus Orr, 2020. **Scorched Snailfish**. To 54 cm (21.3 in) TL (as *Careproctus melanurus*, Orlov and Binohlan 2009). Seas of Japan and Okhotsk to Bering Sea, Aleutian Islands, Gulf of Alaska, and British Columbia (Orr *et al.* 2020). Depth: 58–1,172 m (190–3,844 ft) (Orr *et al.* 2020). Previously part of *Careproctus melanurus*.

Careproctus attenuatus Gilbert & Burke, 1912. **Attenuate Snailfish**. Known from one specimen, 3.7 cm (1.5 in) SL, collected just south of Agattu Island, Aleutian Islands, Alaska. Depth: 882 m (2,894 ft). All in Mecklenburg *et al.* (2002).

Careproctus bowersianus Gilbert & Burke, 1912. **Bowers Bank Snailfish**. To 15.6 cm (6.1 in) SL (Mecklenburg *et al.* 2002). South-eastern and south-central Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002). Depth: 629–1,032 m (2,064–3,385 ft) (min.: Mecklenburg *et al.* 2002; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov).

Careproctus canus Kido, 1985. **Gray Snailfish**. To 19.8 cm (7.8 in) SL (Maslenikov *et al.* 2013). Western and central Aleutian Islands from Near Strait (between Medny and Attu islands) (Kido 1985) to eastern Aleutian Islands (52°33'N, 169°42'W) (Maslenikov *et al.* 2013). Depth: 48–434 m (157–1,424 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Kido 1985).

Careproctus canusocius Orr 2020. **Transboundary Snailfish**. To 8.1 cm (3.2 in) SL. Two specimens from the Beaufort Sea in region of U.S.-Canada Border (70°24.9'N, 140°21.4'W; 70°33.8'N, 140°27'W). Depth: 488–599 m (1,600–1,965 ft). All in Orr (2020).

Careproctus colletti Gilbert, 1896. **Alaska Snailfish**. To 44 cm (17.3 in) SL (Orlov and Tokranov 2011). Seas of Japan and Okhotsk to Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002) to northern California (39°32.2'N, 124°13'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to southern California (33°15'N) (NWFSC-FRAM). Depth: 64–1,556 m (210–5,105 ft) (min.: Kido 1988; max.: Hoff and Britt 2003).

Careproctus comus Orr & Maslenikov, 2007. **Comic Snailfish.** To 9.9 cm (3.9 in) SL (Orr and Maslenikov 2007). Zhemchug Canyon (56°55'N, 173°22'W) (Maslenikov *et al.* 2013) and Aleutian Islands, from Stalemate Bank

to just east of Unalaska Island (Orr and Maslenikov 2007). Depth: 146–400 m (479–1,312 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov; max.: Orr and Maslenikov 2007).

Careproctus cypselurus (Jordan & Gilbert, 1898). **Falcate Snailfish** or Forktail Snailfish. To 37.4 cm (14.7 in (Mecklenburg *et al.* 2002). A record of 54 cm (21.3 in) SL (Kamikawa 2017) is without documentation and is likely in error (James Orr). Pacific Ocean off Honshu, Japan to Kuril Islands and Sea of Okhotsk (Kido 1988) to Bering Sea (Mecklenburg *et al.* 2002), Gulf of Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to northern California (35°26.5'N, 121°44.2'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington); at least several captures reported from further south (e.g., central California (34°44'N), Weinberg *et al.* 2002; southern California (32°56'N), NWFSC-FRAM), but without voucher specimens. Depth: 35–1,993 m (115–6,539 ft) (min.: Orlov and Tokranov 2011; max.: Mecklenburg *et al.* 2002).

Careproctus ectenes Gilbert, 1896. **Shovelhead Snailfish**. To 12.3 cm (5 in) TL (Maslenikov *et al.* 2013). Bering Sea (north to 57°49'N, 173°52'W) and Near Islands (53°06'N, 171°42'W), western Aleutian Islands (Maslenikov *et al.* 2013) to Unalaska Island, Aleutian Islands (Mecklenburg *et al.* 2002). Depth: 380–640 m (1,246–2,100 ft) (min.: Maslenikov *et al.* 2013; max.: Mecklenburg *et al.* 2002).

Careproctus faunus Orr & Maslenikov, 2007. **Mischievous Snailfish.** To 10.2 cm (4 in) SL (Orr and Maslenikov 2007). Pervenets Canyon (59°23'N, 177°40'W), Bering Sea and Petrel Bank, to just east of Unalaska Island (Maslenikov *et al.* 2013). Depth: 120–422 m (394–1,384 ft) (Orr and Maslenikov 2007).

Careproctus filamentosus Stein, 1978. To 18 cm (7.1 in) SL (Stein 1978). Oregon (Stein 1978) and Monterey Bay, central California (Stein *et al.* 2006). Depth: 2,265–3,033 m (7,431–9,948 ft) (min.: Stein 1978; max.: Stein *et al.* 2006).

Careproctus furcellus Gilbert & Burke, 1912. **Emarginate Snailfish**. To 54 cm (21.3 in) SL (Tokranov 2000). Pacific Ocean off Hokkaido and Sea of Okhotsk to Bering Sea (Kido 1983, 1988) at least as far north as 60°49'N, 178°42'W (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), and Pacific Ocean off Aleutian Islands to northern Gulf of Alaska (Mecklenburg *et al.* 2002). Specimens from British Columbia, in the Royal British Columbia Museum collection, are *Careproctus cypselurus* (Jordan & Gilbert, 1898) (James Orr). Depth: 98–1,270 m (322–4,166 ft) (min.: Kido 1988; max. Mecklenburg *et al.* 2002).

Careproctus gilberti Burke, 1912. **Smalldisk Snailfish**. To 12.7 cm (5 in) TL (Mecklenburg *et al.* 2002). Western Aleutian Islands (Mecklenburg *et al.* 2002) and eastern Bering Sea (Hoff and Britt 2003) to central California north of Point Conception at about 35°10'N off Morro Bay (Townsend and Nichols 1925), and perhaps to southern California (33°44.9'N, 120°12'W) (Daniel Pondella, pers. comm. to M.L.). Depth: 55–2,040 m (180–6,691 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov; max.: Drazen *et al.* 2015). The southern limit is the collection locality for the type specimen of *Liparis osborni* Townsend & Nichols, 1925, a junior synonym of *C. gilberti* (Mecklenburg *et al.* 2002).

Careproctus kamikawai Orr, 2012. **Arbiter Snailfish**. To 17.5 cm (6.9 in) TL (Orr 2012). Monterey Bay, central California and southern California (as far southward as 32°28'N, 118°35'W) (Orr 2012). Depth: 468–2,652 m (1,535–8,699 ft) (min.: Orr 2012; max.: Jacobsen Stout *et al.* 2016).

Careproctus lacrima Orr, 2021. **Teardrop Snailfish**. To 6 cm (2.4 in) SL. Aleutian Islands from Kiska to Amukta Islands. Depth: 90–207 m (295–679 ft). All in Orr (2021).

Careproctus lerikimae Orr, Kai & Nakabo, 2015. **Dusty Snailfish**. To 13.6 cm (5.4 in) SL. Beaufort Sea. Depth: 175–500 m (574–1,640 ft). All in Orr *et al.* (2015). Mecklenburg *et al.* (2018) considered *C. lerikimae* a junior synonym of *Careproctus reinhardti* (Krøyer, 1862) based on COI sequencing.

Careproctus longifilis Garman, 1892. **Threadfin Snailfish**. To 16.2 cm (6.4 in) SL (Stein 1978). Oregon to Panama (Stein 1978). Depth: 1,900–3,675 m (6,233–12,054 ft) (min.: Stein 1978; max.: Jacobsen Stout *et al.* 2016).

Careproctus lycopersicus Orr, 2012. **Tomato Snailfish.** To 20.4 cm (8 in) TL (Kai *et al.* 2019). Southern Sea of Okhotsk (Kai *et al.* 2019); Bering Sea and eastern Aleutian Islands (Orr 2012). Depth: 304–1,108 m (997–3,634 ft) (min.: Orr 2012; max. Hoff 2013).

Careproctus maslenikovae Orr, 2021. **Blushing Snailfish**. To 4.3 cm (1.7 in) SL. Aleutian Islands from Tanaga to Umnak islands. Depth: 234–322 m (180–1,056 ft). All in Orr (2021).

Careproctus melanurus Gilbert, 1892. **Blacktail Snailfish**. To 32.5 cm (12.8 in) SL (Personal communication: Royal British Columbia Museum Fish Collection, Victoria, British Columbia, Canada). Southeastern Alaska to at least Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: 50–2,286 m (290–7,500 ft) (min.: Personal communication: California Academy of Sciences Fish Collection, San Francisco, California; max. Stein 1978).

Careproctus microstomus Stein, 1978. **Smallmouth Snailfish**. To 19.7 cm (7.8 in) SL (Stein 1978). Oregon (Stein 1978) to central California (Ambrose in Moser 1996). Depth: 2,721–4,100 m (8,927–13,451 ft) (min.: Stein 1978; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A NWFSC-FRAM database record of 1,229 m (4,031 ft) would need a voucher specimen to be accepted (Jay Orr).

Careproctus mollis Gilbert & Burke, 1912. **Everyday Snailfish**. To 8.5 cm (3.3 in) TL. Northern Kuril Islands and Commander Islands; Aleutian Islands off Attu and Agattu islands, Bering Sea. Depth: 247–882 m (810–2,894 ft). All in Mecklenburg *et al.* (2002).

Careproctus nelsoni Orr, 2016. 6.8 cm (2.7 in) TL. Aleutian Islands from north of the Islands of Four Mountains to south of Amukta Island. Depth: 220–329 m (722–1,079 ft). All in Orr (2016).

Careproctus opisthotremus Gilbert & Burke, 1912. **Distalpore Snailfish**. To 7.7 cm (3 in) SL. Known from two specimens: from eastern North Pacific Ocean south of Agattu Island (the holotype) and from Bering Sea north of Umnak Island. Depth: 1,913 m (6,276 ft; the holotype) and 2,562 m (8,405 ft). All in Mecklenburg *et al.* (2002).

Careproctus oregonensis Stein, 1978. **Oregon Snailfish**. To 15.3 cm (6 in) SL (Stein 1978). British Columbia (Gillespie 1993) to Oregon (Stein 1978). Depth: 1,900–2,926 m (6,233–9,600 ft) (min.: Stein 1978; max.: Pearcy *et al.* 1982). A NWFSC-FRAM database record of 869 m (2,850 ft) would need a voucher specimen to be accepted (Jay Orr).

Careproctus ostentum Gilbert, 1896. **Microdisk Snailfish**. To 13.4 cm (5.3 in) TL (Schmidt 1950). Sea of Okhotsk; Bering Sea and Aleutian Islands to Gulf of Alaska east of Kodiak Island (Mecklenburg *et al.* 2002). Depth: 73–1,030 m (239–3,379 ft) (min.: Orlov and Tokranov 2019; max.: Mecklenburg *et al.* (2002).

Careproctus phasma Gilbert, 1896. Monster Snailfish or **Spectral Snailfish**. To 27.2 cm (10.7 in) SL**.** Continental Shelf of eastern Bering Sea and northern Gulf of Alaska. Depth: 57–184 m (187–604 ft). All in Orr *et al.* (2015).

****Careproctus reinhardti*** (Krøyer, 1862). **Sea Tadpole**. To 30 cm (12.2 in) TL (Mecklenburg *et al.* 2016). Baffin Bay and Davis Strait, off eastern Greenland, Kara and Laptev Seas, Chukchi Borderland and upper continental slope of Chukchi and Beaufort Seas (to as far eastward as 71°15'N, 150°06'W) (Mecklenburg *et al.* 2016) and southward to Bering Sea Slope (60°55'N, 177°41'W) (Mecklenburg *et al.* 2018). Depth: 100–1,840 m (328–6,035 ft) (Mecklenburg *et al.* 2011). This species is likely a species complex (Mecklenburg *et al.* 2011; Orr *et al.* 2019a).

Careproctus scottae Chapman & DeLacy, 1934. **Peachskin Snailfish**. To 39 cm (15.4 in) SL. Central and eastern Bering Sea, Aleutian Islands, and southeast Alaska. Depth: at least 71–390 m (233–1,279 ft). All in Orr *et al.* (2015). Records of "*Careproctus rastrinus*" from the Bering Sea and Aleutian Islands are of this species; *Careproctus rastrinus* is limited to Japan and the Sea of Okhotsk (Orr *et al.* 2015).

Careproctus simus Gilbert, 1896. **Proboscis Snailfish**. To 25 cm (9.8 in) TL (Balanov 2003). Sea of Okhotsk off Hokkaido (Tsutsui and Amaoka 1997) and south-eastern Sakhalin, northern Kuril Islands, and western Bering Sea off Cape Navarin (Chernova *et al.* 2004); central and eastern Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002). Depth: 213–819 m (699–2,686 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Careproctus spectrum Bean, 1890. **Stippled Snailfish**. To about 9.1 cm (3.6 in) SL. North-western Gulf of Alaska. Depth: known only from type series collected at 201 m (659 ft). All in Orr *et al.* (2015).

Careproctus spiraki Orr, 2021. **Pimpled Snailfish**. To 5.5 cm (2.2 in) SL. Aleutian Islands from Kiska to Unalaska islands. Depth: 193–447 m (633–1,466 ft). All in Orr (2021).

Careproctus staufferi Orr, 2016. **Wry Snailfish**. To 9 cm (3.5 in) TL. Central Aleutian Islands from the Islands of Four Mountains and Samalga Pass to Seguam Pass, Aleutian Islands. Depth: 205–366 m (672–1,200 ft). All in Orr (2016).

Careproctus zachirus Kido, 1985. **Blacktip Snailfish**. To 32 cm (12.6 in) SL (Orlov and Takranov 2011). South-western Sea of Okhotsk (Matsuzaki *et al.* 2017), northern Kuril Islands (Tokranov 2000), and Pacific Ocean off south-eastern Kamchatka (Orlov 1998); eastern Bering Sea (Hoff and Britt 2003) and Amchitka Pass, central Aleutian Islands (Kido 1985). Depth: 130–850 m (426–2,805 ft) (min.: Matsuzaki *et al.* 2020; max.: Sheiko and Fedorov 2000).

Careproctus sp. An apparently undescribed species, listed as "*Careproctus* n. sp.," from British Columbia has been identified through COI sequencing by Orr *et al.* (2019).

Crystallichthys cameliae (Nalbant, 1965). **Elusive Snailfish**. Known from only one specimen, 8.5 cm (3.3 in) SL. Bering Sea north of Near Islands, Aleutian Islands. Depth: about 300 m (984 ft). All in Mecklenburg *et al.* (2002).

Crystallichthys cyclospilus Gilbert & Burke, 1912. **Blotched Snailfish**. To 33 cm (13 in) SL, 35.7 cm (14.1 in) FL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Sea of Okhotsk; Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002) to Kodiak Island (Maslenikov *et al.* 2013). Depth: 54–577 m (178–1,904 ft) (min.: Mecklenburg *et al.* 2002; max.: Orlov 1998).

****Crystallichthys mirabilis*** Jordan & Gilbert, 1898. **Wonderful Snailfish**. To 50 cm (19.7 in) SL (Tokranov and Orlov 2014). Western North Pacific Ocean off northern Kuril Islands and south-eastern Kamchatka; reported, but no firm records, from eastern Bering Sea, Alaska (Mecklenburg *et al.* 2002). Depth: 53–830 m (174–2,722 ft) (Federov *et al.* 2003). The Bering Sea record is highly unlikely (James Orr).

Elassodiscus caudatus (Gilbert, 1915). **Humpback Snailfish**. To 23 cm (9.1 in) SL, 26.2 cm (10.3 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Southeast Alaska, off Juneau (Stein 1978), British Columbia (Peden 2003) to southern California (33°55'N)) (NWFSC-FRAM). Depth: 241–1,077 m (791–3,533 ft) (min.: Anderson *et al.* 1979; max.: NWFSC-FRAM). Classified by some authors in *Paraliparis*.

Elassodiscus nyctereutes Kai, Matsuzaki, Orr, Mori & Kamiunten, 2020. **Raccoon Snailfish**. To 26.4 cm (10.4 in). Sea of Okhotsk, Kuril Islands, Kamchatka, Bering Sea, and Aleutian Islands. Depth: 362–1,200 m (1,187–3,936 ft). All in Kai *et al.* (2020). Previously part of *Elassodiscus caudatus*.

Elassodiscus tremebundus Gilbert & Burke, 1912. **Dimdisk Snailfish**. To 39 cm (15.4 in) SL (Tokranov 2000). Sea of Okhotsk, Pacific Ocean off Hokkaido, Japan and Kuril Islands to western Bering Sea off Cape Navarin; eastern Bering Sea over continental slope and off Aleutian Islands (Mecklenburg *et al.* 2002). Depth: 130–1,286 m (426–4,219 ft); also listed to an outlying depth of 1,800 m (5,904 ft) (Federov *et al.* 2003).

Genioliparis ferox (Stein, 1978). **Ferocious Snailfish**. To 23.1 cm (9 in) SL (Stein 1978). Oregon to central California (Priede *et al.* 2019). Depth: 2,884–4,100 m (9,460–13,448 ft) (Priede *et al.* 2019).

Gyrinichthys minytremus Gilbert, 1896. **Minigill Snailfish**. Known from three specimens (James Orr). To 7.2 cm (2.8 in) TL (Mecklenburg *et al.* 2002). Bering Sea north of Unalaska Island (Mecklenburg *et al.* 2002) and near Aleutian Islands (about 52°02'N, 176°22'W) (Maslenikov *et al.* 2013, James Orr). Depth: 344–640 m (1,128–2,100 ft). (min.: Maslenikov *et al.* 2013; max.: Mecklenburg *et al.* 2002).

Liparis adiastolus Stein, Bond & Misitano, 2003. **Rosybrown Snailfish**. To 16.7 cm (6.6 in) SL. Washington to northern California. Reports of this species from British Columbia are unlikely (James Orr). Benthic; depth: intertidal to 10 m (33 ft). All in Stein *et al.* (2003) except the vernacular, coined later by David Stein (Love *et al.* 2005). Previously part of *Liparis rutteri*.

Liparis bathyarcticus Parr, 1931. **Nebulous Snailfish**. To 27 cm (10.6 in) TL (Mecklenburg *et al.* 2016). Circumpolar; Beaufort and Chukchi Seas to northern Bering Sea (Mecklenburg *et al.* 2018). Benthic; depth: about 8–647 m (26–2,123 ft) (Mecklenburg *et al.* 2018).

Liparis bristolensis (Burke, 1912). **Bristol Snailfish**. To 7.6 cm (3 in) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Chukchi Sea (Orr *et al.* 2019a), Bristol Bay, (Mecklenburg *et al.* 2016, 2018) to Gulf of Alaska (Mecklenburg *et al.* 2002). Depth: 10–144 m (33–459 ft) (min: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max: Personal communication: University of

Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Considered by some as a possible synonym of *Liparis tunicatus* Reinhardt, 1836 (Chernova, 2004; Mecklenburg *et al.*, 2016, 2018).

Liparis callyodon (Pallas, 1814). **Spotted Snailfish**. To about 12.7 cm (5 in) TL (Hart 1973). Kuril Islands (Chernova and Nazarkin 2016), south-eastern Kamchatka, and Commander Islands (Sheiko and Fedorov 2000) to Gulf of Anadyr, Bering Sea (Love *et al.* 2005); Saint Lawrence Island and Norton Sound, eastern Bering Sea to Aleutian Islands (Mecklenburg *et al.* 2002) to Oregon (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 49 m (162 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Liparis catharus Vogt, 1973. **Purity Snailfish**. One specimen, 55.9 cm (22 in) TL. Bradfield Canal, south-eastern Alaska. Benthic; depth: 137 m (450 ft). All in Vogt (1973). Known with certainty only from the holotype (Mecklenburg *et al.* 2002).

Liparis cyclopus Günther, 1861. **Ribbon Snailfish**. To 12 cm (4.7 in) SL, 14.1 cm (5.6 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Petropavlovsk, south-eastern Kamchatka to Commander Islands; south-eastern Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002) to Oregon (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 183 m (600 ft) (min.: Cross 1981; max.: Eschmeyer and Herald 1983).

Liparis dennyi Jordan & Starks, 1895. **Marbled Snailfish**. To 30.5 cm (12 in) TL (Hart 1973). Bering Sea (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov), and eastern Aleutian Islands (Mecklenburg *et al.* 2002) to Puget Sound, Washington (Hart 1973). Benthic; depth: intertidal to 225 m (738 ft) (Pietsch and Orr 2015).

Liparis fabricii Krøyer, 1847. **Gelatinous Seasnail**. To 23.7 cm (9.3 in) SL (Stasko *et al.* 2016). Circumpolar in Arctic; Beaufort and Chukchi Seas, Alaska (Mecklenburg *et al.* 2002), at least as far north as near Herald Island (71°55'N, 175°18'W), northern Chukchi Sea (Mecklenburg *et al.* 2007) southward to north Saint Lawrence Island (64°30'N, 170°26'W) (Mecklenburg *et al.* 2011). Pelagic and benthic (Coad in Coad and Reist 2018); depth: 6 m or less to at least 520 m (20–1,706 ft) (min.: Coad in Coad and Reist 2018; max.: Mecklenburg *et al.* 2016) and perhaps as deep as 1,880 m (6,204 ft) but this latter may represent a midwater catch by a bottom trawl (Mecklenburg *et al.* 2016). Although it has been suggested that *Liparis fabricii* is a species complex, discussed in Mecklenburg *et al.* (2018), Mecklenburg *et al.* (2018) go on to state that "Both morphology and DNA indicate that one species is represented from the Pacific Arctic eastward to the Arctic Ocean off Svalbard."

Liparis florae (Jordan & Starks, 1895). **Tidepool Snailfish**. To 18.3 cm (7.2 in) TL (Miller and Lea 1972)**.** Kodiak Island, western Gulf of Alaska (Mecklenburg *et al.* 2002) to King Harbor, southern California (Stephens *et al.* 1994). Bering Sea and Aleutian Islands records are uncertain (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 15 m (50 ft) (min.: Miller and Lea 1972; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Several collections (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington UW 028618 and UW 158024) previously identified as *L. florae* and found both further westward and deeper than previous records were misidentified (Katherine Maslenikov).

Liparis fucensis Gilbert, 1896. **Slipskin Snailfish**. To 17.8 cm (7 in) TL (Miller and Lea 1972). South-eastern Bering Sea and Unimak Pass, eastern Aleutian Islands (Mecklenburg *et al.* 2002) to near San Simeon, central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) Benthic; depth: intertidal to 388 m (1,272 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Miller and Lea 1972); juveniles often found in rocky tide pools (Mecklenburg *et al.* 2002).

Liparis gibbus Bean, 1881. Dusky Snailfish, Polka-dot Snailfish, or **Variegated Snailfish**. To 52.4 cm (20.6 in) TL (Able and McAllister 1980). Beaufort Sea (as far east as 71°18'N, 150°06'W) (and possibly east of the Alaskan Beaufort Sea) and Chukchi Sea to north-western Bering Sea, eastern and western Bering Sea, Commander and Aleutian Islands, and Gulf of Alaska to northern British Columbia (Mecklenburg *et al.* 2018). Reported from south-eastern Kamchatka and northern Kuril Islands but there are no confirmed records from there or from the western Bering Sea south of the north-western portion (Mecklenburg *et al.* 2018). Also reported from throughout much of the Canadian Arctic (Coad in Coad and Reist 2018); the reports were tentatively

included as *Liparis bathyarcticus* Parr, 1931 by Mecklenburg *et al.* (2018). Benthic; depth: 9–364 m (30–1,194 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov; max.: Mecklenburg *et al.* 2011), or perhaps to 647 m (2,122 ft) (Mecklenburg *et al.* 2016). Historically confused with *Liparis bathyarcticus* and *L. tunicatus* (Mecklenburg *et al.* 2011).

Liparis greeni (Jordan & Starks, 1895). **Lobefin Snailfish**. To 30.8 cm (12.1 in) TL (Catherine W. Mecklenburg, pers. comm. to M.L.). Commander Islands; Pribilof Islands (south-eastern Bering Sea) and Aleutian Islands to Washington. Benthic; depth: intertidal to 21 m (69 ft) (Catherine W. Mecklenburg, unpubl. data). All in Mecklenburg *et al.* (2002) except for the newer data. Classified in genus *Polypera* by some authors. *Polypera beringiana* Gilbert & Burke, 1912, recently called *Liparis beringianum,*is treated as a junior synonym (Mecklenburg *et al.* 2002), although evidently not recognized as such by all authors (e.g., Nelson *et al.* 2004).

Liparis marmoratus Schmidt, 1950. **Festive Snailfish**. To 8.4 cm (3.3 in) TL (Busby and Chernova 2001). Northern Sea of Okhotsk near northern tip of Sakhalin Island; near Saint Lawrence Island, Bering Sea, Alaska (Busby and Chernova 2001). 96–165 m (315–541 ft) (min.: Federov *et al.* 2003; max.: Busby and Chernova 2011). Mecklenburg *et al.* (2016) held that this species, if it is valid, is restricted to the Sea of Okhotsk.

Liparis megacephalus (Burke, 1912). **Bighead Snailfish**. To about 28 cm (11 in) TL (Kim *et al.* 1993). Sea of Japan off South Korea (a questionable record—Fricke *et al.* 2020); eastern Bering Sea and off Amchitka Island, Aleutian Islands. Benthic; depth: 58–69 m (190–226 ft). All except length in Mecklenburg *et al.* (2002).

Liparis micraspidophorus (Gilbert & Burke, 1912). **Thumbtack Snailfish**. To less than 10 cm (3.9 in) TL. Commander Islands; Aleutian Islands to Cold Bay, Alaska Peninsula. Benthic; depth: intertidal and shallow subtidal. All in Mecklenburg *et al.* (2002). Authorship of the species name and original description is correctly attributed to both Gilbert and Burke, not only, as sometimes seen, to Burke.

Liparis mucosus Ayres, 1855. **Slimy Snailfish**. To about 12.7 cm (5 in) TL (Jordan and Starks 1895). Samsing Cove, south-eastern Alaska (Mecklenburg *et al.* 2002) to Bahía Playa Maria (28°52'N, 114°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California. Kodiak Island reports are unconfirmed (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 18 m (60 ft) (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California)

Liparis ochotensis Schmidt, 1904. **Okhotsk Snailfish**. To 74 cm (29.1 in) SL (Tokranov 2000). Seas of Japan and Okhotsk, and Pacific Ocean off Hokkaido and Kuril Islands to south-eastern Kamchatka; Bering Sea to northwest of Saint Lawrence Island (63°20'N, 173°20'W) (Mecklenburg and Steinke 2015); specimens from Kodiak Island, western Gulf of Alaska (Quast and Hall 1972) may be *L. gibbus* (Mecklenburg *et al.* 2002). Marine and brackish waters (Dyldin and Orlov 2017); depth: 0–840 m (2,755 ft) (min.: Kido 1988; max.: Okiyama 2004). Presence of this species in Chukchi Sea is unverified (Mecklenburg and Steinke 2015).

Liparis pulchellus Ayres, 1855. **Showy Snailfish**. To 25.4 cm (10 in) TL (Miller and Lea 1972). South-eastern Bering Sea and Aleutian Islands (Mecklenburg *et al.* 2002) to Monterey Bay, central California (Miller and Lea 1972). Benthic; depth: intertidal to 191 m (626 ft) (min.: Miller and Lea 1972; max.: NWFSC-FRAM).

Liparis rutteri (Gilbert & Snyder, 1898). **Ringtail Snailfish**. To 16.8 cm (6.6 in) TL (Pietsch and Orr 2019). Attu Island, Aleutian Islands to Gulf of Alaska coasts nearly to the British Columbia border (Mecklenburg *et al.* 2002), to the Strait of Juan de Fuca (Pietsch and Orr 2019). Although also recorded from south-eastern Kamchatka to Commander Islands, this part of the range should be reevaluated on the basis of the new morphological information presented by Stein *et al.* (2003). Benthic; depth: intertidal to about 73 m (239 ft) (Pietsch and Orr 2019). Historically, the name *L. rutteri* has been applied to fish which actually represent two different species. The second species, *L. adiastolus* (see account above), was described by Stein *et al.* (2003). Mecklenburg *et al.* (2002) give Alaskan records in addition to those mentioned by Stein *et al.* (2003).

Liparis tunicatus Reinhardt, 1836. Greenland Seasnail or **Kelp Snailfish**. To 20.7 cm (8.1 in) SL (Stasko *et al.* 2016). Circumpolar, to as far north as 82°29'N, 62°15'W at Ellesmere Island (Mecklenburg *et al.* 2011); Beaufort and Chukchi Seas to northern Bering Sea at Saint Matthew Island, Alaska and Gulf of Anadyr, Russia (Mecklenburg *et al.* 2018) and Sea of Okhotsk (as *Liparis marmoratus*) (Schmidt 1950). Adults benthic, juveniles associated with medusa (Coad in Coad and Reist 2018); depth: intertidal to 415 m (1,361 ft) (Mecklenburg *et al.* 2011), and perhaps to 600 m (1,968 ft) (Mecklenburg *et al.* 2011). *Liparis herschelinus* (Scofield, 1898) is a synonym (Mecklenburg *et al.* 2016). *Liparis marmoratus* Schmidt, 1950, identified from the Beaufort Sea, is likely *L. tunicatus* (Mecklenburg *et al.* 2016).

Lipariscus nanus Gilbert, 1915. **Pygmy Snailfish**. To 7.1 cm (2.8 in) SL (Kido 1993). Southern Sea of Okhotsk off Hokkaido, vicinity of Commander Islands, and western Bering Sea; along Aleutian Islands from Unimak Pass to Rat Islands (Maslenikov *et al.* 2013), eastern Bering Sea to Gulf of Alaska (Mecklenburg *et al.* 2002) to Monterey Bay, central California (Stein 1978). Depth: 58–910 m (190–2,985 ft) (min.: Gilbert 1915; max.: Kido 1988). A specimen (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington, UW 117779), originally identified as this species, and both larger and deeper than previous maxima, is *Rhinoliparis attenuatus* Burke, 1912 (Katherine Maslenikov).

Lopholiparis flerxi Orr, 2004. **Hardhead Snailfish**. To 3.8 cm (1.5 in) SL (Maslenikov *et al.* 2013). Western Aleutian Islands as far west as near Buldir Island (51°21'N, 178°56'E) (Maslenikov *et al.* 2013) and off Ulak Island, Aleutian Islands, Alaska. Depth: 121–285 m (397–935 ft) (min.: Maslenikov *et al.* 2013; max.: Orr 2004).

Nectoliparis pelagicus Gilbert & Burke, 1912. **Tadpole Snailfish**. To 6.5 cm (2.5 in) TL (Mecklenburg *et al.* 2002)**.** Hokkaido, Japan (Nakabo in Nakabo 2002) and Sea of Okhotsk to Bering Sea (Mecklenburg *et al.* 2002) to San Diego (32°32'N, 117°24'W), southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Pelagic, usually taken in midwater depths (Mecklenburg *et al.* 2002); depth: 2 m (7 ft) or less in a beach seine (Miller *et al.* 1977) to 3,383 m (11,164 ft) in a trawl net (Stein 1978). However, the maximum reported depth of 3,383 m is actually the water depth from a sounding at *Albatross* dredging station 4785 (Bureau of Fisheries 1907), where one of the type specimens was caught. The net was not the usual beam trawl but an "intermediate 3" net which was fished at intermediate depths around 300 fathoms (549 m or 1,800 ft; Bureau of Fisheries 1907, Gilbert and Burke 1912). As with most fish species, there are few records for *N. pelagicus* from closing nets. Also observed in 541 m (1,775 ft) (Stein *et al.* 2006).

Osteodiscus cascadiae Stein, 1978. **Bonydisk Snailfish**. To 8.5 cm (2.6 in) SL (Stein 1978). British Columbia (Stein 1978, Orr *et al.* 2019a) to Monterey Bay, central California (Stein *et al.* 2006). Depth: 1,348–3,500 m (4,421–11,480 ft) (Stein *et al.* 2006).

***Paraliparis* sp.** An apparently undescribed species from British Columbia has been identified through COI sequencing by Steinke *et al.* (2009).

Paraliparis adustus Busby & Cartwright, 2009. **Brown Snailfish**. To 15 cm (5.9 in) SL. Bering Sea, north of Adak Island (53°24'N, 176°40'W). Midwater; depth: 640 m (2,099 ft). All in Busby and Cartwright (2009).

Paraliparis albeolus Schmidt, 1950. **White Snailfish**. To at least 9.5 cm (3.7 in) SL (Maslenikov *et al.* 2013). Sea of Okhotsk (Chernova *et al.* 2004); eastern Aleutian Islands (53°40'N, 167°32'W) and northern Bering Sea (60°30'N, 178°51'W) (Maslenikov *et al.* 2013). Depth: 260–375 m (853–1,230 ft) (Chernova *et al.* 2004); also an outlying record from 33 m (108 ft) (Federov *et al.* 2003).

Paraliparis albescens Gilbert, 1915. **Phantom Snailfish**. To 6.1 cm (2.4 in) SL. Monterey Bay, central California to Point Conception, California. Depth: about 192–500 m (630–1,640 ft). All in Anderson *et al.* (1979).

Paraliparis bathybius (Collett, 1879). **Black Seasnail.** To 26 cm (10.2 in) TL. Circumpolar in Arctic basins; Canada Basin north of Alaska. Depth: 545–2,824 m (1,788–9,623 ft), but perhaps as shallow as 200 m (656 ft). All in Mecklenburg *et al.* (2016).

Paraliparis bullacephalus Busby & Cartwright, 2009. **Bubble-head Snailfish**. To 9.4 cm (3.7 in) SL. Shelikof Strait, Alaska. Depth: 233–322 m (764–1,056 ft). All in Busby and Cartwright (2009).

Paraliparis cephalus Gilbert, 1892. **Swellhead Snailfish**. To 11 cm (4.3 in) SL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Vicinity of Commander Islands (Sheiko and Fedorov 2000); northern Bering Sea (to 59°25'N, 178°07'W) and western Aleutian Islands near Buldir Island (52°22'N, 175°36'E) (Maslenikov *et al.* 2013) and southern Bering Sea off Unalaska Island, and Shelikof Strait, western Gulf of Alaska (Mecklenburg *et al.* 2002) to northern Baja California (32°40'N, 117°35'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 242–1,799 m (794–5,902 ft) (min.: NWFSC-FRAM ; max.: Sheiko and Fedorov 2000).

Paraliparis dactylosus Gilbert, 1896. **Polydactyl Snailfish**. To 12.1 cm (4.7 in) SL (Stein 1978). Commander Islands and eastern Bering Sea (Mecklenburg *et al.* 2002) to off Point Arguello, central California (34°33.3'N, 121°13.8'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), or perhaps southern California (32°36'N) (Bradburn *et al.* 2011), but without documentation. Depth: 90–1,062 m (295–3,483 ft) (min.: UW 117799; confirmed by Katherine Maslenikov); max.: Personal communication: University of Washington, Burke Museum of Natural History and

Culture Fish Collection, Seattle, Washington). A NWFSC-FRAM database record of 1,217 m (3,992 ft) would need a voucher specimen to be accepted (Jay Orr).

Paraliparis deani Burke, 1912. **Prickly Snailfish**. To less than 10 cm (3.9 in) TL (Mecklenburg *et al.* 2002). Shelikof Strait, western Gulf of Alaska (Mecklenburg *et al.* 2002) to Monterey Bay, central California (Burton and Lea 2019). Depth: 18–1,008 m (59–3,306 ft) (min.: Mecklenburg *et al.* 2002; max.: Stein 1978).

Paraliparis grandis Schmidt, 1950. **Grand Snailfish**. To at least 36 cm (14.2 in) SL (Orlov and Tokranov 2011). Sea of Okhotsk, Kuril Islands, south-eastern Kamchatka, western Bering Sea (Chernova *et al.* 2004); eastern Bering Sea (to 58°31'N, 176°49'W) (Maslenikov *et al.* 2013). Depth: 105–1,995 m (344–6,544 ft) (Chernova *et al.* 2004).

Paraliparis holomelas Gilbert, 1896. **Ebony Snailfish**. To 10 cm (3.9 in) TL (Gilbert 1896). Sea of Okhotsk (Schmidt 1950); Pacific Ocean off northern Kuril Islands and south-eastern Kamchatka (Love *et al.* 2005); south-eastern Bering Sea to western and central Gulf of Alaska (Mecklenburg *et al.* 2002). Depth: 55–2,972 m (180–10,991 ft) (min.: Busby and Cartwright 2006; max.: Gilbert 1896); reported to 3,356 m (11,008 ft) (Orlov and Tokranov 2019) but without documentation. The specimen reported by Schmidt (1950) from the Sea of Okhotsk at 3,350 m is not this species (Love *et al.* 2005).

Paraliparis latifrons Garman, 1899. **Bigpored Snailfish**. To 14.5 cm (5.7 in) TL (Stein 1978). British Columbia (Gillespie 1993) to Panama (Stein 1978). Depth: 2,030–3,279 m (6,658–10,755 ft) (Stein 1978).

Paraliparis megalopus Stein, 1978. To 15.2 cm (6 in) SL (Stein 1978). British Columbia (Orr *et al.* 2019a) to central California (34°43'N, 123°06'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 2,825–4,100 m (9,266–13,448 ft) (min.: Stein 1980; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Paraliparis melanobranchus Gilbert & Burke, 1912. **Phantom Snailfish**. To 8.3 cm (3.3 in) TL. Known from two records: one from Sea of Okhotsk and one from off British Columbia. Two unverified reports from Oregon. Depth: 805–1,554 m (2,641–5,098 ft). All in Mecklenburg *et al.* (2002).

Paraliparis mento Gilbert, 1892. **Bulldog Snailfish**. To 11.4 cm (4.5 in) SL (Stein 1978). Washington (Stein 1978) to off Point Conception (34°03.3'N, 121°01.5'W), California (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Depth: 641–1,000 m (2,102–3,281 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Stein 1978).

Paraliparis nassarum Stein & Fitch, 1984. **Fishtrap Snailfish**. To 31.8 cm (12.5 in) SL. Southern California to northern Baja California. Depth: 900–1,280 m (2,953–4,199 ft). All in Stein and Fitch (1984). Vernacular coined by David Stein (Love *et al.* 2005).

Paraliparis paucidens Stein, 1978. **Toothless Snailfish**. To 16.4 cm (6.5 in) SL (Stein 1978). Bering Sea, Alaska (59°21'N, 178°27'W) (Orr *et al.* 2005) and northern British Columbia (Stein and Peden 1979) to Oregon (Stein 1978). Depth: 950–2,275 m (3,116–7,464 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov; max.: Stein and Peden 1979).

Paraliparis pectoralis Stein, 1978. **Pectoral Snailfish**. To 21.8 cm (8.6 in) SL (Kido 1993). Southern Sea of Okhotsk off Hokkaido (Kido 1993) to Bering Sea (Mecklenburg *et al.* 2002) to southern California (34°13.2'N, 121°02'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Depth: 681–1,636 m (2,234–5,366 ft) (min.: Kido 1984; max.: Kamikawa 2017). A NWFSC-FRAM database record of 467 m 1,532 ft) would need a voucher specimen to be accepted.

Paraliparis penicillus Baldwin & Orr, 2010. **Comet Snailfish**. To 8.1 cm (3.2 in) SL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Eastern Bering Sea (Baldwin and Orr 2010). Depth: 722–1072 m (2,368–3,516 ft) (min.: Baldwin and Orr 2010; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Paraliparis rosaceus Gilbert, 1890. Pink Snailfish or **Rosy Snailfish**. To 40 cm (15.7 in) SL (Peden and Ostermann 1980). Sea of Okhotsk off Hokkaido, Japan (Kido 1983); close to Alaska off Dixon Entrance, northern British Columbia (Love *et al.* 2005) to Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Gulf of California (Stein 1978); Costa Rica

(9°48'N, 85°48'W) (Love *et al.* 2005). Depth: 878–3,358 m (2,880–11,017 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Stein 1978).

Paraliparis ulochir Gilbert, 1896. **Broadfin Snailfish**. To 12.3 cm (4.8 in) SL (Maslenikov *et al.* 2013). Bering Sea (as far northward as 60°17'N, 179°11'W) (Maslenikov *et al.* 2013) to Gulf of California (Stein 1978). Depth:215–1,838 m (705–6,030 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Stein 1978).

Prognatholiparis ptychomandibularis Orr & Busby, 2001. **Wrinklejaw Snailfish**. Length to 9.8 cm (3.9 in) SL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Known from three specimens taken in and around Seguam Pass, central Aleutian Islands, Alaska (Orr and Busby 2001, Maslenikov *et al.* 2013). Depth: 448–455 m (1,469–1,493 ft) (min.: Maslenikov *et al.* 2013; max.: Mecklenburg *et al.* 2002).

Psednos anoderkes Chernova & Stein, 2002. **Stargazer Snailfish**. One specimen known, a subadult, 2.7 cm (1.1 in) SL. Northeast of Isla Guadalupe, central Baja California. Probably mesopelagic or bathypelagic; depth: collected in midwater between 0 and 2,036 m (6,678 ft). All in Chernova and Stein (2002). Vernacular from David Stein (Love *et al.* 2005).

Psednos cathetostomus Chernova & Stein, 2002. **Doormouth Snailfish**. To 4.3 cm (1.7 in) SL. Three specimens known. Patton Escarpment, southern California and San Clemente Basin, northern Baja California. Probably mesopelagic or bathypelagic; depth: collected in midwater; depth information not clear, characterized by authors from two specimens as 309–338 m (1,014–1,109 ft) over bottom depth of 3,961 m (12,995 ft). All in Chernova and Stein (2002).

Psednos griseus Chernova & Stein, 2002. One specimen known, 3.7 cm (1.4 in) SL. Northwest of Isla Guadalupe, central Baja California. Probably mesopelagic or bathypelagic; depth: collected in midwater between 0 and 4,000 m (13,120 ft). All in Chernova and Stein (2002).

Psednos mexicanus Chernova & Stein, 2002. To 5.1 cm (2 in) SL, 5.9 cm (2.3 in) TL. Two specimens known, one adult and one juvenile. Near Isla Guadalupe, central Baja California. Probably mesopelagic or bathypelagic; depth: holotype collected from midwater between 0 and 1,000 m (3,280 ft) over bottom depths of 3,292–3,384 m (10,798–11,100 ft), and the juvenile somewhere between the surface and bottom. All in Chernova and Stein (2002).

Psednos pallidus Chernova & Stein, 2002. **Pallid Snailfish**. One specimen known, 6 cm (2.4 in) SL, 7.1 cm (2.8 in) TL. West coast of central Baja California northeast of Isla Guadalupe. Probably mesopelagic or bathypelagic; depth: collected in midwater between 0 and 2,000 m (6,560 ft) over bottom depth of 3,900 m (12,792 ft). All in Chernova and Stein (2002).

Rhinoliparis attenuatus Burke, 1912. **Slim Snailfish**. To 17 cm (6.7 in) SL (Maslenikov *et al.* 2013). Northern Kuril Islands and south-eastern Kamchatka (Sheiko and Fedorov 2000); eastern Bering Sea (Mecklenburg *et al.* 2002) and Gulf of Alaska (Maslenikov *et al.* 2013), to northern British Columbia (Love *et al.* 2005), to southern California (32°48'N)) (NWFSC-FRAM). Depth: 350–2,189 m (1,148–7,182 ft) (min.: Orlov and Tokranov 2019; max.: Stein 1978). Classified by some authors in *Paraliparis*.

Rhinoliparis barbulifer Gilbert, 1896. **Longnose Snailfish**. To 11 cm (4.3 in) TL (Mecklenburg *et al.* 2002). Sea of Okhotsk; Pacific Ocean off northern Honshu and Hokkaido; Commander Islands; Umnak Pass and vicinity of Unalaska Island to southern California (32°38°8'N) (NWFSC-FRAM). Depth: 28–1,500 m (92–4,921 ft) (min.: Orlov and Tokranov 2019; max.: Mecklenburg *et al.* 2002); also an outlying record of 2,189 m (7,180 ft) (Federov *et al.* 2003). Classified by some authors in *Paraliparis*.

Rhodichthys regina Collett, 1879. **Threadfin Seasnail**. To about 32 cm (12.6 in) TL. Circumpolar in Arctic basins. Canada Basin north of Alaska. Depth: 400–500 to 2,365 m (1,312–1,640 to 7,757 ft). All in Mecklenburg *et al.* (2016).

Temnocora candida (Gilbert & Burke, 1912). **Bigeye Snailfish** or Crested Snailfish. To 10.6 cm (4.2 in) SL. Western North Pacific Ocean off northern Kuril Islands and south-eastern Kamchatka; south-eastern Bering Sea (56°17'N, 168°45'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) and Aleutian Islands to north-western Gulf of Alaska at Cook Inlet. Depth: 64–400 m (210–1,312 ft). All except Bering Sea record in Mecklenburg *et al.* (2002). Previously *Careproctus candidus* Gilbert & Burke, 1912. The descriptions of two closely related new species are being prepared (Gardner, Orr, and Tornabene).

Unidentified Liparidae. Lundsten *et al.* (2009) report observations of a black-headed snailfish in deep waters off central California. This specimen is listed as Liparidae sp. 2 in Jacobsen Stout *et al.* (2016) and was seen in 2,150–3,977 m (7,052–13,045 ft) (Jacobsen Stout *et al.* 2016).

Unidentified Liparidae. Jacobsen Stout *et al.* (2016) list an unidentified snailfish from central and southern California as Liparidae sp. 1.

Order Perciformes

Family Centropomidae—Snooks

Centropomus medius Günther, 1864. **Blackfin Snook**. To 55.8 cm (22 in) TL (Rivas 1986). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) and into Gulf of California (Bussing in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: to 25 m (82 ft) (Robertson and Allen 2002).

Centropomus nigrescens Günther, 1864. **Black Snook**. To 117 cm (46 in) TL (Bussing in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno 1974), including lower Gulf of California (Bussing in Fischer *et al.* 1995). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: to 25 m (82 ft) (Robertson and Allen 2002). *Centropomus nigrescens* Günther, 1864, is an invalid name, as it is preoccupied by *C. nigrescens* Risso, 1810, a species in the family Moronidae (Eschmeyer 1998).

Centropomus viridis Lockington, 1877. **White Snook**. Maximum size not clearly defined, 90–120 cm (35.4–47.2 in) TL, but perhaps to as much as 150 cm (60 in) TL (Grove and Lavenberg 1997). Southern Baja California (26°45'N, 114°15'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Tumbes, Peru (Chirichigno and Vélez 1998), including Gulf of California (Bussing in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: to 25 m (82 ft) Robertson and Allen 2002).

Family Moronidae—Temperate Basses

*****Morone saxatilis*** (Walbaum, 1792). **Striped Bass**. To about 122 cm (4 ft) TL in eastern Pacific; 183 cm TL (6 ft) in Atlantic. Atlantic and Pacific Oceans—introduced into California; Barkley Sound, British Columbia to just south of U.S.–Mexico border. Anadromous, along beaches and in bays. All in Miller and Lea (1972), as *Roccus saxatilis* (Walbaum, 1792).

Family Howellidae—Lanternbellies or Temperate Ocean-Basses

Some members of this family have a luminescent organ between the pelvic fins, hence the name lanternbellies. Partly because the Alaskan species does not have this organ, Mecklenburg *et al.* (2002) called them temperate ocean-basses from Eschmeyer and Herald (1983). The name chosen by the AFS–ASIH fish names committee (Nelson *et al.* 2004) is lanternbellies. The relationships of the genus *Howella* are unclear; sometimes placed in the family Acropomatidae.

Bathysphyraenops simplex Parr, 1933. To 10 cm (3.9 in) TL (Heemstra in Carpenter and De Angelis 2016). Cosmopolitan; western Pacific Ocean north to Japan (Hatooka in Nakabo 2002); off central California (35°56'N, 121°58'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (30°46'S, 81°31.5'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: as shallow as 78 m (256 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to at least 500 m (1,640 ft) (Mundy 2005). While the Scripps Institution of Oceanography database has many catches from deeper than 300 m, many down to 1,000 m (3,280 ft) or less, all of these were taken with nonclosing midwater trawls and catches may have

been made in water shallower than the deepest part of the tow. *Bathysphyraenops simplex* Parr, 1933 in World Register of Marine Species (accessed 25 May 2020); *Howella simplex* (Parr 1933) in Heemstra in Carpenter and De Angelis (2016), and Fricke *et al.* (2020).

Howella brodiei Ogilby, 1899. **Pelagic Basslet**. To 10.2 cm (4 in) SL (Roberts *et al.* 2015). Pacific and Atlantic Oceans; Oregon (44°04'N, 124°57'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Chile (Eschmeyer and Herald 1983). Depth: 30–2,750 m (100–9,020 ft) (min.: Fitch and Lavenberg 1968; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Howella sherborni (Norman, 1930). **Shortspine Basslet**. To 11 cm (4.3 in) SL (Roberts *et al.* 2015). Circumglobal (Hatooka in Nakabo 2002); North Pacific Ocean south of Krenitzin Islands, Aleutian Islands (Busby and Orr 1999) to Chile (Kamikawa 2017). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to about 2,700 m (8,858 ft) (Mecklenburg *et al.* 2002).

Family Polyprionidae—Wreckfishes

Stereolepis gigas Ayres, 1859. **Giant Sea Bass**. To 2.7 m (8.9 ft) TL (Parker House, pers. comm. to M.L.). Northern Japan and Sea of Japan (Mochizuki in Masuda *et al.* 1984) (but likely in error); Humboldt Bay, northern California (Miller and Lea 1972) to Oaxaca, southern Mexico (Shane *et al.* in Moser 1996), including Gulf of California (Miller and Lea 1972). Depth: 5–55 m (18–180 ft) (min.: Miller and Lea 1972; max.: Conner Jainese, pers. comm. to M.L.).

Family Epinephelidae—Groupers

We follow Craig and Hastings (2007) and Smith and Craig (2007) and raise the subfamily Epinephelinae to family status; some authorities (e.g., Fricke *et al.* 2020) retain them in the Serranidae.

Alphestes immaculatus Breder, 1936. Pacific Hamlet or **Pacific Mutton Hamlet**. To 30 cm (11.8 in) TL (Allen and Robertson 1994). Islas San Benito and Natividad, central Baja California (Ramírez-Valdez *et al.* 2015); mainland Pacific Baja California as far north as Laguna de San Ignacio, southern Baja California (De La Cruz-Agüero and Cota-Gómez 1998) and Gulf of California (Allen and Robertson 1994) to Pucusana, Peru (Chirichigno and Vélez 1998) and Islas Galápagos (Grove and Lavenberg 1997). Depth: less than 2 m to 50 m (7–164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Craig *et al.* 2011). *Alphestes galapagensis* Fowler, 1944 is a synonym.

Alphestes multiguttatus (Günther, 1867). Many-spotted Hamlet, Pacific Guaseta, or **Rivulated Mutton Hamlet**. To 30 cm (11.8 in) TL (Jiménez Prado and Béarez 2004). Near Punta Pequena (26°14'N, 112°27'W), southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Caleta La Cruz, Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen and Robertson 1994). Depth: intertidal to 30 m (98 ft) (Allen and Robertson 1994).

Cephalopholis colonus (Valenciennes, 1846). **Pacific Creolefish**. To 43 cm (16.9 in) TL (Prado and Béarez 2004). San Diego, southern California (Robins *et al.* 1991) to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995) and such offshore islands as Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (McCosker *et al.* 1997), 1–120 m (4–394 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max. Robertson and Allen 2015). Previously *Paranthias colonus*.

Cephalopholis panamensis (Steindachner, 1876). Pacific Graysby or **Panama Graysby**. To 45.7 cm (18 in) TL (Personal communication: International Game Fish Association Records, Dania Beach, Florida). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California (Heemstra in Fischer *et al.* 1995) to northern Peru (Robertson and Allen 2015) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–76 m (3–249 ft) (min.: Robertson and Allen 2002; max.: Grove and Lavenberg 1997).

Dermatolepis dermatolepis (Boulenger, 1895). **Leather Bass**. To 1 m (39.4 in) TL (Allen and Robertson 1994). El Segundo, southern California (Moore 1991) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and such offshore islands as Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 2–90 m (8–295 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sánchez-Jiménez *et al.* 2018).

Epinephelus analogus Gill, 1863. **Spotted Cabrilla** or Spotted Grouper. To 114 cm (44.9 in) TL (Craig *et al.* 2011). San Pedro, southern California (Miller and Lea 1972) to Pucusana, Peru (Chirichigno 1974), including Gulf of California and Islas Galápagos (Miller and Lea 1972). Depth: less than 1 m to 107 m (3–353 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Epinephelus clippertonensis Allen & Robertson, 1999. **Clipperton Grouper**. To 61 cm (24 in) (Robertson and Allen 2008). Todos Santos (23°24.6'N, 110°13.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Rocas Alijos, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), barely into Gulf of California (23°02'W, 109°20'N) (John Snow, pers. comm. to M.L.), Clipperton Island, Islas Revillagigedo (Robertson and Allen 2008). Depth: 1–100 m (3–328 ft) (Robertson and Allen 2008).

Epinephelus labriformis (Jenyns, 1840). **Flag Cabrilla** or Starry Grouper. To 60 cm (23.6 in) TL (Robertson and Allen 2008). Mission Bay, southern California (Craig *et al.* 2006) to upper Gulf of California (Heemstra in Fischer *et al.* 1995) to Chile (Fricke *et al.* 2020), including Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to at least 50 m (164 ft) (min.: Weaver 1970; max.: McCosker *et al.* 1997).

Epinephelus quinquefasciatus (Bocourt, 1868). **Pacific Goliath Grouper** or Jewfish. To 250 cm (98.4 in) TL (Robertson and Allen 2002). Bahía Almejas (24°22'N, 111°42'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California (Heemstra in Fischer *et al.* 1995) to Máncora, Peru (Chirichigno and Vélez 1998). Depth: intertidal to 100 m (328 ft) (min.: Personal Communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Craig *et al.* 2011). Also found in fresh water (Greenfield and Thomerson 1997). Previously considered *Epinephelus itajara* (Lichtenstein 1822), now known to be a species limited to the Atlantic Ocean (Craig *et al.* 2009).

Hyporthodus acanthistius (Gilbert, 1892). **Gulf Coney**, Rooster Hind, or Rose Coney. To 1.3 m (51 in) TL (Amezcua Linares 1996). Off El Capitan (north of Santa Barbara), southern California (M.L., unpubl. data) to Isla Lobos de Tierra, Peru (Chirichigno 1974), including Gulf of California (Amezcua Linares 1996). Depth: 12–409 m (40–1,342 ft) (min.: Godínez-Domínguez *et al.* 2000; max.: Morera *et al.* 2019). Formerly *Epinephelus acanthistius* (Gilbert, 1892).

Hyporthodus cifuentesi (Lavenberg & Grove, 1993). **Olive Grouper**. To 100 cm (39.3 in) (Robertson and Allen 2008). Bahía San Hipólito (26°58'N, 113°58'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); tip of Baja California; southern Mexico to Ecuador and many offshore islands (Robertson and Allen 2008). Depth: 2–300 m (6–984 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Auster *et al.* 2016).

Hyporthodus niphobles (Gilbert & Starks, 1897). Snowy Grouper or **Star-studded Grouper**. To 121 cm (47.6 in) TL (Robertson and Allen 2008). Near Bixby Bridge (about 36°22'N, 121°54'W), central California (Burton and Lea 2019) to Islas Lobos de Afuera, Peru (Chirichigno 1974), including Gulf of California (Heemstra in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–450 m (3–1,476 ft) (min.: González-Acosta *et al.* 1999; max.: Thomson *et al.* 2000). Heemstra (in Fischer *et al.* 1995) notes that some previous authors have referred to this species as *Epinephelus niveatus* (Valenciennes, 1828). Formerly *Epinephelus niphobles* (Gilbert & Starks, 1897).

****Liopropoma fasciatum*** Bussing, 1980. Rainbow Bass or **Rainbow Basslet**. To 26.5 cm (10.4 in) TL (Robertson and Allen 2002). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Puerto López, Ecuador (Béarez and Jiménez Prado 2003), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 24–250 m (88–820 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Allen and Robertson 1994).

Liopropoma longilepis Garman, 1899. **Scalyfin Basslet**. To at least 26 cm (10.2 in) TL (John Snow, pers. comm. to M.L.). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); Gulf of California (Gallo *et al.* 2020a) to Panama (Robertson and Allen 2015), including Islas Galápagos (McCosker and Rosenblatt 2010). Depth: 90–450 m (295–1,476 ft) (min.: John Snow, pers. comm. to M.L.; max.: Sánchez-Jiménez *et al.* 2018).

Mycteroperca jordani (Jenkins & Evermann, 1889). **Gulf Grouper**. To 198 cm (6.5 ft) TL (Eschmeyer and Herald 1983). La Jolla, southern California to Mazatlán, Mexico (Miller and Lea 1972), including Gulf of California (Heemstra in Fischer *et al.* 1995). Depth: 2–50 m (5–164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Mycteroperca prionura Rosenblatt & Zakuranec, 1967. **Sawtail Grouper**. To 100 cm (39.3 in) (Robertson and Allen 2008). Alijos Rocks (southern Baja California); Gulf of California to Jalisco, Mexico (Craig *et al.* 2011). Depth: 10–90 m (33–295 ft) (Robertson and Allen 2015).

Mycteroperca rosacea (Streets, 1877). **Leopard Grouper**. To 100 cm (39.4 in) TL (Allen and Robertson 1994). Islas Coronados (Walker *et al.* 2020) to Bahía Banderas, Jalisco, Mexico (Thomson *et al.* 1979), including Gulf of California (Heemstra in Fischer *et al.* 1995), and Isla Guadalupe, central Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–100 m (4–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011).

Mycteroperca xenarcha Jordan, 1888. **Broomtail Grouper**. To 150 cm (59 in) TL (Heemstra in Fischer *et al.* 1995). San Francisco, northern California (Miller and Lea 1972) to Callao, Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995), and Islas Galápagos (Miller and Lea 1972). Marine and brackish waters (Fricke *et al.* 2020); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 70 m (230 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Rypticus bicolor Valenciennes, 1846. Cortez Soapfish or **Mottled Soapfish**. To 30 cm (11.8 in) TL (Thomson *et al.* 2000). Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Thomson *et al.* 2000) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (Robertson and Allen 2002), intertidal to 70 m (230 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Grove and Lavenberg 1997).

Rypticus nigripinnis Gill, 1861. Blackfin Soapfish or **Twice-spotted Soapfish**. To 35 cm (13.8 in) TL (Amezcua Linares 1996). Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and throughout Gulf of California to Puerto Pizarro, Peru (Chirichigno and Vélez 1998) and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 70 m (230 ft) (Thomson and Lehner 1976; max. Robertson and Allen 2002).

Family Serranidae—Sea Basses

We follow Craig and Hastings (2007), and Smith and Craig (2007), and limit the family Serranidae, formerly encompassing both sea basses and groupers, as the sea basses and their allies.

Baldwinella eos (Gilbert, 1890). **Bigeye Bass**. To 30.8 cm (12.1 in) TL (Rodríguez-Romero *et al.* 2008). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California and Panama (Fischer *et al.* 1995). Depth: 9–325 m (30–1,066 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Fischer *et al.* 1995). We follow Anderson and Heemstra (2012) in removing this species from the genus *Pronotogrammus.*

Diplectrum eumelum Rosenblatt & Johnson, 1974. Cheekspot Sand Perch, **Orange-spotted Sand Perch**, or Pointed Sand Perch. To 31 cm (12.2 in) TL (Heemstra in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Watson in Moser 1996) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California and Islas

Galápagos (Grove and Lavenberg 1997). Depth: about 10–104 m (33–342 ft) (min.: Aguilar-Palomino *et al.* 2001; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Diplectrum euryplectrum Jordan & Bollman, 1890. **Bighead Sand Perch**. To 24.2 cm (9.6 in) TL (Rodríguez-Romero *et al.* 2008). Bahía Magdalena, southern Baja California (Watson in Moser 1996) to northern Peru (Chirichigno 1974), including Gulf of California and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 150 m (492 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Grove and Lavenberg 1997).

Diplectrum labarum Rosenblatt & Johnson, 1974. **Highfin Sand Perch**. To 30.4 cm (12 in) TL (Rodríguez-Romero *et al.* 2008). Bahía de Sebastian Vizcaino, central Baja California (González-Acosta *et al.* 1999) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995). Depth: 14–251 m (46–823 ft) (min.: Heemstra in Fischer *et al.* 1995; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Diplectrum macropoma (Günther, 1864). Barred Sandperch, Bigscale Sandfish, **Mexican Sand Perch**, or Pygmy Sand Perch. To 28 cm (11 in) TL (John Snow, pers. comm. to M.L.). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Isla Lobos de Tierra, Peru (Chirichigno 1974), including Gulf of California (Heemstra in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–251 m (3–823 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Diplectrum maximum Hildebrand, 1946. **Greater Sand Perch** or Torpedo Sand Perch. To 45 cm (17.7 in) TL (John Snow, pers. comm. to M.L.). Newport Beach, southern California (Lea and Rosenblatt 2000) to northern Peru (Chirichigno and Vélez 1998), into Gulf of California at least as far northward as Loreto (González-Acosta *et al.* 2018). Depth: 1–130 m (3–426 ft) (Robertson and Allen 2002).

Diplectrum pacificum Meek & Hildebrand, 1925. Inshore Sand Perch or **Pacific Sand Perch**. To 40.4 cm (15.9 in) TL (Rodríguez-Romero *et al.* 2008). Bahía San Juanico, southern Baja California (Watson in Moser 1996) to Punta Malpolo, Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–90 m (3–295 ft) (min.: Robertson and Allen 2002; max.: Allen and Robertson 1994).

Diplectrum rostrum Bortone, 1974. **Bridled Sand Perch**. To 26.4 cm (10.4 in) TL (John Snow, pers. comm. to M.L.). Laguna de San Ignacio, southern Baja California (De La Cruz-Agüero and Cota-Gómez 1998) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 10–88 m (33–288 ft) (min.: Robertson and Allen 2002; max.: John Snow, pers. comm. to M.L.).

Diplectrum sciurus Gilbert, 1892. Gulf Sand Perch or **Squirrel Sand Perch**. To 17 cm (6.7 in) TL (Heemstra in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Watson in Moser 1996) and Gulf of California (Heemstra in Fischer *et al.* 1995). Probably in northern Peru (Chirichigno and Vélez 1998). Depth: 15–155 m (50–508 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Hemanthias peruanus (Steindachner, 1875). Rose Threadfin Bass or **Splittail Bass**. To 45 cm (17.7 in) TL (Heemstra in Fischer *et al.* 1995). Hippolito Bank (27°N), southern Baja California (Watson in Moser 1996) to Chile (Pequeño 1989), including Gulf of California (Heemstra in Fischer *et al.* 1995) and probably Islas Galápagos (Grove and Lavenberg 1997). Depth: 10–251 m (28–823 ft) (min.: Fitch 1982; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Hemanthias signifer (Garman, 1899). Damsel Bass, Damsel Threadfin Bass, or **Hookthroat Bass**. To 42 cm (16.5 in) TL (Heemstra in Fischer *et al.* 1995). Playa del Rey, southern California (Eschmeyer and Herald 1983) to Talara, Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995). Depth: 23–305 m (75–1,000 ft) (Eschmeyer and Herald 1983); perhaps as deep as 400 m (1,312 ft) (Anderson and Heemstra 2012).

Paralabrax auroguttatus Walford, 1936. **Goldspotted Sand Bass**. To 71 cm (28 in) TL (Fitch and Schultz 1978). Santa Barbara, southern California (34°21'N, 119°37'W) (Love *et al.* 2019); Islas Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and just north of

Punta Rosalia (28°40'N, 114°16'W) (M.L., unpubl. data), and Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015) to Gulf of California (Eschmeyer and Herald 1983) to central Mexico (Robertson and Allen 2015). Depth: 2–217 m (5–712 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Gallo *et al.* 2020a).

Paralabrax clathratus (Girard, 1854). **Kelp Bass**. To 72.1 cm (28.4 in) TL (Miller and Lea 1972). Columbia River, Washington to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), and Rocas Alijos, southern Baja California (Gotshall 1996). Depth: surface (Miller and Lea 1972), intertidal to 61 m (200 ft) (min.: Carlisle *et al.* 1960; max.: Eric Vetter, pers. comm. to M.L.).

Paralabrax maculatofasciatus (Steindachner, 1868). **Spotted Sand Bass**. To 41.5 cm (16.3 in) TL (Sammons 2021). Monterey, central California (Miller and Lea 1972) to Acapulco, Mexico (Palacios-Salgado *et al.* 2014), including Gulf of California (Robertson and Allen 2002). Reported from San Francisco Bay in late 1800s (Miller and Lea 1972). Depth: surface (M.L., pers. obs.), intertidal to 90 m (295 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: John Snow, pers. comm. to M.L.).

Paralabrax nebulifer (Girard, 1854). **Barred Sand Bass**. To 65 cm (25.6 in) TL (Miller and Lea 1972). Santa Cruz, central California to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and perhaps in southern Mexico in the region around Acapulco (Heemstra in Fischer *et al.* 1995). García-Rodríguez and Aurioles-Gamboa (1997) reported an otolith from this species from a sea lion scat collected in La Paz, Gulf of California. Depth: intertidal to 183 m (3–600 ft) (min.: Carlisle *et al.* 1960; max.: Miller and Lea 1972).

Pronotogrammus multifasciatus Gill, 1863. Speckled Bass or **Threadfin Bass**. To 35.9 cm (14.1 in) TL (Rodríguez-Romero *et al.* 2008). Off east end of Anacapa Island, southern California (Love *et al.* 2005) and south of Point Mugu (34°00'N, 119°00'W), southern California (Love *et al.* 2005), to Talara, Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 14–300 m (45–984 ft) (min.: Dan Richards, pers. comm. to M.L.; max.: McCosker *et al.* 1997).

****Pseudogramma thaumasia*** (Gilbert, 1900). Blackspot Reef-bass or **Pacific Reef Bass**. To 10 cm (4 in) TL (Robertson and Allen 2002). Cabo San Lucas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California to northern Peru, Islas Galápagos, Isla del Cocos, and Isla Malpelo (Robertson and Allen 2015). Depth: 1–40 m (4–131 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Serranus aequidens Gilbert, 1890. **Deepwater Serrano**. To 24.5 cm (9.6 in) TL (Robertson and Allen 2002). White Point, southern California (Pondella 1999) to western Gulf of California; central Mexico to western Panama (Robertson and Allen 2015), including Islas Galápagos (McCosker and Rosenblatt 2010). Depth: 73–486 m (240–1,594 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: McCosker and Rosenblatt 2010).

Serranus huascarii Steindachner, 1900. **Flag Serrano**. To 20 cm (7.9 in) (Robertson and Allen 2008). Southern Baja California (24°30'N, 112°48'W) (Personal communication: Universidad National Autonoma de Mexico, Colleccion Nacional de Peces, Mexico City, Mexico), and Gulf of California to Chile (Fricke *et al.* 2020). Depth: 18–200 m (6–656 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Serranus psittacinus Valenciennes, 1846. **Barred Serrano**. To 18 cm (7.1 in) TL (Heemstra in Fischer *et al.* 1995). Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015) to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Gulf of California (Heemstra in Fischer *et al.* 1995), and such offshore islands as Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 67 m (220 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: John Snow, pers. comm. to M.L.).

Family Opistognathidae—Jawfishes

Opistognathus fossoris Bussing & Lavenberg, 2003. **Barred Jawfish**. To 10.8 cm (4.3 in). Tip of Baja California and Gulf of California; Isla Clarion (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 12–32 cm (39–105 ft). All except Isla Clarion record in Robertson and Allen (2008).

Opistognathus punctatus Peters, 1869. **Finespotted Jawfish**. To 40.6 cm (16.2 in) TL (Thomson *et al.* 1979). Bahía San Ignacio, southern Baja California (Danemann and De La Cruz-Agüero 1993) into northern Gulf of California to Colombia (Robertson and Allen 2015). Benthic; depth: 1–24 m (4–80 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Opistognathus rhomaleus Jordan & Gilbert, 1882. **Giant Jawfish**. To more than 50.8 cm (20.3 in) TL (Thomson *et al.* 1979). Bahía Ballenas, southern Baja California (Watson in Moser 1996) into northern Gulf of California to west Panama (Robertson and Allen 2008), and Islas Revillagigedo. Benthic; depth: 3–70 m (10–230 ft) (Robertson and Allen 2015). The correct date for the species name is 1882 (Eschmeyer 1998), not 1881 as seen elsewhere.

Opistognathus rosenblatti Allen & Robertson, 1991. **Bluespotted Jawfish**. To about 10 cm (4 in) TL (Robertson and Allen 2008). Off Bahía Tortugas (27°34.5'N, 115°36'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), in Gulf of California and Islas Tres Marias (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 2–25 m (6–82 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Opistognathus scops (Jenkins & Evermann, 1889). **Bullseye Jawfish**. At least to 12 cm (4.7 in) (Robertson and Allen 2008). Near tip of Baja California, Gulf of California to Colombia (Robertson and Allen 2008). Benthic; depth: 1–20 m (4–66 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Unidentified opistognathid. Lissner and Dorsey (1986) observed from a manned submersible a jawfish they were unable to identify at Tanner–Cortes Bank, southern California.

Family Priacanthidae—Bigeyes

Cookeolus japonicus (Cuvier, 1829). **Bulleye** or Longfinned Bigeye. To 68 cm (26.8 in) TL (Randall 1995). Circumglobal; western Pacific Ocean north to Japan (Hayashii in Nakabo 2002); Rocas Alijos, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Huacho, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2002). Depth: 20 m (66 ft) or less to 400 m (1,312 ft) (min.: Starnes in Carpenter and De Angelis 2016; max.: Allen and Robertson 1994).

Heteropriacanthus carolinus (Cuvier, 1829). **Pacific Glasseye**. To 51 cm (20 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); Santa Catalina Island, southern California (Walker *et al.* 2020); Isla Guadalupe, central Baja California (Grove and Lavenberg 1997) to Panama (Fricke *et al.* 2020), or perhaps Chile (Starnes 1988), and at least around Isla Cerralvo, Gulf of California (Galván-Magaña *et al.* 1996), and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 300 m (984 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Hureau in Quéro *et al.* 1990). We follow Fernandez-Silva and Ho (2017) and separate this species from the previously believed to be circumglobal *Heteropriacanthus cruentatus* (Lacepède, 1801).

Priacanthus alalaua Jordan & Evermann, 1903. Alalaua or **Hawaiian Bigeye**. To 32 cm (13 in) TL (Starnes in Carpenter and Niem 1999). Isla Guadalupe (Reyes-Bonilla *et al.* 2010); Rocas Alijos, southern Baja California; Islas Revillagigedo; Hawai'i; perhaps in other eastern Pacific sites (Starnes 1988). Depth: 9–296 m (30–971 ft) (min.: Starnes in Fischer *et al.* 1995; max.: Mundy 2005).

Pristigenys serrula (Gilbert, 1891). **Popeye Catalufa**. To 35 cm (13.8 in) TL (John Snow, pers. comm. to M.L.). Newport, central Oregon (Watson in Moser 1996) to Chile (Pequeño 1989), including Gulf of California, and Islas Galápagos (Miller and Lea 1972). Depth: less than 3 m to 1,226 m (10–4,021 ft) (min.: Allen and Robertson 1994; max.: Morera *et al.* 2019).

Family Apogonidae—Cardinalfishes

Apogon atricaudus Jordan & McGregor, 1898. **Plain Cardinalfish**. To 9 cm (3.5 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Anacapa (Christopher Grossman, pers. comm. to M.L.) and San Clemente Islands, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California to central Mexico (Robertson and Allen 2015) and islands of eastern Pacific (Eschmeyer and Herald 1983). Depth: 1–50 m (3–165 ft) (min.: Kuiter and Kozawa 2019; max.: Sandknop and Watson in Moser 1996).

Apogon guadalupensis (Osburn & Nichols, 1916). **Guadalupe Cardinalfish**. To about 13 cm (5 in) TL (Miller and Lea 1972). Anacapa Island and Santa Barbara Island, southern California (Richards and Engle 2001) to tip of Baja California (Robertson and Allen 2002) and Islas Revillagigedo (Sandknop and Watson in Moser 1996). Depth: 10–30 m (33–98 ft) (Robertson and Allen 2002). Likely a synonym of *Apogon atricaudus* Jordan & McGregor, 1898 (Piñeros *et al.* 2019).

Apogon pacificus (Herre, 1935). **Pink Cardinalfish**. To 10 cm (3.9 in) TL (Allen and Robertson 1994). San Clemente Island, southern California (Richards and Engle 2001) and mainland off Arrecife Sacramento (29°40'N, 115°47'W) (M.L., unpubl. data), central Baja California to Cabo San Lucas, southern Baja California (Grove and Lavenberg 1997) to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2002), Islas San Benito (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–96 m (3–315 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996). *Apogon parri* Breder, 1936, is a junior synonym.

Apogon retrosella (Gill, 1862). **Barspot Cardinalfish**. To 10.2 cm (4.1 in) TL (Thomson *et al.* 1979). La Jolla, southern California (Walker *et al.* 2020); Islas San Benito, Isla de Cedros, and Isla Natividad, central Baja California (Ramírez-Valdez *et al.* 2015) and, on mainland, Rocas Chester (27°53'N, 115°04'W), central Baja California (M.L., unpubl. data) to Colombia (Beltrán-León and Rios Herrera 2000), including Gulf of California (Sandknop and Watson in Moser 1996). Depth: intertidal to 61 m (200 ft) (min.: Thomson and Lehner 1976; max.: Sandknop and Watson in Moser 1996).

Family Malacanthidae—Tilefishes

Caulolatilus affinis Gill, 1865. Bighead Tilefish or **Pacific Golden-eyed Tilefish**. To 60 cm (23.6 in) TL (Jiménez Prado and Béarez 2004). Off Mussel Shoals (34°20.7'N, 119°30'W) (Conner Jainese, pers. comm. to M. L) and Anacapa Island, southern California (Merit McCrea, pers. comm. to M.L.) to Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and southern tip of Baja California (Schneider and Krupp in Fischer *et al.* 1995) to Isla Lobos de Tierra, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997) and Gulf of California (Schneider and Krupp in Fischer *et al.* 1995). Depth: 30–230 m (98–756 ft) (min.: Schneider and Krupp in Fischer *et al.* 1995; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Caulolatilus princeps (Jenyns, 1840). **Ocean Whitefish**. To 102 cm (40 in) TL (Miller and Lea 1972). Vancouver Island, British Columbia (Miller and Lea 1972) to Chile (Pequeño 1989), including Gulf of California and Islas Galápagos (Miller and Lea 1972). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–189 m (10–620 ft) (min.: Limbaugh 1955; max.: M.L., pers. obs.). *Caulolatilus hubbsi* Dooley, 1978 is a junior synonym.

Family Nematistiidae—Roosterfishes

Nematistius pectoralis Gill, 1862. **Roosterfish**. To at least 191 cm (75.2 in) TL (Robertson and Allen 2008). San Clemente, southern California (Miller and Lea 1972) to Sur de Taltal, northern Chile (Sielfeld *et al.* 2010), including Gulf of California and Islas Galápagos (Miller and Lea 1972). Nearshore; depth: surface (Robertson and Allen 2002), and surf zone (M.L., pers. obs.) to 62 m (203 ft) (Sepulveda *et al.* 2015).

Family Carangidae—Jacks

Alectis ciliaris (Bloch, 1787). **African Pompano**. Possibly to 130–150 cm (50–60 in) FL (Smith-Vaniz in Fischer *et al.* 1995). Circumglobal; western Pacific Ocean north to Japan (Senou in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); eastern Pacific from Bahía Santa Maria (24°40'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989), including lower Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Coastal waters; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–100 m (3–328 ft) (Laboute and Grandperrin 2000).

Carangoides orthogrammus (Jordan & Gilbert, 1882). **Island Jack,** Island Trevally, or Yellow-spotted Trevally. To 75 cm (29.5 in) TL (Kuiter and Tonozuka 2001). Indo-Pacific; western Pacific Ocean north to Cheju Island, South Korea (Kim *et al.* 1999); in eastern Pacific, Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), Cabo San Lucas (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and barely into Gulf of California north of Cabo San Lucas (John Snow, pers. comm. to M.L.) to Ecuador (Robertson and Allen 2015); Isla Socorro, Isla San Benedicto, and other oceanic sites (Smith-Vaniz in Fischer *et al.* 1995). Nearshore; marine and brackish waters (Koeda *et al.* 2016); depth: 3–190 m (10–623 ft) (min.: Ralston *et al.* 1986; max.: Mundy 2005). Sometimes seen as *Caranx orthogrammus* (e.g., Nelson *et al.* 2004), but most researchers classify the species in *Carangoides* (Eschmeyer 1998 and online editions).

Carangoides otrynter (Jordan & Gilbert, 1883). Thread Pompano or **Threadfin Jack**. To 67 cm (26.4 in) TL (Rojo-Vázquez *et al.* 2009). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to northern Peru (7°26'S, 79°35'W) (Jiménez *et al.* 2017), including lower and central Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 100 m (328 ft) (De La Cruz-Agüero *et al.* 1997).

Carangoides vinctus (Jordan & Gilbert, 1882). **Cocinero**, Concinero Jack, or Striped Jack. To 41.2 cm (16.2 in) TL (Lucano-Ramírez *et al.* 2016). San Diego Bay, southern California (Lea and Rosenblatt 2000) to Tumbes, Peru (Chirichigno and Vélez 1998), including central and southern Gulf of California (Robertson and Allen 2002). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: surface (De La Cruz-Agüero *et al.* 1997), 4–50 m (12–164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: De La Cruz-Agüero *et al.* 1997). Also recently as *Caranx vinctus* Jordan & Gilbert, 1882 (World Register of Marine Species, 28 May 2020).

Caranx caballus Günther, 1868. **Green Jack**. To at least 70 cm (27.6 in) TL (Allen and Robertson 1994). Monterey Bay, central California (Lea and Walker 1995) to Chile (Pequeño 1989), including Gulf of California (Robertson and Allen 2002), Islas Galápagos (Miller and Lea 1972), and Hawai'i (Randall and Carlson 1999). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 100 m (328 ft) (min.: Carlisle *et al.* 1960; max.: De La Cruz-Agüero *et al.* 1997). Recently as *Carangoides caballus*.

Caranx caninus Günther, 1867. **Pacific Crevalle Jack**. To 100 cm (39.4 in) TL (Smith-Vaniz in Fischer *et al.* 1995). Huntington Beach, southern California (Miller and Curtis 2008) to Iquique, northern Chile (Sielfeld *et al.* 2010), including Gulf of California (Robertson and Allen 2002), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Marine, brackish, and fresh waters (Romero-Berny *et al.* 2018, Fricke *et al.* 2020); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), less than 1 m (3 ft) to 350 m (1,148 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Smith-Vaniz in Fischer *et al.* 1995). *Caranx hippos* is considered a separate Atlantic and Caribbean species.

Caranx lugubris Poey, 1860. **Black Jack**. To 99 cm (39 in) TL (Grove and Lavenberg 1997). Circumglobal; western Pacific Ocean north to southern Japan (Senou in Nakabo 2002); southern Baja California (Smith-Vaniz in Fischer *et al.* 1995) to Chile (Pequeño 1989), including lower Gulf of California (Smith-Vaniz in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–355 m (10–1,164 ft) (min.: Robertson and Allen 2002; max.: Ralston *et al.* 1986).

Caranx melampygus Cuvier, 1833. Bluefin Jack, Blue Trevally, or **Bluefin Trevally**. To 117 cm (46.1 in) FL (Froese and Pauly 2019; note that we were unable to verify this record). Indo-Pacific; western Pacific Ocean north to southern Japan (Senou in Nakabo 2002); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); Cabo San Lucas, southern Baja California (Smith-Vaniz in Fischer *et al.* 1995) to Isla Gorgona, Colombia (Franke and Acero 1993), including lower Gulf of California (Smith-Vaniz in Fischer *et al.* 1995) and such offshore islands as Islas Galápagos (Grove and Lavenberg 1997). Nearshore; marine and brackish waters (Koeda *et al.* 2016); depth: surface (Sánchez-Jiménez *et al.* 2018), 1–230 m (3–754 ft) (min.: Laboute and Grandperrin 2000; max.: Ralston *et al.* 1986). A hybrid of this species and *Caranx sexfasciatus* Quoy & Gaimard, 1825 was taken off Panama (Angulo *et al.* 2020).

Caranx sexfasciatus Quoy & Gaimard, 1825. Bigeye Crevalle, **Bigeye Trevally**, or Sixband Jack. To 120 cm (47.2 in) TL (Sadovy and Cornish 2000). Indo-Pacific; western Pacific Ocean north to southern Japan (Senou in Nakabo 2002); San Diego Bay, southern California (Lea and Walker 1995) to northern Peru (Robertson and Allen 2015), including lower Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 1–146 m (3–479 ft) (min.: González-Acosta *et al.* 1999; max.: Myers 1999). Morera *et al.* (20019) report on a capture at a depth of 1,345 m (4,412 ft), however this capture was made in a bottom trawl and the fish may have been captured in midwaters during deployment or retrieval. A hybrid of this species and *Caranx melampygus* Cuvier, 1833 was taken off Panama (Angulo *et al.* 2020).

Chloroscombrus orqueta Jordan & Gilbert, 1883. **Pacific Bumper**. To 31 cm (12.2 in) SL (Amezcua Linares 1996). San Pedro, southern California (Miller and Lea 1972) to Chilca, Peru (Beltrán-León and Rios Herrera 2000), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995), and Isla Malpelo (Robertson and Allen 2002). Shallow coastal waters and estuaries (Watson *et al.* in Moser 1996); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 2–53 m (5–174 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Zeballos Flor *et al.* 1998).

****Decapterus macarellus*** (Cuvier, 1833). **Mackerel Scad**. To 46 cm (18.1 in) TL (Jiménez Prado and Béarez 2004). Circumglobal; western Pacific Ocean north to Ryukyu Islands (Senou in Nakabo 2002); tip of Baja California, mouth of Gulf of California, Costa Rica to Chile, and offshore islands (Robertson and Allen 2015). Depth: surface to 400 m (1,312 ft) (min.: Smith-Vaniz in Fischer *et al.* 1995; max.: Mundy 2005).

Decapterus macrosoma Bleeker, 1851. **Shortfin Scad**. To 35 cm (13.8 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to southern Japan (Senou in Nakabo 2002) and Cheju Island, South Korea (Kim *et al.* 1999); Punta Eugenia (Baja California) (Robertson and Allen 2008) to Chile (Pequeño 1989), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 12–214 m (99–702 ft) (min.: Godínez-Domínguez *et al.* 2000; max.: Mundy 2005). Morera *et al.* (20019) report on a capture at a depth of 500 m (1,640 ft), however this capture was made in a bottom trawl and the fish may have been captured in midwaters during deployment or retrieval.

Decapterus muroadsi (Temminck & Schlegel, 1844). **Amberstripe Scad** or Mexican Scad. To about 55 cm (21.7 in) TL (Robertson and Allen 2002). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Japan and East China Sea (Gushiken in Masuda *et al.* 1984); Pacific Grove, central California (Miller and Lea 1972) to Peru (Watson *et al.* in Moser 1996), Easter Island (Pequeño 1989), and Islas Galápagos (Grove and Lavenberg 1997); apparently not in Gulf of California (Robertson and Allen 2002). Depth: surface to 320 m (1,050 ft) (Mundy 2005). Includes *Decapterus hypodus* Gill, 1862, and *Decapterus scombrinus* (Valenciennes, 1846) as junior synonyms.

Elagatis bipinnulata (Quoy & Gaimard, 1825). **Rainbow Runner**. To 180 cm (70.9 in) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north to Japan (Senou in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to at least as far south as Isla Gorgona, Colombia (Franke and Acero 1993) and probably to northern Peru (Chirichigno and Vélez 1998), including mouth of Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 181 m (594 ft) (min.: Randall 1995; max. Weijerman *et al.* 2019).

Gnathanodon speciosus (Forsskål, 1775). **Golden Trevally** or Yellow Jack. To 120 cm (47.2 in) TL (Randall 1996). Atlantic Ocean via Panama Canal (Robertson and Allen 2002); Indo-Pacific; western Pacific Ocean north

to Japan (Senou in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to central Gulf of California (Robertson and Allen 2002) to Colombia (Allen and Robertson 1994). Adults in deep lagoons and seaward reefs, juveniles among jellyfish tentacles (Watson *et al.* in Moser 1996); depth: surface to 176 m (577 ft) (min.: Robertson and Allen 2002; max.: Weijerman *et al.* 2019).

Hemicaranx leucurus (Günther, 1864). **Yellowfin Jack**. To 36.5 cm (14.4 in) TL (Rojo-Vázquez *et al.* 2009). Near Boca de Soledad (25°18'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Talara, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2015). Marine and brackish waters (Fricke *et al.* 2020); depth: 0 to 30 m (98 ft) (Robertson and Allen 2002).

Hemicaranx zelotes Gilbert, 1898. **Blackfin Jack** or Blackfin Scad. To 35 cm (13.8 in) (Jiménez Prado and Béarez 2004). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Sechura, Peru (Chirichigno and Vélez 1998), including Gulf of California (De La Cruz-Agüero *et al.* 1997). Marine and brackish waters (Fricke *et al.* 2020); depth: 1–30 m (3–98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Naucrates ductor (Linnaeus, 1758). **Pilotfish**. To 70 cm (27.6 in) TL (Smith-Vaniz in Fischer *et al.* 1995). Circumglobal; western Pacific Ocean north to Japan (Senou in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); Vancouver Island, British Columbia (Eschmeyer and Herald 1983) to Chile (Pequeño 1989), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995) and such offshore islands as Islas Galápagos (Miller and Lea 1972). Depth: surface to 430 m (1,410 ft) (Roberts *et al.* 2015).

Oligoplites altus (Günther, 1868). **Longjaw Leatherjack** or Smallmouthed Leatherjack. To 57.8 cm (22.8 in) FL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Laguna San Ignacio, southern Baja California (Galván-Magaña *et al.* 2000) to Callao, Peru (Chirichigno and Vélez 1998), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995). Nearshore marine and estuaries (Allen and Robertson 1994), occasionally in freshwater (Argulo *et al.* 2020); depth: 0 to 30 m (98 ft) (Robertson and Allen 2002).

Oligoplites saurus (Bloch & Schneider, 1801). **Leatherjack**, Yellowjack, or Yellowtail Leatherjack. To 45 cm (17.7 in) TL (Grove and Lavenberg 1997). Atlantic and Pacific Oceans; Bahía San Juanico, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997) and Isla Malpelo (Robertson and Allen 2002). Shallow coastal waters and in estuaries (Watson *et al.* in Moser 1996); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), <1 m to 50 m (3–164 ft) (min.: Arceo-Carranza and Chiappa-Carrara 2015; max.: Amezcua Linares 1996); also reported from fresh water (Greenfield and Thomerson 1997). The southern California record in Miller and Lea (1972) is in error (Robert Lea, pers. comm. to M.L.).

Selar crumenophthalmus (Bloch, 1793). **Bigeye Scad** or Purse-eyed Scad. To 30 cm (11.8 in) (Robertson and Allen 2015); unsubstantiated to 60 cm (23.6 in) SL (Smith-Vaniz in Carpenter and De Angelis 2016) or 70 cm (27.6 in) TL (Kuiter and Tonozuka 2001). Circumglobal; western Pacific Ocean north to southern Japan (Senou in Nakabo 2002), and Sea of Japan (Parin 2003); Palos Verdes, southern California (Love *et al.* 2015) to Cabo Blanco, Peru (Chirichigno 1974), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Coastal waters; depth: surface to 230 m (754 ft) (min.: Laboute and Grandperrin 2000; max.: Weijerman *et al.* 2019). Smaller individuals associate with floating material (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Selene brevoortii (Gill, 1863). **Mexican Lookdown**. To 42 cm (16.5 in) TL (Robertson and Allen 2002). Seal Beach, southern California (Jarvis *et al.* 2009) to northern Chile (Sielfeld *et al.* 2010), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995). Coastal waters, including bays and estuaries (Watson *et al.* in Moser 1996); depth: 2–165 m (8–541 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Morera *et al.* 2019).

Selene orstedii Lütken, 1880. Hairfin Lookdown, **Mexican Moonfish**, or Pacific Lookdown. To 33 cm (13 in) TL (Jiménez Prado and Béarez 2004). About Bahía Magdalena, southern Baja California (Robertson and Allen 2008) to Caleta La Cruz, Peru (Chirichigno and Vélez 1998), including southern Gulf of California (Smith-

Vaniz in Fischer *et al.* 1995). Shallow coastal waters, occasionally in estuaries; depth: surface (nightlight: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–50 m (8–165 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Selene peruviana (Guichenot, 1866). **Pacific Moonfish**. To 85 cm (34 in) TL (Franke and Acero 1993), or to 35 cm (13.8 in) TL (Velasco and Thiel 2002). Long Beach, southern California (Miller and Lea 1972) to Chile (Pequeño 1989), including Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Shallow coastal waters (Watson *et al.* in Moser 1996); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 4–450 m (12–1,476 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Franke and Acero 1993).

*****Seriola aureovittata*** Temminck & Schlegel 1845. **Japanese Yellowtail Jack**. In April 2015, 21 individuals of this species were recovered from a derelict Japanese vessel that had been damaged in the March 2011 tsunami (Craig *et al.* 2018). 193 cm (76 in) FL. Northwest Pacific Ocean. Both from Brown and Schofield (2020).

Seriola dorsalis (Gill, 1863). **Yellowtail** or Yellowtail Jack. To at least 1.5 m (5 ft) TL (Miller and Lea 1972). Northern British Columbia (54°35'N, 131°00'W) (Nagtegaal and Farlinger 1981) to central Mexico (Robertson and Allen 2015), including Gulf of California (Miller and Lea 1972), Islas Galápagos (Grove and Lavenberg 1997), and Isla Malpelo (Robertson and Allen 2002). Unverified reports from Gulf of Alaska off Kodiak Island and Cordova (Mecklenburg *et al.* 2002). Primarily epipelagic; depth: surface to at least 91 m (300 ft) (min.: Miller and Lea 1972; max.: M.L., unpubl. data). Nelson *et al.* (2004) changed the official common name from Yellowtail to Yellowtail Jack, but West Coast fishers and researchers may be reluctant to adopt the change. Previously referred to as the widely distributed *Seriola lalandi* Valenciennes, 1833. However, we follow Martinez-Takeshita *et al.* (2015) and limit the distribution of *S. lalandi* to the Southern Hemisphere, *Seriola dorsalis* from the eastern Pacific Ocean and *Seriola aureovittata* Temminck & Schlegel (1845) in the northwest Pacific (but see above under *Seriola aureovittata*).

Seriola peruana Steindachner, 1881. **Fortune Jack**. To 66.5 cm (20.3 in) (Robertson and Allen 2015). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), south-western Gulf of California to Chile, including Islas Galápagos and Malpelo (Robertson and Allen 2015). Depth: surface to 90 m (295 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: John Snow, pers. comm. to M.L.).

Seriola rivoliana Valenciennes, 1833. **Almaco Jack** or Pacific Amberjack. To 160 cm (63 in) FL (Personal communication: International Game Fish Association Records, Dania Beach, Florida). Circumglobal; western Pacific Ocean north to Korea (Kim *et al.* 1997), and southern Japan (Senou in Nakabo 2002); Stony Point, Santa Catalina Island (M.L., unpubl. data), and Oceanside, southern California (Eschmeyer and Herald 1983), to Cabo Blanco, Peru (Chirichigno and Vélez 1998), including Gulf of California (Smith-Vaniz in Fischer *et al.* 1995), and Islas Galápagos (Eschmeyer and Herald 1983). Pelagic; depth: surface to 367 m (820 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Weijerman *et al.* 2019).

Trachinotus kennedyi Steindachner, 1875. **Blackblotch Pompano** or Pacific Permit. To 73 cm (28.7 in) (Robertson and Allen 2015) or 90 cm (35.4 in) TL (Jiménez Prado and Béarez 2004). Bahía San Bartolome (27°41'N, 114°53'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern Baja California to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2002). Shallow inshore (Watson *et al.* in Moser 1996); marine and brackish waters (Fricke *et al.* 2020); depth: surface (nightlight) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–72 m (9–236 ft) (min.: Personal Communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Franke and Acero 1993).

Trachinotus paitensis Cuvier, 1832. **Paloma Pompano**. To 50.8 cm (20 in) TL (Miller and Lea 1972). Redondo Beach, southern California (Miller and Lea 1972) to Chile (Pequeño 1989), including Gulf of California and Islas Galápagos (Miller and Lea 1972). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–100 m (3–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Trachinotus rhodopus Gill, 1863. **Gafftopsail Pompano**. To 61 cm (24 in) TL (Miller and Lea 1972). Near Diablo Cove, central California (Jay Carroll, pers. comm. to M.L.) to Callao, Peru (Chirichigno and Vélez 1998), including southern and central Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Miller and Lea 1972). Surface to 30 m (98 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Trachurus symmetricus (Ayres, 1855). **Jack Mackerel**. To 81.3 cm (32 in) TL (Miller and Lea 1972). Pacific Ocean south of Aleutian Islands (Mecklenburg *et al.* 2002), and Gulf of Alaska to Gulf of California (Smith-Vaniz in Fischer *et al.* 1995) to Acapulco, Mexico (Palacios-Salgado *et al.* 2014). Primarily pelagic; depth: surface (Miller and Lea 1972), intertidal (Carlisle *et al.* 1960) and offshore to 403 m (1,320 ft (220 fm)) (Hart 1973)). The maximum depth of this species is unclear. For instance, in the NWFSC-FRAM database there are 30 records of catches deeper than 403 m, with a maximum depth of 1,172 m (3,844 ft). However, as all of these records are from bottom trawls it is not possible to differentiate between fish caught on the bottom and those caught in the midwaters during net deployment or retrieval. Although *Trachurus murphyi* Nichols, 1920, found off South America, is considered by some authors (e.g., Grove and Lavenberg 1997) to be a subspecies of *T. symmetricus*, DNA evidence indicates it is a separate species (Poulin *et al.* 2004).

Uraspis helvola (Forster, 1801). **Cottonmouth Jack**, Whitemouth Jack, or Whitetongue Jack. To 58 cm (22.8 in) TL (Jiménez Prado and Béarez 2004). Indo-Pacific; western Pacific Ocean north to perhaps southern Kuril Islands (Savinykh and Shevtsov 2001), and southern Japan (Senou in Nakabo 2002) (although these may be *Uraspis secunda* (Poey, 1860); Santa Catalina Island, southern California (Miller and Lea 1972); southernmost Gulf of California (John Snow, pers. comm. to M.L.), and at a number of more southerly locations (Robertson and Allen 2008) to Ecuador (Béarez 1996), including Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (under drifting material) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 10–300 m (33–984 ft) (Robertson and Allen 2002). The Santa Catalina Island specimen was originally identified as *Uraspis secunda* (Poey 1860) (Fitch 1972). However, *U. secunda* appears to be an Atlantic and Indo-Central Pacific species (William Smith-Vaniz and Ross Robertson, pers. comm. to M.L.).

Family Coryphaenidae—Dolphinfishes

Coryphaena equiselis Linnaeus, 1758. **Pompano Dolphinfish**. To 207 cm (83 in) TL (Eschmeyer and Herald 1983), or only to 127 cm (50 in) in (Robertson and Allen 2008). Not always correctly distinguished from *Coryphaena hippurus* Linnaeus, 1758, and the larger sizes reported likely are from that species. Circumglobal; western Pacific Ocean north to Sea of Japan (Parin 2003); 43 Fathom Bank, southern California (about 32°39.3'N, 117°58.3'W) (Walker *et al.* 2020) to at least Ecuador (Béarez 1996), including south-western Gulf of California (Robertson and Allen 2002). Depth: Surface to 50 m (164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Coryphaena hippurus Linnaeus, 1758. **Dolphinfish** or Dorado. To 210 cm (82.7 in) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north to Japan (Senou in Nakabo 2002) and as far north as southern Kuril Islands (Savinykh 1998); Grays Harbor, Washington to Chile, including Islas Galápagos, and Gulf of California (Miller and Lea 1972). Depth: surface to 262 m (859 ft) (min.: Eschmeyer and Herald 1983; max.: Perle *et al.* 2020).

Family Echeneidae—Remoras

Echeneis naucrates Linnaeus, 1758. **Sharksucker**. To 110 cm (43.3 in) TL (Lieske and Myers 2002). Circumglobal; western Pacific Ocean north to Sea of Japan, off northern Hokkaido, possibly as far north as southern Kuril Islands (Parin 2003); southern California (Miller and Lea 1972) to Chile (Pequeño 1989), including Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Pelagic; marine and brackish waters (Fricke *et al.* 2020); depth: surface to 135 m (443 ft) (min.: Gasparini and Floeter 2001; max: 128–135 m in McLean *et al.* (2018); 135 m from Diane McLean, pers. comm. to M.L.)

Phtheirichthys lineatus (Menzies, 1791). **Slender Suckerfish**. To 76 cm (29.9 in) TL (Eschmeyer and Herald 1983). Circumglobal; southern California (Miller and Lea 1972) to northern Peru (Robertson and Allen 2015), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997).

Oceanic, pelagic; depth: surface to 100 m (328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Remora albescens (Temminck & Schlegel, 1850). **White Suckerfish**. To 35 cm (13.8 in) TL (Lachner and Post in Quéro *et al.* 1990). Circumglobal; San Francisco, northern California to Chile, including central and southern Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Pelagic; depth: 0 to about 50 m (164 ft) (Robertson and Allen 2008).

Remora australis (Bennett, 1840). **Whalesucker**. To 76.2 cm (30 in) TL (Miller and Lea 1972). Circumglobal; British Columbia (Gillespie 1993) to Chile (Miller and Lea 1972), including Islas Galápagos (Grove and Lavenberg 1997). Pelagic; depth: surface to 200 m (656 ft) (Robertson and Allen 2002).

Remora brachyptera (Lowe, 1839). **Spearfish Remora**. To 50 cm (19.7 in) TL (Jiménez Prado and Béarez 2004). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); San Diego County (32°52'N, 117°17'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern California to Chile (Miller and Lea 1972), including Gulf of California (Galván-Magaña *et al.* 1996), and Islas Galápagos (Grove and Lavenberg 1997). Pelagic; depth: surface to 200 m (656 ft) (Robertson and Allen 2002).

Remora osteochir (Cuvier, 1829). **Marlinsucker**. To 40 cm (15.7 in) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); Santa Catalina Island, southern California (Miller and Lea 1972) to northern Chile (Sielfeld *et al.* 2010), including central and southern Gulf of California (Robertson and Allen 2002). Pelagic; depth: surface to 200 m (656 ft) (Robertson and Allen 2002).

Remora remora (Linnaeus, 1758). **Remora**. To 86.4 cm (34 in) TL (Miller and Lea 1972). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Parin 2003); in eastern Pacific from Washington (Hughes 1985) to Chile (Pequeño 1989), including central and southern Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Pelagic; depth: surface to 300 m (984 ft) (min.: Robertson and Allen 2015; max.: Sánchez-Jiménez *et al.* 2018).

Remorina albescens (Temminck & Schlegel, 1850). **White Suckerfish**. To 35 cm (13.8 in) TL (Lachner and Post in Quéro *et al.* 1990). Circumglobal; San Francisco, northern California to Chile, including central and southern Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997).

Family Bramidae—Pomfrets

Brama dussumieri Cuvier, 1831. **Lesser Bream**. To 22.5 cm (8.9 in) SL (Froese and Pauly 2019). Circumglobal; western Pacific Ocean north to Japan (Nakabo 2002); inclusion here based on a 1.1 cm (0.4 in) specimen captured off southern California (33°05'N, 117°39'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and the statement in Moser (1996) that larvae were taken in the "southern part of the CalCOFI pattern," which we take to mean off southern Baja California; Guatamala to Chile (Froese and Pauly 2019; note that we were unable to verify this record). Depth: surface to 439 m (1,440 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). A record of 3,000 m (9,840 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) was based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Brama japonica Hilgendorf, 1878. **Pacific Pomfret** or Small-scaled Pomfret. To 61.4 cm (24.2 in) FL (Pearcy and Fisher 1993); also reported to 122 cm (4 ft) (Jordan and Evermann 1896b) but without documentation. Southern Sea of Japan, and off southern coast of Korean Peninsula (Lindberg and Krasyukova 1969), to Pacific Ocean south of Aleutian Islands, and southern Bering Sea (Mecklenburg *et al.* 2002), to Chile (Robertson and Allen 2002); apparently absent from tropics (Robertson and Allen 2002). Oceanic, primarily epipelagic; depth: surface to 620 m (2,034 ft) (min.: Mead 1972; max.: Moser and Mundy in Moser 1996).

Brama orcini Cuvier, 1831. Bigbelly Pomfret or **Bigtooth Pomfret**. To 35 cm (13.8 in) TL (Eschmeyer and Herald 1983). Indo-Pacific (Eschmeyer and Herald 1983); western Pacific Ocean north to Ogasawara Islands (Hatooka in Nakabo 2002); Imperial Beach, southern California (Mead 1972) to Mexico (Fricke *et al.* 2020). The Imperial Beach record was a beached specimen. Depth: surface to 100 m (328 ft) (Smith in Smith and Heemstra 1986).

Pteraclis aesticola (Jordan & Snyder, 1901). **Pacific Fanfish**. To 61 cm (24 in) TL (Miller and Lea 1972). Cosmopolitan; western Pacific Ocean north to Japan (Hatooka in Nakabo 2002); northern California (37°50'N, 125°00'W; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989). Pelagic; depth: 0–100 m (328 ft) (Mundy 2005). Deeper records (e.g., 2,000 m, 6,650 ft, Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) are based on the maximum depth fished by a midwater trawl and may represent a catch shallower than the maximum depth.

Pterycombus petersii (Hilgendorf, 1878). Prickly Fanfish or **Prickly Pomfret**. To 37.5 cm (14.8 in) TL (Orr *et al.* 2018). Indo-Pacific; western Pacific Ocean north to Japan and Korea; eastern Pacific Ocean: Oregon (44°56'N, 124°56'W) (Orr *et al.* 2018) to 42°21.1'N (Jay Orr, unpublished data). Depth: 0–384 m (1,260 ft) (min.: Mundy 2005; max.: Orr *et al.* 2018).

Taractes asper Lowe, 1843. Flathead Pomfret or **Rough Pomfret**. To more than 50 cm (19.7 in) TL (Mecklenburg *et al.* 2002). Circumglobal; western Pacific Ocean north to Japan (Mochizuki in Masuda *et al.* 1984) to Gulf of Alaska off Kodiak Island (Mecklenburg *et al.* 2002) to southern California (31°20'N, 121°10'W) (Parin and Scherbachev 1998) to Chile (Pequeño 1997). Oceanic, primarily pelagic (Mead 1972); depth: surface to about 1,000 m (3,280 ft) (min.: Mecklenburg *et al.* 2002; max. Roberts *et al.* 2015).

Taractichthys steindachneri (Döderlein, 1883). **Sickle Pomfret**. To 91.4 cm (36 in) TL (Miller and Lea 1972). Indo-Pacific; western Pacific Ocean north to Japan (Hatooka in Nakabo 2002); a few southern California records from as far northward as Point Conception, California (Eschmeyer and Herald 1983), also central Baja California (27°15'N, 118°16'W; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and south-western Gulf of California (Robertson and Allen 2008). Depth: 9–700 m (30–2,296 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Duffy and Ahyong 2015). Date of publication of the species description is sometimes seen as 1884, but the correct date evidently is 1883 (Eschmeyer 1998 and online editions).

Family Caristiidae—Manefishes or Veilfins

Taxonomically, this group is poorly understood. Undescribed species have been reported (e.g., Hatooka in Nakabo 2002) and consensus is lacking on nomenclature of the named Pacific species. Manefishes are meso- and bathypelagic as adults and epipelagic and mesopelagic as larvae and juveniles (Paxton in Carpenter and Niem 2001).

Caristius macropus (Bellotti, 1903). **Bigmouth Manefish** or Veilfin. To more than 33 cm (13 in) SL, 39 cm (15.3 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Japan (Fuji in Masuda *et al.* 1984) to southern Bering Sea, Aleutian Islands (Mecklenburg *et al.* 2002), and Gulf of Alaska (Stevenson *et al.* 2009) to central Baja California near Isla de Cedros (Hart 1973). Pelagic; depth: 100–1,660 (320–5,449 ft) (Orlov and Tokranov 2019).

Paracaristius nudarcus Stevenson & Kenaley, 2011. To 28 cm (11 in) TL (Stevenson, Kenaley, and Britz in Carpenter and De Angelis 2016). Circumglobal; central California to central Baja California (Stevenson and Kenaley 2011). Larvae reported (as *Caristius maderensis*) from as far south as off San Ignacio, southern Baja California (Funes-Rodríguez *et al.* 2011). Depth: 1–1,800 m (3–5,904 ft) (Kamikawa 2017). Fish identified as *Caristius maderensis* Maul, 1949 from the eastern Pacific refer to this species.

Platyberyx andriashevi (Kukuev, Parin, & Trunov, 2012). To 25 cm (9.8 in) TL (Stevenson, Kenaley, and Britz in Carpenter and De Angelis 2016). Circumglobal; western Pacific Ocean north to Japan (Okamoto and Stevenson 2015); San Pedro Basin, southern California. Depth: epipelagic to almost 5,000 m (16,400 ft) (Stevenson, Kenaley, and Britz in Carpenter and De Angelis 2016).

Family Lutjanidae—Snappers

Hoplopagrus guentherii Gill, 1862. **Barred Pargo** or Mexican Barred Snapper. To 92 cm (36.2 in) TL (Allen in Fischer *et al.* 1995). Bahía Abreojos, southern Baja California (Watson and Brogan in Moser 1996) to northern

Peru (Grove and Lavenberg 1997), including Gulf of California (Allen 1985), Islas Galápagos (Grove and Lavenberg 1997), and Isla del Cocos (Robertson and Allen 2002). Marine and brackish waters (Romero-Berny *et al.* 2018); depth: intertidal to about 100 m (10–328 ft) (min.: Thomson and Lehner 1976; max.: Aburto-Oropeza *et al.* 2011).

Lutjanus aratus (Günther, 1864). **Mullet Snapper**. To 99 cm (39 in) TL (Allen 1985). Punta Eugenia, southern Baja California (Gotshall 1998) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen 1985) and Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Depth: intertidal to 80 m (262 ft) (min.: Weaver 1970; max.: Sánchez-Jiménez *et al.* 2018).

Lutjanus argentiventris (Peters, 1869). **Amarillo Snapper** or Yellow Snapper. To 76 cm (29.9 in) (Jiménez Prado and Béarez 2004). Oceanside, southern California (Eschmeyer and Herald 1983) to Islas Lobos de Afuera, Peru (Chirichigno 1974), including Gulf of California (Allen 1985) and Islas Galápagos (Eschmeyer and Herald 1983). Marine, brackish, and fresh waters (Bussing 1998, Romero-Berny 2018); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal (juveniles) to 94 m (308 ft) (min.: Grove and Lavenberg 1997; max.: Amezcua Linares 1996).

Lutjanus colorado Jordan & Gilbert, 1882. **Colorado Snapper**. To 107 cm (42.1 in) TL (Robertson and Allen 2002). Estero (Morro) Bay, central California (Eschmeyer and Herald 1983) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen 1985). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: surface to 90 m (295 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Lutjanus guttatus (Steindachner, 1869). **Spotted Rose Snapper**. To 99 cm (39 in) TL (Herrón *et al.* 2018). Northern Baja California (Robertson and Allen 2015) to Huacho, Peru (Beltrán-León and Rios Herrera 2000), including Gulf of California (Allen 1985). Marine, brackish, and fresh waters (Allen 1986, Argulo *et al.* 2020); depth: surface to 120 m (394 ft) (min.: Robertson and Allen 2002; max.: Aburto-Oropeza *et al.* 2011).

Lutjanus inermis (Peters, 1869). **Golden Snapper**. To 39 cm (15.4 in) (Jiménez Prado and Béarez 2004). Bahía Santa Maria, southern Baja California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California), and into Gulf of California, to northern Peru and offshore islands (Robertson and Allen 2008). Depth: intertidal to 70 m (230 ft) (min.: Robertson and Allen 2008; max.: John Snow, pers. comm. to M.L.).

Lutjanus jordani (Gilbert, 1898). **Whipper Snapper**. To 61 cm (24 in) TL (Fuertes and Araya 1979). Southern Baja California (27°06'N, 114°11'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno 1974), including lower Gulf of California (Allen 1985) and Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 2–200 m (6–656 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Fuertes and Araya 1979).

Lutjanus novemfasciatus Gill, 1862. Dog Snapper or **Pacific Dog Snapper**. To 170 cm (67 in) TL (Allen 1985). Morro Bay, central California (Tognazzini 2003) to Puerto Pizarro, Peru (Chirichigno 1974), including throughout Gulf of California (Allen 1985), and around Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Allen and Robertson 1994); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 60 m (197 ft) (min.: Thomson and Lehner 1976; max.: Allen 1985).

Lutjanus peru (Nichols & Murphy, 1922). **Pacific Red Snapper**. To 99.2 cm (39 in) TL (Rocha-Olivares 1998). La Jolla, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Bahía Santa Maria, southern Baja California (Watson and Brogan in Moser 1996) to Huermey, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (McCosker and Rosenblatt 2010), and throughout Gulf of California (Allen 1985). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 18 m (60 ft) to at least 91 m (300 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: John Snow, pers. comm. to M.L.).

Lutjanus viridis (Valenciennes, 1846). **Blue-and-Gold Snapper**. To 30 cm (11.8 in) TL (Allen 1985). Rocas Alijos, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Bahía Tortugas, southern Baja California (Gotshall 1998) to Peru, including Islas Galápagos (Grove and Lavenberg 1997) and Gulf of California (Allen 1985). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–240 m (3–787 ft) (min.: Personal

communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Morera *et al.* 2019).

Family Lobotidae—Tripletails

Lobotes pacificus Gilbert, 1898. **Pacific Tripletail**. To 110 cm (43.3 in) TL (Carpenter in Carpenter 2003). In western Pacific Ocean as far north as Japan (Hatooka in Nakabo 2002), Sea of Japan (Kharin *et al.* 2009), and southern Kuril Islands (Savinykh 1998); in eastern Pacific from San Pedro Breakwater, southern California (Rounds and Feeney 1993) and San Diego Bay, southern California (Jim Hendricks, pers. comm. to M.L.) to Chimbote, Peru (Beltrán-León and Rios Herrara 2000), including Gulf of California (Robertson and Allen 2015). Bays, brackish estuaries, coastal freshwaters, and sometimes well out to sea around floating objects (Allen and Robertson 1994); depth: surface to 50 m (164 ft) (Robertson and Allen 2015).

Family Gerreidae—Mojarras

Deckertichthys aureolus (Jordan & Gilbert, 1882). **Golden Mojarra**. To 20 cm (7.9 in) (Robertson and Allen 2008). Just south of Bahía San Quintin ["Santa Maria Bay" (30°23.8'N, 115°56'W)], northern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru, including Gulf of California (Robertson and Allen 2008). Depth: 0 to 43 m (140 ft) (min.: Robertson and Allen 2015; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). We follow Vergara-Solana *et al.* (2014) and remove this species from the genus *Diapterus*.

Diapterus brevirostris Sauvage, 1879. **Shortnose Mojarra**. To 38 cm (15 in) TL (Amezcua Linares 1996). Arroyo Soledad (25°11.4'N, 112°05.7'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Caleta La Cruz, Peru (Chirichigno and Vélez 1998), including lower and central Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Romero-Berny 2018); depth; surface (Robertson and Allen 2002), 0.3–104 m (1–341 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Diapterus peruvianus (Cuvier, 1830). **Peruvian Mojarra**. To 35 cm (13.8 in) TL (Coello *et al.* 2021**)**. Boca de Soledad (25°23'N, 112°05'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Chirichigno and Vélez 1998), including Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: intertidal to at least 18 m (3–60 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Eucinostomus currani Zahuranec, 1980. Blackspot Mojarra, Flagfin Mojarra, **Pacific Flagfin Mojarra**, or Spotted-fin Mojarra. To 23 cm (9.1 in) TL (Moncayo-Estrada *et al.* 2006). Anaheim Bay, southern California (Bussing in Fischer *et al.* 1995) to Huacho, Peru (Chirichigno and Vélez 1998), including Gulf of California (Bussing in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and Isla del Cocos (Robertson and Allen 2002). The *Eucinostomus* sp. of Miller and Lea (1972) refers to this species (Nelson *et al.* 2004). Marine, brackish, and fresh waters (Romero-Berny 2018); depth: intertidal to 100 m (328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Eucinostomus dowii (Gill, 1863). Dow's Mojarra, **Pacific Spotfin Mojarra**, or Silver Mojarra. To 25.5 cm (10 in) TL (John Snow, pers. comm. to M.L.). Camp Pendleton Harbor (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern California to Gulf of California (De La Cruz-Agüero *et al.* 1997) to northern Chile (Sielfeld *et al.* 2010). Marine and brackish waters (Fricke *et al.* 2020); depth: intertidal to 114 m (374 ft) (min.: Thomson and Lehner 1976; max.: Amezcua Linares 1996). We follow Nelson *et al.* (2004) in treating records of *Eucinostomus argenteum* from the Pacific Ocean as *E. dowii*.

Eucinostomus entomelas Zahuranec, 1980. Blackgill Mojarra, Black-spot Mojarra, or **Darkspot Mojarra**. To 24.3 cm (9.6 in) TL (Rodríguez-Romero *et al.* 2008). From 4.8 km (3 mi) east of the entrance to Laguna

Ojo de Liebre (27°54'N, 114°18'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), including southern and central Gulf of California (Robertson and Allen 2002). Marine and brackish waters (Fricke *et al.* 2020); depth: intertidal to 100 m (328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Eucinostomus gracilis (Gill, 1862). **Graceful Mojarra** or Slender Mojarra. To 23.9 cm (9.4 in) TL (Amezcua Linares 1996). Bahía de Ballenas (26°39.7'N, 113°18.7'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), including southern Gulf of California (Bussing in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: in ocean, surface to 1–112 m (3–367 ft) (min.: Gonzáles-Acosta *et al.* 1999; max.: Amezcua Linares 1996). *Eucinostomus californiensis* (Gill, 1862) and *E. gracilis* are synonymous. The name *E. californiensis* was selected as the correct name by Jordan and Evermann (1898) but this has been largely overlooked and *E. gracilis* is the name usually seen.

Eugerres axillaris (Günther, 1864). **Black Axillary Mojarra**. To 25 cm (9.8 in) TL (Robertson and Allen 2002). Boca Soledad (25°23'N, 112°06'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Honduras (Robertson and Allen 2002). Marine, brackish, and fresh waters (Romero-Berny 2018, Fricke *et al.* 2020); depth: 0–4 m (14 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and perhaps to 30 m (99 ft) (Robertson and Allen 2002).

Eugerres lineatus (Humboldt, 1821). **Streaked Mojarra**. To 26 cm (10.2 in) (Robertson and Allen 2008). Near Boca de Soledad (25°11'N, 112°06'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and southern and central Gulf of California (Robertson and Allen 2002) to Ecuador (Béarez 1996), including Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Romero-Berny 2018, Fricke *et al.* 2020); depth: surface to 30 m (98 ft) (Robertson and Allen 2002).

Gerres simillimus Regan, 1907**. Pacific Yellowfin Mojarra**. To 47.5 cm (18.7 in) TL (Rodriquez-Romero *et al.* 2008). Boca Soledad (25°11'N, 112°05'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Callao, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997), and lower two-thirds of Gulf of California (Robertson and Allen 2002). Marine, brackish, and nearly fresh waters (Allen and Robertson 1994, Romero-Berny 2018); depth: 0.3–107 m (1–351 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996). Previously referred to as *Gerres cinereus* (Walbaum, 1792), now limited to the western Atlantic (Fricke *et al.* 2020).

Family Haemulidae—Grunts

Anisotremus caesius (Jordan & Gilbert, 1882). **Silvergrey Grunt**. To 30 cm (11.8 in) TL (Fischer *et al.* 1995). Juvenile taken near Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); southern Gulf of California to Peru (Fischer *et al.* 1995). Depth: 3–25 m (10–82 ft) (Allen and Robertson 2015).

Anisotremus davidsonii (Steindachner, 1875). **Sargo** or Xanthic Sargo. To 60 cm (23.6 in) TL (McKay and Schneider in Fischer *et al.* 1995). Santa Cruz, central California (Miller and Lea 1972) to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.); Gulf of California (Miller and Lea 1972), and Chiapas, Mexico (González-Acosta *et al.* 2018). Depth: intertidal to 61 m (201 ft) (min.: Carlisle *et al.* 1960; max.: Thomson *et al.* 2000). Sometimes seen, incorrectly, as *Anisotremus davidsoni* and sometimes with the publication date of 1876 (Fricke *et al.* 2020).

Anisotremus interruptus (Gill, 1862). **Burrito Grunt**. To 90 cm (35.4 in) TL (Amezcua Linares 1996). Isla de Cedros (Ramírez-Valdez *et al.* 2015), mainland at Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (De La Cruz-Agüero *et al.* 1996), and throughout Gulf of California (McKay and Schneider in Fischer *et al.* 1995), to Mancora, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Depth: young fish intertidal (Personal communication: Scripps Institution of Oceanography

Fish Collection, La Jolla, California); 1–90 m (3–295 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sánchez-Jiménez *et al.* 2018).

Anisotremus taeniatus Gill, 1861. **Panamic Porkfish**. To 38 cm (15 in) TL (Rojo-Vázquez *et al.* 2009). Bahía Santa Maria (24°45'N, 112°15'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Punta Sal, Peru (Chirichigno and Vélez 1998), including central and southern Gulf of California (Robertson and Allen 2015). Depth: 5–25 m (17–83 ft) (Robertson and Allen 2002).

Brachygenys californiensis (Steindachner, 1876). **Salema**. To 30.3 cm (11.8 in) TL (Love *et al.* 2005). San Francisco Bay, central California (Burton and Lea 2019) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Miller and Lea 1972). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–40 m (4–131 ft) (min.: Miller and Lea 1972; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Formerly *Xenistius californiensis* (Steindachner, 1876) and *Haemulon californiensis* (Steindachner, 1876). We follow Tavera *et al.* (2018) and move this species to *Brachygenys*.

Conodon serrifer Jordan & Gilbert, 1882. **Armed Grunt** or Serrated Grunt. To 30 cm (11.8 in) TL (Allen and Robertson 1994). San Onofre, southern California (Moore and Herbinson 2002) to Paita, Peru (Chirichigno and Vélez 1998), including Gulf of California (McKay and Schneider in Fischer *et al.* 1995). Nearshore waters (McKay and Schneider in Fischer *et al.* 1995); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–72 m (3–236 ft) (min.: González-Acosta *et al.* 1999; max.: Amezcua Linares 1996).

Haemulon flaviguttatum Gill, 1862. **Cortez Grunt** or Yellowspotted Grunt. To 47.9 cm (18.9 in) TL (Rojo-Vázquez *et al.* 2009). Three collected in southern California: Newport Bay (Love *et al.* 2005), Mission Bay, and San Diego Bay (Lea and Rosenblatt 1992); Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), throughout Gulf of California (McKay and Schneider in Fischer *et al.* 1995) to Peru (Robertson and Allen 2002). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–107 m (3–351 ft) (min.: Gonzáles-Acosta *et al.* 1999; max.: Amezcua Linares 1996).

Haemulon maculicauda (Gill, 1862). **Spottail Grunt**. To 30 cm (11.8 in) TL (McKay and Schneider in Fischer *et al.* 1995). Isla de Cedros, central Baja California (Gotshall 1998) and Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1997) to Ecuador (Robertson and Allen 2015), and probably to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Galván-Magaña *et al.* 1996). Depth: intertidal to 37 m (120 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Haemulon scudderi Gill, 1862. Goldeneye Grunt, Grey Grunt, or **Mojarra Grunt**. To 38.7 cm (15.2 in) TL (Rojo-Vázquez *et al.* 2009). Lagoon (25°12'N, 112°08'W) north of Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into Gulf of California (Thomson *et al.* 1979) to Ecuador (Thomson *et al.* 1979), including Islas Galápagos (Grove and Lavenberg 1997). Depth: 0.6–30 m (2–98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Haemulon sexfasciatum Gill, 1862. **Graybar Grunt**. To 71 cm (28 in) (Jiménez Prado and Béarez 2004). Bahía Magdalena, southern Baja California (Gotshall 1998) and Gulf of California (Thomson *et al.* 1979) to Ecuador (Béarez 1996), including southern tip of Baja California (Thomson *et al.* 1979), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–30 m (3–98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Haemulon steindachneri (Jordan & Gilbert, 1882). **Latin Grunt.** To 34.7 cm (13.7 in) TL (Rojo-Vázquez *et al.* 2009). Atlantic and Pacific Oceans (Lindeman in Carpenter 2003); Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru, including Gulf of California (De La Cruz-Agüero *et al.* 1997). Depth: 1–75 m (3–246 ft) (min.: Gonzáles-Acosta *et al.* 1999; max.: Robertson and Allen 2002). Lindeman in Carpenter (2003) notes that the taxonomic status of this species is unresolved.

Haemulopsis axillaris (Steindachner, 1869). Axil Grunt or **Yellowstripe Grunt**. To 37 cm (14.6 in) TL (Coello *et*

al. 2021). San Diego Bay, southern California (Steve Wozniak, pers. comm. to M.L.); north of Boca de Soledad (25°18'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Béarez 1996), including Gulf of California (Robertson and Allen 2015). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 2–113 m (17–371 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Haemulopsis elongatus (Steindachner, 1879). **Elongate Grunt** or Sharpsnout Grunt. To 44.5 cm (17.5 in) TL (Rojo-Vázquez *et al.* 2009). Walker *et al.* (2020) report the catch of what was likely this species from San Diego Bay, southern California; Boca Soledad (25°12.2'N, 112°07.7'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Béarez 1996), including Gulf of California (Robertson and Allen 2015). Depth: 0–66 m (217 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Haemulopsis leuciscus (Günther, 1864). **Raucous Grunt** or White Grunt. To 41 cm (16.1 in) TL (Rojo-Vázquez *et al.* 2009). Walker *et al.* (2020) report the catch of what was likely *Haemulopsis axillaris* (Steindachner, 1869) from San Diego Bay, southern California, but note that the specimen may have been a small *H. leuciscus*; Bahía de San Quintin, northern Baja California (Rosales-Casian and Ruiz-Campos 1999) to Peru (Robertson and Allen 2015), including Gulf of California (McKay and Schneider in Fischer *et al.* 1995). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 0–134 m (440 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Haemulopsis nitida (Steindachner, 1869). **Shining Grunt**, Shortspine Grunt, or Silver Grunt. To 30 cm (11.8 in) TL (McKay and Schneider in Fischer *et al.* 1995). Bahía San Juanico (26°13'N, 112°28'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Velasco and Thiel 2002), including Gulf of California (McKay and Schneider in Fischer *et al.* 1995). Depth: 0–50 m (164 ft) (min.: Robertson and Allen 2002; max.: Velasco and Thiel 2002). Frequently seen as *Haemulopsis nitidus* (Fricke *et al.* 2020).

Microlepidotus inornatus Gill, 1862. **Wavyline Grunt**. To 45 cm (17.7 in) TL (Allen and Robertson 1994). Newport Bay, southern California (Love *et al.* 2005) into Gulf of California (McKay and Schneider in Fischer *et al.* 1995), and at least as far south as Manzanillo, Mexico (Thomson *et al.* 1979). Depth: 1–30 m (3–98 ft) (min.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; max.: Robertson and Allen 2015).

Orthopristis chalceus (Günther, 1864). Brassy Grunt, Brassy Humpback Grunt, or **Humpback Grunt**. To 45 cm (17.7 in) TL (McKay and Schneider in Fischer *et al.* 1995). Laguna San Ignacio, southern Baja California (Danemann and De La Cruz-Agüero 1993) to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 0–100 m (328 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Orthopristis reddingi Jordan & Richardson, 1895. **Bronzestriped Grunt**. To 30 cm (11.8 in) TL (Allen and Robertson 1994). Isla de Cedros (Ramírez-Valdez *et al.* 2015), and Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (De La Cruz-Agüero *et al.* 1996); Gulf of California (McKay and Schneider in Fischer *et al.* 1995) to southern Mexico (Robertson and Allen 2015). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 103 m (8–338 ft) (min.: Thomson and Lehner 1976; max.: Amezcua Linares 1996).

Rhencus macracanthus (Günther, 1864). Bigspine Grunt or **Longspine Grunt**. To 46.4 cm (18.3 in) TL (Hernández-Padilla *et al.* 2020). Boca Soledad (25°23'N, 112°06'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Béarez 1996), including Gulf of California (Robertson and Allen 2002). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 0–59 m (192 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). We follow Tavera *et al.* (2018) in moving *Pomadasys macracanthus* (Günther, 1864) to the genus *Rhencus.*

Rhencus panamensis (Steindachner, 1876). Highfin Grunt or **Panamic Grunt**. To 39 cm (15.4 in) TL (Jiménez Prado and Béarez 2004). Laguna San Ignacio, southern Baja California (Barjau-González 2003) and Gulf of California (McKay and Schneider in Fischer *et al.* 1995) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2015). Depth: 3–107 m (9–351 ft) (min.: Personal

communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996). We follow Tavera *et al.* (2018) in moving *Pomadasys panamensis* (Steindachner, 1876) to the genus *Rhonciscus.*

Rhonciscus bayanus (Jordan & Evermann, 1898). Freshwater Grunt or **Purplemouth Grunt**. To 41 cm (16.1 in) SL (Jiménez Prado *et al.* 2015). Bahía Magdalena, southern Baja California (Rodríguez-Romero *et al.* 2011) to Rio Tumbes, Peru (Chirichigno 1974), and at mouth of Gulf of California (Robertson and Allen 2002). Marine, brackish and fresh waters (Jiménez-Prado *et al.* 2014); depth: 0–10 m (33 ft) (Robertson and Allen 2002). We follow Tavera *et al.* (2018) in moving *Pomadasys bayanus* Jordan & Evermann, 1898 to the genus *Rhonciscus.*

Rhonciscus branickii (Steindachner, 1879). Branick's Grunt or **Sand Grunt.** To 31.5 cm (12.4 in) TL (Rodríguez-Romero *et al.* 2008). North of Boca Soledad (25°19'N, 112°06'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno 1974), including Gulf of California (Castro-Aguirre *et al.* 1999). Bays, estuaries and river mouths (Allen and Robertson 1994); depth: 0–165 m (541 ft) (min.: Robertson and Allen 2002; max.: Robertson *et al.* 2017). We follow Tavera *et al.* (2018) and move *Pomadasys branickii* to the genus *Rhonciscus. Pomadasys branickii* (Steindachner, 1879) in Fricke *et al.* (2020).

Xenichthys xanti Gill, 1863. **Longfin Salema**. To 25.4 cm (10 in) TL (Amezcua Linares 1996). Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chimbote, Peru (Chirichigno and Vélez 1998), including southern Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 0–107 m (33–351 ft) (min.: Robertson and Allen 2015; max.: Amezcua Linares 1996).

Family Sparidae—Porgies

Calamus brachysomus (Lockington, 1880). **Pacific Porgy**. To about 61 cm (24 in) TL (Miller and Lea 1972). Oceanside, southern California (Miller and Lea 1972) to northern Chile (Sielfeld *et al.* 2010), including Islas Galápagos, Gulf of California (Miller and Lea 1972), and Isla Malpelo (Robertson and Allen 2002). Depth: surface (Miller and Lea 1972), 1–80 m (4–262 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Bianchi in Fischer *et al.* 1995).

Family Polynemidae—Threadfins

Polydactylus approximans (Lay & Bennett, 1839). **Blue Bobo**. To 40 cm (15.7 in) TL (Amezcua Linares 1996). Monterey Bay, central California (Follett 1948) to Chile (Pequeño 1989), including Gulf of California (Schneider in Fischer *et al.* 1995), and Islas Galápagos (Miller and Lea 1972). Inshore (Miller and Lea 1972); depth: 0–107 m (351 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996). In marine, brackish and fresh waters (Velasco and Thiel 2002, Argulo *et al.* 2020).

Polydactylus opercularis (Gill, 1863). **Yellow Bobo**. To 50 cm (19.7 in) TL (Jiménez Prado and Béarez 2004). Los Angeles Harbor, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989), including Gulf of California (Miller and Lea 1972). Inshore (Miller and Lea 1972); marine and brackish waters (Fricke *et al.* 2020); depth: 0–107 m (351 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Family Sciaenidae—Drums and Croakers

Atractoscion nobilis (Ayres, 1860). **White Seabass**. To 166 cm (65.4 in) TL (Robertson and Allen 2002). Juneau, south-eastern Alaska (Mecklenburg *et al.* 2002) to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.), and Gulf of California (Walford 1937). Depth: intertidal to 245 m (804 ft) (min.: Carlisle *et al.* 1960; max.: Aalbers 2015).

Bairdiella icistia (Jordan & Gilbert, 1882). **Bairdiella**, Romeo Croaker, or Ronco Croaker. To 30 cm (11.8 in) TL (Allen and Robertson 1994). Laguna San Ignacio, southern Baja California (Danemann and De La Cruz-

Agüero 1993) to Guatamala (Robertson and Allen 2015), including Gulf of California (Chao in Fischer *et al.* 1995). Inshore, including estuaries (Allen and Robertson 1994); depth: to at least 22 m (72 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Cheilotrema saturnum (Girard, 1858). **Black Croaker**. To 45 cm (17.7 in) TL (Robertson and Allen 2002). Point Conception, California to southern Baja California (23°23'N, 110°12'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Gulf of California (Chao in Fischer *et al.* 1995). There is an extreme outlier record from Oregon (44°47'N, 124°43'W) (NWFSC-FRAM), but it is without documentation. Depth: surface (Miller and Lea 1972), intertidal to 271 m (889 ft) (min.: Carlisle *et al.* 1960; max.: NWFSC-FRAM).

Corvula macrops (Steindachner, 1875). Bigeye Croaker, Large-eye Croaker, or **Vacuocua Croaker**. To 25 cm (9.8 in) TL (Allen and Robertson 1994). Bahía Santa Maria (24°40'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Grove and Lavenberg 1997), probably as far south as northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Chao in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Inshore (Allen and Robertson 1994); depth: 2–18 m (8–60 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Sometimes dated 1876 (Fricke *et al.* 2020).

****Cynoscion orthonopterus*** Jordan & Gilbert, 1882. **Gulf Corvina**. To 70 cm (27.6 in) (Robertson and Allen 2008). Chileno Bay, tip of Baja California (John Snow, pers. comm. to M.L.), Gulf of California (Robertson and Allen 2008). Marine and brackish waters (Fricke *et al.* 2020); depth: 1–86 m (3–282 ft) (min.: Robertson and Allen 2008; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Cynoscion parvipinnis Ayres, 1861. **Shortfin Corvina** or Shortfin Weakfish. To 60 cm (23.6 in) TL (Allen and Robertson 1994). Huntington Beach, southern California to Mazatlán, Mexico (Eschmeyer and Herald 1983), including Gulf of California (Miller and Lea 1972). Depth: 1–101 m (3–331 ft) (min.: Allen 1999; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Cynoscion phoxocephalus Jordan & Gilbert, 1882. **Cachema Weakfish**. To 60 cm (23.6 in) TL (Chao in Fischer *et al.* 1995). Laguna San Ignacio, southern Baja California (Kosegarten-Villarreal *et al.* 2016); southeast Gulf of California to Peru (Robertson and Allen 2015). Depth: 1–30 m (3–98 ft) (Robertson and Allen 2015).

Cynoscion reticulatus (Günther, 1864). **Striped Corvina** or Striped Weakfish. To 90 cm (35.4 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Robertson and Allen 2002), including Gulf of California (Chao in Fischer *et al.* 1995). Estuaries (Allen and Robertson 1994); depth: surface (nightlight; Personal Communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–107 m (3–351 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Cynoscion squamipinnis (Günther, 1867). Scalefin Weakfish, **Scalyfin Corvina**, or Yellowmouth Weakfish. To 64 cm (25.2 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Puerto Pizarro, Peru (Chirichigno 1974), including Gulf of California (Chao in Fischer *et al.* 1995). Inshore waters, occasionally estuaries (Allen and Robertson 1994); depth: 1–30 m (3–99 ft) (Robertson and Allen 2002).

Cynoscion xanthulus Jordan & Gilbert, 1882. **Orangemouth Corvina** or Orangemouth Weakfish. To 90 cm (35.4 in) TL (Allen and Robertson 1994). Central Baja California (Chao in Fischer *et al.* 1995) to Chiapas, Mexico (González-Acosta *et al.* 2018), including Gulf of California (Chao in Fischer *et al.* 1995). Marine and brackish waters (Fricke *et al.* 2020); depth: 1–50 m (3–164 ft) (min.: González-Acosta *et al.* 1999; max.: Robertson and Allen 2002).

Elattarchus archidium (Jordan & Gilbert, 1882). **Bluestreak Drum**. To about 25 cm (9.8 in) TL (Allen and Robertson 1994). North of Boca Soledad (25°18'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Isla Lobos de Tierra, Peru (Chirichigno 1974), including Gulf of California (Chao in Fischer *et al.* 1995). Depth: 2–50 m (6–164 ft) (min.: Chao in Fischer *et al.* 1995; max.: Amezcua Linares 1996).

Genyonemus lineatus (Ayres, 1855). **White Croaker**. To 41 cm (16.3 in) TL (Eschmeyer and Herald 1983). Barkley

Sound, British Columbia (Eschmeyer and Herald 1983) to Bahía Magdalena, southern Baja California (Miller and Lea 1972). Depth: intertidal to 238 m (10–781 ft) (min.: Carlisle *et al.* 1960; max.: NWFSC-FRAM).

Isopisthus remifer Jordan & Gilbert, 1882. **Bigeye Corvina** or Silver Weakfish. To 39.1 cm (15.4 in) TL (Hernández-Padilla *et al.* 2020). Bahía San Juanico (26°03'N, 112°18'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Allen and Robertson 1994), including Gulf of California (Robertson and Allen 2002). Depth: 4–124 m (12–341 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996). Considered a junior synonym of *Isopisthus altipinnis* (Steindachner 1866) by some (Parenti 2020).

Larimus acclivis Jordan & Bristol, 1898. **Steeplined Drum**. To 34.3 cm (13.5 in) TL (Hernández-Padilla *et al.* 2020). Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015) to Talero, Peru (Chirichigno 1974), including Gulf of California (Chao in Fischer *et al.* 1995). Depth: 1–251 m (3–823 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Larimus argenteus (Gill, 1863). **Silver Drum**. To 36.1 cm (14.2 in) (Coello *et al.* 2021) or 52 cm (20.5 in) TL (Jiménez Prado and Béarez 2004). Southern Baja California (Chao in Fischer *et al.* 1995) to Tumbes, Peru (Chirichigno and Vélez 1998), including lower Gulf of California (Chao in Fischer *et al.* 1995). Inshore waters and estuaries (Allen and Robertson 1994); depth: 1–50 m (3–164 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Larimus effulgens Gilbert, 1898. **Shining Drum**. To 30 cm (11.8 in) TL (Jiménez Prado and Béarez 2004). Southern Baja California (Chao in Fischer *et al.* 1995) to Puerto Pizarro, Peru (Chirichigno 1974), including lower Gulf of California (Chao in Fischer *et al.* 1995). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–30 m (3–98 ft) (min.: Robertson and Allen 2002; max.: Velasco and Thiel 2002); also enters river mouths (Velasco and Thiel 2002).

Larimus pacificus Jordan & Bollman, 1890. **Pacific Drum**. To 32 cm (12.6 in) TL (Jiménez Prado and Béarez 2004). Southern Baja California (24°54.4'N, 112°20'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Coquimbo, central Chile (Kong and Valdés 1990), including Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–273 m (3–895 ft) (min.: Robertson and Allen 2002; max.: Zeballos Flor *et al.* 1998).

Menticirrhus elongatus (Günther, 1864). Slender Kingcroaker or **Slender Kingfish**. To 70 cm (28 in) TL (Amezcua Linares 1996). Bahía de Ballenas (26°44'N, 113°27'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno and Vélez 1998), including southern Gulf of California (Chao in Fischer *et al.* 1995). Depth: intertidal to 66 m (216 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Menticirrhus nasus (Günther, 1868). Highfin King Croaker or **Highfin Kingfish**. To 50 cm (19.7 in) TL (Allen and Robertson 1994). Laguna de San Ignacio, southern Baja California (De La Cruz-Agüero and Cota-Gómez 1998) into the Gulf of California (Chao in Fischer *et al.* 1995) to Caleta La Cruz, Peru (Chirichigno and Vélez 1998). Estuaries and nearshore waters (Allen and Robertson 1994); depth: 1–146 m (3–479 ft) (min.: Robertson and Allen 2002; max.: Zeballos Flor *et al.* 1998).

Menticirrhus panamensis (Steindachner, 1876). Panama Kingcroaker or **Panama Kingfish**. To 75 cm (29.5 in) TL (Robertson and Allen 2008). Laguna San Ignacio (26°50'N, 113°10'W), southern Baja California (Danemann and De La Cruz-Agüero 1993) to Chile (Allen and Robertson 1994), including Gulf of California (Chao in Fischer *et al.* 1995). Depth: 1–107 m (8–351 ft) (min.: Robertson and Allen 2015; max.: Amezcua Linares 1996).

Menticirrhus undulatus (Girard, 1854). **California Corbina**. To 83.6 cm (32.6 in) TL (Love *et al.* 2005). Off Morro Rock, central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Gulf of California (Miller and Lea 1972); also perhaps San Francisco Bay, northern California (Burton and Lea 2019). Also reported from Ecuador (Béarez 1996) to Arica, northern Chile (Sielfeld *et al.* 2010). Depth: intertidal to 27 m (90 ft) (min.: Miller and Lea 1972; max.: Allen *et al.* 2002).

Micropogonias altipinnis (Günther, 1864). **Golden Croaker**, Highfin Corvina, or Tailfin Croaker. To 66 cm (30 in)

(Robertson and Allen 2015) or 80 cm (31.5 in) TL (Jiménez Prado and Béarez 2004). North of Boca de Soledad (25°18'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Talara, Peru (Chirichigno and Vélez 1998), including Gulf of California (Chao in Fischer *et al.* 1995). Estuarine and marine waters (Chao in Fischer *et al.* 1995); depth: 1–104 m (3–341 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Micropogonias ectenes (Jordan & Gilbert, 1882). **Slender Croaker**. To 40 cm (15.7 in) TL (Allen and Robertson 1994). About Bahía Asunción, southern Baja California (Robertson and Allen 2015) to Acapulco, southern Mexico (Robertson and Allen 2002), including Gulf of California (Chao in Fischer *et al.* 1995). Coastal brackish and marine waters (Allen and Robertson 1994, Chao in Fischer *et al.* 1995); depth: 1–33 m (3–109 ft) (min.: González-Acosta *et al.* 1999; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Odontoscion xanthops Gilbert, 1898. **Yelloweye Croaker**. To 30 cm (11.8 in) TL (Allen and Robertson 1994). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and south-eastern Gulf of California (Robertson and Allen 2008) to Tumbes, Peru (Chirichigno and Vélez 1998). Estuaries and shallow coastal waters (Chao in Fischer *et al.* 1995); depth: 2–30 m 8–(99 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Ophioscion vermicularis (Günther, 1867). Vermiculated Croaker or **Wormlined Croaker**. To at least 35 cm (13.8 in) TL (Robertson and Allen 2002). Bahía Magdalena (Robertson and Allen 2015) to Punta Marquez (listed as Punta Marquis; 23°57'N, 110°51'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Mazatlan, Mexico (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Tumbes, Peru (Chirichigno and Veléz 1998). Depth: 1–20 m (3–66 ft) (Robertson and Allen 2002).

Paralonchurus goodei Gilbert, 1898. **Angel Croaker**. To about 35 cm (13.8 in) TL (Robertson and Allen 2000). Laguna San Ignacio, southern Baja California (Kosegarten-Villarreal *et al.* 2016) and lower eastern Gulf of California (Robertson and Allen 2002) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998). Marine and brackish waters (Fricke *et al.* 2020); depth: 1–30 m (3–98 ft) (Robertson and Allen 2002).

***Pareques* sp A**. **Rock Croaker**. To 30 cm (11.8 in) TL (Robertson and Allen 2002). Isla de Cedros, central Baja California (M.L., unpubl. data), and on the mainland from about Punta Eugenia, central Baja California (Robertson and Allen 2015) to Peru (Allen and Robertson 1994). Depth: 10–35 m (33–115 ft) (Robertson and Allen 2002). Formerly referred to as *Pareques viola*. *Pareques viola* occurs as far north as Panama (Robertson and Allen 2002).

Roncador stearnsii (Steindachner, 1875). **Spotfin Croaker**. To 68.6 cm (27 in) TL (Miller and Lea 1972). Point Conception, California (Miller and Lea 1972) to tip of Baja California (Robertson and Allen 2002) and eastern Gulf of California (Robertson and Allen 2015). One individual reported from south San Francisco Bay (Pearson 1989). Depth: intertidal to 22 m (73 ft) (min.: Miller and Lea 1972; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Sometimes dated as 1876 (Fricke *et al.* 2020).

Seriphus politus Ayres, 1860. **Queenfish**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Burrard Inlet, Vancouver Island, British Columbia (Peden and Hughes 1986) to southern Gulf of California (Chao in Fischer *et al.* 1995). Depth: intertidal to 181 m (594 ft) (min.: Carlisle *et al.* 1960; max.: M.L., unpubl. data).

Stellifer ericymba (Jordan & Gilbert, 1882). Chimbera Stardrum or **Hollow Stardrum**. To 20.1 cm (7.9 in) TL (Flores-Ortega 2017). Laguna de San Ignacio, southern Baja California (De La Cruz-Agüero and Cota Gómez 1998) to Chile (Pequeño 1989). Depth: 1–104 m (3–341 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996). The spelling *Stellifer erycimba* is occasionally seen.

Stellifer wintersteenorum Chao, 2001. **Amigo Stardrum**. To 21.3 cm (8.4 in) (John Snow, pers. comm. to M.L.). Puerto Adolfo Lopez Mateos, southern Baja California (John Snow, pers. comm. to M.L.); eastern Gulf of California (Robertson and Allen 2015) to Chiapas, Mexico (González-Acosta *et al.* 2018). Depth: 3–42 m (10–138 ft) (min.: Robertson and Allen 2015; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Umbrina analis Günther, 1868. **Longspine Croaker** or Longspine Drum. To 35 cm (13.8 in) TL (Chao in Fischer *et al.* 1995). Southern Baja California to Colombia, including lower Gulf of California (Chao in Fischer *et al.* 1995). Depth: 1–50 m (3–164 ft) (Robertson and Allen 2002).

Umbrina bussingi López, 1980. **Bigeye Croaker**. To 38.8 cm (15.5 in) TL (Béarez 2001). Southern Baja California to southern Colombia (Béarez 2001), including mouth of Gulf of California (Robertson and Allen 2002). Depth: 20–183 m (66–600 ft) or more (min.: Amezcua Linares 1996; max.: Walker and Radford 1992).

Umbrina dorsalis Gill, 1862. **Longfin Croaker** or Longfin Drum. To 40 cm (15.7 in) TL (Jiménez Prado and Béarez 2004). About Bahía Asunción, southern Baja California (Robertson and Allen 2015) to northern Peru (Robertson and Allen 2015), including southern parts of Gulf of California (Walker and Radford 1992). Depth: intertidal to at least 25 m (82 ft) (min.: Walker and Radford 1992; max; Jiménez Prado and Béarez 2004).

Umbrina roncador Jordan & Gilbert, 1882. **Yellowfin Croaker**. To 55.6 cm (21.9 in) TL (Love *et al.* 2005). Point Conception, California (Miller and Lea 1972) to Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994), and in Gulf of California (Robertson and Allen 2002); old records to San Francisco (Miller and Lea 1972). Depth: intertidal to 46 m (150 ft; Miller and Lea 1972).

Umbrina wintersteeni Walker & Radford, 1992. **Cortez Croaker** or Wintersteen Drum. To 35 cm (13.8 in) TL (Robertson and Allen 2002). Near Boca de Soledad, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and into Gulf of California (Chao in Fischer *et al.* 1995). Depth: 1–15 m (3–50 ft) (min.: Robertson and Allen 2002; max.: Robertson and Allen 2002).

Umbrina xanti Gill, 1862. Golden Drum, Polla Drum, or **Surf Croaker**. To 46.5 cm (18.3 in) TL (Amezcua Linares 1996). About Punta Eugenia, southern Baja California (Robertson and Allen 2015) to Chipana, Chile (Kong and Valdés 1990), including Gulf of California (Chao in Fischer *et al.* 1995). Depth: intertidal to 107 m (351 ft) (min.: Walker and Radford 1992; max.: Amezcua Linares 1996).

Family Mullidae—Goatfishes

Mulloidichthys dentatus (Gill, 1862). **Mexican Goatfish**. To 40 cm (15.7 in) (John Snow, pers. comm. to M.L.). At least as far north as Todos Santos, southern Baja California (23°24.6'N, 110°13.8'W) (John Snow, pers. comm. to M.L.) to Arica, northern Chile (Sielfelt *et al.* 2010), including Gulf of California and offshore islands (Robertson and Allen 2008). Depth: 1–110 m (3–361 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max. Aburto-Oropeza *et al.* 2011).

****Mulloidichthys vanicolensis*** (Valenciennes, 1831). **Yellowfin Goatfish**. To 31 cm (12.4 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to southern Japan (Hatooka in Nakabo 2002); tip of Baja California and several locations in Central America (Robertson and Allen 2002). Depth: intertidal to 115 m (377 ft) (min.: Arndt and Fricke 2019; max.: Robertson and Allen 2002).

Pseudupeneus grandisquamis (Gill, 1863). **Bigscale Goatfish** or Red Goatfish. To about 30.6 cm (12 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). San Onofre, southern California to Chile (Eschmeyer and Herald 1983), including Gulf of California (Schneider in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–67 m (3–220 ft) (min.: Robertson and Allen 2002; max.: Zeballos Flor *et al.* 1998). The *Mulloidichthys dentatus* noted from southern California (Eschmeyer and Herald 1983) was based on a misidentification of *P. grandisquamis* (Lea and Rosenblatt 2000).

Family Kyphosidae—Sea Chubs

Girella nigricans (Ayres, 1860). **Opaleye**. To 66 cm (26 in) TL (Eschmeyer and Herald 1983). Otter Rock, Oregon (Bond and Olson 1985) to Cabo San Lucas, southern Baja California (Miller and Lea 1972), with an isolated population in the Gulf of California (Robertson and Allen 2002). Depth: intertidal to about 32 m (105 ft) (min.: Eschmeyer and Herald 1983; max.: M.L., unpubl. data); pelagic juveniles near surface, often associated with floating material (Watson in Moser 1996). Occasionally found in estuaries (Ruiz-Campos *et al.* 2000).

****Girella simplicidens*** Osburn & Nichols, 1916. **Gulf Opaleye**. To 46 cm (18.1 in). Tip of Baja California and Gulf of California. Depth: 1–15 m (3–49 ft). All in Robertson and Allen (2008).

Kyphosus azureus (Jenkins & Evermann, 1889). **Zebraperch** or Zebra Sea Chub. To 45 cm (17.7 in) TL (Robertson

and Allen 2002). Klamath River Estuary, northern California (Fritzsche *et al.* 1991) to Gulf of California (Miller and Lea 1972). Depth: intertidal to 15 m (49 ft) (min.: Miller and Lea 1972; max.: Robertson and Allen 2002). Recently as *Hermosilla azurea* Jenkins & Evermann, 1889.

Kyphosus elegans (Peters, 1869). Cortez Chub or **Cortez Sea Chub**. To 53 cm (20.9 in) TL (Jiménez Prado and Béarez 2004). Widely found throughout Pacific (Fricke *et al.* 2020); western Pacific as far north as southern Japan (Fricke *et al.* 2020); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and in Gulf of California (Sommer in Fischer *et al.* 1995) to Peru (Robertson and Allen 2015), including Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Romero-Berny *et al.* 2021); often associates with floating material: depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 40 m (131 ft) (min.: Grove and Lavenberg 1997; max.: Jiménez Prado and Béarez 2004).

Kyphosus lutescens (Jordan & Gilbert, 1882). **Revillagigedos Sea Chub**. To 40 cm (15.7 in) (Robertson and Allen 2008). Rocas Alijos and Islas Revillagigedo (Gotshall 1998). Depth: 0–20 m (656 ft) (Robertson and Allen 2008). Perhaps a synonym of *Kyphosus sectatrix* (Linnaeus, 1758) (Knudsen and Clements 2013).

Kyphosus ocyurus (Jordan & Gilbert, 1882). **Bluestriped Chub** or Rainbow Sea Chub. To 70 cm (27.6 in) TL (Robertson and Allen 2002). Mostly eastern Pacific Ocean; one record from Japan (Araga in Masuda *et al.* 1984); off Diablo Canyon, central California (Andrew Harmer, pers. comm. to M.L.) to Ecuador (Béarez 1996), apparently just into Gulf of California (23°06'N, 109°12'W) (John Snow, pers. comm. to M.L.), but including Islas Galápagos (Grove and Lavenberg 1997). Inshore and pelagic around floating material (Allen and Robertson 1994); depth: 0–30 m (98 ft) (Robertson and Allen 2008). Smaller individuals associate with drifting material (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Recently as *Sectator ocyurus* (Jordan and Gilbert, 1882).

Kyphosus vaigiensis (Quoy & Gaimard, 1825). **Brassy Chub**, Blue-bronze Chub, or Striped Sea Chub. To 49.7 cm (19.6 in) FL (Kamikawa *et al.* 2015). Circumglobal (Fricke *et al.* 2020); western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); Monterey Bay, California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Antofagasta, northern Chile (Sielfeld *et al.* 2010), including Islas Galápagos (Grove and Lavenberg 1997), and Gulf of California (Galván-Magaña *et al.* 1996). Depth: surface to 24 m (79 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Fricke *et al.* 2019). Pacific Coast individuals recently called *Kyphosus analogus* (Gill, 1862) and we follow Knudsen and Clements (2013) in the synonymy.

Medialuna californiensis (Steindachner, 1875). **Halfmoon**. To 48.3 cm (19 in) TL (Miller and Lea 1972). Vancouver Island, British Columbia (Nagtegaal and Farlinger 1981) to south-western corner of Gulf of California (Robertson and Allen 2002). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 44 m (144 ft) (min.: Allen 1999; max.: M.L., unpubl. data). Date sometimes seen as 1876 (Fricke *et al.* 2020).

Family Chaetodontidae—Butterflyfishes

Chaetodon humeralis Günther, 1860. **Threebanded Butterflyfish**. To 26.4 cm (10.6 in) TL (Amezcua Linares 1996). King Harbor, southern California (Pondella *et al.* 1998) to Chile (Pequeño 1989), including Islas Galápagos (Miller and Lea 1972), and Gulf of California (Galván-Magaña *et al.* 1996); one Hawaiian record (Fricke *et al.* 2020). Marine and occasionally brackish waters (Romero-Berny *et al.* 2021); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 107 m (351 ft) (minimum: Castellanos-Galindo *et al.* 2014; max.: Amezcua Linares 1996).

Forcipiger flavissimus Jordan & McGregor, 1898. **Forcepsfish** or Longnose Butterflyfish. To 22 cm (8.7 in) TL (Allen and Robertson 1994). Indo-Pacific; western Pacific Ocean north to Japan (Ida in Masuda *et al.* 1984); Rocas Alijos, southern Baja California (Gotshall 1996) and Cabo San Lucas and in Gulf of California (Thomson *et al.* 1979) to Chile (Pequeño 1989), and Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Depth: 1–145 m (3–476 ft) (min.: Robertson and Allen 2002; max.: Ralston *et al.* 1986).

Johnrandallia nigrirostris (Gill, 1862). **Barberfish**. To 20.7 cm (8.1 in) TL (Nieto-Navarro *et al.* 2010). Islas San Benito and Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015), and as far northward on mainland as Punta Abreojos (26°43'N, 113°31'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California and Islas Galápagos (Grove and Lavenberg 1997). Depth: 0.9–50 m (3–164 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Sánchez-Jiménez *et al.* 2018).

Prognathodes falcifer (Hubbs & Rechnitzer, 1958). **Scythe Butterflyfish** or Scythe-marked Butterflyfish. To 17 cm (6.8 in) TL (Robertson and Allen 2002). Santa Cruz Island, southern California (Richards and Engle 2001), along the outer Baja California Coast (Benjamin Frable), eastern Gulf of California (Benjamin Frable, pers. comm. to M.L.), Islas Revillagigeos (Benjamin Frable), and Isla Galápagos (McCosker and Rosenblatt, 2010). Depth: 3–270 m (10–886 ft) (min.: Pérez-España *et al.* 1996; max.: McCosker *et al.* 1997).

Family Pomacanthidae—Angelfishes

Holacanthus clarionensis Gilbert, 1890. **Clarion Angelfish**. To 30.3 cm (11.9 in) TL (John Snow, pers. comm. to M.L.). Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Bahía Magdalena, southern Baja California (Hernández-Velasco *et al.* 2016), southern tip of Baja California, Isla Clárion (Krupp and Schneider in Fischer *et al.* 1995), and other offshore islands (Robertson and Allen 2002). Depth: 0–30 m (98 ft) (min.: Robertson and Allen 2002; max.: Allen and Robertson 1994).

Holacanthus passer Valenciennes, 1846. **King Angelfish**. To about 36 cm (14.2 in) TL (Robertson and Allen 2008). Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California (Krupp and Schneider in Fischer *et al.* 1995) to Talara, Peru (Chirichigno 1974), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–80 m (3–262 ft) or more (min.: Robertson and Allen 2002; max.: Allen and Robertson 1994).

Pomacanthus zonipectus (Gill, 1862). **Cortez Angelfish**. To about 50 cm (19.7 in) TL (Grove and Lavenberg 1997). Redondo Beach, southern California (Lea and Rosenblatt 2000) to northern Gulf of California (Krupp and Schneider in Fischer *et al.* 1995) to Máncora, Peru (Chirichigno 1974), and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 50 m (164 ft) (min.: Weaver 1970; max.: Amezcua Linares 1996).

Family Pentacerotidae—Armorheads

Pentaceros wheeleri (Hardy, 1983). **North Pacific Armorhead** or Pelagic Armorhead. To 53 cm (21 in) TL (Hart 1973). Japan to Hawai'i (Hardy 1983), and Gulf of Alaska as far west as south of eastern Aleutian Islands (Mecklenburg *et al.* 2002), and as far north as Resurrection Bay (Catherine W. Mecklenburg, unpubl. data), to central California (Eschmeyer and Herald 1983). Reported in error from Bering Sea (see discussion in Mecklenburg *et al.* (2002:658–659)). Pelagic and benthic; depth: surface to 1,060 m (3,478 ft) (Parin and Pakhorukov 2003). Includes North Pacific records of *Pentaceros richardsoni* Smith, 1844, and *Pseudopentaceros richardsoni* (Smith, 1844). see synonymy in Humphreys *et al.* (1989). Previously reported from the Indian Ocean, but those records represent a different species; pelagic and benthic records of *P. wheeleri* were mapped by Boehlert and Sasaki (1988).

Family Kuhliidae—Flagtails

Kuhlia mugil (Forster, 1801). **Barred Flagtail** or Fivebar Flagtail. To 50 cm (19.7 in) TL (Robertson and Allen 2008). Indo-Pacific (Randall and Randall 2001); western Pacific Ocean north to Japan (Mochizuki in Masuda *et al.* 1984); Cabo San Lucas, southern Baja California (De La Cruz-Agüero *et al.* 1997); Costa Rica to Colombia (Allen and Robertson 2015), including Islas Galápagos and other offshore islands (Allen and Robertson 2015). Marine, brackish, and fresh waters (Fricke *et al.* 2011); depth: surface (nightlight; Personal communication:

Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to at least 26 m (85 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Oplegnathidae—Knifejaws

Oplegnathus fasciatus (Temminck & Schlegel, 1844). **Barred Knifejaw**, Striped Knifejaw, or Striped Beak Fish. To 80 cm (31.5 in) TL (Ta *et al.* 2018). Primarily Japan, Korea, Taiwan, and Hawai'i (Nakabo 2002); reports of occasional individuals from Malta, Mediterranean Sea (Schembri *et al.* 2010); scattered localities in Washington, Oregon, and California as far south as Monterey Bay, central California, entering the eastern Pacific associated with debris from the 2011 Great Japan Earthquake and Tsunami (Ta *et al.* 2018). Depth: intertidal to 10 m (33 ft) (min.: Kwun *et al.* 2017; max.: Randall 2007).

Family Cirrhitidae—Hawkfishes

Cirrhitichthys oxycephalus (Bleeker, 1855). **Coral Hawkfish**. To probably no larger than 10 cm (3.9 in) TL (Grove and Lavenberg 1997). Indo-Pacific; western Pacific Ocean north to Japan (Hayashi in Nakabo 2002); Rocas Alijos, southern Baja California (Gotshall 1998), and 64 km (40 mi) north-west of Cabo San Lucas, southern Baja California (John Snow, pers. comm. to M.L.), into middle Gulf of California (Bussing and Lavenberg in Fischer *et al.* 1995), to Peru (Robertson and Allen 2015), including Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Depth: intertidal to 65 m (213 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Sánchez-Jiménez *et al.* 2018).

Cirrhitus rivulatus Valenciennes, 1846. **Giant Hawkfish** or Hieroglyphic Hawkfish. To 62 cm (24.4 in) (Jiménez Prado and Béarez 2004). Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) to northern Peru (Robertson and Allen 2015), including Gulf of California (Bussing and Lavenberg in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1975). Depth: intertidal to 30 m (98 ft) (min.: Weaver 1970; max.: Robertson and Allen 2008).

Oxycirrhites typus Bleeker, 1857. **Longnose Hawkfish**. To 13 cm (5.1 in) TL (Bussing and Lavenberg in Fischer *et al.* 1995). Indo-Pacific; western Pacific Ocean north to Japan (Hayashi in Nakabo 2002); south entrance to Bahía Magdalena, southern Baja California (Daniel Gotshall, pers. comm. to M.L.) to Colombia (Allen and Robertson 1994), including Gulf of California (Bussing and Lavenberg in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and Isla Malpelo (Robertson and Allen 2002). Depth: 5–100 m (15–328 ft) (min.: Thomson *et al.* 1979; max.: Allen and Robertson 1994).

Family Cichlidae—Cichlids

*****Coptodon zillii*** (Gervais, 1848). **Redbelly Tilapia**. To 40 cm (15.7 in) SL (Froese and Pauly 2019; note that we were unable to verify this record). Long Beach Harbor area (Dill and Cordone 1997; M.L., unpubl. data). Primarily a freshwater species, *T. zillii* are periodically taken in Long Beach Harbor at least as far south as the Belmont Pier. They probably have been washed down rivers or creeks entering the harbor area. Previously as *Tilapia zillii* (Gervais, 1848).

Family Embiotocidae—Surfperches

Longo *et al.* (2018) proposed a number of species reassignments within this family and we have followed their proposals. Among other changes, we have placed the Pileperch (*Rhacochilus vacca*) in the genus *Phanerodon.* However, we also note that Longo and Bernardi (2015) stated that both Pink Seaperch (*Zalembius rosaceus*) and Rubberlip Seaperch (*Rhocochilus toxotes*) are closely related to members of the genus *Phanerodon* and might

also be more appropriately placed within that genus.

Amphistichus argenteus Agassiz, 1854. **Barred Surfperch**. To 43.2 cm (17 in) TL (Miller and Lea 1972). Bodega Bay, northern California (Miller and Lea 1972) to Bahía Santa Rosalia (28°25'N, 114°15'W), north-central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: intertidal to 80 m (262 ft) (min.: Miller and Lea 1972; max.: Bradburn *et al.* 2011); occasionally found in relatively low salinity (to 24.6 ppt) in estuaries (Ruiz-Campos *et al.* 2000).

Amphistichus koelzi (Hubbs, 1933). **Calico Surfperch**. To 32.5 cm (12.8 in) TL (Kirk Lombard, pers. comm. to M.L.). Cape Flattery, Washington (Eschmeyer and Herald 1983) to Los Ojitos (about 29'N), central Baja California (Ruiz-Campos *et al.* 2010). Depth: intertidal to 9 m (30 ft) (Miller and Lea 1972).

Amphistichus rhodoterus (Agassiz, 1854). **Redtail Surfperch**. To 40.6 cm (16 in) TL (Miller and Lea 1972). Kyuquot Channel, northwest Vancouver Island, British Columbia (Peden and Hughes 1986) to Avila Beach, central California (Dentler and Grossman 1980). Two specimens from southern California; one from near Point Dume (NWFSC-FRAM) and the other from the ocean off San Diego (Eigenmann 1892); Punta Colnett (M.L., unpubl. data) to off Punta Baja, northern Baja California (Rosales Casian 2011). Marine and brackish waters (Fricke *et al.* 2020); depth: intertidal to 7 m (24 ft) (Miller and Lea 1972). The NWFSC-FRAM database has a record of one individual caught in a bottom trawl at a depth of 73 m (239 ft); this extreme record is without documentation.

Brachyistius frenatus Gill, 1862. **Kelp Perch** or Kelp Surfperch. To 21.6 cm (8.5 in) TL (Miller and Lea 1972). Near Sitka, south-eastern Alaska (Mecklenburg *et al.* 2002) to Bahía Tortugas, central Baja California, including Isla Guadalupe (Miller and Lea 1972). Depth: intertidal to 76 m (249 ft) (min.: Hubbs and Hubbs 1954; max.: M.L., unpubl. data); primarily at middepths among columns of giant kelp (particularly *Macrocystis*) (Hubbs and Hubbs 1954). *Brachyistius aletes* Tarp, 1952 is a synonym (Longo *et al.* 2018).

Cymatogaster aggregata Gibbons, 1854. **Shiner Perch**, Shiner Surfperch, White Surf-fish, or Yellow Shiner. To 21 cm (8.3 in) TL (Toole *et al.* 2011). Saint John Baptist Bay (about 57°17'N, 135°34'W), south-eastern Alaska (Johnson *et al.* 2003) to Punta Baja, northern Baja California (Rosales-Casián 2011). Marine, brackish, and occasionally fresh waters (Moyle 2002); depth: intertidal to 310 m (1,017 ft) (min.: Hubbs 1921; max.: NWFSC-FRAM). Although the maximum depth is without documentation, we note that the DFO dataset also has several records in that depth range. The Island Perch, *Cymatogaster gracilis* Tarp, 1952, is a junior synonym.

Embiotoca caryi Agassiz, 1853. **Rainbow Seaperch** or Rainbow Surfperch. To 30.5 cm (12 in) TL (Miller and Lea 1972). Cape Mendocino, northern California (Miller and Lea 1972) to Bahía San Carlos (29°36'N, 115°12'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: intertidal to 50 m (165 ft) (min.: Hubbs 1921; max.: Love *et al.* 2005). Previously as *Hypsurus caryi*, we use *Embiotoca* based on the strong molecular and morphological evidence presented in Bernardi (2009) and Longo *et al.* (2018).

Embiotoca jacksoni Agassiz, 1853. **Black Perch** or Black Surfperch. To 39 cm (15.4 in) TL (Miller and Lea 1972). Fort Bragg, northern California (Miller and Lea 1972) to Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), including Isla Guadalupe (Miller and Lea 1972). Depth: surface (Miller and Lea 1972), intertidal to 73 m (239 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Embiotoca lateralis Agassiz, 1854. Blue Seaperch, **Striped Seaperch**, or Striped Surfperch. To 41.1 cm (16.4 in) FL (Ken Gordon, pers. comm. to M.L.). South-eastern Alaska at Klakas Inlet (reported but without documentation as far north as Wrangell (Mecklenburg *et al.* 2002)) to Arrecife Sacramento, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface (Miller and Lea 1972), intertidal to 111 m (364 ft) (min.: Chotkowski 1994; max.: NWFSC-FRAM). Reyes-Bonilla *et al.* (2010) report a California Academy of Science (CAS) record from Isla Guadalupe. However, a search of the CAS database (David Catania, pers. comm. to M.L.) does not yield this record.

Hyperprosopon argenteum Gibbons, 1854. **Walleye Surfperch**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Willapa Bay, Washington (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Punta San Rosarito (Miller and Lea 1972), and Isla de Cedros, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), including

Isla Guadalupe (Miller and Lea 1972). Depth: surface and intertidal to 182 m (597 ft) (min.: Ruiz-Campos *et al.* 2010b; max.: M.L., unpubl. data). One taken inside the mouth of a stream (24.6 ppt) during tidal inflow (Ruiz-Campos *et al.* 2000). A record from Vancouver Island is in error (Theodore Pietsch, pers. comm. to M.L.).

Hyperprosopon ellipticum (Gibbons, 1854). **Silver Surfperch**. To 26.7 cm (10.5 in) TL (Miller and Lea 1972). Brooks Peninsula, British Columbia (Peden and Hughes 1986) to Rio San Vicente, northern Baja California (Miller and Lea 1972). Depth: intertidal to 110 m (360 ft) (min.: Chotkowski 1994; max.: Miller and Lea 1972); also one report from a brackish lagoon (Saiki and Martin 2001).

Hypocritichthys analis (Agassiz, 1861). **Spotfin Surfperch**. To 20 cm (8 in) TL (Eschmeyer and Herald 1983). Seal Rock, Oregon to Bahía Blanca, central Baja California (Miller and Lea 1972). Depth: surface (Miller and Lea 1972), intertidal to 101 m (331 ft) (min.: Ruiz-Campos *et al.* 2010b; max.: Weinberg *et al.* 2002). Formerly *Hyperprosopon anale*, we follow the genetic studies of Longo and Bernardi (2015) and Longo *et al.* (2018) and place this species in the genus *Hypocritichthys*.

Micrometrus aurora (Jordan & Gilbert, 1880). **Reef Perch** or Reef Surfperch. To 18 cm (7.1 in) TL. Tomales Bay, northern California to Punta Baja, central Baja California. Depth: intertidal to 6 m (20 ft). All in Miller and Lea (1972).

Micrometrus minimus (Gibbons, 1854). **Dwarf Perch** or Dwarf Surfperch. To 16 cm (6.3 in) TL (Miller and Lea 1972). Salt Point, northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Punta Baja (central Baja California) (Ruiz-Campos *et al.* 2010b), and Isla de Cedros, central Baja California (Miller and Lea 1972). Depth: intertidal to 20 m (66 ft) (min.: Miller and Lea 1972; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). One individual collected from the mouth of a coastal creek at a salinity of 1.1 ppt (Ruiz-Campos *et al.* 2000). Also anomalously deep captures with bottom trawls reported at 46 m (150 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and 73 m (240 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Phanerodon atripes (Jordan & Gilbert, 1880). **Sharpnose Seaperch** or Sharpnose Surfperch. To 29 cm (11.5 in) TL (Miller and Lea 1972). Yaquina Bay, Oregon (Bond and Olson 1985) to Islas San Benito, central Baja California (Miller and Lea 1972). Depth: 12–229 m (40–750 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Miller and Lea 1972). Miller and Lea (1972) report that this species can be found at the surface. We note that the several records for "surface" collections that we found (e.g., Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) refer to collecting dead specimens following explosions or benthic poisoning.

Phanerodon furcatus Girard, 1854. **White Seaperch**. To 37.5 cm (14.8 in) TL (Beardsley 1969). Vancouver Island, British Columbia (Miller and Lea 1972) to Bahía San Carlos (29°36'N, 115°12'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California and Isla de Cedros and Islas San Benito (Ramírez-Valdez *et al.* 2015). Depth: intertidal to 104 m (341 ft) (min.: Carlisle *et al.* 1960; max.: NWFSC-FRAM).

Phanerodon vacca (Girard, 1855). **Pile Perch**. To 44.2 cm (17.4 in) TL (Miller and Lea 1972). Southern British Columbia (Mecklenburg *et al.* 2002) to Bahía Playa Maria (28°52'N, 114°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) on mainland, and Isla Guadalupe, central Baja California (Miller and Lea 1972), and Isla de Cedros and Isla Natividad (Ramírez-Valdez *et al.* 2015). A reported occurrence from Wrangell, south-eastern Alaska lacks documentation (Mecklenburg *et al.* 2002). Depth: intertidal to 132 m (433 ft) (min.: Chotkowski 1994; max.: DFO); reported to 210 m (690 ft) (Love *et al.* 2005), but apparently without documentation. Recently as *Rhacochilus vacca* (Girard, 1854) and *Damalichthys vacca* Girard, 1854. We follow the genetic studies of Longo and Bernardi (2015) and Longo *et al.* (2018) and place this species in the genus *Phanerodon*.

Rhacochilus toxotes Agassiz, 1854. **Rubberlip Seaperch**. To 47 cm (18.5 in) TL (Miller and Lea 1972). Mendocino County, northern California to Cabo Thurloe, southern Baja California, including Isla Guadalupe (Miller and Lea 1972). Depth: intertidal to 91 m (298 ft) (min.: Carlisle *et al.* 1960; max.: NWFSC-FRAM).

Zalembius rosaceus (Jordan & Gilbert, 1880). **Pink Seaperch** or Pink Surfperch. To 20.3 cm (8 in) TL (Miller and Lea 1972). Point Delgada, northern California (Allen and Smith 1988) to Bahía de San Cristobal, southern Baja California (Miller and Lea 1972); isolated population in Gulf of California (Miller and Lea 1972). Depth: intertidal to 276 m (905 ft) (min.: Carlisle *et al.* 1960; max.: Bradburn *et al.* 2011).

Family Pomacentridae—Damselfishes

Abudefduf declivifrons (Gill, 1862). **Mexican Night Sergeant**. To 19.5 cm (7.7 in) TL (John Snow, pers. comm. to M. L). Bahía Magdalena, southern Baja California and Gulf of California to Costa Rica (Robertson and Allen 2002). Depth: intertidal to 15 m (49 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: John Snow, pers. comm. to M.L.).

Abudefduf troschelii (Gill, 1862). **Panamic Sergeant Major**. To 22.9 cm (9 in) TL (Thomson *et al.* 1979). King Harbor, Redondo Beach, southern California (Pondella 1997) to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Schneider and Krupp in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997) and other offshore islands (Robertson and Allen 2002). Intertidal to 15 m (50 ft) (min.: Watson in Moser 1996 Robertson and Allen 2002).

Azurina hirundo Jordan & McGregor, 1898. **Swallow Damselfish**. To 17 cm (6.8 in) TL (Robertson and Allen 2002). Anacapa, Santa Catalina, and San Clemente Islands, southern California (Richards and Engle 2001); Isla Guadalupe (Allen and Robertson 1994), Islas San Benito (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Rocas Alijos, and Islas Revillagigedo (Allen and Robertson 1994). Shallow waters; depth: surface to 30 m (98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Chromis alta Greenfield & Woods, 1980. Oval Chromis, Oval Damselfish, or **Silverstripe Chromis**. To 17.3 cm (6.8 in) TL (John Snow, pers. comm. to M.L.). Santa Catalina Island, southern California (Richards and Engle 2001); Islas San Benito, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and (mainland) Arrecife Sacramento (29°40'N, 115°47'W) (M.L., unpubl. data), central Baja California to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen and Robertson 1994), Islas Galápagos (Grove and Lavenberg 1997), and many other offshore islands (Robertson and Allen 2002). Depth: 1–200 m (4–656 ft) (min.: Grove and Lavenberg 1997; max.: McCosker *et al.* 1997).

Chromis atrilobata Gill, 1862. **Scissortail Chromis** or Scissortail Damselfish. To about 13.4 cm (5.3 in) TL (Balart *et al.* 2006). Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Isla de Cedros and Islas San Benito (Ramírez-Valdez *et al.* 2015), central Baja California and (mainland) Rocas Chester (27°53'N, 115°47'W) (M.L., unpubl. data) to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Schneider and Krupp in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Intertidal to 80 m (262 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Schneider and Krupp in Fischer *et al.* 1995).

****Chromis limbaughi*** Greenfield & Woods, 1980. **Blue-and-Yellow Chromis** or Limbaugh's Damselfish. To 12 cm (4.7 in) TL (Allen and Robertson 1994). Gulf of California to southern tip of Baja California (Schneider and Krupp in Fischer *et al.* 1995) and some offshore islands (Robertson and Allen 2015). Depth: 3–120 m (10–394 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011).

Chromis punctipinnis (Cooper, 1863). **Blacksmith**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Monterey Bay, central California to Punta San Pablo, southern Baja California (Miller and Lea 1972). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 2–67 m (7–220 ft) (min.: Pondella and Allen 2002; max.: Parnell *et al.* 2020).

Hypsypops rubicundus (Girard, 1854). **Garibaldi**. To 35.6 cm (14 in) TL (Miller and Lea 1972). Monterey Bay, central California (Miller and Lea 1972) to southwest corner of Gulf of California, southern Baja California (Robertson and Allen 2002) to Islas Revillagigedo and Tres Marias (Robertson and Allen 2015). Depth: intertidal to 39 m (128 ft) (min.: Mitchell 1953; max.: M.L., unpubl. data).

Microspathodon bairdii (Gill, 1862). **Bumphead Damselfish** or Sheephead Mickey. To 31 cm (12.1 in) TL (Grove and Lavenberg 1997). Los Cerritos (23°20'N), southern Baja California (Ruiz-Campos 2010b) to Ecuador (Thomson *et al.* 2000), including Gulf of California (Schneider and Krupp in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and many other offshore islands (Robertson and Allen 2002). Depth: intertidal to 20 m (66 ft) (min.: Castellanos-Galindo *et al.* 2005; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Microspathodon dorsalis (Gill, 1862). **Giant Damselfish**. To 37.8 cm (14.9 in) TL (John Snow, pers. comm. to M.L.). Bahía Magdalena, southern Baja California (Grove and Lavenberg 1997) and central Gulf of California

to Ecuador (Béarez 1996), including Islas Galápagos (Grove and Lavenberg 1997) and many other offshore islands (Robertson and Allen 2002). Depth: intertidal to 25 m (83 ft) (min.: Weaver 1970; max.: Robertson and Allen 2002).

Stegastes acapulcoensis (Fowler, 1944). **Acapulco Damselfish** or Acapulco Major. To 18.8 cm (7.4 in) TL (Urbiola-Rangel and Chassin-Noria 2019). Punta Pequeña (26°14'N, 112°31'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to lower Gulf of California (Schneider and Krupp in Fischer *et al.* 1995) and to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including southern tip of Baja California (Schneider and Krupp in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 16 m (53 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Schneider and Krupp in Fischer *et al.* 1995).

Stegastes flavilatus (Gill, 1862). **Beaubrummel**, Beaubrummel Gregory, or Beaubrummel Major. To 16 cm (6.3 in) TL (John Snow, pers. comm. to M.L.). Isla de Cedros (Ramírez-Valdez *et al.* 2015) and (mainland) Rocas Chester (27°53'N, 115°47'W) (M.L., unpubl. data), central Baja California to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Galván-Magaña *et al.* 1996), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Depth: intertidal to 38 m (125 ft) (min.: Ruiz-Campos *et al.* 2010b; max.: Thomson *et al.* 2000).

Stegastes leucorus (Gilbert, 1892). **Whitetail Damselfish** or Whitetail Major. To 17 cm (6.7 in) TL (Allen and Robertson 1994). Santa Catalina and San Clemente Islands, southern California and Islas Coronados, northern Baja California (Love *et al.* 2016a); Isla Guadalupe (Allen and Robertson 1994) and Islas San Benito (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Bahía Magdalena, southern Baja California (Hernández-Velasco *et al.* 2016), and south-western Baja California; Mazatlán, Mexico (Thomson *et al.* 1979) and offshore islands (Robertson and Allen 2015). Depth: 0–18 m (60 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Stegastes rectifraenum (Gill, 1862). **Cortez Damselfish** or Cortez Gregory. To 16 cm (6.3 in) TL (John Snow, pers. comm. to M.L.). Isla San Martín (30°28'N, 116°07'W) (M.L., unpubl. data), northern Baja California to Pucusana, Peru (Chirichigno and Vélez 1998), including Gulf of California (Thomson *et al.* 1979) and Islas Revillagigedo. Depth: intertidal to 27 m (90 ft) (min.: Thomson and Lehner 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Stegastes redemptus*** (Heller & Snodgrass, 1903). **Clarion Damselfish** or Clarion Major. To 14.5 cm (5.7 in) TL (Allen and Robertson 1994). Bahía Santa Maria (24°52'N, 112°15'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California, out on loan and not verified, Benjamin Frable), tip of Baja California (Thomson *et al.* 1979), and Islas Revillagigedo (Allen and Robertson 1994). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 20 m (66 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Family Labridae—Wrasses

We follow Westneat and Alfaro (2005) and others in placing fishes formerly in the family Scaridae in this family.

Bodianus diplotaenia (Gill, 1862). **Mexican Hogfish**. To 76 cm (29.9 in) TL (Allen and Robertson 1994). Isla Guadalupe (Thomson *et al.* 2000) and Isla de Cedros and Islas San Benito (Ramírez-Valdez *et al.* 2015), central Baja California and Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989), including Gulf of California (Gomon in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Parenti and Randall (2000) note that the Chile reference is questionable. The next furthest south reference is at Pucusana, Peru (Chirichigno and Vélez 1998). Depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–98 m (10–321 ft) (min.: Pérez-España *et al.* 1996; max.: Auster *et al.* 2016).

Bodianus pulcher (Ayres, 1854). **California Sheephead**. To 91.4 cm (36 in) TL (Miller and Lea 1972). Monterey Bay, central California to Cabo San Lucas, southern Baja California (Miller and Lea 1972), including Gulf

of California (Gomon in Fischer *et al.* 1995). Depth: intertidal to 150 m (492 ft) (min.: Mitchell 1953; max.: Aburto-Oropeza *et al.* 2011). We follow Baliga and Law (2016) and Santini *et al.* (2016) and remove this species from the genus *Semicossyphus*.

Calotomus carolinus (Valenciennes, 1840). Halftooth Parrotfish or **Stareye Parrotfis**h. To 50 cm (19.7 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); tip of Baja California, Islas Revillagigedo, and Islas Galápagos (Robertson and Allen 2002); Islas Marías, Mexico (Tholan *et al.* 2020). Depth: 1–71 m (3–233 ft) (Mundy 2005).

Decodon melasma Gomon, 1974. **Blackspot Wrasse**. To 32.3 cm (12.7 in) TL (Jiménez Prado and Béarez 2004). Laguna Beach, southern California (Allen and Groce 2001a); Gulf of California (Gomon in Fischer *et al.* 1995) to Banco de Máncora, Peru (Chirichigno and Vélez 1998), including vicinity of Cabo San Lucas, southern Baja California (Gomon in Fischer *et al.* 1995) and Islas Galápagos (Baldwin and McCosker 2001). Depth: 15–300 m (60–984 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Aburto-Oropeza *et al.* 2011).

Halichoeres adustus (Gilbert, 1890). **Black Wrasse**. To 12.5 cm (5 in) TL (Gomon in Fischer *et al.* 1995). Cabo San Lucas, southern Baja California and offshore islands of Mexico and central America (Robertson and Allen 2002) and Islas Galápagos (McCosker and Rosenblatt 2010). Depth: 0–15 m (49 ft) (min.: Robertson and Allen 2002; max.: McCosker and Rosenblatt 2010).

Halichoeres californicus (Günther, 1861). **Señorita**. To 27.5 cm (10.8 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Salt Point, northern California (Eschmeyer and Herald 1983) to Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994); also reported, although without attribution, from Gulf of California (Galván-Magaña *et al.* 2000). Larvae taken south of Bahía Magdalena at about 23°30'N (Funes-Rodríguez *et al.* 1998). Depth: intertidal to 101 m (331 ft) (min.: M.L., unpubl. data; max.: John Engel, pers. comm. to M.L.). Genetic studies (Baliga and Law 2016, Wainwright *et al.* 2018) demonstrate that this species is congeneric with *Halichoeres semicinctus* and we follow Fricke *et al.* (2020) in removing it from the genus *Oxyjulis*.

Halichoeres chierchiae Di Caporiacco, 1947. **Wounded Wrasse**. To 20 cm (7.9 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Robertson and Allen 2015), including Gulf of California (Gomon in Fischer *et al.* 1995) and Islas Galápagos (Victor *et al.* 2001). Depth: intertidal to 70 m (230 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Allen and Robertson 1994).

Halichoeres dispilus (Günther, 1864). **Chameleon Wrasse**. To 28 cm (11 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Islas San Benito (Cowen 1985), and Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015), to northern Chile (20°34'S) (Vargas *et al.* 1998), including Islas Galápagos (Grove and Lavenberg 1997), and Gulf of California (Gomon in Fischer *et al.* 1995). Northernmost mainland site is Isla Asuncion (27°06'N, 114°18'W), southern Baja California (M.L., unpubl. data). Marine and brackish waters (Romero-Berny *et al.* 2021); depth: intertidal to 76 m (3–249 ft) (min.: Thomson and Lehner 1976; max.: Gomon in Fischer *et al.* 1995).

Halichoeres inornatus (Gilbert, 1890). **Cape Wrasse**. To 19 cm (7.5 in) TL (Robertson and Allen 2015). Cabo San Lucas, southern Baja California, Islas Galápagos, Cocos, and Malpelo, and Colombia (Victor *et al.* 2013). Depth: 50–150 m (164–492 ft) (Victor *et al.* 2013). *Halichoeres raisneri* Baldwin & McCosker, 2001 is a synonym (Fricke *et al.* 2020). We follow Wainwright *et al.* (2018) and Fricke *et al.* (2020) and remove this species from the genus *Sagittalarva*.

Halichoeres insularis Allen & Robertson, 1992. **Socorro Wrasse**. To 8 cm (3.1 in) (Robertson and Allen 2008). Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010); Rocas Alijos, Islas Revillagigedo (Robertson and Allen 2015); Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 5–20 m (16–66 ft) (Robertson and Allen 2008).

Halichoeres melanotis (Gilbert, 1890). **Golden Wrasse**. To 15 cm (5.9 in) TL (Allen and Roberts 1994). Isla de Cedros and Islas San Benito, central Baja California (Ramírez-Valdez *et al.* 2015) to Colombia (Robertson and Allen 2002), including Gulf of California (Allen and Robertson 1994), and Islas Galápagos (McCosker and Rosenblatt 2010). Depth: 1–40 m (3–132 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Halichoeres nicholsi (Jordan & Gilbert, 1882). **Spinster Wrasse**. To 40.6 cm (16 in) TL (J. Snow, pers. comm. to Milton Love). Isla Guadalupe, central Baja California (Gotshall 1998); about Punta Eugenia, central Baja California (Robertson and Allen 2015) and Gulf of California (Gomon in Fischer *et al.* 1995) to Ecuador (Béarez 1996), including vicinity of Cabo San Lucas, southern Baja California (Gomon in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Depth: intertidal to 82 m (269 ft) (min.: Thomson and Lehner 1976: max.: Thomson *et al.* 2000).

Halichoeres notospilus (Günther, 1864). **Banded Wrasse**. To 28.5 cm (11.2 in) TL (John Snow, pers. comm. to M.L.). Isla de Cedros and Isla Natividad, central Baja California (Ramírez-Valdez *et al.* 2015); on mainland from Bahía San Juanico (26°13.8'N, 112°28.6'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into Gulf of California (Gomon in Fischer *et al.* 1995) to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998) and Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: intertidal to 10 m (33 ft) (min: Ruiz-Campos *et al.* 2010b; max.: Allen and Robertson 1994).

Halichoeres semicinctus (Ayres, 1859). **Rock Wrasse**. To 38 cm (15 in) TL (Eschmeyer and Herald 1983). Monterey Breakwater, central California (James Lindholm, pers. comm. to M.L.) to Gulf of California (Robertson and Allen 2015); Isla Guadalupe, central Baja California (Miller and Lea 1972). Depth: surface (Miller and Lea 1972), intertidal to 79 m (259 ft) (min.: Eschmeyer and Herald 1983; max.: M.L., unpubl. data).

Iniistius pavo (Valenciennes, 1840). Pacific Razorfish, Pavo Razorfish, **Peacock Razorfish**, or Peacock Wrasse. To 41 cm (16.1 in) TL (Lieske and Myers 2002). Indo-Pacific; western Pacific Ocean north to Japan (Yamakawa in Masuda *et al.* 1984); Punta Rosarito (28°34'N), central Baja California (Rodríguez-Romero *et al.* 1993) to Colombia (Robertson and Allen 2015), including south-western and central eastern Gulf of California (Robertson and Allen 2002), Islas Galápagos (Grove and Lavenberg 1997), and many other offshore islands (Robertson and Allen 2002). Depth: 1–138 m (3–453 ft) (min.: Fricke *et al.* 2019; max.: Weijerman *et al.* 2019).

Nicholsina denticulata (Evermann & Radcliffe, 1917). **Loosetooth Parrotfish**. To 32 cm (12.6 in) TL (Jiménez Prado and Béarez 2004). Santa Catalina Island, southern California (Lea *et al.* 2001); also Islas San Benito and Isla de Cedros (M.L., unpubl. data) and (mainland) Rocas Chester (27°53'N, 115°04'W), central Baja California (M.L., unpubl. data) to Iquique, northern Chile (Sielfeld *et al.* 2010), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–30 m (4–98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

****Novaculichthys taeniourus*** (Lacepède, 1801). **Rockmover Wrasse**. To 30 cm (12 in) TL (Gomon in Fischer *et al.* 1995). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); near tip of Baja California and Gulf of California to Colombia, including many offshore islands (Robertson and Allen 2002). Depth: 1–30 m (4–99 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Polylepion cruentum Gomon, 1977. **Bleeding Wrasse**. To 27.3 cm (10.7 in) TL (John Snow, pers. comm. to M.L.). Todos Santo (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Gulf of California as far north as at least Loreto (John Snow, pers. comm. to M.L.) to Costa Rica (Parenti and Randall 2000). Depth: 80–305 m (262–1,000 ft) (Sánchez-Jiménez *et al.* 2018).

Scarus compressus (Osburn & Nichols, 1916). **Azure Parrotfish**. To at least 68 cm (26.8 in) TL (Jiménez Prado and Béarez 2004). Southern entrance to Bahía Magdalena, southern Baja California (Daniel Gotshall, pers. comm. to M.L.) to northern Gulf of California (González-Cuéllar *et al.* 2012), and Ecuador (Béarez 1996), including Islas Galápago and other offshore islands (Robertson and Allen 2015). Depth: 1–25 m (3–83 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Allen and Robertson 1994).

Scarus ghobban Forsskål, 1775. Bluebanded Parrotfish, Bluebarred Parrotfish, **Bluechin Parrotfish**, or Yellowscale Parrotfish. To 90 cm (35.4 in) TL (Robertson and Allen 2008). Indo-Pacific and Mediterranean Sea (Goren and Aronov 2002); western Pacific Ocean north to Japan (Shimada in Nakabo 2002); Rocas Alijos, southern Baja California (Gotshall 1998); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into northern Gulf of California (González-Cuéllar *et al.* 2012) to Ecuador (Allen and Robertson 1994), including Islas Galápagos

(Grove and Lavenberg 1997), and other offshore islands (Robertson and Allen 2002). Depth: intertidal to 150 m (492 ft) (min.: Arndt and Fricke 2019; max.: Robertson and Allen 2015).

Scarus perrico Jordan & Gilbert, 1882. **Bumphead Parrotfish**. To 80 cm (31.5 in) TL (Allen and Robertson 1994). Bahía Almejas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Islas Lobos de Afuera, Peru (Grove and Lavenberg 1997), including northern Gulf of California (González-Cuéllar *et al.* 2012), Islas Galápagos (Grove and Lavenberg 1997), and Isla Malpelo (Robertson and Allen 2002). Depth: 1–30 m (4–98 ft) (min.: Robertson and Allen 2002; max.: Thomson *et al.* 2000).

****Scarus rubroviolaceus*** Bleeker, 1847. **Bicolor Parrotfish**, Ember Parrotfish, or Redlip Parrotfish. To 71 cm (28 in) TL (Randall 1996). Indo-Pacific; western Pacific Ocean north to Japan (Shimada in Nakabo 2002); Cabo San Lucas (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and central Gulf of California (González-Cuéllar *et al.* 2012) to Ecuador (Béarez 1996), and Islas Galápagos (Grove and Lavenberg 1997). Depth: 1–96 m (3–315 ft) (min.: Myers 1999; max.: Weijerman *et al.* 2019).

****Stethojulis bandanensis*** (Bleeker, 1851). **Red-shouldered Wrasse**. To 15 cm (5.9 in) (Robertson and Allen 2008). Southern Japan; tip of Baja California, lower Gulf of California, Costa Rica, Panama, and various offshore islands (Robertson and Allen 2008). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 15 m (49 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: Robertson and Allen 2008).

Thalassoma grammaticum Gilbert, 1890. Green Wrasse, Island Wrasse, or **Sunset Wrasse**. To 32 cm (12.6 in) TL (Gomon in Fischer *et al.* 1995). Rocas Alijos, southern Baja California (Gotshall 1998); Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) into northern Gulf of California (Gomon in Fischer *et al.* 1995) to northern Peru (Robertson and Allen 2015), Islas Galápagos (Grove and Lavenberg 1997), and many other offshore islands (Robertson and Allen 2002). Depth: intertidal to 65 m (213 ft) (min.: Personal Communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Thalassoma lucasanum (Gill, 1862). **Cortez Rainbow Wrasse**. To 15 cm (5.9 in) TL (Allen and Robertson 1994). Islas San Benito and Isla de Cedros (Ramírez-Valdez *et al.* 2015), and (mainland) Rocas Chester (27°53'N, 115°04'W), central Baja California (M.L., unpubl. data), to central Peru (Robertson and Allen 2015), including Gulf of California (Gomon in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Depth: intertidal to 64 m (210 ft) (min.: Weaver 1970; max.: Gomon in Fischer *et al.* 1995).

****Thalassoma virens*** Gilbert, 1890. **Emerald Wrasse** or Long-finned Wrasse. To 36.6 cm (14.4 in) TL (John Snow, pers. comm. to M.L.). Islas Revillagigedo and Isla Clipperton (Allen and Robertson 1994) to tip of Baja California (Robertson and Allen 2002) and northward into the Gulf of California around the La Paz area (Victor *et al.* 2001). Depth: 0–10 m (33 ft) (Robertson and Allen 2002).

Xyrichtys mundiceps Gill, 1862. **Cape Razorfish**. To 15.9 cm (6.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía Magdalena (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Cabo San Lucas, southern Baja California (Thomson *et al.* 1979), and central Gulf of California to central Mexico (Robertson and Allen 2002). Depth: 3–27 m (10–90 ft) (min.: John Snow, pers. comm. to M.L.; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Bathymasteridae—Ronquils

Bathymaster caeruleofasciatus Gilbert & Burke, 1912. **Alaskan Ronquil**. To 30 cm (about 1 ft) TL (Eschmeyer and Herald 1983). Commander Islands, Russia and Aleutian Islands, Alaska (Mecklenburg *et al.* 2002) to Prince Rupert, northern British Columbia (Pauline Ridings, pers. comm. to M.L.). Benthic; depth: 0–225 m (738 ft) (min.: Federov *et al.* 2003; max.: Stevenson and Matarese 2005).

Bathymaster leurolepis McPhail, 1965. **Smallmouth Ronquil**. To 21 cm (8.3 in) TL (Eschmeyer and Herald 1983). Pacific coast of Hokkaido, Japan (Wakimoto and Amaoka 1994) to Commander Islands, Aleutian Islands, and south-eastern Bering Sea off Pribilof Islands to Little Port Walter, south-eastern Alaska (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 119 m (390 ft) (min.: Eschmeyer and Herald 1983; max.: Personal

communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov)

Bathymaster signatus Cope, 1873. **Searcher**. To 38 cm (15 in) TL (Mecklenburg *et al.* 2002). Pacific coast of Hokkaido, Japan (Shinohara *et al.* 1992), Sea of Okhotsk, and Kuril Islands to western Bering Sea and Commander Islands, and Bering Sea as far northward as Saint Matthew Island (61°N, 178°31'W), Alaska (Mecklenburg *et al.* 2011), southeast from Navarin Canyon, and throughout Aleutian Islands to Washington (Mecklenburg *et al.* 2002). Records as far south as northern British Columbia have good documentation, but those from Washington are uncertain (Stevenson and Matarese 2005). Records from Puget Sound and at the mouth of the Strait of Juan de Fuca are in error (Pietsch and Orr 2019). Benthic; depth: adults at 3–380 m (10–1,247 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Fedorov 1973); juveniles often collected at surface. Reported to 825 m (2,707 ft) (Allen and Smith 1988), but the fish may not have entered the net at or near the maximum depth of the tow.

Rathbunella alleni Gilbert, 1904. Rough Ronquil, **Stripefin Ronquil**, and Stripedfin Ronquil. To 20.5 cm (8.1 in) SL (Orange County Sanitation District, unpublished data, from Danny Tang, pers. comm. to M.L.); about 24.3 cm (9.6 in) TL. Perhaps are far north as Barkley Sound, Vancouver Island (based on a photograph reviewed by Duane Stevenson, pers. comm. to M.L.); Marin County, north of San Francisco Bay, northern California (Kiernan 1990) to Bahía San Carlos, northern Baja California (Stevenson and Matarese 2005). Benthic; depth: 2–146 m (6–479 ft) (min.: Kiernan 1990; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Rathbunella hypoplecta (Gilbert, 1890). **Bluebanded Ronquil**. To 27.7 cm (10.9 in) TL (Toby Carpenter, pers. comm. to M.L.). Point Conception, California to Santo Tomás anchorage (31°33'N, 116°24'W), northern Baja California (Stevenson and Matarese 2005). Previous reports from San Francisco and farther north are probably due to confusion with *Ronquilus alleni* Gilbert, 1904, and perhaps *Ronquilus jordani* (Gilbert, 1889) (Stevenson and Matarese 2005). Benthic; depth 3–178 m (9–584 ft) (min.: Kiernan 1990; max.: Gallo *et al.* 2020b). Evidently this is the "deepwater ronquil" of Eschmeyer and Herald (1983) (Stevenson and Matarese 2005). Common name, Bluebanded Ronquil, is from Nelson *et al.* (2004); previously called Smooth Ronquil (Robins *et al.* 1980). Although Stripefin Ronquil was a name in general use for this species (Fitch and Lavenberg 1975, Eschmeyer and Herald 1983), *R. alleni* is actually the stripefin form (Kiernan 1990).

Ronquilus jordani (Gilbert, 1889). **Northern Ronquil**. To 21 cm (8.3 in) TL (DFO). South-eastern Bering Sea (Allen and Smith 1988), and Amchitka Island, Aleutian Islands (Simenstad *et al.* 1977) to La Jolla, southern California (Stevenson and Matarese 2005). Benthic; depth: 3–337 m (10–1,105 ft) (min.: Eschmeyer and Herald 1983; max.: DFO); usually shallower than 150 m (492 ft) (Mecklenburg *et al.* 2002).

Family Zoarcidae—Eelpouts

Reviewed by: Duane Stevenson and James Orr

Bothrocara pusillum (Bean, 1890). **Alaska Eelpout**. To 17.1 cm (6.7 in) SL (Stevenson and Anderson 2005). Eastern Bering Sea (Anderson 1994) to Oregon (Gillespie 1993). Benthic; depth: 55–642 m (180–2,106 ft) (Anderson *et al.* 2009). Some authors (e.g., Balushkin *et al.* 2011 and Fricke *et al.* 2020) consider this species to be valid as *Bentartia pusillum* (Bean, 1890).

Bothrocara brunneum (Bean, 1890). **Twoline Eelpout**. To 74 cm (29.1 in) TL (Orlov and Binohlan 2009). Sea of Okhotsk (Schmidt 1950), and Pacific Ocean off Kuril Islands (Sheiko and Fedorov 2000), to Commander-Aleutian Chain, and Bering Sea (Mecklenburg *et al.* 2002), to southern Baja California (27°12'N) (Cruz-Acevedo *et al.* 2018); Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Gulf of Panama (Eric Anderson, pers. comm. to M.L.). Benthic; depth: 124–2,570 m (407–8,430 ft) (min.: DFO; max.: Federov *et al.* 2003).

Bothrocara hollandi (Jordan & Hubbs, 1925). **Japan-Sea Eelpout**. To 39.7 cm (15.6 in) TL (Anderson *et al.* 2009). Japan and Sea of Okhotsk; Pacific coast of northern, and central Japan, to the eastern Bering Sea off the Pribilof Islands (Anderson *et al.* 2009). Benthic; depth: 69–1,980 m (226–6,494 ft) (min.: Kim and Kim 2019; max.: Anderson *et al.* (2009).

Bothrocara molle Bean, 1890. **Soft Eelpout**. To 58.7 cm (23.2 in) TL (Mecklenburg *et al.* 2002). Southern Kamchatka Peninsula (Anderson *et al.* 2009), to Bering Sea (Mecklenburg *et al.* 2002), to northern Baja California (30°47'N, 116°52'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Central America (Robertson *et al.* 2017); Chile (Mecklenburg *et al.* 2002; confirmed by Eric Anderson); South Atlantic (Anderson *et al.* 2009). Benthic; depths: 60–2,688 m (197–8,819 ft) (min.: Robertson *et al.* 2017; max.: Pearcy *et al.* 1982).

Bothrocara nyx Stevenson & Anderson, 2005. To 21.7 cm (8.7 in) SL (Stevenson and Anderson 2005). Eastern Bering Sea (Stevenson and Anderson 2005). Depth: 738–1,508 m (2,421–4,946 ft) (min.: Hoff 2013; max.: Stevenson and Anderson 2005).

Bothrocara zestum Jordan & Fowler, 1902. To 73 cm (28.7 in) TL (Stevenson and Hibpshman, 2010). Honshu, Japan, north to Sea of Okhotsk and east to the Gulf of Alaska and Bering Sea (Anderson *et al.* 2009). Benthic; depth: 199–1,620 m (653–5,314 ft) (Anderson *et al.* 2009).

Derepodichthys alepidotus Gilbert, 1896. **Cuskpout**. To 16 cm (6.3 in) TL (Kamikawa 2017). Near Alaska off Dixon Entrance, northern British Columbia (Love *et al.* 2005) to Gulf of California (Anderson and Hubbs 1981). Benthopelagic; depth: 481–2,904 m (1,578–9,527 ft) (min.: DFO; max.: Anderson and Hubbs 1981).

Eucryphycus californicus (Starks & Mann, 1911). **Persimmon Eelpout**. To 25.5 cm (10 in) TL (Zuercher *et al.* 2019). Ascension Canyon, central California (36°55'N, 122°28'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to San Diego, southern California (Eschmeyer and Herald 1983). In drifting kelp and eelgrass accumulated at bottom of submarine canyons and basins (Eschmeyer and Herald 1983); benthic; depth: 60–545 m (197–1,787 ft) (min.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys; max.: Eschmeyer and Herald 1983).

Gymnelus hemifasciatus Andriashev, 1937. **Halfbarred Pout**. To 17.6 cm (6.9 in) TL (Mecklenburg *et al.* 2018). South-eastern Barents Sea eastward through Siberian Sea through Beaufort Sea to Dease Strait, Canada; Sea of Okhotsk, Commander Islands, east coast of Kamchatka, Bering Sea to Prince William Sound, northern Gulf of Alaska (Mecklenburg *et al.* 2016). Benthic; depth: intertidal to 216 m (708 ft) (Mecklenburg *et al.* 2011). We consider *Gymnelus knipowitschi* Chernova, 1999, included in Møller in Coad and Reist (2018), a synonym (Mecklenburg *et al.* 2018).

Gymnelus popovi (Taranetz & Andriashev, 1935). **Aleutian Pout**. To 16.3 cm (6.4 in) SL. Simushir Island, Kuril Islands; Commander Islands; Agattu Island (Wilimovsky 1964), Aleutian Islands to Kodiak Island at Karluk. Benthic; depth: intertidal above tidemark at low tide to 2 m (7 ft). All in Mecklenburg *et al.* (2002), primarily after Anderson (1982). Also referred to as *Commandorella popovi* Taranetz & Andriashev, 1935 (i.e., Kells *et al.* 2016).

Gymnelus viridis (Fabricius, 1780). **Fish Doctor**. To 30 cm (11.8 in) TL (Coad and Reist 2004). Laptev Sea eastward to Greenland, southward in Atlantic to Nova Scotia, and Gulf of Saint Lawrence; in Pacific Ocean to south-western Bering Sea off Cape Afrika, eastern Aleutian Islands, and south-eastern Bering Sea (Mecklenburg *et al.* 2016). Benthic; depth: intertidal to 318 m (1,043 ft) (min.: Anderson 1982; max.: Koyanagi in Okamura *et al.* 1995). We consider *Gymnelus bilabrus* Andriashev, 1937, included in Møller in Coad and Reist (2018), a synonym (Mecklenburg and Anderson 2015).

Lycenchelys alta Toyoshima, 1985. **Short Eelpout**. Known from one specimen, 12.7 cm (5 in) TL. Buldir Island, western Aleutian Islands. Benthic; depth: 336 m (1,102 ft). All in Mecklenburg *et al.* (2002) after Toyoshima (1985).

Lycenchelys callista Anderson, 1995. To 20.3 cm (8 in) TL. Central Oregon (44°24'N, 125°07'W) to Tanner Basin, southern California. Benthic; depth: 1,200–1,830 m (3,937–6,004 ft). All in Anderson (1995).

Lycenchelys camchatica (Gilbert & Burke, 1912). **Kamchatka Eelpout**. To 43 cm (16.9 in) TL (Fedorov 1976). Sea of Okhotsk (Toyoshima 1985) and south-eastern Kamchatka (Gilbert and Burke 1912), Shirshov Ridge (Fedorov 1976), and Commander Islands (Andriashev 1937); Bering Sea south of Cape Navarin to near Unalaska Island (Toyoshima 1985, Anderson 1995) to northern Baja California (Anderson 1995). Benthic; depth: about 256–2,100 m (840–6,890 ft) (min.: Eric Anderson, pers. comm. to M.L.—the "200 m" of Andriashev (1937) was based on an estimate; max.: Anderson 1995).

Lycenchelys crotalinus (Gilbert, 1890). **Snakehead Eelpout**. To 46.8 cm (18.4 in) TL (Toyoshima 1985). Western Bering Sea across Shirshov Ridge and Commander Plateau (Fedorov 1976); eastern Bering Sea and Gulf of

Alaska (Gilbert 1896, Mecklenburg *et al.* 2002), to central Baja California (27°12'N) (Cruz-Acevedo *et al.* 2018). Benthic; depth: 63–2,816 m (207–9,239 ft) (min.: NWFSC-FRAM; max.: Anderson 1995).

Lycenchelys hippopotamus Schmidt, 1950. **Behemoth Eelpout** or Hippopotamus Eelpout. To 22.3 cm (8.8 in) TL, but none recorded is fully mature (Anderson 1995). Southern Sea of Okhotsk (Schmidt 1950) to western Bering Sea southwest of Cape Navarin (Fedorov 1976). Benthic; depth: 160–1,800 m (525–5,904 ft) (min.: Orlov and Tokranov 2019; max.: Kawarada *et al.* 2020).

Lycenchelys jordani (Evermann & Goldsborough, 1907). **Shortjaw Eelpout**. To 38.9 cm (15.3 in) TL (Anderson 1995). Sitka Sound, south-eastern Alaska (Evermann and Goldsborough 1907, Mecklenburg *et al.* 2002) to Punta Colnett, northern Baja California (Anderson 1995). Benthic; depth: 1,500–2,570 m (4,921–8,432 ft) (Anderson 1995).

Lycenchelys kolthoffi Jensen, 1904. **Checkered Wolf Eel**. To 29 cm (11.4 in) TL (Mecklenburg *et al.* 2016). Ungava Bay and Hudson Strait, Canada (Møller in Coad and Reist 2018); Greenland to Svalbard and Kara Sea and Alaskan and Canadian Beaufort Sea (as far westward as 70°28'N,141°09'W) (Mecklenburg *et al.* 2016). Benthic; depth: 202–930 m (663–3,050 ft) (Møller and Jørgensen 2000).

Lycenchelys micropora Andriashev, 1955. **Manytoothed Eelpout** or Pale Eelpout. To 34.9 cm (13.7 in) TL (Andriashev 1955). Northern Bering Sea, one record in U.S. waters; Pacific Ocean off British Columbia (Mecklenburg *et al.* 2002) to Gulf of Tehuantepec, central Mexico (14°28'N, 93°09'W) (Anderson 1995). Benthic; depth: 1,980–3,512 m (6,494–11,522 ft) (min.: Anderson 2012; max.: Anderson 1995). A "*Lycenchelys micropora*" (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) from waters shallower than here reported is *Lycenchelys camchatica* (Gilbert & Burke, 1912) (Katherine Maslenikov).

Lycenchelys monstrosa Anderson, 1982. To 27.6 cm (10.9 in) TL. Monterey Bay, central California (Anderson 2012) to Gulf of Panama (Anderson 1995). Benthic; depth: 3,100–4,188 m (10,168–13,740 ft) (min.: Anderson 2012; max.: Anderson 1995), or perhaps as shallow as 2,780 m (9,118 ft) (Anderson 2012).

Lycenchelys pearcyi Anderson, 1995. To 38.5 cm (15.2 in) TL. Northern Oregon to southern tip of Baja California. Benthic; depth: 2,663–3,051 m (8,737–10,010 ft). All in Anderson (1995).

Lycenchelys plicifera Andriashev, 1955. **Keeled Eelpout**. To 19.1 cm (7.5 in) TL (a juvenile; Andriashev 1958). Western North Pacific Ocean off Paramushir Island (Kuril–Kamchatka Trench) (Andriashev 1955, 1958); Bering Sea north of Near Islands, Aleutian Islands (Aleutian Basin; Andriashev 1955). Benthic; depth: 3,820–4,070 m (12,697–13,353 ft) (min.: Andriashev 1955; max.: Andriashev 1958).

Lycenchelys rassi Andriashev, 1955. **Earless Eelpout**. To about 24 cm (9.4 in) SL (Kawarada *et al.* 2020). Sea of Okhotsk off Sakhalin (Andriashev 1955) and Hokkaido (Toyoshima in Amaoka *et al.* 1983); south-western Bering Sea at Kronotskiy Bay (Anderson 1995); one record from south-eastern Bering Sea, Alaska north of Unalaska Island (Peden 1973, Mecklenburg *et al.* 2002). Benthic; depth: 895–1,805 m (2,936–5,922 ft) (min: Kawarada *et al.* 2020; max.: Peden 1973).

Lycenchelys ratmanovi Andriashev, 1955. **Manypore Eelpout**. To 19 cm (7.5 in) TL (Andriashev 1955). Western Pacific Ocean off southeast Kamchatka and northern Kuril Islands; western Bering Sea southwest of Cape Navarin and off Cape Olyutorskiy; eastern Bering Sea slope south to Unalaska Island (Fedorov 1976, Toyoshima 1985, Anderson 1995, Mecklenburg *et al.* 2002). Benthic; depth: 620–1,120 m (2,034–3,674 ft) (Anderson 1995). Known only from immature individuals. *Lycenchelys longirostris* Toyoshima, 1985, is a junior synonym (Fricke *et al.* 2020).

Lycenchelys rosea Toyoshima, 1985. **Rosy Eelpout**. To 23.7 cm (9.3 in) TL. Known from two specimens. Central Aleutian Islands. Benthic; depth: 358 and 750 m (1,174 and 2,461 ft). All in Mecklenburg *et al.* (2002) after Toyoshima (1985).

Lycenchelys volki Andriashev, 1955. **Longnape Eelpout**. Known from one specimen, 20.8 cm (8.2 in) TL. South-western Bering Sea northeast of Medny Island, Commander Islands. Benthic; depth: 3,940 m (12,926 ft). All in Mecklenburg *et al.* (2002), mainly from Andriashev (1955).

Lycodapus dermatinus Gilbert, 1896. **Looseskin Eelpout**. To 13.2 cm (5.2) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). One juvenile from the Pacific waters of Kamchatka, Russia (Saushkina and Kurbanov 2020); Welker Seamount, Gulf of Alaska (Peden and Anderson 1981); British Columbia (Peden 2003); northern Oregon (Peden and Anderson 1978) to Gulf of California (Peden and Anderson 1978) and Peru (Anderson 1989). Bering Sea (Duane Stevenson); Eric Anderson commented that the Unimak Island record is a label switching error (Mecklenburg *et al.* 2002, Love *et al.* 2005). Mesopelagic and

bathypelagic; depth: 198–1,903 m (650–6,242 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: DFO).

Lycodapus endemoscotus Peden & Anderson, 1978. **Deepwater Eelpout**. To 13.2 cm (5.2 in) SL (Peden and Anderson 1978). Sea of Okhotsk (based on many specimens in the fish collection of Hokkaido University); Bering Sea as far northward as 59°43'N, 178°39'W (Maslenikov *et al.* 2013) and off central Aleutian Islands (Anderson 1989) to Gulf of California (Peden and Anderson 1978), and off Peru (Anderson 1989). Mesopelagic and bathypelagic; depth: 226–2,225 m (741–7,300 ft) (min.: Maslenikov *et al.* 2013; max.: Peden and Anderson 1978).

Lycodapus fierasfer Gilbert, 1890. **Blackmouth Eelpout**. To 15.6 cm (6.1 in) TL (Sinclair *et al.* 2015). Western Bering Sea on Shirshov Ridge (Mecklenburg *et al.* 2002); eastern Bering Sea (Peden and Anderson 1978, 1981); off Dixon Entrance, northern British Columbia (Love *et al.* 2005) to Peru (Anderson 1989). Mesopelagic and bathypelagic to benthopelagic; depth: 50–2,212 m (164–7,255 ft) (Orlov and Tokranov 2019). *Lycodapus grossidens* Gilbert, 1915, in part, is a synonym.

Lycodapus leptus Peden & Anderson, 1981. **Slender Eelpout**. To 9.8 cm (3.9 in) SL (Peden and Anderson 1981). Eastern Bering Sea (Peden and Anderson 1981). Mesopelagic; depth: 328–831 m (1,076–2,726 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Lycodapus mandibularis Gilbert, 1915. **Pallid Eelpout**. To 20.6 cm (8.1 in) TL (Pietsch and Orr 2019). Prince William Sound, Gulf of Alaska to La Jolla Canyon, southern California (Peden and Anderson 1978**).** A report of occurrence off Peru is in error (Love *et al.* 2005). Mesopelagic; depth: typically taken in midwater tows at depths to 800 m (2,625 ft), but sometimes in bottom trawls (Mecklenburg *et al.* 2002); reported as shallow as 86 m (282 ft) (DFO) and deep as 1,560 m (5,117 ft) (DFO).

Lycodapus pachysoma Peden & Anderson, 1978. **Stout Eelpout**. To 20 cm (7.9 in) TL (Anderson in Gon and Heemstra 1990). Eastern Pacific Ocean and Southern Ocean (Peden and Anderson 1978); Bering Sea (56°26'N, 169°51'W) (Maslenikov *et al.* 2013) to about Davidson Seamount, central California (Burton and Lea 2019). Mesopelagic and bathypelagic; depth: 534 to at least 2,780 m (1,752–9,118 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Anderson 2012), and possibly as deep as 3,100 m (10,168 ft) (Anderson 2012).

Lycodapus parviceps Gilbert, 1896. **Smallhead Eelpout**. To 16.7 cm (6.6 in) TL (Maslenikov *et al.* 2013). South Kuril Islands (Orlov and Tokranov 2019); Eastern Bering Sea (as far northward as 57°47'N, 174°11'W) (Maslenikov *et al.* 2013) to southern Oregon near Bandon (43°05'N) (NWFSC-FRAM). Mesopelagic; depth: 81–1,212 m (266–3,975 ft) (min.: Peden and Anderson 1978; max.: NWFSC-FRAM).

Lycodapus poecilus Peden & Anderson, 1981. **Variform Eelpout**. To 14 cm (5.5 in) SL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Eastern Bering Sea continental slope (Peden and Anderson 1981). Mesopelagic; depth: 207–1,149 m (679–3,769 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Lycodapus psarostomatus Peden & Anderson, 1981. **Specklemouth Eelpout**. To 15.7 cm (6.2 in) SL (Peden and Anderson 1981). Eastern Bering Sea (Peden and Anderson 1981); British Columbia (Peden 2003); Monterey Bay, central California (Anderson 1989). Mesopelagic; depth: 466–670 m (1,528–2,198 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington: max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). The one record from California was a 9.8 cm (3.9 in) SL specimen collected by midwater trawl at 0–15 m (0–49 ft) (Anderson 1989).

Lycodes adolfi Nielsen and Fosså, 1993. **Adolf's Eelpout.** To at least 28.6 cm (11.3 in) TL (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California). Probably circumpolar; Chukchi Borderland and Beaufort Sea (Mecklenburg *et al.* 2016). Benthic; depth: 274–2,150 m (899–7,052 ft) (min.: Møller in Coad and Reist 2018; max.: Mecklenburg *et al.* 2016)

Lycodes akuugun Stevenson & Orr, 2006. 32.4 cm (12.8 in) TL. Central Aleutian Islands from Samalga Pass west to Seguam Pass. Benthic; depth: 121–460 m (397–1518 ft). All in Stevenson and Orr (2006).

Lycodes beringi Andriashev, 1935. **Bering Eelpout**. To 36.3 cm (14.3 in) TL. At least from south-eastern Kamchatka Peninsula through the Bering Sea, Commander and Aleutian Islands, and Gulf of Alaska to the Strait of Georgia, and Puget Sound. Benthic; depth: 76–1,091 m (249–3,578 ft). The shallowest record may be in error. All in Stevenson and Sheiko (2009).

Lycodes brevipes Bean, 1890. **Shortfin Eelpout**. To 39.0 cm (15.4 in) TL (Antonenko *et al.* 2012). Western and eastern Bering Sea, and eastern Aleutian Islands (Mecklenburg *et al.* 2011) to central California (34°34'N) (Weinberg *et al.* 2002). Benthic; depth: 2 or less to 973 m (7–3,192 ft) (min.: Miller *et al.* 1977; max.: Allen and Smith 1988).

X*Lycodes brunneofasciatus* Suvorov, 1935. **Tawnystripe Eelpout**. A single record (of three specimens) from near Unalaska Island, Alaska (Mecklenburg *et al.* 2002) is of *Lycodes beringi* Andriashev, 1935.

Lycodes concolor Gill & Townsend, 1897. **Ebony Eelpout**. To about 80 cm (31.5 in) TL (Mecklenburg *et al.* 2002). Western Bering Sea to southern Sea of Okhotsk and northern Kuril Islands; eastern Bering Sea from Navarin Canyon to Aleutian Islands and west to Stalemate Bank, and south of Aleutian Islands to Kodiak Island, western Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 249–1,200 m (817–3,937 ft) (min.: James Orr; max.: Hoff and Britt 2003). A record of 42 m (138 ft) (Allen and Smith 1988) is likely in error.

Lycodes cortezianus (Gilbert, 1890). **Bigfin Eelpout**. To 58 cm (22.8 in) TL (DFO). South-eastern Alaska (55°30'N, 134°53'W) (Maslenikov *et al.* 2013) to San Diego, southern California (Miller and Lea 1972). Benthic; depth: 18–1,280 m (60–4,198 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: DFO).

Lycodes diapterus Gilbert, 1892. **Black Eelpout** or Blackfin Eelpout. To 39 cm (15.4 in) TL (DFO). Pacific Ocean side of Vancouver Island (Stevenson and Sheiko 2009) to off San Diego, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 24–1,472 (79–4,828 ft) (DFO).

Lycodes eudipleurostictus Jensen, 1902. **Doubleline Eelpout**. To 44.5 cm (17.5 in) TL (Mecklenburg *et al.* 2002). Probably circumpolar; Beaufort Sea off Alaska (as far west as off Kaktovik), and Canada (Mecklenburg *et al.* 2016). Benthic; depth: 54–1,288 m (177–4,225 ft) (Mecklenburg *et al.* 2016); the minimum depth of 25 m (82 ft) reported in Mecklenburg *et al.* (2002) was based on a typographical error in McAllister *et al.* (1981).

Lycodes frigidus Collett, 1879. **Glacial Eelpout**. To 69 cm (27.2 in) TL (Mecklenburg *et al.* 2002). Circumpolar in Arctic basins; Chukchi and Beaufort Seas. (Mecklenburg *et al.* 2016). Benthic; depth: 475–3,580 m (1,558–11,742 ft) (Mecklenburg *et al.* 2016).

Lycodes japonicus Matsubara & Iwai, 1951. **Japanese Eelpout**. To 34 cm SL (Nalbant 1994). Sea of Japan off Honshu in Toyama Bay and near Sado Island; one record from eastern North Pacific Ocean from Bering Sea north of Near Islands (western Aleutian Islands), Alaska (Mecklenburg *et al.* 2002). Benthic; depth: about 216–985 m (708–3,231 ft) (Dolganov and Saveliev 2013). Panchenko *et al.* (2016) list a minimum depth of 200 m (656 ft), but without attribution. Balanov and Solomatov (2008) question the record from Alaska. They point out that fish in the western Pacific reach a maximum length of 14 cm (5.6 in) TL that is far smaller than the Alaska fish.

Lycodes jugoricus Knipowitsch, 1906. **Shulupaoluk**. To about 51 cm (20 in) TL. White Sea eastward to Kara, Laptev and East Siberian Seas; Beaufort Sea to Spence Bay, Boothia Peninsula, Canada. Record from Chukchi Sea is unverified. Benthic; depth: 9–90 m (30–295 ft). All in Mecklenburg *et al.* (2016).

Lycodes marisalbi Knipowitsch, 1906. **White Sea Eelpout**. To about 22.5 cm (8.9 in) TL (Mecklenburg *et al.* 2018). Found at several localities in the Beaufort Sea, from Mould Bay, Prince Patrick Island, to Mackenzie Bay and east to Dease Strait, Bathurst Inlet (Møller 2000). Benthic; depth: 3–335 m (10–1,099 ft) (min.: Møller in Coad and Møller 2018; max.: Møller 2000). Once thought to be a subspecies of *Lycodes pallidus,* but resurrected by Møller (2000). Specimens identified as *L. pallidus* west of Boothia Peninsula are misidentified *L. marisalbi* (Møller 2000). Records from the Beaufort Sea off Alaska identified as *L. pallidus* (e.g., Mecklenburg *et al.* 2002) are *L. marisalbi* (Mecklenburg *et al.* 2011).

Lycodes mucosus Richardson, 1855. **Saddled Eelpout** or Lightcheek Eelpout. To 49 cm (19.3 in) TL (Andriashev 1954); at 48.5 cm SL, a specimen in the University of Washington, Burke Museum of Natural History and Culture Fish Collection (UW 111520) was probably a bit more than 49 cm TL but the caudal rays are broken off (Catherine W. Mecklenburg, unpubl. data). Chukchi Sea eastward to Cumberland Sound, Baffin Island, and north-western Greenland; southward to Bering Sea to Gulf of Anadyr, and south side of Saint Matthew Island (Mecklenburg *et al.* 2016). Benthic; depth: intertidal to 184 m (590 ft) (Mecklenburg *et al.* 2016). Note that in

the past this species, *Lycodes turneri*, and *Lycodes polaris* have often been mistaken for one another. *Lycodes knipowitschi* Popov, 1931, a Sea of Okhotsk endemic, may be a synonym (Mecklenburg *et al.* 2016).

Lycodes pacificus Collett, 1879. **Blackbelly Eelpout**. To 46 cm (18 in) TL (Jordan and Evermann 1898). Aleutian Islands, and Gulf of Alaska (Mecklenburg *et al.* 2002) to Ensenada, northern Baja California (Miller and Lea 1972). Benthic; depth: 7–1,036 m (23–3,399 ft) (min.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys; max.: Ramsey *et al.* 2002).

Lycodes palearis Gilbert, 1896. **Wattled Eelpout**. To 62 cm (24.4 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Northern Sea of Okhotsk to Beaufort Sea (71°22'N, 156°19'W) (Mecklenburg *et al.* 2011), over the continental shelf in the Bering Sea, and off the Aleutian Islands to Oregon (Mecklenburg *et al.* 2002). Benthic; depth: about 2 m (7 ft) or less to 925 m (3,035 ft) (min.: Miller *et al.* 1977; max.: Allen and Smith 1988), nearly always less than 200 m (656 ft) (Mecklenburg *et al.* 2002). Rarely recorded from very shallow water, *L. palearis* were caught in about 3 m (10 ft) of water at low tide at Jackson Beach, San Juan Island, on two different days (Love *et al.* 2005).

Lycodes pallidus Collett, 1879. Pale Eelpout. To at least 28.9 cm (11.4 in) SL; a report of a 38 cm (15 in) TL individual needs verification (Mecklenburg *et al.* 2018). Nearly circumpolar; Beaufort Sea (as far west as 71°12'N, 148°35'W) eastward through Canada, Greenland, to East Siberian Sea (Mecklenburg *et al.* 2018). Epipelagic, mesopelagic, and bathypelagic; depth: 6–1,750 m (20–5,740 ft) (min.: Møller in Coad and Møller 2018; max.: Mecklenburg *et al.* 2016). "*L. pallidus* does not appear to be monophyletic and more taxonomic work is needed" (Mecklenburg *et al.* 2018).

Lycodes polaris (Sabine, 1824). **Polar Eelpout** or Canadian Eelpout. To a least 33.3 cm (13.1 in) TL (Mecklenburg *et al.* 2018). Nearly circumpolar; Beaufort and Chukchi Seas to eastern Bering Sea between Saint Matthew Island, and Saint Lawrence Island to western Bering Sea at Glubokaya Bay; as far north as 79°55'N, 85°20'W in the high Canadian Arctic (Mecklenburg *et al.* 2016). Benthic; depth: 4 to more than 300 m (13–984 ft) (min.: Møller in Coad and Møller 2018; max.: Mecklenburg *et al.* 2016). In the past, this species, *Lycodes mucosus*, and *Lycodes turneri* were often been confused. The American Fisheries Society (Nelson *et al.* 2004) calls this fish the Canadian Eelpout, but its range is nearly circumpolar and Canadian (e.g., McAllister 1990, Coad 1995) and Russian scientists (e.g., Sheiko and Fedorov 2000), as well as many U.S. scientists (e.g., Mecklenburg *et al.* 2002), call it the Polar Eelpout. With the specific epithet *polaris,* it is logical and less confusing to use the name Polar Eelpout.

Lycodes raridens Taranetz & Andriashev, 1937. **Marbled Eelpout**. To 86 cm (34.4 in) TL (Balanov *et al.* 2006). Sea of Okhotsk and northern Sea of Japan; Bering Sea (in eastern Bering Sea to outer Bristol Bay) to East Siberian Sea, Chukchi Sea, and western Beaufort Sea (eastward to north of Arey Island at 70°36'N, 143°55'W); one capture north of Near Islands, western Aleutian Islands (Mecklenburg *et al.* 2016). Benthic; depth: 8–525 m (26–1,722 ft) (min.: Mecklenburg *et al.* 2002; max.: Kim 2001).

Lycodes reticulatus Reinhardt, 1835. **Arctic Eelpout**. To about 65 cm (25.6 in) TL; a 75 cm (29.5 in) record from Labrador may represent *Lycodes lavalaei* Vladykov & Tremblay, 1936. Arctic Canada at Ellesmere Island eastwards to Barents, Kara, and Laptev Seas; Alaska, and Canada Beaufort Sea from 151°06'W eastward to 70°32'N, 130°50'W. Benthic; depth: 6–930 m (20–3,051 ft). All in Mecklenburg *et al.* (2016). Note that the differences between this species and *L. rossi* are unclear (Mecklenburg *et al.* 2011), and *L. reticulatus* may be a senior synonym of *L. rossi* (Mecklenburg and Steinke 2015).

Lycodes rossi Malmgren, 1865. **Threespot Eelpout**. To 31 cm (12.2 in) or 38 cm (15 in) TL (Mecklenburg *et al.* 2018). Nearly circumpolar; Greenland eastward to Laptev Sea; Beaufort Sea off Alaska (as far west as 155°W) eastward to Dease Strait, Canada. Not verified from Chukchi Sea (Mecklenburg *et al.* 2016). Benthic; depth: 42–467 m (138–1,532 ft); juveniles as shallow as 9 m (30 ft) (min.: Mecklenburg *et al.* 2016; max. Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). There are no clear distinctions between *L. rossi* and *L. reticulatus* and thus data on distributions are problematic (Mecklenburg *et al.* 2011, Mecklenburg and Steinke 2015).

Lycodes sagittarius McAllister, 1976. **Archer Eelpout**. To 42.7 cm (16.8 in) TL (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California). Beaufort Sea, Alaska, and Kara, and Laptev Seas (Mecklenburg *et al.* 2016). Captures in the Chukchi Sea have not been verified (Mecklenburg *et al.* 2016).

Benthic; depth: 120 to at least 1,934 m (394–6,344 ft), and perhaps to 2,151 m (7,055 ft) (Mecklenburg *et al.* 2016). Specimens with white bars and fewer vertebrae from Franklin Bay in the Canadian part of the Beaufort Sea identified as *L. sagittarius* (illustrated in McAllister *et al.* 1981; Mecklenburg *et al.* 2002) are *L. marisalbi*. *Lycodes sagittarius* consists of uniformly brown specimens only (Møller 2000). *Lycodes sagittarius* may be a junior synonym of *Lycodes marisalbi* Knipowitsch, 1906 (Mecklenburg *et al.* 2018).

Lycodes seminudus Reinhardt, 1837. **Longear Eelpout**. To 57 cm (22.4 in) TL (Møller and Jørgensen 2000). Likely circumpolar, lacking documentation from the East Siberian Sea and the central Canadian Arctic; Chukchi Borderland eastward to Dease Strait, Canada (Mecklenburg *et al.* 2016). Benthic; depth: 50–2,000 m (164–6,650 ft) (min.: Mecklenburg *et al.* 2011; max.: Møller in Coad and Møller 2018).

Lycodes soldatovi Taranetz & Andriashev, 1935. **Dipline Eelpout.** To 96 cm (37.8 in) FL (Kulik *et al.* 2016). Seas of Okhotsk and Japan to Bering Sea (Lindberg and Krasyukova 1975); one record from Alaska (Mecklenburg *et al.* 2002). Balanov *et al.* (2004) question whether this species occurs in the Sea of Japan. Benthic; depth: 153–1,030 m (502–3,379 ft) (Federov *et al.* 2003).

Lycodes squamiventer Jensen, 1904. **Scalebelly Eelpout**. To 37 cm (14.6 in) TL. Arctic Ocean north of Svalbard; deep slopes of the Barents, Norwegian, and Greenland Seas southward to the Iceland-Faroe-Shetland Slope; Alaska and Canadian Beaufort Seas (from 71°26'N, 151°06'W eastwards to 71°09'N, 134°59'W). Bathybenthic; depth: 160–1,808 m (524–5,930 ft). All in Mecklenburg *et al.* (2016).

Lycodes turneri Bean, 1879. **Estuarine Eelpout** or Polar Eelpout. To 85 cm (33.5 in) SL (Mecklenburg *et al.* 2018). Western Beaufort (Mecklenburg *et al.* 2011), and Chukchi Seas to Bristol Bay in the eastern Bering Sea to about Cape Olyutorskiy in the western Bering Sea (Mecklenburg *et al.* 2002). Benthic; depth: 1–125 m (3–410 ft) (min.: Mecklenburg *et al.* 2011; max.: Allen and Smith 1988). Historically, this species, *Lycodes mucosus*, and *Lycodes polaris* have often been mistaken for one another. The AFS–ASIH fish names committee (Page *et al.* 2013) calls this fish the Polar Eelpout, the name we prefer for *L. polaris.*

Lyconema barbatum Gilbert, 1896. **Bearded Eelpout**. To 22 cm (8.7 in) TL (Eric Miller, pers. comm. to M.L.). Northern Oregon (45°46'N, 124°40'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to between Islas San Benito and Isla de Cedros (28°17'N, 115°28'W), central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Published reports of occurrence in the Bering Sea are mistaken (Mecklenburg *et al.* 2002). Benthic; depth: 45–472 m (148–1,548 ft) (min.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys; max.: Shelly Moore, pers. comm. to M.L.).

Melanostigma pammelas Gilbert, 1896. **Midwater Eelpout** or Pacific Softpout. To 12.2 cm (4.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); 13.3 cm (5.2 in) TL (Lancraft 1982). South of Umnak-Unalaska Islands (53°25'N, 168°10'W) (Maslenikov *et al.* 2013) to Gulf of Tehuantepec, Mexico (Anderson 1994). Mesopelagic and possibly bathypelagic; depth: collected in nets towed from 91–2,012 m (298–6,601 ft) (min.: Kamikawa 2017; max.: Mecklenburg *et al.* 2002).

Nalbantichthys elongatus Schultz, 1967. **Thinskin Eelpout**. To 13.8 cm (5.4 in) TL (Springer and Anderson 1997). Eastern Aleutian Islands (52°57'N, 169°26'W) (Maslenikov *et al.* 2013) and Bering Sea near western Aleutian Islands (Schultz 1967, Anderson 1984) at positions estimated and plotted in Mecklenburg *et al.* (2002). Benthic; depth: 300–520 m (984–1,706 ft) (min.: Schultz 1967; max.: Anderson 1984).

Opaeophacus acrogeneius Bond & Stein, 1984. **Bulldog Eelpout**. To 15.4 cm (6.1 in) SL. Seguam and Umnak Islands, Aleutian Islands. Benthic; depth: 500–800 m (1,640–2,625 ft). All in Mecklenburg *et al.* (2002) after Bond and Stein (1984).

Pachycara bulbiceps (Garman, 1899). **Snubnose Eelpout**. To 53.5 cm (21 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Eastern Pacific and Atlantic Oceans; Haida Gwaii, northern British Columbia (Mecklenburg *et al.* 2002) to Chile (25°27'N, 71°52'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 2,400–4,780 m (7,874–15,682 ft) (Anderson and Peden 1988).

Pachycara gymninium Anderson & Peden, 1988. **Nakednape Eeelpout**. To 42.2 cm (16.6 in) (Anderson and Peden 1988). Haida Gwaii, northern British Columbia to vicinity of Isla Guadalupe, central Baja California; Gulf of California (Anderson and Peden 1988). Benthic; depth: 1,646–3,219 m (6,399–10,561 ft) (min.: Kamikawa 2017; max.: Anderson and Peden 1988). A potential shallower catch at 366 m (1,200 ft) was taken by a bottom

trawl fished over a depth range of 366–732 m (2,400 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Pachycara karenae Anderson, 2012. To 36.2 cm (14.3 in) SL (Anderson 2012). Monterey Bay, central California (Anderson 2010). Depth: 2,780–3,150 m (9,118–10,332 ft) (min.: Anderson 2012; max: Drazen *et al.* 2015).

Pachycara lepinium Anderson & Peden, 1988. **Scalynape Eelpout.** To 59.7 cm (23.5 in) TL (Anderson and Peden 1988). Haida Gwaii, northern British Columbia to vicinity of Isla Guadalupe, central Baja California (Anderson and Peden 1988). Benthic; depth: 1,646–2,970 m (5,399–9,744 ft) (min.: Kamikawa 2017; max.: Anderson and Peden 1988).

Puzanovia rubra Fedorov, 1975. **Tough Eelpout**. To 38 cm (15 in) TL (Tokranov *et al.* 2004). Sea of Okhotsk (Fedorov 1975); Pacific Ocean off Hokkaido (Amaoka *et al.* 1977) to northern Kuril Islands, and Shirshov Ridge, south-western Bering Sea (Fedorov 1975); Cape Navarin, northern Bering Sea to Pribilof Islands (Fedorov 1975, Mecklenburg *et al.* 2002), and Aleutian Islands (James Orr). Benthic; depth: 200–1,038 m (656–3,405 ft) (min.: Fedorov 1975; max.: Hoff and Britt 2003).

Taranetzella lyoderma Andriashev, 1952. **Ghostly Eelpout**. To 16 cm (6.3 in) SL, 16.5 cm (6.6 in) TL (Anderson 1995). Suruga Bay, Japan (Machida and Ohta 1996); western Bering Sea at Olyutorskiy Bay (Andriashev 1952); eastern Bering Sea to off southern British Columbia (Peden and Jamieson 1988) to Isla Guadalupe, central Baja California (Anderson 1995). Benthopelagic; depth: 500–3,000 m (1,640–9,842 ft) (min.: Orlov and Tokranov 2019; max.: Pearcy *et al.* 1982).

Family Stichaeidae—Pricklebacks

Acantholumpenus mackayi (Gilbert, 1896). **Blackline Prickleback** or Pighead Prickleback. To 70 cm (27.6 in) SL (Amaoka and Miki in Masuda *et al.* 1984). Seas of Okhotsk and Japan; Pacific coast of Hokkaido, Kuril Islands, and south-eastern Kamchatka; Canadian Beaufort Sea (Phillips Bay to Wood Bay), eastern Chukchi Sea, eastern Bering Sea, Aleutian Islands, and Gulf of Alaska. No records from Alaskan Beaufort Sea (Mecklenburg *et al.* 2016). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 0.6–200 m (2–656 ft) (min.: Mecklenburg *et al.* 2018; max.: Coad in Coad and Reist 2018).

Alectrias alectrolophus (Pallas, 1814). **Stone Cockscomb**. To 14.3 cm (5.6 in) TL (Tokranov and Murasheva 2018). Sea of Okhotsk and northern Sea of Japan to south-eastern Kamchatka and Commander Islands; Norton Sound, Bering Sea, Alaska; an uncertain record from Amchitka Island, Aleutian Islands (Mecklenburg *et al.* 2002). Benthic; depth: intertidal (primarily) and shallow subtidal to 100 m (328 ft) (min.: Peden 1967; max.: Federov *et al.* 2003).

Alectridium aurantiacum Gilbert & Burke, 1912. **Lesser Prickleback**. To 10.2 cm (4 in) SL (Balanov *et al.* 1999). Kuril Islands, Commander Islands, and Aleutian Islands (Balanov *et al.* 1999). Benthic; depth: lower intertidal and shallow subtidal to 56 m (184 ft) (min.: Peden 1967; max.: Sheiko and Fedorov 2000).

Anisarchus medius (Reinhardt, 1837). **Stout Eelblenny**. Variously reported to 20 cm (7.9 in) TL (Wienerroither *et al.* 2011), 28.6 cm (11.3 in) (Mecklenburg *et al.* 2018), and 30 cm (11.8 in) TL (Coad in Coad and Reist 2018). Circumpolar in Arctic Ocean (Coad in Coad and Reist 2018) and southward to Sea of Okhotsk off Hokkaido, Japan (Yamanaka and Yabe 2012) to south-eastern Alaska at Auke Bay (Mecklenburg and Sheiko 2004), and Coco Harbor (55°03'N, 133°02'W) (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska). Benthic; depth: intertidal to 300 m (984 ft) (min.: Mecklenburg *et al.* 2018; max.: Federov *et al.* 2003). Classified by some authors in *Lumpenus*. Date of the original species description is 1837, although previously given as 1836 (Mecklenburg and Sheiko 2004).

Anoplarchus insignis Gilbert & Burke, 1912. **Slender Cockscomb**. To 11.8 cm (4.6 in) TL (Peden and Wilson 1976). Attu Island, Aleutian Islands to Pribilof Islands and Bristol Bay, Bering Sea, Alaska (Mecklenburg *et al.* 2002), to Arena Cove, northern California (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 84 m (276 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov)

Anoplarchus purpurescens Gill, 1861. **High Cockscomb**. To 20 cm (7.8 in) TL (Hart 1973). Attu Island, Aleutian Islands and Pribilof Islands, Bering Sea (Mecklenburg *et al.* 2002), to Newport Beach, southern California (Personal communication: Santa Barbara Natural History Museum Fish Collection, Santa Barbara, California),

and Santa Rosa Island, southern California (Miller and Lea 1972). Benthic; depth: intertidal to 35 m (114 ft) (min.: Eschmeyer and Herald 1983; max. Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Bryozoichthys lysimus (Jordan & Snyder, 1902). **Nutcracker Prickleback**, Longfin Moss Blenny, or Longfin Prickleback. To 30 cm (11.8 in) SL, 32.2 cm (12.7 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) (TL measurement made by Katherine Maslenikov). Sea of Japan off Primorskii Krai (Russian coast) (Antonenko *et al.* 2004), Hokkaido, and Tatar Strait, Pacific Ocean off Hokkaido, and Sea of Okhotsk (Mecklenburg *et al.* 2002) to throughout Aleutian Islands (Maslenikov *et al.* 2013), Bering Sea north to Cape Navarin, and vicinity of Saint Matthew Island, and western Gulf of Alaska (Mecklenburg *et al.* 2002). Benthic; depth: 45–490 m (148–1,608 ft) (Lavrova 1990).

Bryozoichthys marjorius McPhail, 1970. **Pearly Prickleback**. To 30 cm (1 ft) TL (Eschmeyer and Herald 1983). Western Aleutian Islands (to Stalemate Bank) (Maslenikov *et al.* 2013), Bering Sea to near Pribilof Islands (56°02'N, 169°21'W) (Maslenikov *et al.* 2013) to Gulf of Alaska (Mecklenburg *et al.* 2002) to La Perouse Bank, southern British Columbia (Peden and Wilson 1976). Benthic; depth: 97–374 m (318–1,227 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Incorrectly spelled *majorius* by some authors.

Cebidichthys violaceus (Girard, 1854). **Monkeyface Prickleback**. To 76.2 cm (30 in) TL (Miller and Lea 1972). Netarts-Cape Mears area, Oregon (Janna Nichols, pers. comm. to M.L.) to Bahía San Quintin, northern Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 24 m (80 ft) (Miller and Lea 1972); reported but not confirmed to 91 m (300 ft) (Love *et al.* 2005).

Chirolophis decoratus (Jordan & Snyder, 1902). **Decorated Warbonnet**. To 41.9 cm (16.5 in) TL (Eschmeyer and Herald 1983). Norton Sound, eastern Bering Sea (Mecklenburg *et al.* 2018), and Aleutian Islands, Alaska (Mecklenburg *et al.* 2002), to Rittenburg Bank (37°53'N, 123°18'W), central California (Tom Laidig, pers. comm. to M.L.). Benthic; depth: 5–297 m (15–974 ft) (min.: Jan Kocian, pers. comm. to M.L.; max.: DFO).

Chirolophis nugator (Jordan & Williams, 1895). **Mosshead Warbonnet**. To more than 14.6 cm (5.8 in) TL (Peden and Wilson 1976). Western Aleutian Islands, Alaska (Mecklenburg *et al.* 2002) to San Nicolas Island (33°14'N, 119°38'W), southern California (Christopher Grossman, pers. comm. to M.L.). Benthic; depth: intertidal to 80 m (262 ft) (min.: Miller and Lea 1972; max.: Pietsch and Orr 2019).

Chirolophis snyderi (Taranetz, 1938). **Bearded Warbonnet** or Wendell's Warbonnet. To 41.7 cm (16.4 in) TL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Sea of Okhotsk, west coast of Sakhalin (northern Sea of Japan), and Pacific coast of Hokkaido, to Bering and Chukchi Seas (to Point Barrow) (Mecklenburg *et al.* 2016), Aleutian Islands west to Adak Island (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; depth: 0–490 m (1,608 ft) (min.: Federov *et al.* 2003; max.: Lavrova 1990).

Chirolophis tarsodes (Jordan & Snyder, 1902). **Matcheek Warbonnet**. To 17.6 cm (6.9 in) SL (Peden 1975). Pacific Ocean south of Sanak Islands and western Gulf of Alaska at Chiniak Bay, Kodiak Island (Mecklenburg *et al.* 2002); Haida Gwaii, northern British Columbia (Peden 1975). Benthic; depth: 1–75 m (3–246 ft) (Mecklenburg *et al.* 2002).

Ernogrammus walkeri Follett & Powell, 1988. **Masked Prickleback**. To 29 cm (11.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Monterey Bay, central California to San Miguel Island, southern California (Follett and Powell 1988). Benthic; depth: intertidal to 21 m (70 ft) (Follett and Powell 1988).

Esselenichthys carli (Follett & Anderson, 1990). **Threeline Prickleback**. To 27 cm (10.6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Pacific Grove, northern California to Bahía San Quintin, northern Baja California (Follett and Anderson 1990). Benthic; depth: 1–29 m (4–95 ft) (min.: Follett and Anderson 1990; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The original genus name was *Esselenia*, but this name is not available for fishes because it was already given to a grasshopper, Anderson (2003) changed the name to *Esselenichthys.*

Esselenichthys laurae (Follett & Anderson, 1990). **Twoline Prickleback**. To 9.8 cm (3.9 in) SL. Farallon Islands, northern California to Punta Banda, northern Baja California. Benthic; depth: 11–46 m (35–151 ft). All in

Follett and Anderson (1990). The original genus name was *Esselenia* but was preoccupied as a grasshopper name, so Anderson (2003) changed the name to *Esselenichthys.*

Eumesogrammus praecisus (Krøyer, 1836). **Fourline Snakeblenny**. To 23 cm (9.1 in) TL. East Siberian and Chukchi Seas, through North American Arctic, to western Greenland, and thence to Gulf of Maine; southward to Bering Sea (at Saint Matthew Island), with isolated population in Sea of Okhotsk. Benthic; depth: 5–6 to about 400 m (16–20 to 1,312 ft). All in Mecklenburg *et al.* (2018).

Gymnoclinus cristulatus Gilbert & Burke, 1912. **Trident Prickleback**. To 11.6 cm (4.6 in) SL. Hokkaido to Kuril Islands, eastern Kamchatka, Commander Islands, and western Aleutian Islands at Amchitka Island, Alaska. Benthic; depth: intertidal to 40 m (131 ft); usually shallower than 20 m (66 ft). All in Mecklenburg *et al.* (2002).

Kasatkia seigeli Posner & Lavenberg, 1999. **Sixspot Prickleback**. To 14 cm (5.5 in) TL (Eschmeyer and Herald 1983 as *Kasatkia* sp.). Mendocino County, northern California to Diablo Cove, central California (Eschmeyer and Herald 1983 as *Kasatkia* sp.). Benthic; depth: 9–26 m (30–85 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Eschmeyer and Herald 1983 as *Kasatkia* sp.).

Leptoclinus maculatus (Fries, 1838). **Daubed Shanny**. To 23 cm (9.1 in) TL (Coad in Coad and Reist 2018). Circumpolar; northern Scandinavia, White Sea to Spitsbergen, Iceland, southern Greenland to Cape Cod, Massachusetts; Arctic Canada to Beaufort Sea, Alaska to Sea of Okhotsk and Tatar Strait, Sea of Japan to Puget Sound, Washington (Mecklenburg *et al.* 2002, Mecklenburg and Sheiko 2004). Benthic; depth: 2–773 m (7–2,535 ft) (min.: Mecklenburg *et al.* 2002; max.: Mecklenburg *et al.* 2016).

Lumpenella longirostris (Evermann & Goldsborough, 1907). **Longsnout Prickleback**. To 43 cm (17.2 in) TL (Antonenko *et al.* 2003). Western North Atlantic Ocean (one record from Greenland; Miki in Okamura *et al.* 1995), and North Pacific Ocean; Sea of Japan (Lindberg and Krasyukova 1975, Grigor'ev 1993, Antonenko *et al.* 2004), and Sea of Okhotsk (Dudnik and Dolganov 1992) to Bering Sea, and Aleutian Islands, Alaska (Mecklenburg *et al.* 2002) to Burrard Inlet, southern British Columbia (Hart 1973). Benthic; depth: 25–1,195 m (82–3,921 ft) (min.: Allen and Smith 1988; max.: Parin and Pakhorukov 2003); adults typically at 300–600 m (984–1,968 ft) (Mecklenburg and Sheiko 2004). *Lumpenlla nigricans* is a junior synonym (Fricke *et al.* 2020).

Lumpenopsis clitella Hastings & Walker, 2003. **Saddled Prickleback**. To 5.5 cm (2.2 in) SL (Hastings and Walker 2003). Collected in southern California off San Diego and Santa Catalina Island (Hastings and Walker 2003); observed from a manned submersible at a number of offshore banks in southern California (M.L., unpubl. data). Benthic; depth: 54–130 m (177–429 ft) (min.: Hastings and Walker 2003; max.: M.L., unpubl. data). Only two specimens have been collected.

Lumpenopsis hypochroma (Hubbs & Schultz, 1932). **Y-Prickleback**. To 7.6 cm (2.9 in) SL (Hubbs and Schultz 1932). Known with certainty only from British Columbia (Hastings and Walker 2003). Benthic; depth: 30–100 m (98–328 ft) (Campbell 1989). Moved from genus *Allolumpenus* to *Lumpenopsis* by Hastings and Walker (2003). The correct spelling of the specific name in the new combination is *hypochroma,* to agree with the gender (feminine) of *Lumpenopsis* (Mecklenburg and Sheiko 2004).

Lumpenus fabricii Reinhardt, 1836. **Slender Eelblenny**. To 36.5 cm (14.4 in) TL (Mecklenburg *et al.* 2018). Barents Sea, Russia eastward across Siberia, and through the Chukchi, and Beaufort Seas to Greenland, and southward to Nova Scotia; in Pacific Ocean southward to western Bering Sea at Pavla, and Natalii Bays, and eastern Bering Sea, and eastern Aleutian Islands, and south-eastern Gulf of Alaska at Auke Bay (Mecklenburg *et al.* 2018). Benthic; depth: intertidal to 146 m (479 ft) (min.: Quast 1968; max.: Mecklenburg *et al.* 2018). Various reports of much deeper catches are not verifiable (Mecklenburg *et al.* 2018). A maximum depth of 235 m (771 ft) (Coad in Coad and Reist 2018) is without documentation.

Lumpenus sagitta Wilimovsky, 1956. **Snake Prickleback**. To 50.8 cm (20 in) TL (Mecklenburg *et al.* 2016). Seas of Japan and Okhotsk; Pacific Ocean off Japan, to Commander Islands, and Aleutian Islands to at least Saint Matthew Island, and Norton Sound, northern Bering Sea (Mecklenburg *et al.* 2016), to Monterey Bay, central California (Jacobsen Stout *et al.* 2016). Reports from Chukchi Sea are uncertain (Mecklenburg *et al.* 2016). Benthic; depth: intertidal to 425 m (1,394 ft) (min.: Miller *et al.* 1980; max.: Allen and Smith 1988); almost always shallower than 200 m (656 ft) (Mecklenburg *et al.* 2002).

Phytichthys chirus (Jordan & Gilbert, 1880). **Ribbon Prickleback**. To 21.1 cm (8.3 in) TL (Mecklenburg et a. 2002). Amchitka Island, Aleutian Islands (Personal communication: University of Washington, Burke Museum

of Natural History and Culture Fish Collection, Seattle, Washington), and Gulf of Alaska coasts to southern California (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 12 m (39 ft) (Mecklenburg *et al.* 2002).

Plagiogrammus hopkinsii Bean, 1894. **Crisscross Prickleback**. To 19.7 cm (7.8 in) TL (Miller and Lea 1972). Pacific Grove, central California (Miller and Lea 1972) to San Nicolas Island (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), San Miguel Island (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Santa Cruz Island (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern California. Benthic; depth: intertidal to 21 m (70 ft) (Miller and Lea 1972).

Plectobranchus evides Gilbert, 1890. **Bluebarred Prickleback**. To 13.7 cm (5.4 in) TL (Miller and Lea 1972). Central British Columbia to San Diego, southern California (Miller and Lea 1972). Benthic; depth: 57–368 m (186–1,206 ft) (min.: Pietsch and Orr 2019; max.: Gilbert 1915).

Poroclinus rothrocki Bean, 1890. Whitebarred Blenny or **Whitebarred Prickleback**. To 25.4 cm (10 in) TL (Miller and Lea 1972). South-eastern Bering Sea (57°N, 172°W; Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington, UW 048670, UW 049345), and Aleutian Islands (Mecklenburg *et al.* 2002), Alaska to San Diego, southern California (Miller and Lea 1972). Benthic; depth: 35–350 m (115–1,148 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max.: DFO).

Stichaeus punctatus (Fabricius, 1780). **Arctic Shanny**. To 22 cm (8.7 in) TL (Eschmeyer and Herald 1983). East Siberian, Chukchi, and Beaufort Seas east to Greenland and Gulf of Maine (not in eastern North Atlantic), and south to Seas of Okhotsk and Japan to Skidegate Inlet, British Columbia, including Commander–Aleutian Chain (Mecklenburg *et al.* 2016). A larval Arctic shanny was reported taken off Oregon (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Benthic; shallow subtidal (to as shallow as at least 6 m (20 ft) (Pirtle *et al.* 2012)) to 100 m (328 ft) (Mecklenburg *et al.* 2016).

Xiphister atropurpureus (Kittlitz, 1858). **Black Prickleback**. To 32.3 cm (12.7 in) TL (Mecklenburg *et al.* 2002). Kodiak Island, Gulf of Alaska (Mecklenburg *et al.* 2002) to near Isla San Martín (30°26'N, 116°07'W), northern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: intertidal to 27 m (90 ft) (min.: Miller and Lea 1972; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Xiphister mucosus (Girard, 1858). **Rock Prickleback**. To 58.6 cm (23.1 in) TL (Miller and Lea 1972). Kodiak Island, western Gulf of Alaska to Santa Cruz Island, southern California (Mecklenburg *et al.* 2002). Benthic; depth: intertidal to 18 m (60 ft) (Miller and Lea 1972).

Family Cryptacanthodidae—Wrymouths

Cryptacanthodes aleutensis (Gilbert, 1896). **Dwarf Wrymouth** or Red Devil. To 31 cm (12.2 in) TL (Mecklenburg *et al.* 2002). Central Bering Sea (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washingto, UW 066154, UW 094241), and eastern Aleutian Islands from Unalaska Island (Mecklenburg *et al.* 2002), to Eureka, northern California (Eschmeyer and Herald 1983). Benthic; depth: 18–964 m (59–3,163 ft) (min.: DFO).

Cryptacanthodes giganteus (Kittlitz, 1858). **Giant Wrymouth**. To 123 cm (48.4 in) TL (Pietsch and Orr 2019). South-eastern Bering Sea, and eastern Aleutian Islands from Unalaska Island (Mecklenburg *et al.* 2002), to Humboldt Bay, northern California (Miller and Lea 1972). Benthic; depth: 6–331 m (20–1,086 ft) (min.: Miller and Lea 1972; max.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington).

Family Pholidae—Gunnels

Apodichthys flavidus Girard, 1854. **Penpoint Gunnel**. To 46 cm (18 in) TL (Miller and Lea 1972). Kodiak Island, Gulf of Alaska to Santa Barbara Island (Eschmeyer and Herald 1983), and on mainland to Point Loma, southern

California (Personal communication: Santa Barbara Natural History Museum Fish Collection, Santa Barbara, California). Benthic; depth: intertidal to 11 m (36 ft) (min.: Miller and Lea 1972; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). An "*Apodichthys flavidus*" from Adak Island, Aleutian Islands (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington, UW 027056), is not this species (Katherine Maslenikov).

Apodichthys fucorum Jordan & Gilbert, 1880. **Rockweed Gunnel**. To 22.9 cm (9 in) TL (Miller and Lea 1972). Banks Island, British Columbia (Eschmeyer and Herald 1983) to Punta Escarpada, central Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 9 m (30 ft) (Miller and Lea 1972).

Pholis clemensi Rosenblatt, 1964. **Longfin Gunnel**. To 13.4 cm (5.3 in) TL (Peden and Wilson 1976). One unverifiable record from Kodiak Island, Gulf of Alaska (Mecklenburg *et al.* 2002); Prince William Sound, Gulf of Alaska (Maslenikov *et al.* 2013) to Point Lobos, central California (Kline *et al.* 2013). Benthic; depth: 7–64 m (24–210 ft) (Eschmeyer and Herald 1983).

Pholis fasciata (Bloch & Schneider, 1801). **Banded Gunnel**. To 30 cm (11.8 in) TL (Mecklenburg *et al.* 2002). Chukchi and Beaufort Seas eastward to Greenland; Bering Sea westward to Sea of Okhotsk and southeastward to Prince William Sound (Mecklenburg *et al.* 2016). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: shallow subtidal to 110 m (361 ft) (Mecklenburg *et al.* 2016). *Pholis gilli* Evermann & Goldsborough, 1907, is a junior synonym (Mecklenburg *et al.* 2016).

Pholis laeta (Cope, 1873). **Crescent Gunnel**. To 25.4 cm (10 in) TL (Miller and Lea 1972). South-eastern Kamchatka, Commander Islands, and Aleutian Islands, east along north side of Alaska Peninsula to Port Heiden, south-eastern Bering Sea, and Gulf of Alaska (Mecklenburg *et al.* 2002) to Abalone Point, Humboldt County, northern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: intertidal to 99 m (324 ft) (min.: Cross 1981; max.: Love *et al.* 2005).

Pholis ornata (Girard, 1854). **Saddleback Gunnel**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Vancouver Island, southern British Columbia (Eschmeyer and Herald 1983) to Point Loma, southern California (Kevin Lee, pers. comm. to M.L.). Peden and Hughes (1984) demonstrated that records of *P. ornata* from Alaska were misidentified *P. laeta.* Consequently, we must view recent reports of occurrence in Alaska with scepticism, especially since those specimens were not retained for verification. Benthic; depth: intertidal to 60 m (198 ft) (Love *et al.* 2005). Reports of *P. ornata* from Hokkaido (e.g., Hatooka in Nakabo 2002), the Sea of Japan, and Korean Peninsula are probably the western Pacific species *Pholis nea* (Peden and Hughes 1984) or these forms are conspecific or subspecies (Mecklenburg 2003). A "*Pholis ornata*" from the Gulf of Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington, UW 005206) is a *Pholis laeta* (Cope, 1873) (Katherine Maslenikov).

Pholis schultzi Schultz, 1931. **Red Gunnel**. To 12.7 cm (5 in) TL (Miller and Lea 1972). Haida Gwaii (53°20'N, 131°38'W), British Columbia (DFO) to Diablo Cove, central California (Miller and Lea 1972). Benthic; depth: intertidal to 102 m (335 ft) (min.: Miller and Lea 1972; max.: DFO).

Rhodymenichthys dolichogaster (Pallas, 1814). **Stippled Gunnel**. To 25 cm (9.8 in) TL (Mecklenburg *et al.* 2002). Seas of Japan and Okhotsk to Kuril Islands, Commander Islands, and Aleutian Islands, to Saint Lawrence Island and Norton Sound, northern Bering Sea (Mecklenburg *et al.* 2002). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 148 m (485 ft) (Mecklenburg *et al.* 2002).

Ulvicola sanctaerosae Gilbert & Starks, 1897. **Kelp Gunnel**. To 28.6 cm (11.3 in) TL (Miller and Lea 1972). Pacific Grove, central California (Miller and Lea 1972) to Punta Baja, northern Baja California (Rosales-Casián 2011), and Isla Guadalupe, central Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 12 m (40 ft) (min.: Chotkowski 1994; max.: Miller and Lea 1972).

Family Anarhichadidae—Wolffishes

Anarhichas denticulatus Krøyer, 1845. **Northern Wolffish**. To at least 143.8 cm (56.6 in) TL (Coad in Coad and Reist 2018), but various other, unverified, reports to as much as 200 cm (78.7 in) TL (Mecklenburg *et al.* 2016). Barents and Norwegian Seas to Spitsbergen, Iceland, Faroe Islands, Greenland, south along east coast of North America to southern Newfoundland, and as far northward as 80°38'N north of Spitsbergen; a few reports from the Chukchi

Sea near Point Barrow, Kaktovik on the Beaufort Sea, and several in western Arctic Canada (Mecklenburg *et al.* 2016). Depth: surface (Mecklenburg *et al.* 2002) to 1,700 m (5,576 ft) (Mecklenburg *et al.* 2016).

Anarhichas orientalis Pallas, 1814. **Bering Wolffish**. To 124 cm (48.8 in) TL (Mecklenburg *et al.* 2016). Seas of Japan and Okhotsk, Pacific Ocean off northern Honshu and Hokkaido, south-eastern Kamchatka, and western Gulf of Alaska (Prince William Sound) to Bering, Chukchi, and Beaufort Seas, and eastward to Bathhurst Inlet (Mecklenburg *et al.* 2016), and western Coppermine Gulf, Nunavut (Coad in Coad and Reist 2018). Depth: intertidal to about 110 m (361 ft) (Mecklenburg *et al.* 2016; max.: Lauth 2010).

Anarrhichthys ocellatus Ayres, 1855. **Wolf-eel**. To no more than 203 cm (6.7 ft) (Pietsch and Orr 2019) or perhaps to 240 cm (nearly 8 ft) TL (Mecklenburg *et al.* 2002). South-eastern Bering Sea east to Cape Menshikof, west along Aleutian Islands to Krenitzin Islands, and Gulf of Alaska (Mecklenburg *et al.* 2002) to northern Baja California (31°41'N, 116°42'W) (Feeney *et al.* 2007). This species has also been reported to live around Isla Guadalupe, central Baja California (del Prado and Peters 2005), but without documentation. A Wolf-eel found on the northeastern Bering Sea coast at Nome after a major storm (Love *et al.* 2005) may have drifted there from farther south in the Bering Sea. Depth: intertidal to 417 m (1,368 ft) (min.: Miller and Lea 1972; max.: NWFSC-FRAM).

Family Ptilichthyidae—Quillfishes

Ptilichthys goodei Bean, 1881. **Quillfish**. To 39.3 cm (15.5 in) SL (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Seas of Japan and Okhotsk to Litke Strait, and Commander and Aleutian Islands (Mecklenburg *et al.* 2002), and Bering Sea as far northward as 57°54'N, 169°40'W (Maslenikov *et al.* 2013) to central Oregon (Eschmeyer and Herald 1983). Possibly buried in substrate during the day; depth: surface to 360 m (1,181 ft) (min.: Hart 1973; max.: Mecklenburg *et al.* 2002).

Family Zaproridae—Prowfishes

Zaprora silenus Jordan, 1896. **Prowfish**. To 1 m (3.3 ft) TL or more (Mecklenburg 2003). Hokkaido, Japan and Sea of Okhotsk, Kuril Islands, Commander-Aleutian Islands to Bering Sea (Mecklenburg *et al.* 2016) to eastern Chukchi Sea (west of Kivalina, 67°32'N, 165°54'W) (Mecklenburg *et al.* 2011) to San Miguel Island, southern California (Allen and Smith 1988). Depth: 0–801 m (2,628 ft) (min.: Federov *et al.* 2003; max.: Smith *et al.* 2004); adults near bottom, young fish often taken near surface (Mecklenburg *et al.* 2002).

Family Scytalinidae—Graveldivers

Scytalina cerdale Jordan & Gilbert, 1880. **Graveldiver**. To 15.2 cm (6 in) TL (Miller and Lea 1972), usually under 10 cm (4 in) (Mecklenburg 2003). Western Aleutian Islands (Mecklenburg *et al.* 2002) to Diablo Cove, central California (Miller and Lea 1972). Benthic; depth: intertidal to 8 m (25 ft) (Eschmeyer and Herald 1983). We also note that there is a much deeper record of 1,372 m (4,500 ft) from the DFO database. However, this record is without documentation.

Family Chiasmodontidae—Swallowers

Chiasmodon niger Johnson, 1864. **Black Swallower**. To 23.6 cm (9.3 in) SL (Melo 2009). Eastern Pacific, from to west coast of North, Central, and northern South America (Melo 2009); in mid-North Pacific recorded north to 43°N (Mecklenburg *et al.* 2002); in eastern North Pacific from Washington (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington, 47°33'N, 125°19'W; UW 045555) to southern Baja California (24°27'N) (Cruz-Acevedo *et al.* 2018). Mesopelagic and

bathypelagic, 183–4,568 m (600–1,498 ft) (min.: Robertson *et al.* 2017; max.: Melo 2009). We follow Prokofiev (2014) and consider *Chiasmodon subniger* Garman, 1899 to be a junior synonym. However, we note that Fricke *et al.* (2020) consider *C. subniger* to be a valid species.

Dysalotus oligoscolus Johnson & Cohen, 1974. To 33 cm (13 in) SL (Smith in Carpenter and De Angelis 2016). Circumglobal in temperate to tropical waters; western Pacific Ocean north to south-eastern Kyushu, Japan (Ban and Fukui 2011); southern California to Gulf of California (Johnson and Cohen 1974). Mesopelagic and bathypelagic; depth: 1,262–4,835 m (4,140–15,859 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Melo 2017).

Kali falx Melo, 2008. To 16 cm (6.3 in) SL (Melo 2017). Worldwide in northern hemisphere; central Baja California (28°20.9'N, 116°21.6'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 1,300–2,870 m (4,264–9,414 ft) (Melo 2008).

Kali indica Lloyd, 1909. **Shortnose Swallower.** To 27 cm (10.6 in) TL (Smith in Carpenter and De Angelis 2016). Circumglobal; western Pacific Ocean north to northern Honshu, Japan (Shinohara *et al.* 1996); eastern Bering Sea (58°22'N, 175°01'W) (Yabe *et al.* 1981), and off north-western Vancouver Island, southern British Columbia (50°01'N, 128°51'W) (Gavin Hanke, pers. comm. to M.L.) to central Baja California (Johnson and Cohen 1974). Mesopelagic and bathypelagic; depth: to 3,527 m (11,569 ft) (Porteiro *et al.* 2017); most adults taken at depths greater than 900 m (2,953 ft) (Mecklenburg *et al.* 2002).

Kali kerberti (Weber, 1913). To 27 cm (10.6 in) TL (Smith in Carpenter and De Angelis 2016). Circumglobal; Oregon (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). Bathypelagic; depth: 200–4,465 m (656–14,645 ft) (Melo 2008).

Kali macrodon (Norman, 1929). To 27 cm (10.6 in) SL (Smith in Carpenter and De Angelis 2016). Circumglobal (Moore *et al.* 2003, Melo 2008); southern Baja California (Johnson and Cohen 1974). Bathypelagic; depth: 800 m (2,624 ft) (Porteiro *et al.* 2017) to at least 3,700 m (12,136 ft); most records deeper than 1,500 m (4,920 ft) (Johnson and Keene in Quéro *et al.* 1990).

Kali macrura (Parr, 1933). **Longnose Swallower**. To 13 cm (5.1 in) SL (Melo 2008). Circumglobal; southern California to Baja California (Johnson and Cohen 1974), and near mouth of Gulf of California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Mesopelagic and bathypelagic; depth: 600–2,750 m (1,968–9,020 ft) or deeper (min.: Moore *et al.* 2003; max.: Melo 2008). Does not occur in the eastern Pacific (Fricke *et al.* 2020).

Pseudoscopelus lavenbergi Melo, Walker, & Klepadlo, 2007. To 19 cm (7.2 in) SL (Prokofiev 2014). San Clemente Island, southern California to Chile (23°S) (Melo *et al.* 2007). Depth: about 200–3,000 m (656–9,840 ft) (min.: Robertson *et al.* 2017; max.: Melo *et al.* 2007).

Pseudoscopelus scriptus Lütken, 1892. **Luminous Swallower**. To 17.2 cm (7.5 in) SL (Mecklenburg *et al.* 2002). Circumglobal; western Pacific Ocean north to Japan (Okamura in Okamura *et al.* 1985) and southern Kuril Islands (Parin *et al.* 1995); western Bering Sea off northeastern Kamchatka and vicinity of Commander Islands (Sheiko and Fedorov 2000); one specimen taken in "NMFS Area 670, 47°30'N to 50°30'N" (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington, UW 153507); probably inhabits deep waters north and south of the Aleutian Islands and in the Gulf of Alaska (Mecklenburg *et al.* 2002). Mesopelagic and bathypelagic; depth: 200–2,100 m (656–6,890 ft) (Mecklenburg *et al.* 2002). A taxon with confused taxonomy. The western Pacific form *Pseudoscopelus scriptus sagamianus* Tanaka, 1908, has been treated as a separate species, *P. sagamianus* (Melo *et al.* 2007, Prokofiev 2009). Fricke *et al.* (2020) do not recognize the genus *Pseudoscopelus* from within our range.

Family Trichodontidae—Sandfishes

Most systematists classify the family Trichodontidae within the order Perciformes (e.g., Nelson 1994, Eschmeyer 1998). Some morphological and molecular evidence indicates classification within the Scorpaeniformes as a cottoid family may more correctly reflect relationships (Smith and Wheeler 2004).

Arctoscopus japonicus (Steindachner, 1881). **Sailfin Sandfish**. To 28 cm (11 in) FL (Kulik *et al.* 2016). Yellow Sea and Sea of Japan off Korea to Sea of Okhotsk, Kuril Islands (Lindberg and Krasyukova 1969), and Pacific

coast of Hokkaido (Hatooka in Nakabo 2002); one record from Akutan Bay, Aleutian Islands (Mecklenburg *et al.* 2002). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 0–550 m (1,804 ft) (min.: Federov *et al.* 2003).

Trichodon trichodon (Tilesius, 1813). **Pacific Sandfish**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Japan to Kuril Islands (rarely), south-eastern Kamchatka, and Commander–Aleutian chain to south-eastern Bering Sea, including Pribilof Islands (Mecklenburg *et al.* 2002) to San Francisco, northern California (Miller and Lea 1972). Burton and Lea (2019) note that the "San Francisco" location of Miller and Lea was based on a statement that the specimen came from a "market in San Francisco" in 1860. Thus, the precise location is unknown but is likely to be close to that location. Morin and Dodson (1986) report catches from James Bay, Hudson Bay, and Hudson Strait, but do not list their sources. Depth: intertidal, where it is often found buried in the sand after a receding tide (e.g., Lamb and Edgell 1986) to reported 375 m (1,230 ft), but usually found shallower than 150 m (492 ft) (Allen and Smith 1988).

Family Ammodytidae—Sand Lances

****Ammodytes dubius*** Reinhardt, 1837. **Northern Sand Lance**. To at least 37.2 cm (14.6 in) TL (Mecklenburg *et al.* 2018). Perhaps as far westward as Canadian Beaufort Sea (Coad in Coad and Reist 2018) and eastward to Greenland and southward in North America to North Carolina. Depth: 0–274 m (899 ft) (min.: Coad in Coad and Reist 2018; max.: Mecklenburg *et al.* 2018). This data is of uncertain quality as the validity of *Ammodytes dubius* and *Ammodytes americanus* DeKay, 1842 as separate species is uncertain (Orr *et al.* 2015, Mecklenburg *et al.* 2018).

Ammodytes hexapterus Pallas, 1814. **Arctic Sand Lance**. To at least 28 cm (11 in) TL (Mecklenburg *et al.* 2016). East Siberian, Chukchi, and Beaufort Seas eastward to Hudson and Ungava Bays (Mecklenburg *et al.* 2018, Falardeau *et al.* 2017), southward through eastern Bering Sea to Unimak Pass, and western Bering Sea to south-eastern Kamchatka and Sea of Okhotsk (Mecklenburg *et al.* (2016). Pelagic and benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: intertidal to 275 m (902 ft) (Mecklenburg *et al.* 2018).

Ammodytes personatus Girard, 1856. **Pacific Sand Lance**. To at least 27.4 cm (10.9 in) SL (Orr *et al.* 2015). Norton Sound, eastern Bering Sea to Attu Island, Aleutian Islands, to Balboa Island, southern California; May range to Sea of Okhotsk (Orr *et al.* 2015). Near surface to fairly shallow depths and also bury in substrate; depth: intertidal to 272 m (892 ft) (min.: Eschmeyer and Herald 1983; max.: DFO).

****Ammodytoides gilli*** (Bean, 1895). **Panamic Sand Lance** or Silver Sand Lance. To 13.5 cm (5.3 in) TL (Robertson and Allen 2002). Todos Santos area (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Cabo San Lucas, southern Baja California (Collette and Robertson 2001), and central Mexico to Ecuador, including Islas Galápagos (Robertson and Allen 2002). Depth: 1–25 m (3–82 ft) (min.: Robertson and Allen 2002; max.: Collette and Robertson 2001).

Family Uranoscopidae—Stargazers

Astroscopus zephyreus Gilbert & Starks, 1897. Electric Stargazer, **Pacific Stargazer**, or Zephyr Stargazer. To 56 cm (22 in) TL (Robertson and Allen 2015). Huntington Beach, southern California (Personal commication: Cabrillo Marine Aquarium Fish Collection, San Pedro, California) to Chimbote, Peru (Chirichigno and Vélez 1998), including Gulf of California (Jesus-Roldan *et al.* 1993). Benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–385 m (4–1,263 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Kathetostoma averruncus Jordan & Bollman, 1890. **Smooth Stargazer**. To 32 cm (12.6 in) TL (Bussing and Lavenberg in Fischer *et al.* 1995). Northern Monterey Bay, central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Isla Lobos de Tierra, Peru (Chirichigno 1974), including mouth of Gulf of California (Robertson and Allen 2002), and Islas Galápagos

(Grove and Lavenberg 1997). Benthic; depth: 13–600 m (42–1,968 ft) (min.: Miller and Lea 1972; max.: Robertson and Allen 2002).

Family Tripterygiidae—Triplefins

Axoclinus nigricaudus Allen & Robertson, 1991. **Cortez Triplefin**. To 4.8 cm (1.9 in) TL (Robertson and Allen 2008). Gulf of California to Cabo San Lucas, southern Baja California (Watson in Moser 1996). Benthic; depth: intertidal to 6 m (20 ft) (min.: Allen and Robertson 1994; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Classified by some authors in *Enneanectes*; see review of taxonomic status in Smith and Williams (2002).

Axoclinus storeyae (Brock, 1940). **Carmine Triplefin**. To 4.3 cm (1.7 in) TL (Robertson and Allen 2008). Bahía Santa Maria (24°46.1'N, 112°16'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Bahía Conejos (15°45'N, 96°05'W), Mexico (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), including Gulf of California (Robertson and Allen 2002). Benthic; depth: 1–21 m (3–70 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Crocodilichthys gracilis Allen & Robertson, 1991. **Lizard Triplefin**. To 8.3 cm (3.3 in) TL (Robertson and Allen 2008). Gulf of California to Cabo San Lucas, southern Baja California (Watson in Moser 1996). Benthic; depth: less than 1 m to 40 m (3–132 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Enneanectes carminalis (Jordan & Gilbert, 1882). **Carmine Triplefin** or Delicate Triplefish. To 4.1 cm (1.6 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Islas San Benito (Ramírez-Valdez *et al.* 2015), and Bahía Magdalena, southern Baja California, into central Gulf of California, to Oaxaca, Mexico (Thomson *et al.* 2000). Benthic; depth: 1–15 m (3–49 ft) (min.: Robertson and Allen 2015; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Classified by some authors in *Axoclinus*; see review of taxonomic status in Smith and Williams (2002). *Enneanectes sexmaculatus* is a synonym.

Enneanectes reticulatus Allen & Robertson, 1991. **Flag Triplefin**, Network Triplefin, or Reticulated Triplefin. To 6.9 cm (2.7 in) TL (Robertson and Allen 2008). Isla Guadalupe, central Baja California and, on mainland, Bahía de Sebastian Vizcaino, central Baja California (Thomson *et al.* 2000) to Gulf of California (Allen and Roberts 1991). Benthic; depth: intertidal to 55 m (180 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Thomson *et al.* 2000).

***Enneanectes* sp.** Isla Guadalupe and Bahía de Sebastian Vizcaino, central Baja California to Gulf of California (Watson in Moser 1996).

Family Dactyloscopidae—Sand Stargazers

Dactylagnus mundus Gill, 1863. Giant Sand Stargazer or **Giant Stargazer**. To 16.5 cm (6.5 in) TL (Robertson and Allen 2002). Bahía Ojo de Liebre (Scammons Lagoon), central Baja California to Panama, including Gulf of California (Dawson 1976), and perhaps Islas Galápagos (Grove and Lavenberg 1997). Depth: 0.5–15 m (2–50 ft) (min.: Dawson 1976; max.: De La Cruz-Agüero *et al.* 1997).

Dactylagnus parvus Dawson, 1976. Dwarf Sand Stargazer or **Panamic Stargazer**. To 5.8 cm (2.3 in) TL (Robertson and Allen 2002). Punta Marquez, southern Baja California to Panama (Dawson 1976). Depth: 0–6 m (20 ft) (Dawson 1976).

Dactyloscopus elongatus Myers & Wade, 1946. **Fringed Stargazer**. To 9.7 cm (3.8 in) TL (Robertson and Allen 2015). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Gulf of California southward to Oaxaca, Mexico (Hastings and Springer 2009). 1–18 m (3–60 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Dactyloscopus heraldi Dawson, 1975. **Baja Stargazer**. To 6 cm (2.4 in) SL (Robertson and Allen 2015). Southern Baja California to at least as far northward as Bahía San Juanico (Hastings and Springer 2009). Depth: about 1–8 m (4–25 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Dactyloscopus lunaticus Gilbert, 1890. **Moonstruck Stargazer**. To 8.5 cm (3.4 in) TL (Robertson and Allen 2002). Punta Tosca, southern Baja California to Ecuador, including Gulf of California (Dawson 1975). Depth: 3–138 m (10–452 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Dawson 1975).

Dactyloscopus pectoralis Gill, 1861. **Whitesaddle Stargazer**. To at least 5.3 cm (2.1 in) TL (Robertson and Allen 2015). Bahía Santa Maria, southern Baja California into Gulf of California (Dawson 1975) to Chiapas, Mexico (González-Acosta *et al.* 2018). Intertidal to 46 m (151 ft) (min.: Thomson and Lehner 1976; max.: Robertson and Allen 2015).

Gillellus arenicola Gilbert, 1890. **Sandloving Stargazer** or Sandy Stargazer. To 5.5 cm (2.2 in) TL (Allen and Robertson 1994). Punta Marquis (23°57'N, 110°52'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Cabo San Lucas area, southern Baja California; Oaxaca and Colima, Mexico (Dawson 1977) to western Panama (Robertson and Allen 2015). Depth: 1–40 m (3–131 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Gillellus semicinctus Gilbert, 1890. **Halfbanded Stargazer** or Smooth-tip Sand Stargazer. To 5.2 cm (2 in) TL (Allen and Robertson 1994). Isla Guadalupe and vicinity of Punta Eugenia, central Baja California to Colombia, including Gulf of California, Islas Galápagos (Watson in Moser 1996), and other offshore islands (Robertson and Allen 2002). Depth: 0.6–137 m (2–449 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Dawson 1977).

Heteristius cinctus (Osburn & Nichols, 1916). Banded Sand Stargazer or **Banded Stargazer**. To 4.5 cm (1.8 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California to Cabo San Francisco, Ecuador (Dawson 1977), including mouth of Gulf of California (Robertson and Allen 2002). Depth: intertidal to 27 m (89 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Dawson 1977).

Myxodagnus opercularis Gill, 1861. **Dart Stargazer.** To 9.1 cm (3.6 in) TL (Robertson and Allen 2002). Central Baja California, Gulf of California, and Islas Revillagigedo (Robertson and Allen 2015). Benthic; depth: intertidal to 18 m (59 ft) (min.: Dawson 1976; max.: Robertson and Allen 2015).

Family Blenniidae—Combtooth Blennies

Entomacrodus chiostictus (Jordan & Gilbert 1882). **Notchfin Blenny** or Rock Blenny. To 8 cm (3.1 in) TL (De La Cruz-Agüero *et al.* 1997). Bahía San Ignacio, southern Baja California (Galván-Magaña *et al.* 2000) and Gulf of California to Colombia (De La Cruz-Agüero *et al.* 1997), including all offshore islands (Robertson and Allen 2002), and Islas Galápagos (McCosker and Rosenblatt 2010). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 9 m (30 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Hypsoblennius brevipinnis (Günther, 1861). **Barnaclebill Blenny** or Barnacled Blenny. To 7 cm (2.8 in) TL (Robertson and Allen 2002). Bahía Santa Maria (24°40'N, 112°11'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California (Robertson and Allen 2002) to northern Peru (Chirichigno and Veléz 1998), including Islas Galápagos, Cocos, and Malpelo (Robertson and Allen 2002); also at locks at Atlantic entrance to the Panama Canal (Robertson and Allen 2015). Benthic; depth: intertidal to 18 m (60 ft). (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Hypsoblennius gentilis (Girard, 1854). **Bay Blenny**. To 14.7 cm (5.8 in) TL (Miller and Lea 1972). Monterey Bay, central California to Gulf of California (Miller and Lea 1972). Benthic; marine and brackish waters (Fricke *et*

al. 2020); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 24 m (80 ft) (Miller and Lea 1972).

Hypsoblennius gilberti (Jordan, 1882). **Rockpool Blenny**. To 17 cm (6.8 in) TL (Miller and Lea 1972). San Francisco Bay, northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Cabo Pulmo, Baja California (just inside the Gulf of California) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 18 m (60 ft) (Eschmeyer and Herald 1983).

Hypsoblennius jenkinsi (Jordan & Evermann, 1896). **Mussel Blenny**. To 13 cm (5 in) TL (Eschmeyer and Herald 1983). Santa Cruz, northern California (Burton and Lea 2019) to Punta Marquez, southern Baja California and Gulf of California (Miller and Lea 1972). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 40 m (131 ft) (min.: Wells 1986; max.: City of San Diego 2020).

Ophioblennius steindachneri Jordan & Evermann, 1898. Large-banded Fanged Blenny or **Panamic Fanged Blenny**. To 18 cm (7.1 in) TL (Allen and Robertson 1994). Catalina Island, southern California (Love *et al.* 2018a); Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Isla de Cedros (M.L., unpubl. data), and (mainland) Arricefe Sacramento (29°40'N, 115°47'W) (M.L., unpubl. data), central Baja California into northern Gulf of California to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 20 m (66 ft) (min.: Weaver 1970; max.: Robertson and Allen 2002).

Plagiotremus azaleus (Jordan & Bollman, 1890). **Sabertooth Blenny**. To 10.2 cm (4 in) TL (Robertson and Allen 2002). King Harbor, southern California (Pondella and Craig 2001); Rocas Chester (27°53'N, 115°04'W), Isla de Cedros, central Baja California (Pondella and Craig 2001), and Islas San Benito (Pondella and Craig 2001) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998), including Gulf of California (Allen and Robertson 1994), Islas Galápagos (Grove and Lavenberg 1997), and many other offshore islands (Robertson and Allen 2002). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–37 m (4–120 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: SIO Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Clinidae—Kelp Blennies

Gibbonsia elegans (Cooper, 1864). **Spotted Kelpfish**. To 16 cm (6.3 in) TL (Miller *et al.* 2008). San Francisco Bay (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California), northern California to Bahía Magdalena, southern Baja California, including Isla Guadalupe (Eschmeyer and Herald 1983). Benthic; depth: intertidal to 56 m (185 ft) (min.: Wells 1986; max.: Eschmeyer and Herald 1983). The Spotted Kelpfish was mistakenly given the name *Gibbonsia evides* by Eschmeyer (1998); for explanation see Nelson *et al.* (2004:243).

Gibbonsia metzi Hubbs, 1927. **Striped Kelpfish**. To 23.5 cm (9.3 in) TL (Miller and Lea 1972). Vancouver Island, British Columbia to Punta Rompiente, southern Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 18 m (59 ft) (min.: Eschmeyer and Herald 1983; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Gibbonsia montereyensis Hubbs, 1927. **Crevice Kelpfish**. To 18.4 cm (7.2 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Vancouver Island, British Columbia (Lamb and Edgell 2010) to Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Bahía San Carlos (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Isla de Cedros, Islas San Benito, and Isla Natividad, central Baja California (Ramírez-Valdez *et al.* 2015). Benthic; depth: intertidal to 49 m (162 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Gibbonsia erythra* Hubbs, 1952, is a junior synonym (Stepien and Rosenblatt 1991).

Heterostichus rostratus Girard, 1854. **Giant Kelpfish**. To 61 cm (24 in) TL (Miller and Lea 1972). British Columbia to Cabo San Lucas, southern Baja California, including Isla Guadalupe (Miller and Lea 1972). Benthic; depth: intertidal to 40 m (132 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Eschmeyer and Herald 1983).

Family Labrisomidae—Labrisomid Blennies

Alloclinus holderi (Lauderbach, 1907). **Island Kelpfish**. To 15 cm (5.9 in) TL (González-Acosta *et al.* 2018). San Miguel Island, southern California (Love *et al.* 2005) to Isla Asuncion (27°06'N, 114°18'W), southern Baja California (M.L., unpubl. data), Rocas Alijos (24°57.5'N, 115°45'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and into the Gulf of California at least as far northward as Playa Caleritas (24°21'N, 110°17'W) (González-Acosta *et al.* 2018). Benthic; depth: intertidal to 91 m (298 ft) (min.: M.L., unpubl. data; max.: Personal communication: Southern California Coastal Water Research Project, Westminster, California. Unpublished data from their trawl surveys).

****Brockius striatus*** (Hubbs, 1953). **Green Blenny**. To 14 cm (5.5 in) TL (Moncayo-Estrada *et al.* 2006). Cabo San Lucas, southern Baja California to southern Mexico (Allen and Robertson 1994), and central Gulf of California (Robertson and Allen 2002). Benthic; depth: intertidal to 9 m (30 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). We follow Lin and Hastings (2013) and place *Labrisomus striatus* Hubbs, 1953 in *Brockius*.

Cryptotrema corallinum Gilbert, 1890. **Deepwater Blenny** or Deepwater Kelpfish. To 12.7 cm (5 in) TL (Miller and Lea 1972). Off Cook Point, San Miguel Island, southern California (Love *et al.* 2005) to Bahía San Quintin, northern Baja California (Miller and Lea 1972). Benthic; depth: 15–195 m (48–639 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: M.L., unpubl. data).

****Dialommus macrocephalus*** (Günther, 1861). **Foureye Rockskipper**. To 11 cm (4.3 in) TL (Allen and Robertson 1994). Cabo San Lucas, southern Baja California to Colombia (Thomson *et al.* 2000). Benthic; depth: intertidal to 5 m (15 ft) (min.: Thomson *et al.* 2000; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Labrisomus multiporosus Hubbs, 1953. **Porehead Blenny**. To about 18 cm (7.1 in) SL (Jiménez Prado and Béarez 2004). Grenada Cove-Punta Moro, northern Baja California (Ruiz-Campos *et al.* 2010b) into upper Gulf of California (Thomson *et al.* 2000) to Islas Chincha, Peru (Chirichigno 1974), including Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 21 m (65 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Labrisomus wigginsi Hubbs, 1953. **Baja Blenny**. To 9.6 cm (3.8 in) TL (González-Acosta *et al.* 2018). Punta Eugenia, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Arroyo Seco ("half way between Magdalena Bay and Cape San Lucas"), southern Baja California (Hubbs 1953), and into Gulf of California at least as far northward as Playa Caleritas (24°21'N, 110°17'W) (González-Acosta *et al.* 2018). Benthic; depth: intertidal to 5 m (15 ft) (min.: Hubbs 1953; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Labrisomus xanti Gill, 1860. **Largemouth Blenny**. To 19.7 cm (7.8 in) TL (Thomson *et al.* 1979). Near Potato Harbor (34°02.66'N, 119°36.02'W), Santa Cruz Island (David Kushner and Katie Grady, pers. comm. to M.L.) and King Harbor, Redondo Beach, southern California (Bill Power, pers. comm. to M.L.) into Gulf of California (Thomson *et al.* 1979) to northern Chile (Sielfeld *et al.* 2010). Benthic; depth: intertidal to 21 m (70 ft) (min.: Thomson and Lehner 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Malacoctenus ebisui Springer, 1959. **Fishgod Blenny**. To 6.5 cm (2.6 in) TL (Robertson and Allen 2002). Tip of Baja California, and Mazatlán, Mexico to Ecuador (Robertson and Allen 2015); apparently not in Gulf of California (Robertson and Allen 2002). Benthic; depth: intertidal (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to 21 m (69 ft) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Malacoctenus gigas Springer, 1959. **Sonora Blenny**. To 13 cm (5.1 in) (Robertson and Allen 2008). Isla Guadalupe, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California (Robertson and Allen 2008). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 5 m (16 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Malacoctenus hubbsi Springer, 1959. **Redside Blenny**. To 8.5 cm (3.3 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and perhaps to 9 cm (3.5 in) TL (Allen and Robertson 1994) (the latter record unclear as the presence of *M. polyporosus* Springer, 1959 was unknown at the time). Bahía de Sebastian Vizcaino, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into northern Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: intertidal to 20 m (3–65 ft) (min.: Ruiz-Campos *et al.* 2010b; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Hastings and Springer (2009) separated this species from *M. polyporosus* (previously *M. hubbsi polyporosus*); that species is found from Sinaloa, central Mexico southward to Acapulco, including the Islas Tres Marias.

Malacoctenus mexicanus Springer, 1959. **Mexican Blenny**. To 6.5 cm (2.6 in) TL (Robertson and Allen 2015). Punta Tosco (24°18'N, 111°43'W) (southern Baja California) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into Gulf of California to southern Mexico (Robertson and Allen 2015). Benthic; depth: 1–29 m (3–90 ft) (min.: Robertson and Allen 2015; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Malacoctenus tetranemus (Cope, 1877). Speckled Blenny or **Throatspotted Blenny**. To 7.5 cm (3 in) TL (Allen and Robertson 1994). Bahía Santa Maria (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) (labelled as *Malacoctenus afuerae*) and Cabo San Lucas, southern Baja California (Thomson *et al.* 1979) to Chile (Grove and Lavenberg 1997), including Gulf of California (Thomson *et al.* 2000), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 25 m (83 ft) (min.: Grove and Lavenberg 1997; max.: Robertson and Allen 2002).

Malacoctenus zacae Springer, 1959. **Zaca Blenny**. To 6.5 cm (2.6 in) TL (Allen and Robertson 1994). Isla Guadalupe; tip of Baja California and extreme south-western part of Gulf of California to central Mexico (Robertson and Allen 2015). Benthic; depth: shallow water (Thomson *et al.* 1979) to 10 m (33 ft) (Robertson and Allen 2002).

Malacoctenus zonifer (Jordan & Gilbert, 1882). **Glossy Blenny**. To 8 cm (3.1 in). Punta Hughes (24°45.2'N, 112°15.9'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); tip of Baja California; Gulf of California to Ecuador (Robertson and Allen 2008). Benthic; depth: intertidal to 10 m (33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen (2008).

Paraclinus altivelis (Lockington, 1881). **Topgallant Blenny**. To 6.2 cm (2.4 in) TL. 2. (Robertson and Allen 2015). Laguna Ojo de Liebre, central Baja California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Gulf of California to Panama (Robertson and Allen 2015). Benthic; depth: 1–40 m (3–131 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008).

Paraclinus asper (Jenkins & Evermann, 1889). **Sargassum Blenny**. To 6.5 cm (2.6 in) TL (Allen and Robertson 1994). Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (De La Cruz-Agüero *et al.* 1996) into upper Gulf of California (Allen and Robertson 1994). Benthic; depth: intertidal to 10 m (33 ft) (min.: Thomson and Lehner 1976; max.: Robertson and Allen 2002). We follow Lin and Hastings (2013) in removing this species from the genus *Exerpes*.

Paraclinus beebei Hubbs, 1952. **Pink Blenny**. To 4.3 cm (1.8 in) TL (Robertson and Allen 2002). Arroyo Seco, southern Baja California to Bahía Honda, Panama (Rosenblatt and Parr 1969), including Gulf of California south of La Paz (Thomson *et al.* 2000). Benthic; depth: intertidal to 9 m (30 ft) (Rosenblatt and Parr 1969).

Paraclinus integripinnis (Smith, 1880). **Reef Finspot**. To 7.8 cm (3.1 in) TL (Rosales-Casián 1996). Santa Cruz Island, southern California (Rosenblatt and Parr 1969) and Naples, Santa Barbara County, southern California (Love *et al.* 2005) to Bahía Almejas, southern Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 15 m (50 ft) (Miller and Lea 1972).

Paraclinus magdalenae Rosenblatt & Parr, 1969. **Magdalena Blenny**. To 4.4 cm (1.7 in) TL (Robertson and Allen 2015). Bahía Magdalena and vicinity, southern Baja California (Rosenblatt and Parr 1969). Benthic; depth: 8–21 m (25–70 ft) (Rosenblatt and Parr 1969).

****Paraclinus mexicanus*** (Gilbert, 1904). **Mexican Blenny**. To 6 cm (2.4 in) TL (Robertson and Allen 2015). Tip of Baja California; Gulf of California to Ecuador, and Isla del Cocos (Robertson and Allen 2015). Benthic; depth: intertidal to 10 m (33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Paraclinus sini Hubbs, 1952. **Flapscale Blenny**. To 6 cm (2.4 in) TL (Allen and Robertson 1994). Laguna Ojo de Liebre, central Baja California into northern Gulf of California (Rosenblatt and Parr 1969). Benthic; depth: intertidal to 15 m (50 ft) (Rosenblatt and Parr 1969).

Paraclinus stephensi Rosenblatt & Parr, 1969. **Professor Blenny**. To 3.9 cm (1.5 in) TL (Robertson and Allen 2002). Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) and central to southern Mexico (Robertson and Allen 2002). Depth: 0–15 m (49 ft) (Robertson and Allen 2002).

****Paraclinus tanygnathus*** Rosenblatt & Parr, 1969. **Longjaw Blenny**. To 3.5 cm (1.4 in) TL (Allen and Robertson 1994). Tip of Baja California (Rosenblatt and Parr 1969); Mazatlán to southern Mexico (Allen and Robertson 2015). Depth: 0–15 m (50 ft) (Robertson and Allen 2002).

Paraclinus walkeri Hubbs, 1952. **San Quintin Blenny**. To 8.7 cm (3.5 in) TL (Rosales-Casián 2000). Bahía San Quintin, northern Baja California (Hubbs 1952). 1–10 m (3–33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Rosales-Casián 2000).

Starksia guadalupae Rosenblatt & Taylor, 1971. **Guadalupe Blenny**. To 4.5 cm (1.8 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Isla Guadalupe, central Baja California (Rosenblatt and Taylor 1971), Punta Abreojos (26°43'N, 113°31'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and Rocas Alijos, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: 2–18 m (8–60 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Rosenblatt and Taylor 1971).

****Starksia spinipenis*** (Al-Uthman, 1960). **Phallic Blenny**. To 6.5 cm (2.6 in) (Robertson and Allen 2002). Cabo San Lucas, southern Baja California to southern Mexico, including Gulf of California (Rosenblatt and Taylor 1971). Depth: 1–18 m (3–60 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Xenomedea rhodopyga*** Rosenblatt & Taylor, 1971. **Redrump Blenny**. To 6.5 cm (2.6 in) TL (Allen and Robertson 1994). Cabo San Lucas, southern Baja California into northern Gulf of California (Rosenblatt and Taylor 1971). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–33 m (2–100 ft) (Rosenblatt and Taylor 1971).

Family Chaenopsidae —Tube Blennies

****Acanthemblemaria balanorum*** Brock, 1940. **Clubhead Barnacle Blenny**. To 5.2 cm (2 in) TL (Balart *et al.* 2006). Cabo San Lucas, southern Baja California into southern Gulf of California (Thomson *et al.* 1979) to Isla Gorgona, Colombia (Robertson and Allen 2002). Depth: 0–21 m (69 ft) (min.: Robertson and Allen 2002; max.: Galland 2011).

****Acanthemblemaria crockeri*** Beebe & Tee-Van, 1938. Browncheck Barnacle Blenny or **Browncheek Blenny**. To 6 cm (2.4 in) TL (Robertson and Allen 2002). Cabo San Lucas, southern Baja California into northern Gulf of California (Thomson *et al.* 1979). Depth: 1–60 m (3–198 ft) (Allen and Robertson 1994).

Acanthemblemaria hastingsi Lin & Galland, 2010. To 6 cm (2.4 in) TL (Robertson and Allen 2015). Probably Punta Marquis (23°56'N, 11°52'W), southern Baja California and Gulf of California (Lin and Galland 2010). 0–13 m (43 ft) (Lin and Galland 2010). Previously as *A. macrospilus*—now known to be a species limited to mainland Mexico as far north as Mazatlán (Grantly Galland, pers. comm. to M.L.).

Chaenopsis alepidota (Gilbert, 1890). **Orangethroat Pikeblenny**. To 15.2 cm (6 in) TL (Miller and Lea 1972). Pelican Harbor, Santa Cruz Island, southern California (Kushner *et al.* 2001) to Gulf of California (Thomson *et al.* 1979). The only known mainland population in southern California is in King Harbor, southern California

(Stephens *et al.* 1989). A record from Point Sur, central California (Love and Passarelli 2020) is in error. Depth: intertidal to at least 27 m (90 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Cirriemblemaria lucasana (Stephens, 1963). **Plume Blenny**. To 4 cm (1.6 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California (Galván-Magaña *et al.* 2000) into central Gulf of California (Thomson *et al.* 1979) to southern Mexico (Robertson and Allen 2002). Depth: 3–30 m (10–98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Allen and Robertson 1994).

****Coralliozetus angelicus*** (Böhlke & Mead, 1957). **Angel Blenny** or Angel Tube Blenny. To 4.2 cm (1.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas, southern Baja California to southern Mexico, including Gulf of California (Thomson *et al.* 1979). Depth: intertidal to 5 m (17 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Coralliozetus micropes (Beebe & Tee-Van, 1938). Scarletfin Blenny, Scarlet Tube Blenny, or **Zebraface Blenny**. To 4 cm (1.6 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California into upper Gulf of California (Thomson *et al.* 1979). Depth: 0.3–6 m (1–20 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max. Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Coralliozetus rosenblatti Stephens, 1963. Speckled Tube Blenny or **Spikefin Blenny**. To 3.5 cm (1.4 in) TL (Allen and Robertson 1994). Bahía Santa Maria (24°46.1'N, 112°16'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into northern Gulf of California (Thomson *et al.* 1979). Depth: 1–9 m (3–30 ft) (min.: Allen and Robertson 1994; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Ekemblemaria myersi Stephens, 1963. **Reef-sand Blenny** or Reef-sand Tube Blenny. To 7 cm (2.8 in) TL (Allen and Robertson 1994). Southern Baja California (23°56.8'N, 110°52.2'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Robertson and Allen 2015), including Gulf of California (Allen and Robertson 1994). Depth: intertidal to 12 m (40 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Emblemaria hypacanthus*** (Jenkins & Evermann, 1889). **Gulf Signal Blenny** or Signal Blenny. To 5.1 cm (2 in) TL (Thomson *et al.* 1979). Cabo San Lucas, southern Baja California and throughout Gulf of California (Thomson *et al.* 1979). Depth: intertidal to 24 m (80 ft) (min.: Thomson and Lehner 1976; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Neoclinus blanchardi Girard, 1858. **Sarcastic Fringehead**. To 30.5 cm (12 in) TL (Miller and Lea 1972). Off Bodega Head, northern California (Devin Stephens, pers. comm. to M.L.) to Isla de Cedros, central Baja California (Miller and Lea 1972) and, on mainland, near Punta Colnett (30°40.3'N, 116°05'W), northern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–83 m (10–272 ft) (min.: Miller and Lea 1972; max.: NWFSC-FRAM).

Neoclinus stephensae Hubbs, 1953. **Yellowfin Fringehead**. To 10 cm (4 in) TL (Miller and Lea 1972). San Francisco, northern California (Ryan 1986) to Punta San Hipólito, central Baja California (Miller and Lea 1972). Depth: intertidal to 30 m (100 ft) (min.: Hubbs 1953; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Neoclinus uninotatus Hubbs, 1953. **Onespot Fringehead**. To 25 cm (9.8 in) TL (Eschmeyer and Herald 1983). Bodega Bay, northern California to northern Baja California (Eschmeyer and Herald 1983). Depth: intertidal to 55 m (180 ft) (min.: Carlisle *et al.* 1960; max.: Fay *et al.* 1978).

Protemblemaria bicirrus (Hildebrand, 1946). **Warthead Blenny** or Warthead Tube Blenny. To 5 cm (2 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and throughout Gulf of California (Thomson *et al.* 1979) to Bahía Independencia, Peru (Chirichigno and Vélez 1998). Depth: intertidal to 20 m (66 ft) (min.: Personal communication: Scripps

Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002). Recently as *Emblemaria bicirris*.

Stathmonotus sinuscalifornici (Chabanaud, 1942). **Gulf Worm Blenny** or Worm Blenny. To 6.5 cm (2.6 in) TL (Allen and Robertson 1994). Bahía Magdalena, southern Baja California into northern Gulf of California (Hastings and Springer 1994). Reports of this species from Mazatlán, Sinaloa, Mexico are doubtful (Hastings and Springer 1994). Depth: 0–6 m (20 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Family Icosteidae—Ragfishes

Icosteus aenigmaticus Lockington, 1880. **Ragfish**. To 2.13 m (7 ft) TL (Clemens and Wilby 1946) or more (Hart 1973). Sea of Okhotsk (Sheiko and Fedorov 2000), and Pacific coast of southern Honshu, Japan (Suzuki and Tsukada 1994), to Bering Sea and Gulf of Alaska (Mecklenburg *et al.* 2002), to Point Loma, southern California (Miller and Lea 1972). Larvae have been taken off northernmost Baja California (Moser *et al.* 1994). Depth: intertidal to 1,420 m (4,658 ft) (min.: Carlisle *et al.* 1960; max.: Mecklenburg *et al.* 2002). Ragfish under about 30 cm (12 in) TL in shallow water or offshore near surface; adults near bottom and deep (Mecklenburg *et al.* 2002). Adults occasionally found at the shoreline or in the surf evidently are out of their normal depth range and may be injured or disoriented. *Acrotus willoughbyi* Bean, 1888, is a junior synonym; complete synonymy given in Mecklenburg (2003).

Family Gobiesocidae—Clingfishes

****Arcos erythrops*** (Jordan & Gilbert, 1882). **Rockwall Clingfish**. To 5.4 cm (2.1 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas, southern Baja California and Gulf of California (De La Cruz-Agüero *et al.* 1997) to southern Mexico (Robertson and Allen 2002). Benthic; depth: intertidal to 15 m (49 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Gobiesox adustus Jordan & Gilbert, 1882. **Panamic Clingfish**. To 6.2 cm (2.4 in) TL (Castellanos-Galindo *et al.* 2005). Punta Marquis (23°56.8'N, 110°52.2'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); Gulf of California to Ecuador (De La Cruz-Agüero *et al.* 1997). Benthic; depth: intertidal to 18 m (60 ft) (min.: Castellanos-Galindo *et al.* 2005; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). *Gobiesox adustus* found at Isla del Coco form an independent evolutionary lineage (Torres-Hernández *et al.* 2020).

Gobiesox eugrammus Briggs, 1955. **Lined Clingfish**. To 5.8 cm (2.3 in) TL (Miller and Lea 1972). Avalon Dive Park, Santa Catalina Island (Douglas Klug, pers. comm. to M.L.) and Bird Rock, San Diego County, southern California (Miller and Lea 1972) to Islas San Benito (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Isla Guadalupe (Miller and Lea 1972), central Baja California. Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 9–82 m (30–270 ft) (Miller and Lea 1972).

Gobiesox maeandricus (Girard, 1858). **Northern Clingfish**. To 16.5 cm (6.5 in) TL (Eschmeyer and Herald 1983). Noyes Island, south-eastern Alaska (Mecklenburg *et al.* 2002) to central Baja California (between Isla Guadalupe and mainland on drifting kelp) (Miller and Lea 1972). Benthic; depth: intertidal to 18 m (59 ft) (min.: Miller and Lea 1972; max.: Cross 1981). DFO reports one bottom trawl record from northern Hecate Strait in 2005 at 140 m (459 ft). However, there is no voucher specimen.

Gobiesox papillifer Gilbert, 1890. **Bearded Clingfish**. To 8 cm (3.2 in) TL (Robertson and Allen 2002). San Pedro, southern California to Panama Bay (Miller and Lea 1972), including Gulf of California (Robertson and Allen 2002). Benthic; depth: intertidal to 5 m (17 ft) (Robertson and Allen 2002).

****Gobiesox pinniger*** Gilbert, 1890. Feathered Clingfish or **Tadpole Clingfish**. To 13 cm (5.1 in) TL (Robertson and Allen 2002). Cabo San Lucas, southern Baja California into northern Gulf of California (Thomson *et al.* 1979). Benthic; depth: intertidal to 5 m (17 ft) (min.: Thomson *et al.* 1979; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Gobiesox rhessodon Smith, 1881. **California Clingfish**. To 6.4 cm (2.5 in) TL (Miller and Lea 1972). San Simeon Reef (35°39.1'N, 121°14.4'W), central California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 11 m (35 ft) (min.: Eschmeyer and Herald 1983; max.: Miller and Lea 1972).

Gobiesox schultzi Briggs, 1951. **Smoothtip Clingfish**. To 7.8 cm (3.1 in). Southern Baja California and Gulf of California. Benthic; depth: 0–5 m (16 ft). All in Robertson and Allen (2008).

Rimicola cabrilloi Briggs, 2002. **Channel Islands Clingfish**. To 3.5 cm (1.4 in) SL (Briggs 2002). Islands off southern California (Santa Rosa, Santa Cruz, Santa Catalina, and San Nicolas). Benthic; depth: intertidal and shallow subtidal (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Rimicola dimorpha Briggs, 1955. **Southern Clingfish**. To 3.7 cm (1.5 in) TL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Gaviota (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Islas San Benito, central Baja California (Miller and Lea 1972). Benthic; depth: kelp beds, occasionally intertidal (Watson in Moser 1996).

Rimicola eigenmanni (Gilbert, 1890). **Slender Clingfish**. To 5.7 cm (2.3 in) TL (Miller and Lea 1972). San Miguel Island, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Bahía Magdalena, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: intertidal to 15 m (48 ft) (min.: Miller and Lea 1972; max.: Fitch 1952).

Rimicola muscarum (Meek & Pierson, 1895). **Kelp Clingfish**. To 7 cm (2.8 in) TL (Eschmeyer and Herald 1983). Glacier Bay, south-eastern Alaska (Mecklenburg *et al.* 2002) to Punta Baja, northern Baja California (Watson in Moser 1996). Also reported from Kachemak Bay, northern Gulf of Alaska (Abookire 2002): the arrival of *R. muscarum* in Kachemak Bay coincided with arrival of large quantities of floating bull kelp (*Nereocystis*) which may have been their mode of travel (Love *et al.* 2005). Benthic; depth: intertidal to 5 m (16 ft) (min.: Miller and Lea 1972; max.: Shelly Moore, pers. comm. to M.L.). The Glacier Bay specimen (Personal communication: University of Alaska Fairbanks Fish Collection, Fairbanks, Alaska) may have been lost, as a different fish is now in the jar (Love *et al.* 2005).

Rimicola sila Briggs, 1955. **Guadalupe Clingfish**. To at least 2.8 cm (1.1 in) SL (Briggs 1955). Isla Guadalupe, central Baja California (Briggs 1955). Benthic: depth: 2 m (7 ft) or less (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to perhaps 23 m (75 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Tomicodon boehlkei Briggs, 1955. **Cortez Clingfish**. To 7.5 cm (3 in) TL (Robertson and Allen 2002). Los Cerritos (23°20'N), southern Baja California (Ruiz-Campos *et al.* 2010b) to northern Gulf of California (Thomson *et al.* 1979). Benthic; depth: intertidal to 12 m (40 ft) (min.: Thomson *et al.* 1979; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Tomicodon eos (Jordan & Gilbert, 1882). **Rosy Clingfish**. To 5 cm (2 in) TL (Robertson and Allen 2002). Punta Tosco (24°18'N, 111°42.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California to Oaxaca, Mexico (De La Cruz-Agüero *et al.* 1997). Benthic; depth: intertidal to at least 5 m (15 ft) (min.: De La Cruz-Agüero *et al.* 1997; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and perhaps to 14 m (45 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Tomicodon humeralis*** (Gilbert, 1890). **Sonora Clingfish**. To 10 cm (4 in) TL (Robertson and Allen 2002). Cabo San Lucas, southern Baja California into northern Gulf of California (Thomson *et al.* 1979). Benthic; depth: intertidal to 5 m (16 ft) (min.: Thomson *et al.* 1979; max.: Robertson and Allen 2002).

****Tomicodon myersi*** Briggs, 1955. **Blackstripe Clingfish**. To 2.8 cm (1.1 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Gulf of California to Colombia. Robertson and Allen 2008). Benthic; depth: 0–7 m (23 ft) (Robertson and Allen 2008).

Tomicodon petersii (Garman, 1875). **Hourglass Clingfish**. To 4.6 cm (1.8 in) TL (Robertson and Allen 2015). Punta Tosco (24°187'N, 111°42.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) into Gulf of California to northern Peru, Isla del Cocos, and Islas Galápagos (Robertson and Allen 2015). Benthic; depth: intertidal to 5 m (16 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Tomicodon zebra (Jordan & Gilbert, 1882). **Zebra Clingfish**. To 5.6 cm (2.2 in) TL (Robertson and Allen 2002). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to El Salvador (Robertson and Allen 2015), including Gulf of California (Thomson *et al.* 2000). Benthic; depth: intertidal to 10 m (33 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Family Callionymidae—Dragonets

Synchiropus atrilabiatus (Garman, 1899). Antlered Dragonet, Black Dragonet, **Blacklip Dragonet**, or Sleepy Dragonet. To at least 19.5 cm (7.8 in) TL (Rodríguez-Romero *et al.* 2008). Santa Catalina Island and Point Loma, southern California (Groce, Rosenblatt, and Allen 2001); central Baja California (28°52'N, 114°30'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Talara, Peru (Grove and Lavenberg 1997), including Gulf of California (Castro-Aguirre 1991) and Islas Galápagos (Grove and Lavenberg 1997) and Isla del Cocos (Robertson and Allen 2002). Benthic; depth: 3–235 m (10–771 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Family Eleotridae—Sleepers

Dormitator latifrons (Richardson, 1844). **Pacific Fat Sleeper** or Spotted Sleeper. To 61 cm (2 ft) TL (Eschmeyer and Herald 1983). Palos Verdes, southern California to Peru (Bussing 1998), including Islas Galápagos (Grove and Lavenberg 1997); also Lake Merritt, San Francisco Bay area (Long 1996). Benthic; marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: to 2 m (7 ft) or more (Robertson and Allen 2002).

Eleotris picta Kner, 1863. **Spotted Sleeper**. To at least 54 cm (21.3 in) TL (John Snow, pers. comm. to M.L.). Isla de Cedros (Ramírez-Valdez *et al.* 2015); southern tip of Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Bussing 1998), including Gulf of California and Islas Galápagos (Grove and Lavenberg 1997) and Isla del Cocos. Benthic; marine, brackish, and fresh waters (Bussing 1998); depth: 0–5 m (16 ft) (Robertson and Allen 2008).

Erotelis armiger (Jordan & Richardson, 1895). **Flathead Sleeper**. To 12.5 cm (4.9 in) TL (Robertson and Allen 2015). Larvae found off southern Baja California (Jiménez-Rosenberg *et al.* 2010); Gulf of California to Colombia (Robertson and Allen 2015). Benthic; marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 0–5 m (16 ft) (Robertson and Allen 2015).

Gobiomorus maculatus (Günther, 1859). Bigscale Sleeper or **Pacific Sleeper**. To 35 cm (13.8 in) TL (Robertson and Allen 2015). Bahía Magdalena area, southern Baja California (Robertson and Allen 2015); Gulf of California to northern Peru, including Islas Galápagos and Isla del Cocos (Robertson and Allen 2002). Benthic; marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 0–5 m (16 ft) (Robertson and Allen 2002), often in fresh water (Bussing 1998).

Family Gobiidae—Gobies

****Acanthogobius flavimanus*** (Temminck & Schlegel, 1845). **Yellowfin Goby**. To 25 cm (9.8 in) TL in eastern Pacific; 30 cm (12 in) TL in Japan (Eschmeyer and Herald 1983). Native to Russian coast of Sea of Japan (Vasil'eva 2003), Japan, China, and Korea; Tomales Bay (Moyle 2002); Estero Americano, Sonoma County, northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco,

California), San Francisco Bay, and other central and southern California bays and estuaries (Eschmeyer and Herald 1983) to Ensenada, northern Baja California (Watson in Moser 1996), and perhaps to Isla de Cedros, but without documentation (Ramírez-Valdez *et al.* 2015). Benthic; bays and estuaries and ascends rivers (Eschmeyer and Herald 1983); intertidal to 14 m (45 ft) (min.: Allen 1999; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Barbulifer mexicanus Hoese & Larson, 1985. Mexican Bearded Goby or **Saddlebanded Goby**. To 3.5 cm (1.4 in) TL (Robertson and Allen 2002). Punta Marquis, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); tip of Baja California, central Mexico, and Islas Tres Marias (Robertson and Allen 2002), and Chiapas, Mexico (González-Acosta *et al.* 2018). Benthic; depth: 0 to 20 m (66 ft) (Robertson and Allen 2002).

****Barbulifer pantherinus*** (Pellegrin, 1901). **Panther Goby**. To 5.2 cm (2 in) TL (Allen and Robertson 1994). Cabo San Lucas, southern Baja California into central Gulf of California (Thomson *et al.* 1979). Benthic; depth: intertidal to 32 m (105 ft) (Robertson and Allen 2002).

Bathygobius ramosus Ginsburg, 1947. **Panamic Frillfin**. To 20 cm (7.9 in) TL (Jiménez Prado and Béarez 2004). Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015), and San Juanico, southern Baja California (Ruiz-Campos *et al.* 2010b) into northern Gulf of California (Thomson *et al.* 1979) to Paita, Peru (Chirichigno and Vélez 1998). Benthic; depth: intertidal to 15 m (50 ft) (min.: Thomson et a. 1979; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). The *Bathygobius soporator* listed from Bahía Magdalena by De La Cruz-Agüero *et al.* (1994) may be *B. ramosus*, as *B. soporator* is known to be an Atlantic species.

Bollmannia stigmatura Gilbert, 1892. **Tailspot Goby**. To 12 cm (4.7 in) TL (Robertson and Allen 2015). Oceanside (33°09'N, 117°23'W), southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Gulf of California, to northern Peru (Robertson and Allen 2015). Benthic; depth: 20–150 m (66–492 ft) (Robertson and Allen 2015).

****Chriolepis cuneata*** Bussing, 1990. **Rail Goby**. To 3.1 cm (1.2 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas and Gulf of California (Thomson *et al.* 2000) to Isla Gorgona, Colombia (Alzate *et al.* 2012). Benthic; depth: 0–32 m (105 ft) (min.: Robertson and Allen 2002; max.: Thomson *et al.* 2000).

****Chriolepis zebra*** Ginsburg, 1938. **Gecko Goby**. To 4.4 cm (1.8 in) TL (Thomson *et al.* 1979). Cabo San Lucas, southern Baja California to Gulf of California to central Mexico (Robertson and Allen 2015). Benthic; depth: 2–30 m (5–98 ft) (min.: Thomson *et al.* 1979; max.: Robertson and Allen 2002).

Clevelandia ios (Jordan & Gilbert, 1882). **Arrow Goby**. To 6.7 cm (2.6 in) TL (Rosales-Casián 1996). Rivers Inlet, British Columbia (Eschmeyer and Herald 1983) to Bahía Magdalena, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). The Gulf of California record (Miller and Lea 1972) is likely in error (Camm Swift, pers. comm. to M.L.). Benthic; estuaries, lagoons, and tidal sloughs (Eschmeyer and Herald 1983); depth: intertidal to 45 m (1–148 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Levings 1973).

Coryphopterus urospilus Ginsburg, 1938. Orangespot Goby or **Redlight Goby**. To 8 cm (3.1 in) TL (Grove and Lavenberg 1997). Isla Asuncion, southern Baja California (M.L., unpubl. data) to northern Gulf of California (Thomson *et al.* 1979) to central Peru (Robertson and Allen 2015), including Islas Galápagos and other offshore islands (Robertson and Allen 2015). Benthic; depth: intertidal to 40 m (125 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Ctenogobius sagittula (Günther, 1861). Lancetail Goby or **Longtail Goby**. To about 30 cm (12 in) TL (Camm Swift, pers. comm. to M.L.). Marina del Rey, southern California (Lea and Rosenblatt 2000) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998). Benthic; depth: intertidal to 5 m (17 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002). Primarily marine but does enter freshwater (Argulo *et al.* 2020). Also, recently as *Gobionellus sagittula* (Günther, 1862) and *Gobionellus longicaudus* (Jenkins & Evermann, 1889).

****Elacatinus puncticulatus*** (Ginsburg, 1938). **Redhead Goby**. To 5 cm (2 in) SL (Balart *et al.* 2006). Cabo San Lucas (Hoese and Reader 2001), and at least throughout Gulf of California (Sandoval-Huerta *et al.* 2019). Benthic; depth: 1–21 m (3–69 ft) (min.: Robertson and Allen 2002; max.: Hoese and Reader 2001). We follow

Sandoval-Huerta *et al.* (2019) and divide "*Elacatinus puncticulatus*" into three species, one of which lives in the Gulf of California region. A record from Orange County, southern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) is in error (Benjamin Frable).

Eucyclogobius kristinae Swift, Spies, Ellingson, & Jacobs, 2016. **Southern Tidewater Goby**. To 5.5 cm (2.2 in) TL. Aliso Creek, Orange County, southern California to Agua Hedionda Lagoon, San Diego County, southern California. Benthic; coastal lagoons. (All in Swift *et al.* 2016).

Eucyclogobius newberryi (Girard, 1856). **Northern Tidewater Goby**. To 5.7 cm (2.3 in) TL (Eschmeyer and Herald 1983). Tillas Slough, mouth of Smith River, northern California (Moyle 2002) to Santa Monica Artesian Springs, southern California (Swift *et al.* 2016). Benthic; coastal lagoons and brackish bays at mouths of freshwater streams (Eschmeyer and Herald 1983); occasionally marine, mostly brackish and fresh waters (Moyle 2002); depth: to 15 m (49 ft) (Greg Goldsmith, pers. comm. to M.L.).

Gillichthys mirabilis Cooper, 1864. **Longjaw Mudsucker**. To 21 cm (8.3 in) TL (Eschmeyer and Herald 1983). Tomales Bay, northern California to Gulf of California (Miller and Lea 1972). Benthic; shallow waters of bays and mudflats (Miller and Lea 1972); depth: to at least 5 m (15 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Gobionellus microdon*** Gilbert, 1892). **Palmtail Goby**. To 18.3 cm (7.2 in) TL (Hernández-Roque *et al.* 2018). Tip of Baja California, and Gulf of California to Ecuador (Robertson and Allen 2015). Benthic; marine, brackish, to nearly fresh waters (Romero-Berny 2018); depth: 0–5 m (16 ft) (Robertson and Allen 2015).

Gobiosoma nudum (Meek & Hidebrand, 1928). **Knobchin Goby**. To 4.5 cm (1.8 in) TL (Allen and Robertson 1994). Introduced to Atlantic; Punta Marquis, southern Baja California to Cabo Pulmo, Gulf of California and from Mazatlán to Colombia (Thomson *et al.* 1979). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: intertidal to 10 m (33 ft) (min.: Allen and Robertson 1994; max.: Robertson and Allen 2002).

***Gobiosoma* sp. B**. To 2.1 cm (0.8 in) TL. Central Baja California and Gulf of California. Benthic; depth: 1–10 m (3–33 ft). All in Robertson and Allen (2002).

Gobulus crescentalis (Gilbert, 1892). **Crescent Goby**. To 7 cm (2.8 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Laguna Ojo de Liebre (Scammon's Lagoon), central Baja California into northern Gulf of California (Thomson *et al.* 1979) to Isla Gorgona, Colombia (Alzate *et al.* 2012). Benthic; depth: intertidal to 21 m (3–70 ft) (min.: Weaver 1970; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

****Gobulus hancocki*** Ginsburg, 1938. **Sand-top Goby**. To 4 cm (1.6 in) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Tip of Baja California, and Gulf of California to Colombia (Robertson and Allen 2008). Benthic; depth: intertidal to 20 m (66 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Robertson and Allen 2008).

Gymneleotris seminuda (Günther, 1864). **Splitbanded Goby**. To 5.1 cm (2 in) TL (Thomson *et al.* 2000). Bahía Magdalena, southern Baja California into central Gulf of California (Thomson *et al.* 2000) to northern Peru (Robertson and Allen 2015). Benthic; depth: intertidal to 23 m (75 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Thomson *et al.* 2000).

Ilypnus gilberti (Eigenmann & Eigenmann, 1889). **Cheekspot Goby**. To 6.8 cm (2.7 in) TL (Rosales-Casián 1996). Estero Americano, northern California (Hickey 2007) to Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994), and Gulf of California (Miller and Lea 1972). Mudflats and shallow bays (Miller and Lea 1972) and estuaries (Ruiz-Campos *et al.* 2000); benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 24 m (79 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Lepidogobius lepidus (Girard, 1858). **Bay Goby**. To 15.5 cm (6.1 in) TL (Eric Miller, pers. comm. to M.L.). Kegan Cove, south-eastern Alaska (Mecklenburg *et al.* 2002) to Isla de Cedros (Miller and Lea 1972), and Bahía de Sebastian Vizcaino (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California. Benthic; depth: intertidal to 305 m (1,000 ft) (min.: Eschmeyer and Herald 1983; max.: LACSD 2002).

Lethops connectens Hubbs, 1926. **Halfblind Goby**. To 8.9 cm (3.5 in) TL (Eric Miller, pers. comm. to M.L.). Carmel, central California to Punta Colnett, northern Baja California (Miller and Lea 1972). Benthic; depth:

intertidal to 21 m (70 ft) (min.: Miller and Lea 1972; max: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Lythrypnus dalli (Gilbert, 1890). **Bluebanded Goby**. To 6.4 cm (2.5 in) TL (Eschmeyer and Herald 1983). Monterey Bay, central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Islas Lobos de Afuera, Peru (Grove and Lavenberg 1997), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Miller and Lea 1972). Benthic; depth: intertidal to 76 m (250 ft) (Eschmeyer and Herald 1983). Islas Galápagos specimens previously identified as *Lythrypnus crinitus* Ginsburg, 1939.

Lythrypnus pulchellus Ginsburg, 1938. **Gorgeous Goby**. To 4.5 cm (1.8 in) TL (Allen and Robertson 1994). Bahía Santa Maria (24°46.1'N, 112°16'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to central Gulf of California (Thomson *et al.* 1979) and parts of central Mexico (Robertson and Allen 2002). Benthic; depth: 2–70 m (7–229 ft) (Allen and Robertson 1994).

Lythrypnus zebra (Gilbert, 1890). **Zebra Goby**. To 5.7 cm (2.3 in) TL (Eschmeyer and Herald 1983). Carmel Bay, central California (Eschmeyer and Herald 1983) to barely into Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Isla Clarión, and Islas Revillagigedo (Robertson and Allen 2002). Benthic; depth: intertidal to 97 m (318 ft) (Eschmeyer and Herald (1983).

Microgobius brevispinis Ginsburg, 1939. **Balboa Goby** or Shortspine Goby. To 8.2 cm (3.2 in) TL (Robertson and Allen 2002). Southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Panama (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), including Gulf of California (Robertson and Allen 2002). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 0–6 m (20 ft) (Robertson and Allen 2002).

Microgobius cyclolepis Gilbert, 1890. **Roundscale Goby**. To 7 cm (2.8 in) TL (Robertson and Allen 2008). Punta Pequena (26°14'N, 112°32'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Colombia (Allen and Robertson 2015). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 2–36 m (5–118 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Microgobius emblematicus (Jordan & Gilbert, 1882). **Emblem Goby**. To 6.4 cm (2.5 in) TL. Bahía Magdalena (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California); mouth of Gulf of California to northern Peru (Robertson and Allen 2015). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 0–6 m (20 ft) (Robertson and Allen 2015).

Microgobius erectus Ginsburg, 1938. **Erect Goby**. To 7.5 cm (3 in) TL (Robertson and Allen 2008). Bahía Santa Maria, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California and Panama (Allen and Robertson 1994). Benthic; depth: 3–36 m (9–118 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Microgobius miraflorensis Gilbert & Starks, 1904. **Miraflores Goby**. To 5.4 cm (2.1 in). Bahía Magdalena, southern Baja California, eastern Gulf of California to northern Peru. Benthic; marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: 0–6 m (20 ft). All except habitats in Robertson and Allen (2015).

Microgobius tabogensis Meek & Hildebrand, 1928. **Tagoba Goby**. To 7 cm (2.8 in) TL (Robertson and Allen 2002). Boca de Soledad (25°23'N, 112°05'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Puerto Pizarro, Peru (Chirichigno 1974). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 0–11 m (36 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Quietula y-cauda (Jenkins & Evermann, 1889). **Shadow Goby**. To 7 cm (2.8 in) TL (Miller and Lea 1972). Morro Bay, central California to Gulf of California (Miller and Lea 1972). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: intertidal to 6 m (20 ft) (min.: Allen 1999; max.: Robertson and Allen 2002).

Rhinogobiops nicholsii (Bean, 1882). **Blackeye Goby**. To 15 cm (6 in) TL (Follett 1970). Yakutat, eastern Gulf of Alaska (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by Katherine Maslenikov) to south of Punta Rompiente, southern Baja California (Miller and Lea 1972), and Isla Guadalupe (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central Baja California. Benthic; depth: intertidal to at

least 195 m (640 ft) (min.: Follett 1970; max.: M.L., unpubl. data). A record of 640 m (2,100 ft) (Barnhart 1936) is without documentation. Classified until recently in the genus *Coryphopterus*.

****Rhinogobius brunneus*** (Temminck & Schlegel, 1845). **Amur Goby**. To at least 5.8 cm (2.3 in) TL (Kim *et al.* 2017). The "58 cm" in Froese and Pauly (2019) is a misreading of "5.8 cm" in Kim *et al.* (2017). Many parts of eastern Asia; introduced into western United States, currently in Columbia River Estuary and associated waters (Van Tassell 2011). Benthic; marine, brackish, and fresh waters (Fricke *et al.* 2020). Anadromous. This is a species complex (Dyldin and Orlov 2017).

****Tigrigobius digueti*** (Pellegrin, 1901). Banded Cleaner Goby or **Banded Cleaning Goby**. To 3.2 cm (1.3 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Cabo San Lucas, southern Baja California (Hoese and Reader 2001) to central Gulf of California to central Mexico (Robertson and Allen 2002). Benthic; depth: 1–30 m (4–98 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2008). Formerly *Elacatinus digueti* (Pellegrin, 1901).

****Tigrigobius limbaughi*** (Hoese & Reader, 2001). Widebanded Cleaner Goby or **Widebanded Cleaning Goby**. To 3.6 cm (1.4 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Central Gulf of California to Bahía Banderas, central Mexico, including Cabo San Lucas, southern Baja California (Hoese and Reader 2001). Benthic; depth: 2–35 m (7–116 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Hoese and Reader 2001). Formerly *Elacatinus limbaughi* Hoese & Reader, 2001.

*****Tridentiger barbatus*** **(**Günther, 1861). **Shokihaze Goby**. To 10.9 cm (4.4 in) TL (Greiner 2002). Native to western Pacific; Japan and Korea as far south as Taiwan (Akihito *et al.* in Nakabo 2002); San Francisco Bay Estuary (Moyle and Davis 2000). Benthic; marine (Hwang and Lee 1999) and brackish waters (Akihito *et al.* in Nakabo 2002); benthic; depth: 2–26 m (6–85 ft) (min.: Wang 2011; max.: Greiner 2002).

*****Tridentiger bifasciatus*** Steindachner, 1881. **Shimofuri Goby**. To 10.4 cm (4.1 in) TL (Love *et al.* 2005). Native to Asia; China, Korea, Japan, and Russian Sea of Japan (Vasil'eva 2003); Sacramento–San Joaquin Delta and various freshwater systems in California (Matern and Fleming 1995) to at least as far southward as the Santa Clara River drainage in southern California (Howard and Booth 2016). Marine, brackish, and fresh waters (Dyldin and Orlov 2017).

*****Tridentiger trigonocephalus*** (Gill, 1859). **Chameleon Goby**. To 12.5 cm (4.9 in) TL (Eric Miller, pers. comm. to M.L.). Native to China, Japan, and Siberia; San Francisco Bay, Los Angeles-Long Beach Harbors (Eschmeyer and Herald 1983), and San Diego Bay (Allen 1997). Benthic; marine, brackish, and fresh waters (Eschmeyer and Herald 1983); depth: intertidal to more than 15 m (49 ft) (Hwang and Lee 1999).

Typhlogobius californiensis Steindachner, 1879. **Blind Goby**. To 8.3 cm (3.3 in) TL (Eschmeyer and Herald 1983). San Simeon Point, central California (Eschmeyer and Herald 1983) to Bahía Magdalena, southern Baja California (Miller and Lea 1972). Benthic; depth: intertidal to 15 m (50 ft; Eschmeyer and Herald 1983).

Family Microdesmidae—Wormfishes

Microdesmus **sp.** To 11 cm (4.3 in) SL. La Jolla Cove, southern California. 12 m (40 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Microdesmus dorsipunctatus Dawson, 1968. Black-spotted Worm Goby or **Spotback Wormfish**. To 12.5 cm (4.9 in) TL (Robertson and Allen 2002). Bahía Almejas, southern Baja California (24°22'N, 111°42'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and Gulf of California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Panama (Dawson 1968). Benthic; marine, brackish, and fresh waters (Fricke *et al.* 2020); depth: intertidal to 10 m (33 ft) (min.: Dawson 1968; max.: Robertson and Allen 2002).

Family Ptereleotridae—Dartfishes

****Ptereleotris carinata*** Bussing, 2001. **Panamic Dartfish**. To 8 cm (3.1 in). Tip of Baja California, and Gulf of California to Colombia. Benthic; depth: 8–25 m (26–82 ft). All in Robertson and Allen (2008).

Family Ephippidae—Spadefishes

Chaetodipterus zonatus (Girard, 1858). **Pacific Spadefish**. To 66 cm (26 in) TL (Amezcua Linares 1996). San Diego, southern California (Miller and Lea 1972) to Bahía de Sechura, Peru (Chirichigno and Vélez 1998), including Gulf of California (Schneider in Fischer *et al.* 1995). Primarily marine, but will enter slightly brackish waters (Romero-Berny 2018); depth: 1–107 m (3–351 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Family Luvaridae—Louvars

Luvarus imperialis Rafinesque, 1810. **Louvar**. To 2 m (78.7 in) TL (Bauchot in Fischer *et al.* 1995). Circumglobal; Graham Island, Haida Gwaii, British Columbia (Brooks *et al.* 2016) to Chile (Miller and Lea 1972), including Gulf of California as far northward as Loreto (Shane Anderson, pers. comm. to M.L.). Epipelagic; depth: to 200 m (656 ft) (Roberts *et al.* 2015).

Family Zanclidae—Moorish Idols

Zanclus cornutus (Linnaeus, 1758). **Moorish Idol**. To 30 cm (11.8 in) TL (Araga in Masuda *et al.* 1984). Indo-Pacific; western Pacific Ocean north to Japan (Araga in Masuda *et al.* 1984); Bahía Almejas, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (Robertson and Allen 2002), Easter Island (Pequeño 1989), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface (nightlight: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 2–182 m (5–597 ft) (min.: Thompson *et al.* 1979; max.: Pinheiro *et al.* 2019).

Family Acanthuridae—Surgeonfishes

******Acanthurus achilles*** Shaw, 1803. Achilles Surgeon or **Achilles Tang**. To 26 cm (10.2 in) TL (Randall in Carpenter and Niem 2001). Cabo San Lucas, southern Baja California (Thomson *et al.* 1979), and south-western Gulf of California (Robertson and Allen 2015). Inshore surge areas (Allen and Robertson 1994); depth: to 45 m (148 ft) (Wagner *et al.* 2014).

******Acanthurus nigricans*** (Linnaeus, 1758). **Goldrim Surgeonfish**, Velvet Surgeonfish, or Whitecheek Surgeonfish. To 22 cm (8.7 in) TL (Robertson and Allen 2008). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); southern tip of Baja California (Krupp in Fischer *et al.* 1995) to Ecuador (Béarez 1996), including Islas Galápagos (Grove and Lavenberg 1997). Depth: shallow surge zone to 201 m (659 ft) (Mundy 2005).

******Acanthurus triostegus*** (Linnaeus, 1758). **Convict Surgeonfish** or Convict Tang. To 27 cm (10.6 in) TL (Robertson and Allen 2008). Indo-Pacific; western Pacific Ocean north to southern Japan (Shimada in Nakabo 2002); Gulf of California (Krupp in Fischer *et al.* 1995) to Chile (Pequeño 1989), including tip of Baja California (Krupp in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Koeda *et al.* 2016); depth: intertidal to 90 m (295 ft) (min.: Arndt and Fricke 2019; max.: Grove and Lavenberg 1997).

Acanthurus xanthopterus Valenciennes, 1835. Purple Surgeonfish, **Yellowfin Surgeonfish**, or Yellow-masked Surgeon. To 70 cm (27.6 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to southern Japan (Shimada in Nakabo 2002); Palos Verdes, southern California (Bill Power, pers. comm. to M.L.); Gulf of California (Krupp in Fischer *et al.* 1995) to Ecuador (Béarez 1996), including tip of Baja California (Krupp in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Koeda *et al.* 2016); depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 148 m (3–485 ft) (min.: Arndt and Fricke 2019; max.: Weijerman *et al.* 2019).

Prionurus laticlavius (Valenciennes, 1846). **Razor Surgeonfish**. To 60 cm (23.6 in) TL (Robertson and Allen 2008). Rocas Alijos (Gotshall 1998); Bahía Santa Maria (24°40'N, 112°11'W), southern Baja California (Personal

communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Ecuador (Béarez 1996), including Gulf of California (Krupp in Fischer *et al.* 1995). Depth: 0–65 m (213 ft) (min.: Robertson and Allen 2008; max.: Sánchez-Jiménez *et al.* 2018). We follow Ludt *et al.* (2018) and consider *Prionurus punctatus* (Gill, 1862) a junior synonym.

Family Sphyraenidae—Barracudas

Sphyraena argentea Girard, 1854. **Pacific Barracuda**. To 122 cm (48 in) TL; reported to 152 cm (60 in) TL (Miller and Lea 1972), but without documentation. Kodiak Island, Gulf of Alaska (Van Cleve and Thompson 1938) to Gulf of California (Robertson and Allen 2015), and Islas Revillagigedo (Robertson and Allen 2002). Neritic epipelagic (Mecklenburg *et al.* 2002); depth: surface (Miller and Lea 1972), intertidal to 38 m (125 ft) (min.: Carlisle *et al.* 1960; max.: M.L., unpubl. data).

Sphyraena ensis Jordan & Gilbert, 1882. **Mexican Barracuda**. To 137 cm (53.9 in) TL (Robertson and Allen 2008). Oceanside, southern California (Shane 2001) to Chile (Pequeño 1989), including lower Gulf of California (Sommer in Fischer *et al.* 1995). Depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 3–25 m (10–82 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max: Robertson and Allen 2002).

Sphyraena idiastes Heller & Snodgrass, 1903. **Pelican Barracuda**. To 91 cm (35.8 in) (Robertson and Allen 2008). Laguna Guerro Negro (24°49'N, 114°122'W), central Baja California (González-Acosta *et al.* 2012) to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California) (John Snow, pers. comm. to M.L.); Gulf of California (González-Acosta *et al.* 2012); Colombia to Chile, and offshore islands (Robertson and Allen 2008). Depth: 0–100 m (328 ft) (min.: Robertson and Allen 2008; max.: Jiménez Prado and Béarez 2004).

Sphyraena lucasana Gill, 1863. **Cortez Barracuda** or Lucas Barracuda. To 76 cm (29.9 in) TL (Robertson and Allen 2008). Isla de Cedros (Ramírez-Valdez *et al.* 2015), and Bahía de Sebastian Vizcaino, central Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), into Gulf of California (Sommer in Fischer *et al.* 1995). Nearshore; depth: surface to 25 m (82 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Family Gempylidae—Snake Mackerels

Diplospinus multistriatus Maul, 1948. Lined Cutlassfish or **Striped Escolar**. To about 33 cm (13 in) SL (Nakamura and Parin 1993). Circumglobal; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002), and east of Kuril Islands (Savinykh *et al.* 2004); central California (35°N) (Ambrose in Moser 1996) to Chile (Pequeño 1989). Oceanic epipelagic and mesopelagic; depth: surface to 1,000 m (3,280 ft) (min.: Porteiro *et al.* 2017; max.: Clarke and Wagner 1976).

Gempylus serpens Cuvier, 1829. **Snake Mackerel**. To 140.5 cm (55.3 in) TL (Choy and Drazen 2013). Circumglobal; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); San Pedro, southern California to central Chile (Fitch and Lavenberg 1968), including lowermost Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic epipelagic and mesopelagic; depth: surface to 1,000 m (3,280 ft) (Robertson and Allen 2008).

Lepidocybium flavobrunneum (Smith, 1843). **Escolar**. To 220 cm (86.6 in) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); Point Vicente, southern California (Fitch and Schultz 1978) to Cabo Blanco, Peru (Chirichigno 1974); apparently not in Gulf of California (Robertson and Allen 2015). Miller and Lea (1972) give Washington State as the northern-most record—a record without documentation according to Fitch and Schultz (1978). Oceanic pelagic and mesopelagic; depth: 25–1,100 m (82–3,608 ft) (min.: Azevedo and Heemstra 1995; max.: Duffy and Ahlong 2015).

Nealotus tripes Johnson, 1865. **Black Snake Mackerel**. To 30 cm (11.8 in) TL (Nakamara in Masuda *et al.* 1984). Circumglobal; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002), and southern Kuril

Islands (Parin 2003); southern Baja California (26°N) (Ambrose in Moser 1996) to Chile (Pequeño 1898), including southern part of Gulf of California (Robertson and Allen 2002); Islas Galágos (Grove and Lavenberg 1997). Ocean epipelagic and mesopelagic; depth: surface to 1,646 m (5,399 ft) (min.: Nakamura and Parin 1993; max.: Fricke *et al.* 2019).

Ruvettus pretiosus Cocco, 1833. **Oilfish**. To 305 cm (10 ft) TL (Eschmeyer and Herald 1983). Circumglobal; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002), and southern Kuril Islands (Parin 2003); well off Bodega Bay (38°15'N, 123°30'W), northern California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to southern Baja California and Costa Rica (Robertson and Allen 2015) to Chile (Pequeño 1989). Oceanic benthopelagic; depth: 22–1,160 m (72–3,806 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Pakhorukov 1999).

Family Trichiuridae—Cutlassfishes

Aphanopus arigato Parin, 1994. **Pacific Black Scabbardfish**. To 120 cm (47.2 in) TL (Nakabo 2002). Japan, Kuril Islands (Nakamura and Parin 1993), and south-eastern Kamchatka (Sheiko and Fedorov 2000); British Columbia southward to near Punta Eugenia (27°33'N, 115°53W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern Baja California. Records from northern Chile (Nakamura and Parin 1993), Peru, and Islas Galápagos (McCosker *et al.* 1997) are likely *Aphanopus capricornis* Parin, 1994. Benthopelagic; depth: adults mostly at 800–1,350 m (2,624–4,428 ft) (Nakamura and Parin 1993), at least one at about 498 m (1,620 ft) (Fitch and Gotshall 1972); juveniles mesopelagic, at 300–1,000 m (984–3,280 ft) (Nakamura and Parin 1993); also reported at surface (Orlov and Tokranov 2019). North Pacific records of *Aphanopus carbo* Lowe, 1839, are now considered to belong to *A. arigato,* while *A. carbo* is recognized as an Atlantic Ocean taxon. Sometimes referred to as *Aphanopus intermedius* Parin, 1983, now considered to be an eastern Atlantic species (Fricke *et al.* 2020).

Assurger anzac (Alexander, 1917). **Razorback Scabbardfish**. To 250 cm (98.4 in) SL (Nakamura in Fischer *et al.* 1995). Circumglobal (Nakamura and Parin 1993); western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); Point Dume, southern California to Chile (Eschmeyer and Herald 1983). Adults probably benthopelagic; depth: 15–400 m (50–1,312 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Nakamura and Parin 1993).

Benthodesmus pacificus Parin & Becker, 1970. **North Pacific Frostfish**. To 112 cm (44.1 in) SL. Kyushu-Palau Ridge and Ryukyu Islands, Japan (Nakamura and Parin 1993); British Columbia and Puget Sound, Washington (Peden and Hughes 1986) to Monterey Bay, central California (Anderson and Cailliet 1975). Benthopelagic; depth: to 380 m (1,246 ft) and deeper, sometimes migrating to surface; juveniles mesopelagic (Nakamura and Parin 1993). Originally described as a subspecies of *Benthodesmus elongatus* (Clarke, 1879), this form was treated as a full species by Nakamura and Parin (1993) and recognized as such by Nelson *et al.* (2004); *B. pacificus* occurs in the North Pacific, whereas *B. elongatus* occurs in the Southern Hemisphere in the Indian, Pacific, and Atlantic Oceans. Records from British Columbia and Washington (Peden and Hughes 1986) were reported as *Benthodesmus tenuis* (Günther, 1877).

Lepidopus fitchi Rosenblatt & Wilson, 1987. Black Scabbardfish or **Pacific Scabbardfish**. To 210 cm (82.7 in) SL (Nakamura in Fischer *et al.* 1995). Off Newport, Oregon (Jonathan Cusick, pers. comm. to M.L.) to southern Peru (Chirichigno and Vélez 1998), including Gulf of California (Nakamura in Fischer *et al.* 1995). No collections appear to have been made between 20°N and 5°N and Rosenblatt and Wilson (1987) speculate that this is an example of antitropical distribution. Benthopelagic; depth: adults 150–500 m (492–1,640 ft) (min.: Rosenblatt and Wilson 1987; max.: Fitch and Lavenberg 1968), and perhaps to 1,080 m (3,542 ft) (Bradburn *et al.* 2011). The latter record is from a capture made by a bottom trawl and may represent a catch made in midwaters as the net was retrieved.

Trichiurus nitens Garman, 1899. **Pacific Cutlassfish**. To 82 cm (32.3 in) SL (Burhanuddin and Parin 2008). Hunter's Point, Monterey County (37°43.8'N, 122°21.4'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), central California to Callao, Peru (Chirchigno 1974), including Gulf of California (Nakamura in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg

1997). Depth: surface to 384 m (1,260 ft) (min.: Nakamura and Parin 1993; max.: Miller and Lea 1972). A much deeper capture (1,023 m, 3,355 ft) (Morera *et al.* 2019) was made with a bottom trawl and may represent a fish taken in midwaters either during net deployment or retrieval. Burhanuddin and Parin (2008) recognized *T. nitens* as distinct from other nominal *Trichiurus* species.

Family Scombridae—Mackerels

Acanthocybium solandri (Cuvier, 1832). **Wahoo**. To 2.5 m (8.2 ft) TL (Robertson and Allen 2002). Circumglobal; western Pacific Ocean north as Japan (Nakabo in Nakabo 2002), and southern Kuril Islands (Savinykh 1998); near Santa Barbara Island and east end of San Clemente Island (Merit McCrea, pers. comm. to M.L.), and off Oxnard, southern California (Merit McCrea, pers. comm. to M.L.) to Paita, Peru (Chirichigno and Vélez 1998), including mouth of Baja California (Robertson and Allen 2015), and Easter Island (Pequeño 1989), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic epipelagic; depth: surface to 296 m (971 ft) (Theisen and Baldwin 2012). Recently and commonly as *A. solanderi.*

Allothunnus fallai Serventy, 1948. **Slender Tuna**. To 106 cm (41.7 in) FL (Roberts *et al.* 2015). Circumglobal in Southern Hemisphere (Fricke *et al.* 2020); one report from North Pacific Subarctic Gyre (44°01'N, 151°13'W) (Schaefer and Childers 1999), and one from Los Angeles–Long Beach Harbor, southern California (Miller and Lea 1972). Epipelagic; depth: to about 200 m (656 ft) (Roberts *et al.* 2015).

Auxis rochei (Risso, 1810). **Bullet Tuna**. To 55 cm (21.6 in) TL (Nakamura in Masuda *et al.* 1984). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Parin 2003); between Halfmoon Bay and San Francisco, central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to northern Chile (Pequeño 1997), including Gulf of California (Collette in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Neritic and oceanic epipelagic; depth: surface to 200 m (656 ft) (Robertson and Allen 2002). The eastern Pacific form is recognized as the subspecies *Auxis rochei eudorax* Collette and Aadland 1996 (Collette 2003).

Auxis thazard (Lacepède, 1800). **Frigate Tuna**. To 61 cm (24 in) TL (Miller and Lea 1972). Circumglobal; Huntington Beach (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), and Santa Catalina Island, southern California to Chile (Pequeño 1989), including Gulf of California (Robertson and Allen 2015) and Islas Galápagos (Miller and Lea 1972). The record of this species from the southern Kuril Islands in Savinykh (1998) appears to be in error and was changed to *Auxis rochei* in Parin (2003). Neritic and oceanic epipelagic; depth: surface to 200 m (656 ft) (Robertson and Allen 2002). The eastern Pacific form is recognized as the subspecies *Auxis thazard brachydorax* Collette and Aadland 1996 (Collette 2003).

Euthynnus affinis (Cantor, 1849). **Kawakawa** or Mackerel Tuna. To 110 cm (43.3 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); near Diablo Cove, central California (Jay Carroll, pers. comm. to M.L.), and Los Angeles Harbor, southern California (Miller and Lea 1972), and off southern Baja California (Robertson and Allen 2008) and Islas Revillagigedo (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Neritic epipelagic; depth: surface to 73 m (164 ft) (Robertson and Allen 2002).

Euthynnus lineatus Kishinouye, 1920. **Black Skipjack**. To 92 cm (36.2 in) TL (Robertson and Allen 2002). San Simeon, central California (Miller and Lea 1972) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Miller and Lea 1972), and Islas Galápagos (Eschmeyer and Herald 1983). Neritic and oceanic epipelagic; depth: surface to about 73 m (240 ft) (min.: Robertson and Allen 2002; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Katsuwonus pelamis (Linnaeus, 1758). **Skipjack Tuna**. To 108 cm (42.5 in) FL (Kurt Schaefer, pers. comm. to M.L.). Circumglobal (Collette 2003); western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); near Cordova, Gulf of Alaska (60°21.2'N, 146°05.3'W) (Steve Moffitt, pers. comm. to M.L.) to Chile (Collette and Nauen 1983), including southern Gulf of California (Robertson and Allen 2002) and Islas Galápagos (Grove and Lavenberg 1997). Oceanic epipelagic; depth: surface to 596 m (1,955 ft) (Schaefer and Fuller 2007).

Sarda chiliensis (Cuvier, 1832). **Pacific Bonito**. To 122 cm (48 in) TL (Robertson and Allen 2002). Hawai'i (Randall *et al.* 2019); eastern Pacific, with two populations: northern and eastern Gulf of Alaska (Quast 1964, Karinen *et al.* 1985, Mecklenburg *et al.* 2002) to southern Baja California (Eschmeyer and Herald 1983), just into Gulf of California on Baja California side (Robertson and Allen 2002), and Islas Revillagigedo (Robertson and Allen 2015); and Máncora, Peru to Talcahuano, Chile (Collette and Nauen 1983). Neritic epipelagic; depth: surface to 110 m (361 ft) (Robertson and Allen 2002).

Sarda orientalis (Temminck & Schlegel, 1844). **Striped Bonito**. To 117 cm (46 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); central Mexico (Robertson and Allen 2002) to Cabo Blanco, Peru (Chirichigno and Vélez 1998). Neritic epipelagic; depth: surface to about 167 m (548 ft) (Mundy 2005).

Scomber japonicus Houttuyn, 1782. Chub Mackerel, **Pacific Chub Mackerel**, or Pacific Mackerel. To nearly 63.5 cm (25 in) TL (Fitch 1956). Western Pacific Ocean north to Japan (Collette and Nauen 1983), southern Kuril Islands (Savinykh 1998), and south-eastern Kamchatka (Sheiko and Fedorov 2000); western Gulf of Alaska (Mecklenburg *et al.* 2002) to Gulf of California (Castro Hernández and Santana Ortega 2000) to Chile (Robertson and Allen 2015), including Islas Galápagos (Collette and Nauen 1983). Coastal pelagic to epipelagic or mesopelagic over continental slope; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to about 300 m (984 ft) (Collette and Nauen 1983); sometimes near shore in surf (Love *et al.* 2005). Previously treated as conspecific with *Scomber colias* Gmelin, 1789, of the Atlantic (Collette 1999, 2003).

Scomberomorus concolor (Lockington, 1879). **Gulf Sierra** or Monterey Spanish Mackerel. To 87 cm (34.2 in) TL (Robertson and Allen 2002). Soquel, Monterey Bay, central California to Gulf of California (Miller and Lea 1972). Perhaps now limited to upper Gulf of California (Robertson and Allen 2015). Neritic epipelagic; marine and brackish waters (Fricke *et al.* 2020); depth: to 15 m (49 ft) or more (Robertson and Allen 2002).

Scomberomorus sierra Jordan & Starks, 1895. **Pacific Sierra**. To 112 cm (44.1 in) TL (Robertson and Allen 2002). Marina del Rey, southern California (Williams *et al.* 2011) to central Chile (33°35'S) (Brito 2002), including Gulf of California (Collette and Nauen 1983), and Islas Galápagos (Miller and Lea 1972). Unverified report as far north as Santa Cruz Island (Williams *et al.* 2011). Neritic epipelagic; depth: surface to 15 m (49 ft) or more (Robertson and Allen 2002).

Thunnus alalunga (Bonnaterre, 1788). **Albacore**. To 152 cm (5 ft) TL (Foreman 1980). Circumglobal; western Pacific Ocean north to Japan (Collette and Nauen 1983), and southern Kuril Islands (Savinykh 1998); northern and eastern Gulf of Alaska (Karinen *et al.* 1985, Mecklenburg *et al.* 2002) to Chile (Foreman 1980), including Islas Galápagos (Grove and Lavenberg 1997), and Gulf of California (Robertson and Allen 2015). Oceanic epipelagic and mesopelagic; depth: surface to 1,185 m (3,887 ft) (Childers *et al.* 2011).

Thunnus albacares (Bonnaterre, 1788). **Yellowfin Tuna**. To 206 cm (6.8 ft) FL (Kurt Schaefer, pers. comm. to M.L.) Circumglobal; western Pacific Ocean north to Japan (Collete and Nauen 1983), and southern Kuril Islands (Savinykh 1998); one apparently newly dead specimen found on a beach near Tsiu River, Gulf of Alaska (Leon Shaul, pers. comm. to M.L.; specimen's identity confirmed through a photograph by Kurt Schaefer); also eastern North Pacific at 50°00'N, 150°02'W (Larkins 1964, Mecklenburg *et al.* 2002), and Morro Bay, central California (Squire 1987) to Chile (Miller and Lea 1972), including Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic epipelagic; depth: surface to 1,602 m (5,255 ft) (Schaefer *et al.* 2014).

Thunnus obesus (Lowe, 1839). **Bigeye Tuna**. To 236 cm (7.7 ft) FL (Kurt Schaefer, pers. comm. to M.L.). The 250 cm (8.2 ft) TL record of Nakamura in Masuda *et al.* (1984) is likely in error (Kurt Schaefer, pers. comm.). Circumglobal; western Pacific Ocean north to Japan (Collette and Nauen 1983), and southern Kuril Islands (Parin 2003); Iron Springs, central Washington (Eschmeyer and Herald 1983) to Chile (Pequeño 1989), including Islas Galápagos (Miller and Lea 1972); apparently not in Gulf of California (Robertson and Allen 2002). Oceanic epipelagic and mesopelagic; depth: surface to 1,902 m (6,239 ft) (min.: Eschmeyer and Herald 1983; max.: Schaefer and Fuller 2010).

Thunnus orientalis (Temminck & Schlegel, 1844). **Pacific Bluefin Tuna**. To 271 cm (8.9 ft) FL (Foreman and Ishizuka 1990). Western Pacific Ocean north to Japan (Nakabo in Nakabo 2002), southern Kuril Islands (Savinykh 1998), and southern Sea of Okhotsk; Shelikof Strait, Gulf of Alaska (Mecklenburg *et al.* 2002) to just

inside southwest corner of Gulf of California (Robertson and Allen 2015). Oceanic epipelagic; depth: surface to 1,426 m (4,677 ft) (Kurt Schaefer, pers. comm. to M.L.). Previously considered a subspecies of *Thunnus thynnus* (Linnaeus, 1758), raised to full species status by Collette (1999). The size of more than 3 m (10 ft) FL and weight of about 680 kg given by Mecklenburg *et al.* (2002), after Collette and Nauen (1983), pertains to the Atlantic species, *T. thynnus*.

Family Xiphiidae—Swordfishes

Xiphias gladius Linnaeus, 1758. **Swordfish**. To 457 cm (15 ft) TL (Eschmeyer and Herald 1983). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); northern Vancouver Island (49°53.12'N, 128°09.50'W), British Columbia (Luke Halpin, pers. comm. to M.L.) to Valdivia, Chile (Chirichigno and Vélez 1998), including Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic; depth: surface to 2,878 m (9,442 ft) (Collette *et al.* 2011).

Family Istiophoridae—Billfishes

Istiompax indica (Cuvier, 1832). **Black Marlin**. To 5 m (16.4 ft) TL (Randall *et al.* 1990). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); southern California (Miller and Lea 1972) to northern Chile (Grove and Lavenberg 1997), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic; depth: near surface to 258 m (846 ft) (min.: Eschmeyer and Herald 1983; max.: Chiang *et al.* 2015). Recently as *Makaira indica* (Cuvier, 1832).

Istiophorus platypterus (Shaw, 1792). **Sailfish**. To 360 cm (11.7 ft) TL (Randall *et al.* 1990). Circumglobal; western Pacific Ocean north to southern Kuril Islands (Parin 2003); Dana Point, southern California (Oliphant 1991) to Chile (Miller and Lea 1972), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic; depth: near surface to 340 m (1,115 ft) (min.: Eschmeyer and Herald 1983; max.: Hoolihan *et al.* 2011).

Kajikia audax (Philippi, 1887). **Striped Marlin**. To 4.2 m (13.8 ft) TL (Randall *et al.* 1990). Indo-Pacific straying into the southeastern Atlantic (Fricke *et al.* 2020); western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); near Westport, Washington (Love *et al.* 2005) to Chile (35°S) (Chirichigno and Vélez 1998), including southern Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic; depth: near surface to 532 m (1,745 ft) (min.: Eschmeyer and Herald 1983; max.: Lam *et al.* 2015). Recently as *Tetrapterus audax* (Philippi, 1887).

Makaira nigricans Lacepède, 1802. **Blue Marlin**. To 5 m (16.4 ft) TL (Heemstra in Smith and Heemstra 1986). Circumglobal; western Pacific Ocean north to Sea of Japan, and off southern Kuril Islands (Parin 2003); at least San Clemente and Santa Catalina Islands, southern California (Pete Thomas, pers. comm. to M.L.) to Mejillones, Chile (Chirichigno and Vélez 1998), including southernmost Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Oceanic; depth: near surface to 600 m (1,968 ft) (Hoolihan *et al.* 2009).

Tetrapturus angustirostris Tanaka, 1915. **Shortbill Spearfish**. To at least 2.4 m (8 ft) TL (Eschmeyer and Herald 1983). Indo-Pacific straying into southeastern Atlantic (Fricke *et al.* 2020); western Pacific Ocean north to southern Japan (Nakabo in Nakabo 2002); Cape Mendocino, central California (Miller and Lea 1972) to Mejillones, Chile (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997). Apparently not in Gulf of California (Robertson and Allen 2002). Oceanic; depth: near surface to 1,830 m (6,004 ft) (min.: Eschmeyer and Herald 1983; max.: Robertson and Allen 2002).

Family Centrolophidae—Medusafishes

Icichthys lockingtoni Jordan & Gilbert, 1880. **Medusafish**. To about 46 cm (18.4 in) TL (Mecklenburg *et al.* 2002). Japan and Kuril Islands (Haedrich 1967), to Pacific side of Aleutian Islands (Mecklenburg *et al.* 2002),

to southern Baja California (26°39'N, 114°58'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Pelagic; depth: juveniles associate with medusa near surface; adults to 1,257 m (4,124 ft) (min.: Jordan 1923; max.: Lauth 2001); also reported as intertidal (Bolin 1975).

Family Nomeidae—Driftfishes or Flotsamfishes

Cubiceps baxteri McCulloch, 1923. **Black Fathead**. To 93 cm (36.6 in) SL (Nakabo in Nakabo 2002). Japan (Nakabo in Nakabo 2002); southern California (32°N) to Chile (Pequeño 1989), including Islas Galápagos (Grove and Lavenberg 1997); Australia and Lord Howe Island (Viji *et al.* 2021). Not in oxygen minimum layer off Mexico and central America (Watson in Moser 1996). Epipelagic and mesopelagic; depth: near surface to 1,378 m (4,520 ft) (min.: Mundy 2005; max.: Roberts *et al.* 2015).

Cubiceps capensis (Smith, 1845). **Cape Cigarfish** or Cape Fathead. To 100 cm (39.3 in) TL (Agafonova 1994). Circumglobal (Haedrich in Carpenter and De Angelis 2016); one specimen taken 145 km (90 mi) west-southwest of Morro Bay, central California (35°08'N, 122°24'W) (McCosker *et al.* 2004). Epipelagic and mesopelagic (Mundy 2005); depth: to more than 800 m (2,624 ft) (Roberts *et al.* 2015).

Cubiceps paradoxus Butler, 1979. **Longfin Cigarfish**. To 128 cm (50.4 in) TL (Frable *et al.* 2020). Off Mauritania, eastern Atlantic (Kukuev and Gulyugin 2015); western Pacific Ocean north to southern Kuril Islands (Savinykh 1998); Port Hueneme (Merit McCrea, pers. comm. to M.L.) and Palos Verdes, southern California (Butler 1979). Epipelagic and mesopelagic (Mundy 2005).

****Cubiceps pauciradiatus*** Günther, 1872. **Long-fin Fat-head.** To 20 cm (7.9 in) (Robertson and Allen 2008). Circumglobal; western Pacific Ocean north to central Japan (Nakabo in Nakabo 2002); distribution in northeastern Pacific unclear; Cabo San Lucas and just inside southwest corner of Gulf of California (Robertson and Allen 2015) to Peru (Nakaya *et al.* 2009). Surface to 1,470 m (3–4,822 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Morera *et al.* 2019).

Nomeus gronovii (Gmelin, 1789). **Man-of-War Fish**. To 40 cm (15.7 in) TL (Robertson and Allen 2002). Circumglobal; tip of southern Baja California (Robertson and Allen 2015), and Gulf of California (Page *et al.* 2013) to Peru (Robertson and Allen 2002), including Islas Galápagos (Grove and Lavenberg 1997). Juveniles epipelagic; adults deeper, possibly benthopelagic (Watson in Moser 1996); depth: surface to 1,000 m (3,280 ft) (Mundy 2005).

Psenes pellucidus Lütken, 1880. **Bluefin Driftfish**. To 80 cm (31.5 in) TL (Haedrich in Whitehead *et al.* 1986). Circumglobal; western Pacific Ocean north to Japan (Nakabo in Nakabo 2002) and southern Kuril Islands (Parin 2003); Santa Catalina Island, southern California (Ahlstrom *et al.* 1976) to southern end of Baja California (Watson in Moser 1996), and about 5°N (Ahlstrom *et al.* 1976) to Chile (Robertson and Allen 2015), including Islas Galápagos (Grove and Lavenberg 1997). Juveniles epipelagic, adults mesopelagic and possibly bathypelagic (Haedrich in Whitehead *et al.* 1986); depth: 30–1,500 m (98–4,920 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Roberts *et al.* 2015).

Psenes sio Haedrich, 1970. Sio Driftfish or **Twospine Driftfish**. To 28 cm (11 in) TL (Robertson and Allen 2008). Southern Baja California (Ahlstrom *et al.* 1976) to Chile (Robertson and Allen 2015), including Gulf of California (Galván-Magaña *et al.* 1996), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 500 m (1,640 ft) (Robertson and Allen 2002).

Family Tetragonuridae—Squaretails

Tetragonurus atlanticus Lowe, 1839. **Bigeye Squaretail**. To 50 cm (19.7 in) SL (Haedrich in Whitehead *et al.* 1986). Circumglobal; western Pacific Ocean north to eastern Japan (larvae and juveniles) (Okamoto *et al.* 2001); North Pacific Gyre (32°53'N, 140°17'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); in eastern Pacific Ocean from central Baja California (28°N) (Watson in Moser 1996) to Chile (Pequeño 1989), and west of Islas Galápagos (Ahlstrom *et al.* 1976). Depth: 1–800 m (3–2,624 ft) (Mundy 2005).

Tetragonurus cuvieri Risso, 1810. **Smalleye Squaretail.** To 70 cm (27.6 in) SL (Haedrich in Whitehead *et al.* 1986). Mediterranean Sea, Atlantic and Pacific Oceans (Haedrich in Carpenter and De Angelis 2016); western Pacific Ocean north to Japan to south of Aleutian Islands (Mecklenburg *et al.* 2002) to Chile (Pequeño 1989). Oceanic pelagic; depth: 0–1,800 m (5,904 ft) (Porteiro *et al.* 2017).

Family Stromateidae—Butterfishes

Peprilus medius (Peters, 1869). **Pacific Harvest Fish**. To 37 cm (14.6 in) SL (Jiménez Prado and Béarez 2004). Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), to lower Gulf of California (Haedrich and Schneider in Fischer *et al.* 1995), to northern Chile (Sielfeld *et al.* 2010). Depth: 2–114 m (6–374 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Morera *et al.* 2019).

Peprilus simillimus (Ayres, 1860). Pacific Butterfish or **Pacific Pompano**. To about 36 cm (14.2 in) TL (Robertson and Allen 2015). Haida Gwaii, British Columbia (Clemens and Wilby 1961) to southern Baja California (23°24.6'N, 110°13.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and Gulf of California (Miller and Lea 1972). Depth: intertidal (Carlisle *et al.* 1960) to an uncertain maximum depth. We are unsure about the maximum depth attained by this species. The deepest depth in which this species has been directly observed (from a remotely operated vehicle) was 302 m (991 ft) (Joshua Smith, pers. comm to M.L. expanding on data in Smith and Lindholm 2016); thus a capture depth derived from a bottom trawl of 311 m (1,026 ft) (NWFSC-FRAM) is likely accurate. However, the NWFSC-FRAM database also contains bottom trawl catch records of 464 m (1,522 ft), 466 m (1,528 ft), and 550 m (1,804 ft). The problem is that it is unknown to what extent this nominally benthic species also occupies midwaters—thus potentially making it available to nets during deployment or retrieval.

Peprilus snyderi Gilbert & Starks, 1904. **Salema Butterfish**. To 44 cm (17.3 in) TL (Jiménez Prado and Béarez 2004). Bahía San Juanico, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Haedrich and Schneider in Fischer *et al.* 1995). Pelagic neritic; depth: 0–245 m (804 ft) (Robertson *et al.* 2017).

Order Pleuronectiformes

Family Paralichthyidae—Sand Flounders

Ancylopsetta dendritica Gilbert, 1890. Threespot Flounder or **Threespot Sand Flounder**. To 36.4 cm (14.3 in) TL (Nieto-Navarro *et al.* 2010). Bahía San Ignacio, southern Baja California (Kosegarten-Villarreal *et al.* 2016) into Gulf of California (Hensley in Fischer *et al.* 1995) to northern Peru (4°56'S, 81°22'W) (Chirichigno and Vélez 1998). Benthic; depth: 7–100 m (23–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Hensley in Fischer *et al.* 1995).

Citharichthys fragilis Gilbert, 1890. **Gulf Sanddab**. To 25 cm (9.8 in) TL (Eric Miller, pers. comm. to M.L.). Santa Cruz Island, southern California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California) to Gulf of California (Eschmeyer and Herald 1983); Peru (Nakaya *et al.* 2009). Benthic; depth: 18–347 m (60–1,138 ft) (Eschmeyer and Herald 1983).

Citharichthys gilberti Jenkins & Evermann, 1889. **Bigmouth Sanddab**. To 30 cm (11.8 in) TL (Amezcua Linares 1996). Near Boca de Soledad (25°19'N, 112°06.4'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Gulf of California (Hensley in Fischer *et al.* 1995) to Paita, Peru (Chirichigno 1974), including Islas Galápagos (Grove and Lavenberg 1997). Marine, brackish, and fresh waters (Hensley in Fischer *et al.* 1995); benthic; depth: intertidal to 228 m (748 ft) (min.: Weaver 1970; max.: Vargas *et al.* 2020).

Citharichthys gordae Beebe & Tee-Van, 1938. **Mimic Sanddab**. To at least 18.2 cm (7.2 in) TL (Rodríguez-Romero *et al.* 2008). Off Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), and in southern Gulf of California (Robertson and Allen 2015); perhaps to Panama (Moser and Sumida in Moser 1996). Benthic; depth: 38–196 m (125–642 ft) (min.: Robertson and Allen 2015; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Citharichthys platophrys Gilbert, 1891. **Small Sanddab**. To 35 cm (13.7 in) TL (Morales-Nin 1994). Boca de Carrizal, southern Baja California (24°16'N, 111°32'W) (Castro-Aguirre *et al.* 1992) to Huacho, Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 11–228 m (36–748 ft) (min.: Hensley in Fischer *et al.* 1995; max.: Vargas *et al.* 2020).

Citharichthys sordidus (Girard, 1854). **Pacific Sanddab**. To 41 cm (16 in) TL (Kramer *et al.* 1995), reported to 48 cm (18.9 in) TL (Don Pearson, pers. comm. to M.L.). Holiday Beach, Kodiak Island, western Gulf of Alaska (57°42'N, 152°28'W) (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington) to Cabo San Lucas, southern Baja California (Miller and Lea 1972). Records from south-eastern Bering Sea and Aleutian Islands are in error or not verifiable (Mecklenburg 2002). Also reported off Peru (Zeballos Flor *et al.* 1998). Mostly benthic, but frequently ascends into water column (M.L., pers. obs.); depth: intertidal to about 581 m (1,906 ft) (min.: Carlisle *et al.* 1960; max.: City of San Diego).

Citharichthys stigmaeus Jordan & Gilbert, 1882. **Speckled Sanddab**. To 19.2 cm (7.6 in) TL (Gotshall *et al.* 1980). Seward, northern Gulf of Alaska (Johnson *et al.* 2012) to Bahía Magdalena, southern Baja California (Miller and Lea 1972); Bahía Concepcion, Gulf of California (Galván-Magaña *et al.* 2000). Larvae have been collected as far west in the Gulf of Alaska as south of Kodiak Island (Matarese *et al.* 2003). Also reported Ecuador (Béarez 1996) to Puerto Pizarro, Peru (Chirichigno and Vélez 1998). Benthic; depth: intertidal to 366 m (1,200 ft) (min.: Hart 1973; max.: Kramer *et al.* 1995). A 21.5 cm (8.5 in) SL specimen (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington), listed as *C. stigmaeus*, has been reidentified as *Citharichthys sordidus* (Girard, 1854) (Katherine Maslenikov).

Citharichthys xanthostigma Gilbert, 1890. **Longfin Sanddab**. To 29 cm (11.4 in) TL (Martínez-Muñoz and Ortega-Salas 2010). Monterey Bay, central California to Costa Rica, including Gulf of California (Miller and Lea 1972). Benthic; depth: 2–298 m (8–977 ft) (min.: Eschmeyer and Herald 1983; max.: City of San Diego 2020).

Cyclopsetta panamensis (Steindachner, 1875). God's Flounder, **Panamic Flounder**, or Southern Flounder. To 40 cm (15.7 in) TL (John Snow, pers. comm. to M.L.). Laguna San Ignacio, southern Baja California (Barjau-González 2003) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 1–235 m (3–771 ft) (min.: González-Acosta *et al.* 1999; max.: Vargas *et al.* 2020). Sometimes dated 1876 (Fricke *et al.* 2020).

Cyclopsetta querna (Jordan & Bollman, 1890). **Toothed Flounder**. To 50.8 cm (20 in) TL (Hernández-Padilla *et al.* 2020). Boca de Carrizal (23°16'N, 110°11'W), southern Baja California (Castro-Aguirre *et al.* 1992) to Huacho, Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Marine and brackish waters (Fricke *et al.* 2020); benthic; depth: 1–92 m (3–302 ft) (min.: Robertson and Allen 2002; max.: Amezcua Linares 1996).

Etropus crossotus Jordan & Gilbert, 1882. **Fringed Flounder**. To 24.5 cm (9.6 in) TL (Rodríguez-Romero *et al.* 2008). Caribbean Sea, Atlantic and Pacific Oceans; Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (Galván-Magaña *et al.* 2000) to Peru (De La Cruz-Agüero *et al.* 1997), including Gulf of California (Hensley in Fischer *et al.* 1995). Marine and brackish waters (Hensley in Fischer *et al.* 1995); benthic; depth: 0.6–108 m (2–354 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Etropus peruvianus Hildebrand, 1946. **Peruvian Flounder**. To 20 cm (7.9 in) TL (Rábago-Quiroz *et al.* 2017). Southern Baja California (27°29'N, 114°43'W) (Personal communication: Universidad National Autonoma de Mexico, Colleccion Nacional de Peces, Mexico City, Mexico) to Bahía de Sechura, Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 0–276 m (905 ft) (min.: Robertson and Allen 2015; max.: Valdez-Holguín *et al.* 2017).

Hippoglossina bollmani Gilbert, 1890. **Spotted Flounder**. To 29.5 cm (11.6 in) TL (Rodríguez-Romero *et al.* 2008). Off Laguna San Ignacio, southern Baja California (Martínez-Muñoz and Ramírez-Cruz 1992) to Paita,

Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 18–210 m (59–690 ft) (min.: Hensley in Fischer *et al.* 1995; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Hippoglossina stomata Eigenmann & Eigenmann, 1890. **Bigmouth Sole**. To 39.9 cm (15.7 in) TL (Miller and Lea 1972). Gulf of Farallones, northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Gulf of California, including Isla Guadalupe (Miller and Lea 1972). Benthic; depth: 2–478 m (6–1,568 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Bradburn *et al.* 2011); one estuarine record (Ruiz-Campos *et al.* 2000).

Hippoglossina tetrophthalma (Gilbert, 1890). **Foureye Flounder**. To 40 cm (15.7 in) TL (Hensley in Fischer *et al.* 1995). Just west of Laguna de Guerrero Negro, central Baja California (Martínez-Muñoz and Ramírez-Cruz 1992) to Islas Lobos de Afuera, Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 4–233 m (12–768 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2002).

Paralichthys aestuarius Gilbert & Scofield, 1898. Cortez Flounder or **Cortez Halibut**. To 58.3 cm (23 in) TL (Arellano-Martinez *et al.* 1997). Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (Arellano-Martinez *et al.* 1997) to Gulf of California (Hensley in Fischer *et al.* 1995), and slightly below Gulf of California on mainland side (Robertson and Allen 2015). Galván-Magaña *et al.* (2000) report on captures from Bahía de La Paz but do not give attributions. Marine and brackish waters (Hensley in Fischer *et al.* 1995); benthic; depth: intertidal to 55 m (180 ft) (min Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Paralichthys californicus (Ayres, 1859). **California Halibut**. To 152 cm (5 ft) TL (Eschmeyer and Herald 1983). Quillayute River, northern Washington (Eschmeyer and Herald 1983) to Cabo Falsa (22°50'N), southern Baja California (Martinez Muñoz and Ramírez-Cruz 1992). Also reported from upper Gulf of California near Sonora (Grijalva-Chon *et al.* 1996), but without documentation. Marine and brackish waters (Hensley in Fischer *et al.* 1995). Benthic; depth: intertidal to 317 m (1,040 ft) (min.: Carlisle *et al.* 1960; max.: Bradburn *et al.* 2011).

Paralichthys woolmani Jordan & Williams, 1897. **Dappled Flounder** or Speckled Flounder. To 89 cm (35 in) TL (John Snow, pers. comm. to M.L.). Punta Pequeña (26°14'N, 112°28.5'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chimbote, Peru (Chirichigno 1974), including Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Hensley in Fischer *et al.* 1995); benthic; depth: 0.6–248 m (2–813 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Herrera-Valdivia *et al.* 2016).

Syacium latifrons (Jordan & Gilbert, 1882). **Beach Flounder**. To 26.1 cm (10.3 in) TL (John Snow, pers. comm. to M.L.). Bahía Magdalena, southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Peru (3°39'S, 80°55'W) (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 12–119 m (39–390 ft) (min.: Godínez-Domínguez *et al.* 2000; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Syacium ovale (Günther, 1864). **Oval Flounder**. To 50 cm (19.7 in) TL (Vargas *et al.* 2020). Bahía Santa Maria (24°42.8'N, 112°11.7'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Paita, Peru (Chirichigno and Vélez 1998), including Gulf of California (Hensley in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Larvae have been taken somewhat further north at about 26°N (Moser *et al.* 1994). Benthic; depth: about 2 to 104 m (7–342 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Xystreurys liolepis Jordan & Gilbert, 1880. **Fantail Sole**. To 63.5 cm (25 in) TL (Kamikawa 2017). Monterey Bay, central California to Gulf of California (Miller and Lea 1972). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 136 m (446 ft) (min.: Carlisle *et al.* 1960; max.: Martínez-Muñoz and Ramírez-Cruz 1992).

Family Pleuronectidae—Righteye Flounders

Acanthopsetta nadeshnyi Schmidt, 1904. **Scalyeye Plaice**. To 46 cm (18.1 in) TL (Fadeev 1987). Western Pacific north to Sea of Japan off Korean Peninsula to southern Sea of Okhotsk and Pacific Ocean off Hokkaido to western Bering Sea off Cape Navarin (Lindberg and Fedorov 1993). Two flexion stage larvae taken off Norton Sound, northern Bering Sea (Mecklenburg *et al.* 2011). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 7 to 1,000–1,200 m (23–3,281–3,937 ft) (min.: Shinohara *et al.* 2011; max.: Kim *et al.* 1999). Mecklenburg and Steinke (2015) note that records of *Acanthopsetta nadeshnyi* Schmidt, 1904 from the northern Bering Sea are likely misidentified *L. sakhalinensis* and that *A. nadeshnyi* is limited to the western Pacific.

Atheresthes evermanni Jordan & Starks, 1904. Asiatic Arrowtooth or **Kamchatka Flounder**. To 110 cm (44 in) TL (Mecklenburg *et al.* 2002). Sea of Okhotsk and northern Sea of Japan to Gulf of Anadyr, western Bering Sea (Lindberg and Fedorov 1993), to eastern Bering Sea, Aleutian Islands, and south-western Gulf of Alaska (Zimmermann and Goddard 1996), to off Davenport, central California (about 37°01'N, 122°12'W) (Lea 2013). Benthic; depth: 25–1,200 m (83–3,936 ft) (Mecklenburg *et al.* 2002). Records from the Chukchi Sea are in error (Mecklenburg and Steinke 2015).

Atheresthes stomias (Jordan & Gilbert, 1880). **Arrowtooth Flounder**. To 97.8 cm (38.5 in) FL (DFO); about 99.4 cm (39.1 in) TL. Along with the 97.8 cm fish in the DFO database, Maria Cornthwaite notes that fish as large as 103 cm (40.6 in) FL (about 104.8 in TL) have been reported in the British Columbia commercial fishery. Commander Islands and east coast of Kamchatka, to Cape Navarin, Bering Sea (northward to south of Saint Lawrence Island, 62°08'N, 170°18'W) (Mecklenburg *et al.* 2011), to Aleutian Islands and Gulf of Alaska (Mecklenburg *et al.* 2002), to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (John Snow, pers. comm. to M.L.). Benthic; depth: 9–1,186 m (29–3,890 ft) (min.: Levings 1973; max.: NWFSC-FRAM). Records from the Chukchi Sea are in error (Mecklenburg and Steinke 2015).

Clidoderma asperrimum (Temminck & Schlegel, 1846). **Roughscale Sole**. To 62 cm (24.4 in) TL (Tokranov and Orlov 2003). Yellow Sea off Korean Peninsula, Sea of Japan, and Sea of Okhotsk to Commander Islands (Lindberg and Fedorov 1993), to Bering Sea, and Aleutian Islands (Lea *et al.* 1989, Mecklenburg *et al.* 2002), to off Port San Luis, central California (36°14'N, 126°29'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 6–1,900 m (20–6,233 ft) (min.: Abe *et al.* 2013; max.: Lindberg and Fedorov 1993).

Eopsetta jordani (Lockington, 1879). Brill or **Petrale Sole**. To 75 cm (29.5 in) TL (Kamikawa 2017). Aleutian Islands west at least as far as Unalaska Island, and Gulf of Alaska (Mecklenburg *et al.* 2002), to Islas Coronados, northern Baja California (Miller and Lea 1972). Benthic; depth: 0–640 m (0–2,099 ft) (min.: Hart 1973; max.: DFO). Much deeper catch records from the NWFSC-FRAM database of 851 m (2,791 m) and 1,151 m (3,775 ft) are without documentation.

Glyptocephalus stelleri (Schmidt, 1904). Far-Eastern Long Flounder, **Korean Flounder**, or Small-mouth Plaice. To 53 cm (20.9 in) SL (Kim *et al.* 1999) or 60 cm (24 in) TL (Kramer *et al.* 1995). Seas of Japan and Okhotsks to Kuril Islands and southern Kamchatka; one record from Bering Sea in vicinity of Pribilof Islands (Lindberg and Fedorov 1993). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: about 5–1,600 m (16–5,250 ft) (Lindberg and Fedorov 1993), with greatest densities in winter below 700 m (2,300 ft) (Kim *et al.* 1999).

Glyptocephalus zachirus Lockington, 1879. Longfin Sole, **Rex Sole**, or Witch Sole. To 61 cm (24 in) TL (Kramer *et al.* 1995). Northern Kuril Islands (Orlov *et al.* 2002) to Commander Islands, and western Bering Sea, to Navarin Canyon, and Aleutian Islands, eastern Bering Sea, and Gulf of Alaska (Mecklenburg *et al.* 2002), to Todos Santos (23°24.6'N, 110°13.8'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Benthic; depth: 0–1,237 m (0–4,057 ft) (min.: Kramer *et al.* 1995; max.: NWFSC-FRAM).

Hippoglossoides elassodon Jordan & Gilbert, 1880. **Flathead Sole**. To 52 cm (20.5 in) TL (Fadeev 1987). Northern Sea of Japan, Sea of Okhotsk, Kuril Islands, south-eastern Kamchatka, and western and eastern Bering Sea, northward to East Siberian, Chukchi, and Beaufort seas, and eastward to Bathurst Inlet, south of Dease Strait (68°20'N, 107°41'W), Nunavut (Mecklenburg *et al.* 2016), and Bering Sea, and Commander–Aleutian Chain to Monterey, central California (Allen and Smith 1988); one record from near La Jolla (32°55.2'N, 117°17.6'W), southern California (NWFSC-FRAM). Benthic; depth: intertidal to 1,050 m (3,445 ft) (min.: Kussakin *et al.*

1997; max.: Allen and Smith 1988). These data include records from *Hippoglossoides robustus* Gill & Townsend, 1897, considered a junior synonym by us based on data in Mecklenburg *et al.* (2018). However, recently also as *H. robustus* (Alfonso in Coad and Reist 2018, Saveliev *et al.* 2019, Forster *et al.* 2020).

Hippoglossus stenolepis Schmidt, 1904. **Pacific Halibut**. To 2.67 m (8.78 ft) TL (Clemens and Wilby 1961). Northern Sea of Japan, Sea of Okhotsk to Kuril Islands, Commander and Aleutian Islands through Bering Sea (Mecklenburg *et al.* 2016), to northeastern Chukchi Sea (71°12'N, 163°05'W) (Mecklenburg et al, 2010), to Punta Camalu, Baja California (Allen and Smith 1988). Benthic; depth: 2–2,000 m (8–6,560 ft) (min.: Thomas Hurst, pers. comm. to M.L. from sampling reported in Hurst 2016; max.: Pietsch and Orr 2019).

Inopsetta ischyra (Jordan and Gilbert, 1880). **Hybrid Sole** or Forkline Sole. To 46 cm (18.1 in) TL (Kramer *et al.* 1995). Likely at least southern British Columbia to San Francisco, California. Alaska records are without documentation (Garrett *et al.* 2007). Benthic; depth: perhaps 5–50 m (15–164 ft) (min.: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; max: Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington). A hybrid of *Parophry vetulus* Girard, 1854 and *Platichthys stellatus* (Pallas, 1787).

Isopsetta isolepis (Lockington, 1880). **Butter Sole** or Scalyfin Sole. To 55.2 cm (21.8 in) TL (Miller and Lea 1972). South-eastern Bering Sea, and Aleutian Islands (west to Amchitka Island) (Wilimovsky 1964), to San Pedro, southern California (Williams *et al.* 2018). Benthic; depth: 2 m or less to 425 m (7–1,394 ft) (min.: Miller *et al.* 1980; max.: Allen and Smith 1988).

Lepidopsetta bilineata (Ayres, 1855). Rock Sole or **Southern Rock Sole**. To perhaps 58 cm (22.8 in) TL (Orr and Matarese 2000). There is a maximum length of 59.5 cm (23.4 in) TL in the DFO database. However, this datum cannot be confirmed, as the DFO database does not differentiate between *L. bilineata* and *Lepidopsetta polyxystra* Orr & Matarese, 2000. Bering Sea near Pribilof Islands (56°02'N 169°53'W), and western Aleutian Islands near Buldir Island (51°58'N, 176°05'E) (Maslenikov *et al.* 2013); transforming larva captured further northward at 57°54'N, 169°40'W (Maslenikov *et al.* 2013), and south-eastern Bering Sea (Slime Bank north of Unimak Island) to Cortes Bank (Orr and Matarese 2000), and La Jolla (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern California. Benthic; depth: 1–476 m (3–1,561 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: DFO). The AFS–ASIH fish names committee (Nelson *et al.* 2004) chose to keep the name Rock Sole for this fish, but with the new species, the Northern Rock Sole, we feel it is less confusing to call *L. bilineata* the Southern Rock Sole, as recommended by Orr and Matarese (2000).

Lepidopsetta polyxystra Orr & Matarese, 2000. **Northern Rock Sole**. To 69 cm (27.2 in) TL (Orr and Matarese 2000). Northern coast of Hokkaido, Kuril Islands, and Sea of Okhotsk to Gulf of Anadyr, and vicinity of Saint Lawrence Island (64°30'N, 170°26'W) (Mecklenburg *et al.* 2011), Bering Sea, and Commander–Aleutian chain to Puget Sound, Washington (Orr and Matarese 2000). Benthic; depth: 0–700 m (8–2,296 ft) (Federov *et al.* 2003).

Limanda aspera (Pallas, 1814). Muddab or **Yellowfin Sole**. To 50 cm (19.6 in) TL (Pietsch and Orr 2019). Sea of Japan off Korea and Sea of Okhotsk (Lindberg and Fedorov 1993) to Beaufort Sea off Cooper Island (Johnson *et al.* 2010) and south through Bering Sea and eastern Aleutian Islands (Mecklenburg *et al.* 2002) to San Juan Island, Salish Sea (Personal communication: University of Washington, Burke Museum of Natural History and Culture Fish Collection, Seattle, Washington; confirmed by James Orr). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 2–714 m (7–2,342 ft) (min.: Thomas Hurst, pers. comm. to M.L. from sampling reported in Hurst 2016; max.: Panchenko *et al.* 2016). Listed as shallow as 0 m (Saveliev *et al.* 2019) but without documentation.

Limanda sakhalinensis Hubbs, 1915. Sakhalin Flounder or **Sakhalin Sole**. To 35 cm (14 in) TL (Kramer *et al.* 1995). Northern Sea of Japan, Sea of Okhotsk, Kuril Islands, and south-eastern Kamchatka to Bering and Chukchi Seas as far northward as 71°04'N, 158°26'W (Mecklenburg *et al.* 2016). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 10–415 m (33–1,361 ft) or more (min.: Lindberg and Fedorov 1993; max.: Panchenko *et al.* 2016). Recently as *Pleuronectes sakhalinensis* (Hubbs, 1915). Mecklenburg and Steinke (2015) note that records of *Acanthopsetta nadeshnyi* Schmidt, 1904 from the northern Bering Sea are likely misidentified *L. sakhalinensis* and that *A. nadeshnyi* is limited to the western Pacific.

Liopsetta glacialis (Pallas, 1776). **Arctic Flounder** or Polar Flounder. To 44 cm (17.3 in) TL (Mecklenburg *et al.* 2018). Arctic coasts of Russia from south-eastern Barents Sea and White Sea to Arctic North America

eastward to Queen Maude Gulf; southward in eastern Bering Sea to Bristol Bay, and along the Alaska Peninsula (documentation for presence along Aleutian Islands is lacking); western Pacific to south-eastern Kamchatka, northern Kuril Islands, and Sea of Okhotsk (Mecklenburg *et al.* 2016). Benthic; marine, brackish, and fresh waters (Morrow 1980, Fricke *et al.* 2020); depth: in shallow brackish waters of bays and estuaries to about 25 m (81 ft) (Kobelev 1989); rarely, if ever, found in deeper water (Mecklenburg *et al.* 2002), but reported to 91 m (298 ft) (Kramer *et al.* 1995). Also recently as *Pleuronectes glacialis* Pallas, 1776 (Alfonso in Coad and Reist 2018).

Lyopsetta exilis (Jordan & Gilbert, 1880). Rough Sole or **Slender Sole**. To 44 cm (17.3 in) TL (DFO). Eastern Bering Sea (55°19'N, 166°58'W), and Unalaska Island (Maslenikov *et al.* 2013) to Pacific Ocean off Boca de Santa Domingo (about 25°30'N), southern Baja California (Martínez-Muñoz and Ramírez-Cruz 1992). Benthic; depth: 9–1,258 m (30–4,126 ft) (min.: Kramer *et al.* 1995; max.: DFO).

Microstomus bathybius (Gilbert, 1890). **Deepsea Sole**. To 55.2 cm (21.7 in) TL (DFO). Hokkaido, Japan (Sakamoto in Masuda *et al.* 1984), to Bering Sea, and Aleutian Islands (Mecklenburg *et al.* 2002), to southern California (32°38'N, 119°24'W) (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California). Benthic; depth: 41–1,743 m (134–5,717 ft) (min.: Orlov and Tokranov 2019; max.: DFO). Individuals taken at the shallower depths typically are juveniles. Formerly *Embassichthys bathybius* (Gilbert, 1890).

Microstomus pacificus (Lockington, 1879). **Dover Sole**, Slime Sole, or Slippery Flounder. To 85.2 cm (33.5 in) TL (DFO). North-western Bering Sea (Evseenko 2003), and south-eastern Bering Sea and Aleutian Islands from Stalemate Bank (Allen and Smith 1988) to just south of Punta San Juanico, southern Baja California (25°59'N, 113°17'W) (Snytko 1987). Benthic; depth: 2 m or less to 1,400 m (7–4,592 ft) (min.: Miller *et al.* 1980; max.: Pietsch and Orr 2019).

Myzopsetta proboscidea (Gilbert, 1896). **Longhead Dab**. To 41 cm (16.1 in) TL (Andriashev 1954). Hokkaido, Japan (Nakabo in Nakabo 2002), and Sea of Okhotsk (Sakamoto in Masuda *et al.* 1984), to western Chukchi Sea (Mecklenburg *et al.* 2007), to Bathurst Inlet, south of Dease Inlet (68°20'N, 107°41'W), Nunavut (Mecklenburg *et al.* 2011), to eastern Bering Sea north of Unimak Island (Mecklenburg *et al.* 2002). A possible Queen Maud Gulf, Canadian Arctic record (Coad and Reist 2004) appears to be in error (Alfonso in Coad and Reist 2018). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 0–125 m (410 ft) (min.: Federov *et al.* 2003; max.: Allen and Smith 1988) or perhaps to 160 m (525 ft), but without documentation (Mecklenburg *et al.* 2016). Previously *Limanda proboscidea* Gilbert, 1896 (and so considered in Dyldin and Orlov 2017, Alfonso in Coad and Reist 2018, and Forster *et al.* 2020), we follow Mecklenburg and Steinke (2015), and Vinnikov *et al.* (2018), and place this species in the genus *Myzopsetta*.

Parophrys vetulus Girard, 1854. **English Sole** or Lemon Sole. To 62 cm (24.4 in) TL (DFO). Nunivak Island, Bering Sea, and Agattu Island, Aleutian Islands (Allen and Smith 1988) to Bahía San Cristobal (27°22'N, 114°38'W), southern Baja California (Knaggs *et al.* 1975). Benthic; depth: intertidal (juveniles) to 608 m (1,994 ft) (min.: Hart 1973; max.: DFO).

Platichthys stellatus (Pallas, 1787). **Starry Flounder**. To 91 cm (36 in) TL (Clemens and Wilby 1946). Sea of Japan off Korean Peninsula and Japan (southward to Honshu) to Sea of Okhotsk, to Arctic Ocean in East Siberian Sea, Chukchi Sea, Beaufort Sea, and eastwards in Canada to Bathhurst Inlet, Nunavut (Alfonso in Coad and Reist 2018), and northeast to Count Melville Sound (Stewart *et al.* 1993), and Bering Sea and Commander–Aleutian Chain (citations in Mecklenburg *et al.* 2002, 2016) to Los Angeles Harbor, southern California (Kramer *et al.* 1995). Benthic; marine, brackish, and fresh waters (Dyldin and Orlov 2017); depth: intertidal to about 660 m (2,165 ft) (min.: Kramer *et al.* 1995; max.: Panchenko *et al.* 2016). We follow Eschmeyer (1998 and online editions) in retaining 1787 for the date of publication; sometimes given as 1788.

Pleuronectes quadrituberculatus Pallas, 1814. **Alaska Plaice** or Lemon Sole. To 66 cm (26 in) TL (Mecklenburg *et al.* 2018). Seas of Japan (Lindberg and Fedorov 1993) and Okhotsk, Hokkaido, Kuril Islands and south-eastern Kamchatka (Mecklenburg *et al.* 2016) to Chukchi Sea, as far northward as 70°16'N, 163°58'W (Mecklenburg *et al.* 2011) and near Barrow, Alaska (Johnson *et al.* 2012) to eastern Aleutian Islands and Gulf of Alaska to south-eastern Alaska near Ketchikan (Mecklenburg *et al.* 2002); one record from Bellingham Bay, Washington (Townsend 1936). Benthic; marine and brackish waters (Dyldin and Orlov 2017); depth: 2–600 m (8–1,968 ft) (min.: Thomas Hurst, pers. comm. to M.L. from sampling reported in Hurst 2016; Federov *et al.* 2003), except reported to 850 m (2,789 ft) or more in winter in Sea of Okhotsk (Kim *et al.* 1999). *Pleuronectes pallasii* Steindachner, 1880, is a junior synonym and the name under which the Washington record was published

(Mecklenburg *et al.* 2002). Hybrids of this species and *Platichthys stellatus* have been described from Bristol Bay and off Saint Matthew Island, Alaska (Mecklenburg *et al.* 2018).

Pleuronichthys coenosus Girard, 1854. **C-O Sole** or C-O Turbot. To 36 cm (14 in) TL (Clemens and Wilby 1946). Prince William Sound, Alaska (Andy Murch, pers. comm. to M.L.) to Punta Abreojos, southern Baja California (Charter and Moser in Moser 1996). Benthic; depth: 0–350 m (1,146 ft) (min.: Kramer *et al.* 1995; max.: Hart 1973).

Pleuronichthys decurrens Jordan & Gilbert, 1881. **Curlfin Sole**, California Turbot, or Curlfin Turbot. To 45 cm (17.7 in) TL (DFO). Aleutian Islands off northwest coast of Unimak Island and Gulf of Alaska (Mecklenburg *et al.* 2002) to just south of Punta San Juanico, southern Baja California (25°59'N, 112°35'W) (Snytko 1987). Benthic; depth: intertidal to 440 m (1,443 ft) (min.: Carlisle *et al.* 1960; max.: NWFSC-FRAM).

Pleuronichthys guttulatus Girard, 1856. **Diamond Turbot**. To 45.7 cm (18 in) TL (Miller and Lea 1972). Cape Mendocino, northern California (Miller and Lea 1972) to Gulf of California (Robertson and Allen 2015). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 46 m (150 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Miller and Lea 1972). We note that there is a much deeper record of 91 m (298 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), however this specimen was not retained and thus we are unable to confirm. Recently as *Hypsopsetta guttulata*.

Pleuronichthys ocellatus Starks & Thompson, 1910. **Ocellated Turbot**. To 24 cm (9.4 in) TL (Sommer in Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Gulf of California (Sommer in Fischer *et al.* 1995). Benthic; depth: 1–140 m (3–459 ft) (Sommer in Fischer *et al.* 1995).

Pleuronichthys ritteri Starks & Morris, 1907. **Spotted Turbot** or Catalina Sanddab. To 32 cm (11 in) SL, about 38 cm (15 in) TL (City of San Diego 2020). Morro Bay (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California; confirmed by Robert Lea and Richard Feeney), central California to southern Baja California (24°12'N, 111°21'W) (Cabrera Mancilla *et al.* 1988); also reported from the upper Gulf of California (Grijalva-Chon *et al.* 1996). A catch further north, near San Francisco (37°54.6'N) (NWFSC-FRAM), is without a voucher specimen or other documentation. Benthic; depth: 1–219 m (3–718 ft) (min.: Sommer in Fischer *et al.* 1995; max.: Bradburn *et al.* 2011). A previous record from northern California records (37°55'N) (Weinberg *et al.* 2002) was determined to be an incorrectly identified *Pleuronichthys verticalis* Jordan & Gilbert, 1880, by Richard Feeney and Jame Orr (Richard Feeney, pers. comm. to M.L.).

Pleuronichthys verticalis Jordan & Gilbert, 1880. **Hornyhead Turbot** or Sharpridge Flounder. To 36.8 cm (14.5 in) TL (Miller and Lea 1972). Oregon (Kramer *et al.* 1995) to Bahía Magdalena, southern Baja California (Miller and Lea 1972); isolated population in Gulf of California (Eschmeyer and Herald 1983). Benthic; depth: 5–496 m (16–1,627 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Bradburn *et al.* 2011).

Psettichthys melanostictus Girard, 1854. **Sand Sole** or Fringe Sole. To 63 cm (24.8 in) TL (Clemens and Wilby 1961). South-eastern Bering Sea, and Aleutian Islands from Unalaska Island to Port Heiden, and Gulf of Alaska (Allen and Smith 1988) to La Jolla, southern California (Moore *et al.* 2012). Benthic; depth: intertidal to 325 m (1,066 ft) (min.: Bolin 1975; max.: Allen and Smith 1988).

Reinhardtius hippoglossoides (Walbaum, 1792). **Greenland Halibut** or Pacific Black Halibut. To 130 cm (51.2 in) TL (Fadeev 1987). Nearly circumpolar; North Atlantic, Arctic, and North Pacific Oceans; Seas of Japan and Okhotsk to Bering, Chukchi, and Beaufort Seas, and Aleutian Islands and Gulf of Alaska (Mecklenburg *et al.* 2002) to just south of U.S.–Mexico border (Hubbs and Wilimovsky 1964). Not documented from the central Canadian High Arctic or East Siberian Sea (Mecklenburg *et al.* 2016). Benthic but often ascends well into the water column (Love *et al.* 2011); depth: 10–2,000 m (33–6,562 ft) (min.: Orlov and Tokranov 2019; max.: Allen and Smith 1988).

Family Achiridae—American Soles

Achirus mazatlanus (Steindachner, 1869). Mazatlán Sole or **Pacific Lined Sole**. To 30 cm (11.8 in) TL (Vargas *et al.* 2020). Islas Coronados, northern Baja California (Jordan 1923) to Puerto Pizarro, Peru (Chirichigno 1974),

including Gulf of California (Krupp in Fischer *et al.* 1995). Marine, brackish, and fresh waters (Krupp in Fischer *et al.* 1995); benthic; depth: 1–64 m (3–210 ft) (min.: González-Acosta *et al.* 1999; max.: Vargas *et al.* 2020).

Family Bothidae—Lefteye Flounders

Bothus constellatus (Jordan, 1889). **Pacific Eyed Flounder**. To 15.7 cm (6.2 in) TL (Tapia-García *et al.* 2000). Laguna San Ignacio, southern Baja California (Danneman and De La Cruz-Agüero 1993) to Caleta Buena (19°53'S, 70°08'W), northern Chile (Sielfeld *et al.* 2003), including Gulf of California (Hensley in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 1–121 m (3–397 ft) (Hensley in Fischer *et al.* 1995)

Bothus leopardinus (Günther, 1862). **Pacific Leopard Flounder** or Speckled Flounder. To 23.5 cm (9.3 in) TL (Nieto-Navarro *et al.* 2010). Boca de Carrizal (23°42'N, 110°38'W), southern Baja California (Castro-Aguirre 1992) to Peru (Robertson and Allen 2002), including Gulf of California (Hensley in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: 1–121 m (3–397 ft) (min.: Robertson and Allen 2002; max.: Hensley in Fischer *et al.* 1995).

Engyophrys sanctilaurentii Jordan & Bollman, 1890. **Speckledtail Flounder**. To 20 cm (7.9 in) TL (Hensley in Fischer *et al.* 1995). North of La Jolla Submarine Canyon, southern California (Allen and Groce 2001b) to Bahía Salinas, Huacho, Peru (Chirichigno 1974), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 15–1,369 m (49–4,490 ft) (min.: Vargas *et al.* 2020; max.: Morera *et al.* 20019).

Monolene dubiosa Garman, 1899. **Dark Flounder**. To 18 cm (7.1 in) TL (Rodríguez-Romero *et al.* 2008). Isla Santa Margarita (at mouth of Bahía Magdalena), southern Baja California (Martínez-Muñoz and Ramírez-Cruz 1992); Pacific coast of Mexico (Hensley in Fischer *et al.* 1995) to Peru (Robertson *et al.* 2017). Benthic; depth: about 20–457 m (66–1,499 ft) (min.: Aguilar-Palomino *et al.* 2001; max.: Morera *et al.* 20019). We follow Eveseenko (1999) and Robertson *et al.* (2017) and consider *Monolene asaedae* Clark, 1936 to be a junior synonym. *Monolene asaedae* is considered a valid species in Fricke *et al.* (2020).

Perissias taeniopterus (Gilbert, 1890). **Flag Flounder** or Striped-fin Flounder. To 15 cm (5.9 in) TL (Amezcua Linares 1996). Laguna San Ignacio (Kosegarten-Villarreal *et al.* 2016); tip of Baja California to Ecuador (Robertson and Allen 2015), including Gulf of California (Hensley in Fischer *et al.* 1995). Benthic; depth: 41–160 m (134–525 ft) (min.: Castro-Aguirre 1992; max.: Vargas *et al.* 2020).

Family Cynoglossidae—Tonguefishes

Symphurus atramentatus Jordan & Bollman, 1890. Barfinned Tonguefish, **Halfspotted Tonguefish**, Inkspot Tonguefish, or Spot-fin Tonguefish. To 15 cm (5.9 in) TL (Vargas *et al.* 2020). Bahía Magdalena, southern Baja California (De La Cruz-Agüero *et al.* 1994) to Isla San Lorenzo, Peru (Chirichigno and Vélez 1998), including Islas Galápagos (Grove and Lavenberg 1997), and Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; depth: 1–228 m (3–748 ft) (min.: Munroe *et al.* in Fischer 1995; max.: Vargas *et al.* 2020).

Symphurus atricauda (Jordan & Gilbert, 1880). **California Tonguefish**. To 21 cm (8.3 in) TL (Miller and Lea 1972). Barkley Sound (48°56'N, 125°23'W), Vancouver Island (Gavin Hanke, pers. comm. to M.L.) and Washington (Dinnel and Rogers 1986) to Gulf of California (Robertson and Allen 2002); Chiapas, Mexico (González-Acosta *et al.* 2018); also reported off northern Peru (Chirichigno and Vélez 1998). Benthic; depth: intertidal to 463 m (1,519 ft) (min.: Carlisle *et al.* 1960; max.: DFO). Also seen as *Symphurus atricaudus*.

Symphurus callopterus Munroe & Mahadeva, 1989. **Chocolate Tonguefish** or Feather Tonguefish. To 40 cm (15.7 in) TL (Vargas *et al.* 2020). Pacific coast of southern Baja California (Munroe *et al.* in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998), including lower Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; depth: 18–636 m (59–2,086 ft) (min.: Munroe *et al.* in Fischer *et al.* 1995; max.: Nakaya *et al.* 2009).

Symphurus fasciolaris Gilbert, 1892. **Banded Tonguefish**. To 24.5 cm (9.6 in) TL (Nieto-Navarro *et al.* 2010). About Punta Eugenia, central Baja California (Robertson and Allen 2015) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; depth: 1–150 m (3–492 ft) (min.: Munroe *et al.* in Fischer *et al.* 1995; max.: Robertson and Allen 2008).

Symphurus melanurus Clark, 1936. **Drab Tonguefish**. To 24.1 cm (9.5 in) TL (Amezcua and Aguirre 2007). Southern Baja California (25°18'N, 112°11'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), including southern Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; marine and brackish waters (Munroe *et al.* in Fischer *et al.* 1995); depth: 1–65 m (3–213 ft) (min.: Munroe *et al.* in Fischer *et al.* 1995; max.: Vargas *et al.* 2020).

Symphurus oligomerus Mahadeva & Munroe, 1990. Spotfin Tonguefish or **Whitetail Tonguefish**. To 16 cm (6.3 in) TL (Robertson and Allen 2002). Off Point Mugu (34°02.5'N, 119°07.5'W), southern California (Walker *et al.* 2020); southern tip of Baja California (Munroe *et al.* in Fischer *et al.* 1995) to northern Peru (Chirichigno and Vélez 1998), including Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; depth: 32–1,008 m (105–3,306 ft) (min.: Vargas *et al.* 2020; max.: Jacobsen Stout *et al.* 2016).

Symphurus prolatinaris Munroe, Nizinski, & Mahadeva, 1991. **Halfstriped Tonguefish**. To 17 cm (6.7 in) (Robertson and Allen 2008). Southern Baja California (about 24°19'N, 111°46'W) (Munroe *et al.* 1991) to central Peru (Munroe *et al.* 1991), including lower Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; depth: 9–162 m (30–531 ft) (Munroe *et al.* 1991).

Symphurus williamsi Jordan & Culver, 1895. Williams' Tonguefish or **Yellow Tonguefish**. To 11.9 cm (4.7 in) SL (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Bahía Santa Maria (24°41.3'N, 112°10.4'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to northern Peru (Chirichigno and Vélez 1998), and Gulf of California (Munroe *et al.* in Fischer *et al.* 1995). Benthic; marine and brackish waters (Fricke *et al.* 2020); depth: 0.6–118 m (2–387 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Vargas *et al.* 2020).

Order Tetraodontiformes

Family Balistidae—Triggerfishes

Balistes polylepis Steindachner, 1876. **Finescale Triggerfish**. To 80 cm (31.5 in) TL (De La Cruz-Agüero *et al.* 1997). Metlakatla, south-eastern Alaska (Karinen *et al.* 1985; see comment under *Melichthys niger* below) to San Antonio (about 33°32'S), central Chile (Brito 2003), including Gulf of California (Bussing in Fischer *et al.* 1995), Islas Galápagos (Grove and Lavenberg 1997), and Hawai'i (Randall and Mundy 1998). Only one Alaska record and isolated records from Washington to California; most common south of California (Mecklenburg *et al.* 2002). Benthic; depth: 2–512 m (6–1,680 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Miller and Lea 1972).

****Canthidermis maculata*** (Bloch, 1786). **Rough Triggerfish**. To 50 cm (19.7 in) (Robertson and Allen 2015). Circumglobal; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); near tip of Baja California (Robertson and Allen 2015), and in mouth of Gulf of California (to about 30 miles north of Cabo San Lucas) (John Snow, pers. comm. to M.L.) to Ecuador and offshore islands (Robertson and Allen 2015). Benthic; depth: surface to 110 m (361 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Robertson and Allen 2015).

Melichthys niger (Bloch, 1786). **Black Durgon** or Black Triggerfish. To 51 cm (20 in) TL (Eschmeyer and Herald 1983). Circumglobal; western Pacific Ocean north to Ryukyu Islands, Japan (Hayashi in Nakabo 2002); San Diego, southern California to southern Gulf of California (Robertson and Allen 2002), Costa Rica, Panama, Colombia (Robertson and Allen 2015), and Ecuador, including Islas Galápagos (Grove and Lavenberg 1997). Not confirmed north of Mexico since it was reported off San Diego in the 1800s (Miller and Lea 1972, Eschmeyer and Herald 1983). A report of this fish from Metlatkatla, Alaska (Karinen *et al.* 1985), represents a misidentified *Balistes polylepis* Steindachner, 1876 (Mecklenburg *et al.* 2002). Benthic; depth: surface to 75 m (246 ft) (min.: Lieske and Myers 2002; max.: Matsuura in Carpenter and Niem 2001).

Pseudobalistes naufragium (Jordan & Starks, 1895). **Blunthead Triggerfish** or Stone Triggerfish. To 1 m (39.4 in) TL (Allen and Robertson 1994). Bahía Almejas (24°22.7'N, 111°42.6'W), southern Baja California (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to Chile (Pequeño 1989), including Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg

1997). Marine and brackish waters (Romero-Berny 2018); benthic; depth: 0.6–100 m (2–328 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996). Extensive molecular analyses of the species in the family Balistidae strongly suggests that this species should be called *Balistes naufragium* Jordan and Starks, 1895 (McCord and Westneat 2016).

Sufflamen verres (Gilbert & Starks, 1904). **Orangeside Triggerfish**. To 41 cm (16.1 in) TL (John Snow, pers. comm. to M.L.). Isla de Cedros, central Baja California (Ramírez-Valdez *et al.* 2015) and, on mainland, Isla Asuncion (27°06'N, 114°18'W), southern Baja California (M.L., unpubl. data) to central Gulf of California and Ecuador (Béarez 1996), including Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: surface (nightlight: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 2–47 m (6–154 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: John Snow, pers. comm.).

XXanthichthys lineopunctatus (Holland, 1854). Reported from Isla Guadalupe, central Baja California (Reyes-Bonilla *et al.* 2010). However, this species does not appear to live in the eastern Pacific (Robertson and Allen 2008, Froese and Pauly 2019) and this record is likely in error.

Xanthichthys mento (Jordan & Gilbert, 1882). Crosshatch Triggerfish or **Redtail Triggerfish**. To 30 cm (11.7 in) TL (Randall 1996). Tropical Pacific Ocean; scattered locations in the eastern Pacific including Ventura, southern California (Miller and Lea 1972), Isla Guadalupe, Rocas Alijos, tip of Baja California, and Colombia (Robertson and Allen 2015). Benthic; depth: surface to 158 m (518 ft) (min.: Eschmeyer and Herald 1983; max.: Weijerman *et al.* 2019).

Family Monacanthidae—Filefishes

Aluterus monoceros (Linnaeus, 1758). **Unicorn Filefish** or Unicorn Leatherjacket. To 76 cm (29.9 in) TL (Robertson and Allen 2002). Circumglobal; Bahía Magdalena, southern Baja California (Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California), western Gulf of California northward to at least as far as Santa Rosalia (John Snow, pers. comm. to M.L.), to Chile, Isla del Cocos, Isla Malpelo, and Islas Revillagigedo (Robertson and Allen 2002). Depth: 0–150 m (492 ft) (min.: Robertson and Allen 2002; max: Matsuura in Carpenter and De Angelis 2016).

Aluterus scriptus (Osbeck, 1765). **Scrawled Filefish** or Scrawled Leatherjacket. To 1.1 m (43.3 in) TL (Lieske and Myers 2002). Circumglobal; western Pacific Ocean north to Japan (Hiyashi in Nakabo 2002); Rocas Alijos, southern Baja California (Gotshall 1998), Todos Santos area (23°24.6'N, 110°13.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), southern Baja California (Bussing and Lavenberg in Fischer *et al.* 1995) to Ecuador (Béarez 1996), including Gulf of California (Bussing and Lavenberg in Fischer *et al.* 1995), Easter Island (Pequeño 1997), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 176 m (577 ft) (min.: Arndt and Fricke 2019; max.: Weijerman *et al.* 2019).

Family Ostraciidae—Boxfishes

Lactoria diaphana (Bloch & Schneider, 1801). Roundbelly Cowfish, **Spiny Boxfish**, or Spiny Cowfish. To 34 cm (13.4 in) TL (Robertson and Allen 2002). Indo-Pacific; western Pacific Ocean north to central Japan (Hayashi in Nakabo 2002); Piedras Blancas, central California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Chile (Pequeño 1989). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 20–171 m (66–561 ft) (min.: Randall 2007; max.: Easton *et al.* 2017). Reports of this species from the Islas Galápagos are in error (McCosker and Rosenblatt 2010).

Ostracion meleagris Shaw, 1796. Pacific Boxfish, **Spotted Boxfish**, or Spotted Trunkfish. To 25 cm (9.8 in) TL (Smith in Smith and Heemstra 1986). Indo-Pacific; western Pacific Ocean north to southern Japan (Yamada in Nakabo 2002); Todos Santos (23°24.6'N, 110°13.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), Cabo San Lucas, southern Baja California, and other locations in tropical eastern Pacific (Thomson *et al.* 1979) to Ecuador (Robertson and Allen 2015), including

Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–71 m (3–233 ft) (min.: Lieske and Myers 2002; max.: Mundy 2005).

Family Tetraodontidae—Puffers

Arothron hispidus (Linnaeus, 1758). **Stripebelly Puffer** or White-spotted Pufferfish. To 52 cm (20.5 in) TL (Kulbicki *et al.* 2005). Indo-Pacific; western Pacific Ocean north to Yonaguni-jima Island, Japan (Koeda *et al.* 2016); Todos Santos area (23°24.6'N, 110°13.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and tip of Baja California to Colombia (Robertson and Allen 2015), including Islas Galápagos (Grove and Lavenberg 1997); not in Gulf of California (Robertson and Allen 2015). Benthic; depth: intertidal to 122 m (400 ft) (min.: Kwun *et al.* 2017; max.: Weijerman *et al.* 2019).

Arothron meleagris (Anonymous, 1798). **Guineafowl Puffer** or Guineafowl Pufferfish. To 45 cm TL (17.7 in) TL (Kuiter and Tonozuka 2001). Indo-Pacific; western Pacific Ocean north to Ogasawara Islands, Japan (Yamada in Nakabo 2002); Todos Santos area (23°24.6'N, 110°13.8'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California); tip of Baja California into central and southern Gulf of California (Robertson and Allen 2002) to Peru (Pequeño 1989), including Islas Galápagos, and other offshore islands (Robertson and Allen 2002). Benthic; depth: 1–144 (3–472 ft) (min.: Robertson and Allen 2002; max.: Weijerman *et al.* 2019). The original description is usually ascribed to Lacepède; Fricke *et al.* (2020) explain why Anonymous is correct.

****Canthigaster punctatissima*** (Günther, 1870). Sharpnosed Puffer or **Spotted Sharpnose Puffer**. To 9 cm (3.5 in) TL (Bussing in Fischer *et al.* 1995). Tip of Baja California (Robertson and Allen 2002) to La Libertad, Ecuador (Grove and Lavenberg 1997), including Gulf of California (Bussing in Fischer *et al.* 1995) and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: intertidal to 24 m (79 ft) (min.: Castellanos-Galindo *et al.* 2014; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Lagocephalus lagocephalus (Linnaeus, 1758). **Oceanic Puffer**. To 61 cm (24 in) TL (Miller and Lea 1972). Circumglobal; western Pacific Ocean north to Japan (Yamada in Nakabo 2002), and southern Kuril Islands (Parin 2003); Alder Creek Beach, Mendocino County, northern California (Miller and Lea 1972) to Peru (Grove and Lavenberg 1997), including Islas Galápagos (Grove and Lavenberg 1997); at least one Gulf of California record (23°39.35'N, 109°40.77'W) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California). Oceanic; depth: near surface (Eschmeyer and Herald 1983) to at least 1,000 m (3,280 ft) (Shipp in Carpenter 2003).

Sphoeroides angusticeps (Jenyns, 1842). **Narrow-headed Puffer**. To 25 cm (9.8 in) TL (Fischer *et al.* 1995). Bahía Magdalena, southern Baja California (Rodríguez-Romero *et al.* 2011); Mazatlán, Mexico (FMNH 96387), Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: at least as shallow as 2 m (6 ft) (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) to 20 m (66 ft) (Robertson and Allen 2015). Once thought to be endemic to the Islas Galápagos, but apparently found in several places in the tropical and subtropical eastern Pacific.

Sphoeroides annulatus (Jenyns, 1842). **Bullseye Puffer**. To 48 cm (18.9 in) TL (Amezcua Linares 1996). Redondo Beach, southern California (Grove and Lavenberg 1997) to Pisco, Peru (Chirichigno 1974), including Gulf of California (Bussing in Fischer *et al.* 1995), and Islas Galápagos (Watson in Moser 1996). Mostly marine, juveniles in estuaries (Velasco and Thiel 2002); benthic; depth: surface (Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), intertidal to 105 m (344 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Amezcua Linares 1996).

Sphoeroides lispus Walker, 1996. **Naked Puffer** or Smooth Puffer. To 35.2 cm (13.9 in) TL (Cota-Gómez *et al.* 1998). Lagunas Ojo de Liebre-Guerrero Negro, central Baja California (Cota-Gómez *et al.* 1998) to Gulf of California (Walker and Bussing 1996), and Chiapas, Mexico (González-Acosta *et al.* 2018). Benthic; depth: 0.3–33 m (1–108 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Los Angeles County Museum of Natural History Fish Collection, Los Angeles, California).

Sphoeroides lobatus (Steindachner, 1870). **Longnose Puffer**. To at least 30.3 cm (11.9 in) TL (John Snow, pers. comm. to M.L.). Redondo Beach, southern California (Grove and Lavenberg 1997) to Salinas (33°57'S), central Chile (Brito 2003), including southern and central Gulf of California (Robertson and Allen 2002), and Islas Galápagos (Grove and Lavenberg 1997). Marine and brackish waters (Fricke *et al.* 2020); depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–107 m (3–351 ft) (min.: Allen and Robertson 1994; max.: Amezcua Linares 1996).

****Sphoeroides sechurae*** Hildebrand, 1946. **Peruvian Puffer** or Southern Puffer. To 17 cm (6.7 in) TL (Bussing in Fischer *et al.* 1995). Tip of Baja California and Gulf of California (Robertson and Allen 2015) to Bahía de Sechura, Peru (Chirichigno and Veléz 1998). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1–118 m (4–387 ft) (min.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California; max.: Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California).

Family Diodontidae—Porcupinefishes

Chilomycterus reticulatus (Linnaeus, 1758). **Spotfin Burrfish** or Spotted Burrfish. To about 75 cm (29.5 in) TL (Leis in Carpenter and Niem 2001). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002) and southern Kuril Islands (Savinykh 1998); San Pedro, southern California (Miller and Lea 1972) to Chile (Allen and Robertson 1994), including Gulf of California (Robertson and Allen 2015), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California) and 1–141 m (3–462 ft) (Chave and Mundy 1994).

Diodon eydouxii Brisout de Barneville, 1846. **Pelagic Porcupinefish**. To 30 cm (11.8 in) TL (Robertson and Allen 2015). Circumglobal; western Pacific Ocean north to central Japan (Aizawa in Nakabo 2002); Los Angeles Harbor (Lea 1998 as *C. reticulatus*) to eastern Pacific tropics (Leis 2006), including Chiapas, Mexico (González-Acosta *et al.* 2018). Pelagic.

Diodon holocanthus Linnaeus, 1758. **Balloonfish**, Freckled Porcupinefish, Longnose Porcupinefish, or Longspined Balloonfish. Length to 51.5 cm (20.3 in) TL (Flores-Ortega *et al.* 2020). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002); Bolinas, northern California (Personal communication: California Academy of Sciences Fish Collection, San Francisco, California) to Easter Island (Pequeño 1989), including Gulf of California (Thomson *et al.* 2000), and Islas Galápagos (Grove and Lavenberg 1997). Benthic; depth: surface (nightlight; Personal communication: Scripps Institution of Oceanography Fish Collection, La Jolla, California), 1 m to at least 100 m (3–328 ft) (min.: Robertson and Allen 2002; max.: Randall *et al.* 1990).

Diodon hystrix Linnaeus, 1758. Freckled Porcupinefish, **Porcupinefish**, Spotfin Porcupinefish, or Spotted Porcupinefish. To 91 cm (36 in) TL (Miller and Lea 1972). Circumglobal; western Pacific Ocean north to Japan (Aizawa in Nakabo 2002) and southeast of Kuril Islands (Parin 2003); Santa Barbara (34°24'N, 119°45'W), southern California (Personal communication: Santa Barbara Natural History Museum Fish Collection, Santa Barbara, California) to Chile, including Gulf of California and Islas Galápagos (Miller and Lea 1972). Benthic; depth: surface (nightlight: 52-415), intertidal to 135 m (443 ft) (min.: Arndt and Fricke 2019; max.: Ralston *et al.* 1986).

Family Molidae—Molas or Ocean Sunfishes

Mola mola (Linnaeus, 1758). Mola or **Ocean Sunfish**. Confirmed to 2.7 m (8.9 ft) TL (Tierney Thys, pers. comm. to M.L.); possibly to 4 m (13.1 ft) TL (Miller and Lea 1972). Circumglobal; western Pacific Ocean north to Japan (Hatooka in Nakabo 2002), and southern Kuril Islands (Parin 2003; Gulf of Alaska (Mecklenburg *et al.* 2002) to Las Cruces (33°29'S), central Chile (Brito 2003), including Gulf of California (Scott in Fischer *et al.* 1995), and Islas Galápagos (Grove and Lavenberg 1997). Depth: surface to 844 m (2,768 ft) (min.: Clemens and Wilby 1946; max.: Potter and Howell 2011). Deepest known occurrence off eastern Pacific coast is 556 m (1,824 ft) (Thys *et al.* 2015). We note that the NWFSC-FRAM database contains a number of records of fish ostensibly caught by bottom trawls at depths deeper than 844 m (e.g., 942 m, 3,090 ft, 954 m, 3,129 ft, 1095

m, 3,592 ft, and 1,184 m, 3,884 ft). However, it is likely that all of these represent catches made in the water column during net deployment or retrieval.

Mola tecta Nyegaard, Sawai, Gemmell, Gillum, Loneragan, Yamanoue, & Stewart, 2018. **Hoodwinker Ocean Sunfish.** To at least 242 cm (95.3 in) TL (Nyegaard *et al.* 2018). Southern Hemisphere from Chile to Australia to South Africa, and one possible record from the North Sea (Nyegaard *et al.* 2018); at least as far north as Kodiak Island, Alaska (Marianne Nyegaard, pers. comm.) to Coal Oil Point, Santa Barbara County, southern California (M.L., pers. obs.). Depth range unknown, but may resemble that of *Mola mola* (Linnaeus, 1758) (Nyegaard *et al.* 2018).

Ranzania laevis (Pennant, 1776). **Slender Mola**. To 90 cm (35.4 in) TL (Hutchins in Carpenter and Niem 2001). Circumglobal (Hutchins in Carpenter and Niem 2001); western Pacific Ocean north to Ryukyu Islands, Japan (Hatooka in Nakabo 2002); Oceano, central California (Snyder 1913) to Chile (Eschmeyer and Herald 1983), including southern Gulf of California (Scott in Fischer *et al.* 1995). Depth: surface to 257 m (843 ft) (Roberts *et al.* 2015).

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