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Stakeholder Valuation of CalCOFI Data usage for Improved Decision Making

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Stakeholder Valuation of CalCOFI Data Usage for Improved Decision Making

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Abstract

California's ocean is home to one of the most biologically diverse and productive marine ecosystems in the world, providing vital environmental, economic, and cultural resources. However, increasing human activity and climate-related changes are affecting ocean health, threatening marine biodiversity, and altering the services these ecosystems provide. Understanding and monitoring these changes over time is critical to ensuring a sustainable future for California's coasts and marine life. California Cooperative Oceanic Fisheries Investigations (CalCOFI) runs the world's longest-running integrated ocean ecosystem sampling program. The application and importance of the time-series data is far reaching. The physical, chemical, and biological processes of the California Current are monitored to understand ocean currents that influence the climate and ecosystems of the area. Included in this are sea surface temperature, salinity, and nutrient concentrations which are imperative in assessing the effects of climate change on the ocean. Additionally, the data is used to track the abundance and distribution of various marine organisms, including fish, plankton, and marine mammals, which can then be leveraged to support the sustainable management of fishing and aquaculture, conservation efforts, and the siting and development of offshore renewable energy (Monroe, 2024).

CalCOFI data is used by oceanographers, meteorologists, state and federal government entities, and organizations across sectors to assess the impact of climate variability and the changes to coastal ocean ecosystems. With many stakeholders engaged with the long-term data, and many more interested in becoming engaged, it is imperative that CalCOFI understands user needs to inform their decision-making related to operations and data collection (Mackenzie, 2019). Incorporating a user-centric perspective in understanding the respective value of each CalCOFI monitoring station, the seasons in which data is collected, which data is being used, and what the data is being used for, is a key step in this process. To this end, I partnered with CalCOFI to create tools to better understand the value of CalCOFI data with the goal of informing their operational decision making. The methodology applied to achieve these results included stakeholder identification, stakeholder surveying, analysis of results, and mapping. The deliverables include a master list of current and potential stakeholders, a survey platform for continued assessment, and a GIS story map to collate and present the survey findings.

The findings of the assessment indicate a large amount of data usage at the academic and research level, as well as with government and nonprofit entities, with applications along discovery-based research, education, policy design, and management. Available data sets are almost exhaustively being utilized, with monthly collection recurrence as a priority. Collating these findings and creating tools for continued assessment will allow

CalCOFI to gain a more complete understanding of their data usage, and to inform decision making and resource allocation at the operational level. In this paper, I discuss the methodology and outcomes of the project.

Background

California Cooperative Oceanic Fisheries Investigations (CalCOFI) was originally founded with the intention of researching oceanic conditions that contributed to the Pacific sardine crash in the 1940's, and to inform future ocean management responses. With the organization's evolution over three quarters of a century, it is now one of few ocean monitoring programs that simultaneously collects biological, chemical, and physical variables across the California Current Ecosystem (CCE). The data is used by a breadth of stakeholders working with exploited and protected species, oceanographic & atmospheric conditions, fisheries & marine resource management, water quality & pollution, and more (California Cooperative Oceanic Fisheries Investigation, 2025).

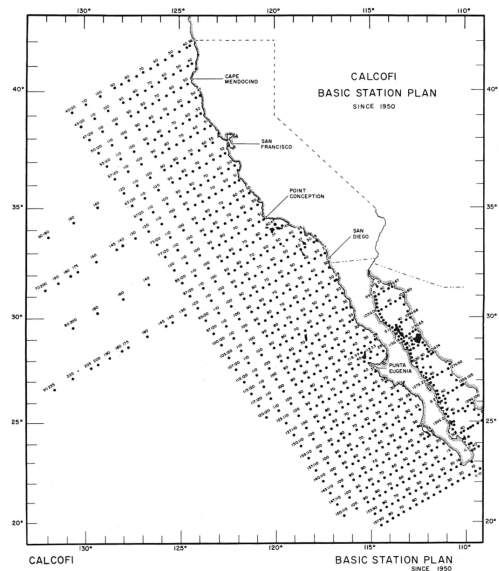


Figure 1: CalCOFI Research Stations Map

CalCOFI leads research cruises each quarter for approximately 2 – 4 weeks, during which they stop at 75 – 113 of their monitoring stations (Figure 1) to collect samples and data. Due to variable conditions, including weather, time constraints, military activity, and research goals, the planned route is often adjusted in real time. The CalCOFI program is engaging researchers, resource managers, industry representatives, and policy experts to collaboratively prioritize its long-term ocean monitoring efforts. Currently, CalCOFI does not have a tool to comprehensively visualize the value of the monitoring stations or specific ocean parameters. To ensure a more complete understanding of the priorities of their stakeholders, as well as potential future stakeholders, we have identified a need for a valuation assessment of CalCOFI sampling in the CCE (California Cooperative Oceanic Fisheries Investigation, 2025).

Goals & Objectives

The goal of this project was to assess which seasons, locations, and data parameters are most important for different uses (e.g., across research, management, and industry). To this end, my project explored ocean monitoring priorities of stakeholders who are using

CalCOFI data or would like to use CalCOFI data and products to identify priority stations, parameters and seasons. The objectives included:

1. **Identify stakeholders**
Identify entities that currently use or might be interested in using CalCOFI data, and collate into a comprehensive list
2. **Survey stakeholders on data use**
Conduct a survey of the above-mentioned stakeholders to identify priority uses of CalCOFI data (e.g., locations, parameters, and seasons).
3. **Visualize & share survey results**
Create a dashboard for internal use and story map for external use to visualize the survey results in a format that can be automatically updated.

Methodology & Deliverables

The project methodology incorporated survey research, data management, and ArcGIS mapping. Three deliverables were presented to the Capstone Advisory Committee, which convened twice monthly to review progress, provide feedback, and advise on direction and application of the project results. The deliverables are listed below, inclusive of the methodology utilized for each.

Master Stakeholder List

For this project, I collected primary data using a survey methodology. The surveyed population encompassed stakeholders that currently utilize CalCOFI data, as well as stakeholders who are interested in utilizing CalCOFI data. The Stakeholder Master List was created in collaboration with my capstone advisor, Erin Satterthwaite, by utilizing internal resources such as conference registrations, peer reviewed and government publication citations, and desk research on local industries and organizations for potential stakeholder applications. Capturing both current and potential users in a comprehensive list of stakeholders is important because CalCOFI data has a breadth of applications, and in addressing potential users, we aimed to share data sets that may be of use and to capture what would make data more accessible to them. Once the comprehensive list was complete, I developed categories, such as industry, consultants, scientists, federal, state, NGO, etc, and applied them to the full stakeholder list. From this stage, I distilled entities which had contacts to include in a separate distribution list.

Data Collection

Identify Survey Platform

In the first phase of data collection, I utilized the GIS platform Survey123. In comparison to other survey platforms, such as SurveyMonkey and Qualtrics, it was decided under consultation with survey and mapping advisors that for the purposes of the project, Survey123 would be most suitable. Survey123 was chosen because the platform contains exclusive functionalities to embed GIS maps used in the survey for spatial analysis. It also contains an auto-populating dashboard of survey data, analytics, and allows for continuity post-pilot distribution.

Draft Survey

Once the survey platform was identified, I began drafting the survey itself. To capture stakeholders who are familiar with or currently using CalCOFI data, and for entities that are interested in using CalCOFI data, I bifurcated with the question “Do you use CalCOFI data?”. The drafting process began with identifying the categories of data I am seeking to capture. From there, I break down each category into precisely worded questions and corresponding output units to inform those categories. The survey centered on asking the data users what they value CalCOFI data and why. The survey included questions related to data usage, preferred sampling frequency and locations, priority data sets and parameters, and seasonality. The survey reflected the spatio-temporal priorities for each entity's research parameters, which was then analyzed to create a frequency based valuation of each research station in the CCE.

Survey Distribution

In the next phase of surveying, I deployed a pilot survey to a distribution list of stakeholders. The master stakeholder list is comprehensive, pulled from peer reviewed citations, government entities, and partners. The list was then divided into current and potential stakeholders. The distribution list was then distilled from both current and potential stakeholders based on the availability of contact information. Once the survey and distribution list was finalized, the final survey was sent to the distribution list with the goal of maximizing the representation under each category. In an effort to maximize response rates, I extended the response time to 2 weeks, and phased the distribution, to allow for rolling responses.

Collate Responses

Finally, the survey responses were populated on a rolling basis, and visualized within the dashboard platform. The workflow of the data analytics from the survey responses is included in the flow chart below (Figure 2).

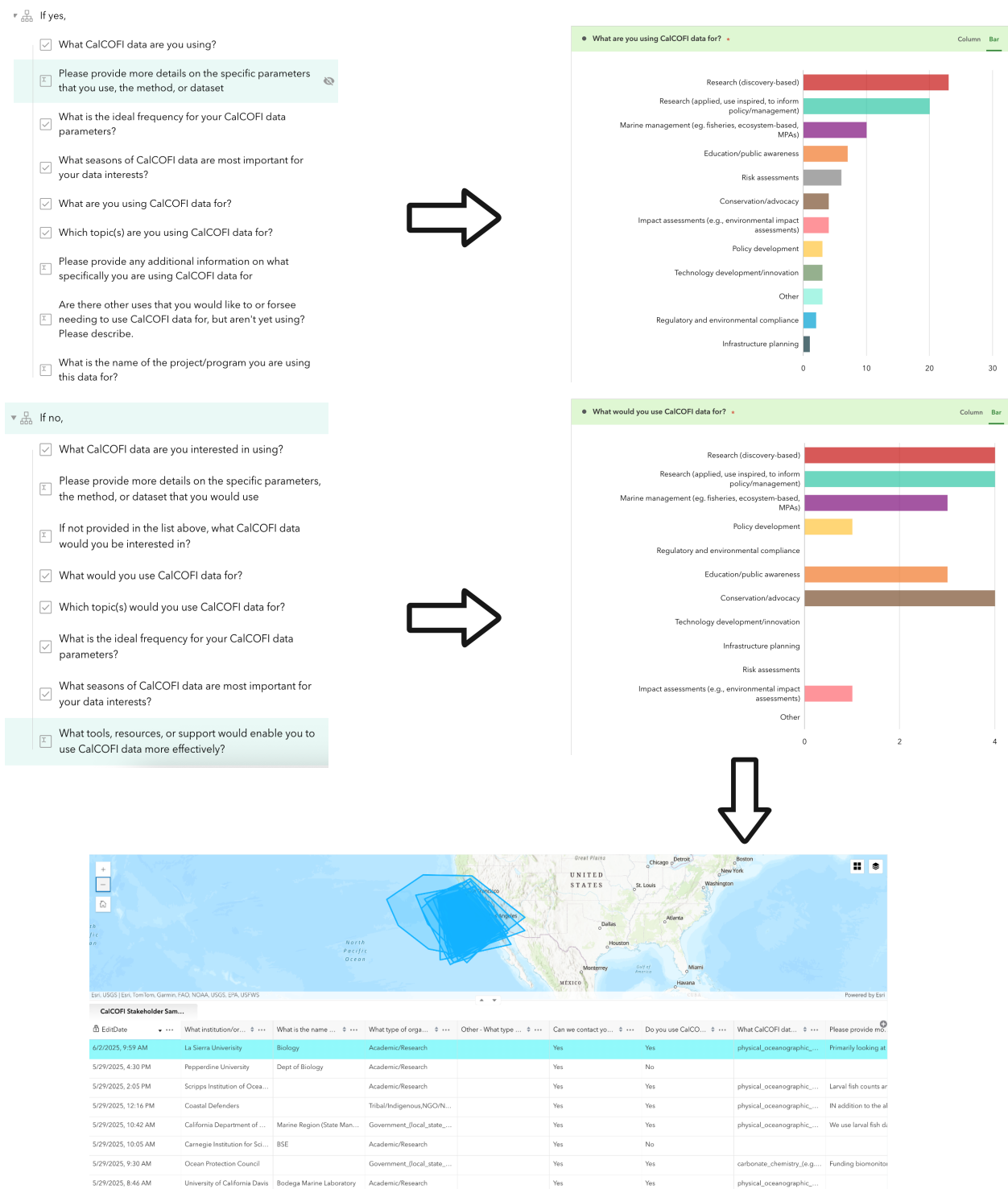


Figure 2: Survey response and analysis workflow

Story Map

The final deliverable is the ArcGIS story map. This tool has been selected as the most effective in visualizing the stakeholder valuations of the CalCOFI research stations, as the survey responses and GIS map will feed in directly from the survey platform. The GIS program allowed me to house the data sets in the geodatabase as a feature class, which then allowed me to run geoprocessing and analysis tools as needed to create the valuations of the station map. The stakeholder responses to the survey are also

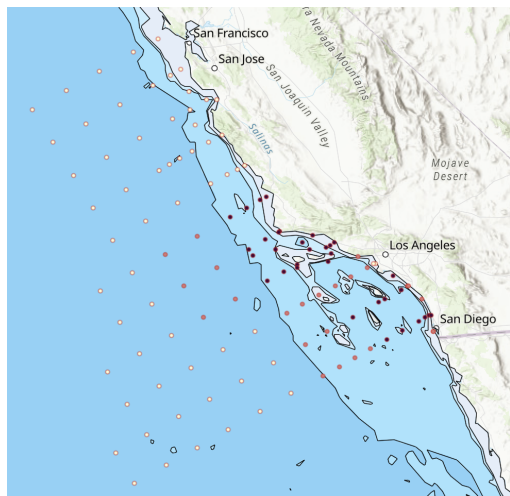


Figure 3: CalCOFI Research Station Valuation

accessible through the story map interface. Overall, the intention of the story map is to present the background of the project, its purpose, and the results in an accessible format for both public consumption and internal decision making for CalCOFI. The mapping of the station valuation includes an oceanographic basemap, the CalCOFI station point map, and the polygons of stakeholder priority areas. The GIS analysis tools used include intersect and join for the mapping portion. Separately, I maintained a tracker of the distribution list responses. The tracker allows us to quantify the response rate to measure success. Once all stakeholder responses were analyzed, I created the StoryMap in the form of a narrative, with bar charts included under each survey question response, and a station map with color-coded points to indicate the station's valuation.

Findings

The survey was sent to one hundred and twenty two (122) stakeholders with a 33% response rate. Fifty nine (59) stakeholders clicked the survey link, and forty (40) responses were collected. Of these responses, 34 were from current CalCOFI data users, and 6 were from potential users.

Current Stakeholders

The responses from current CalCOFI stakeholders indicate that all provided data sets are being utilized, with priorities for monthly and quarterly data collection, and an almost equal distribution of preference indicated for the seasons in which the data is collected. The data is being applied largely towards discovery based research, policy development, and marine management. Current stakeholders also span the provided topics, with the majority (>20) indicating that they are using the data for questions related to

oceanography, oceanographic trends and variability, marine ecology, and marine ecosystem dynamics.

Potential Stakeholders

The responses from potential CalCOFI stakeholders indicate that the majority are interested in using physical oceanographic measurements and general water chemistry for applications in marine ecology, marine ecosystem dynamics, fisheries, ichthyoplankton and larval fish ecology, and trophic dynamics and food webs. The interest in CalCOFI data is indicated as being applied largely to discovery based research, policy development, management, conservation, and advocacy. When prompted with what tools, resources, or support would enable potential stakeholders to access CalCOFI data, respondents indicated that 1) continuing to make data publicly available online would be helpful, 2) a more user friendly database online that allows data sampling access, and 3) a database in csv or comparable formats with dates, sightings, and locations.

Conclusion

The mapping results indicated that users prioritized stations closer to the coast, while stations farthest from the coastline were noted as the least important for these total user needs. There is also an indicated need for continued monthly data collection, with increased value placed on data sets related to physical oceanographic measurements, general water chemistry, phytoplankton and primary productivity, plankton biovolume, zooplankton, copepods, krill and euphausiids, carbonate chemistry, fish larvae, and seawater density and optical properties. The respondents also indicated a desire for increased application of CalCOFI data for educational activity development, long term impacts of wildfires, and predator-prey relationships. With the understanding of which data sets are being prioritized based on utility, the frequency of data collection, as well as gaps in data set availability, CalCOFI can apply a user-centric approach to operational decision making for research cruises and data management in the future.

It's important to also note that the pilot survey faced constraints on distribution across sectors, with minimal responses from potential stakeholders, and a lack of representation from private industry. Looking towards future application of these tools, more development on the Master Stakeholder List and Distribution List will be vital. Based on these results, CalCOFI can increase engagement with potential stakeholders by continuing to develop a more accessible interface for data sets and downloading, and ensuring they are maintained and organized with clear titles, dates, and location descriptions.

References

Monroe, Robert. "CalCOFI at 75: A California Science Gem Is Cutting-Edge but Still Devoted to the Fundamentals." *Scripps Institution of Oceanography*, 20 Nov. 2024, <https://scripps.ucsd.edu/news/calcofi-75>.

California Cooperative Oceanic Fisheries Investigations. "About." *CalCOFI*, https://www.calcofi.com/index.php?option=com_content&view=category&layout=blog&id=135&Itemid=845. Accessed 3 June 2025.

"History & Survey Coverage." *California Cooperative Oceanic Fisheries Investigations*, www.calcofi.org/about/history/. Accessed 23 May 2025.

Mackenzie, Bev, et al. "The Role of Stakeholders in Creating Societal Value From Coastal and Ocean Observations." *Frontiers in Marine Science*, vol. 6, 2019, article 137, <https://doi.org/10.3389/fmars.2019.00137>.

Annex 1. Master Stakeholder List

Category	Organization	Website
Academic research	University of California, Los Angeles - Department of Atmospheric and Oceanic Sciences	atmos.ucla.edu
Academic research	University of California, Santa Barbara - Bren School of Environmental Science & Management	bren.ucsb.edu
Academic research	UC Davis Bodega Marine Laboratory	bml.ucdavis.edu
Academic research	California Institute of Technology (Caltech) - Geological and Planetary Sciences	caltech.edu
Academic research	California Sea Grant	caseagrants.ucsd.edu
Academic research	Cal Poly San Luis Obispo - Center for Coastal Marine Sciences	ccms.calpoly.edu
Academic research	California State University Long Beach - Ocean Studies Institute	csulb.edu
Academic research	California State University Monterey Bay	csUMB.edu
Academic research	California State University San Marcos	csusm.edu
Academic research	University of California, Berkeley - Environmental Science, Policy, and Management	espm.berkeley.edu
Academic research	Stanford University - Hopkins Marine Station	hopkins.stanford.edu
Academic research	University of California, Santa Cruz - Institute of Marine Sciences	ims.ucsc.edu
Academic research	Monterey Bay Aquarium Research Institute (MBARI)	mbari.org
Academic research	University of California, Santa Barbara - Marine Science Institute	msi.ucsb.edu
Academic research	University of California, Santa Cruz - Ocean Sciences Department	oceansciences.ucsc.edu

Academic research	Scripps Institution of Oceanography (SIO) - UC San Diego	scripps.ucsd.edu
City governments	Humboldt, Arcata	arcata.ca.us
City governments	Humboldt, Eureka	ci.eureka.ca.gov
City governments	Monterey, Pacific Grove	ci.pg.ca.us
City governments	Contra Costa, Richmond	ci.richmond.ca.us
City governments	Monterey, Seaside	ci.seaside.ca.us
City governments	Los Angeles, Manhattan Beach	citymb.info
City governments	San Mateo, San Mateo	cityofsanmateo.org
City governments	Santa Cruz, Santa Cruz	cityofsantacruz.com
City governments	Ventura, Ventura	cityofventura.ca.gov
City governments	Del Norte, Crescent City	crescentcity.org
City governments	Mendocino, Fort Bragg	fortbragg.com
City governments	Mendocino, Gualala	gualala.org
City governments	San Diego, Imperial Beach	imperialbeachca.gov
City governments	Los Angeles, Los Angeles	lacity.org
City governments	Orange, Laguna Beach	lagunabeachcity.net
City governments	Monterey, Monterey	monterey.org
City governments	San Luis Obispo, Morro Bay	morro-bay.ca.us
City governments	Orange, Newport Beach	newportbeachca.gov
City governments	San Diego, Oceanside	oceansideca.org
City governments	Ventura, Ojai	ojaicity.org
City governments	San Luis Obispo, Pismo Beach	pismobeach.org
City governments	Mendocino, Point Arena	pointarena.ca.gov
City governments	Los Angeles, Redondo Beach	redondo.org
City governments	San Diego, San Diego	sandiego.gov
City governments	Santa Barbara, Santa Barbara	santabarbaraca.gov
City governments	Los Angeles, Santa Monica	santamonica.gov
City governments	San Francisco, San Francisco	sfgov.org
City governments	Sonoma, Sonoma	sonomacity.org
City governments	San Mateo, South San Francisco	ssf.net

City governments	Orange, Huntington Beach	surfcity-hb.org
City governments	Orange, Surfside	surfside.org
City governments	Mono, Mammoth Lakes	townofmammothlakes.ca.gov
City governments	Humboldt, Trinidad	trinidad.ca.gov
City governments	Los Angeles, Venice	venicecommunity.org
City governments	Contra Costa, Walnut Creek	walnut-creek.org
Coastal Resilience & Planning	City of Ventura - Coastal Resilience Plan	cityofventura.ca.gov
Coastal Resilience & Planning	City of Imperial Beach - Coastal Resilience	imperialbeachca.gov
Coastal Resilience & Planning	City of Los Angeles - Office of Sustainability	lacity.org
Coastal Resilience & Planning	City of Long Beach - Environmental Services Bureau	longbeach.gov
Coastal Resilience & Planning	City of Monterey - Climate Action Plan	monterey.org
Coastal Resilience & Planning	Orange County - Coastal Resources Department	ocgov.com
Coastal Resilience & Planning	City of Redwood City - Sustainability & Resilience	redwoodcity.org
Coastal Resilience & Planning	City of San Diego - Climate Action Plan	sandiego.gov
Coastal Resilience & Planning	City of Santa Barbara - Environmental Services	santabarbaraca.gov
Coastal Resilience & Planning	City of Santa Monica - Sustainability & Resilience	santamonica.gov
Coastal Resilience & Planning	San Francisco Planning Department	sfplanning.org
Coastal Resilience & Planning	San Mateo County - Environmental Health Services	smcgov.org
Coastal Resilience & Planning	Sonoma County - Climate Action & Resilience	sonomacounty.ca.gov
Coastal Resilience & Planning	City of Huntington Beach - Climate Action Plan	surfcity-hb.org
Commercial ports & harbor authorities	Port of Richmond	ci.richmond.ca.us
Commercial ports & harbor authorities	Port of West Sacramento	cityofsacramento.org
Commercial ports & harbor authorities	Port of Humboldt Bay	humboldtbay.org
Commercial ports & harbor authorities	Port of San Diego	portofsandiego.org

Commercial ports & harbor authorities	Port of Stockton	portofstockton.com
Diving & freediving operators	Aquarius Dive Shop	aquariusdive.com
Diving & freediving operators	Beach Cities Scuba	beachcityesscuba.com
Diving & freediving operators	Big Bear Scuba	bigbearscuba.com
Diving & freediving operators	Catalina Scuba Luv	catalinascubaluv.com
Diving & freediving operators	Channel Islands Dive Adventures	cidac.com
Diving & freediving operators	Club Ed Scuba	clubedscuba.com
Diving & freediving operators	Crescent City Scuba	crescentcityscuba.com
Diving & freediving operators	Laguna Sea Sports	lagunaseasports.com
Diving & freediving operators	La Jolla Dive	lajolladive.com
Diving & freediving operators	Monterey Bay Diving	montereybaydiving.com
Diving & freediving operators	Morro Bay Scuba	morrowdivers.com
Diving & freediving operators	Dana Point Ocean Institute	ocean-institute.org
Diving & freediving operators	Pacific Beach Dive Shop	pbdiveshop.com
Diving & freediving operators	Point Reyes Diving	pointreyesdiving.com
Diving & freediving operators	Redondo Beach Scuba	redondobeachscuba.com
Diving & freediving operators	Santa Cruz Divers	santacruzdivers.com
Diving & freediving operators	Santa Barbara Dive Shop	sbdive.com
Diving & freediving operators	Scuba Diving Catalina	scubadivingcatalina.com
Diving & freediving operators	Scuba Schools of America	scubaschool.com
Diving & freediving operators	SDI Scuba	sdiscuba.com
Diving & freediving operators	Ventura Dive & Sport	venturadiveandsport.com
Ecosystem Monitoring	Bodega Marine Laboratory	bml.ucdavis.edu
Ecosystem Monitoring	California Marine Mammal Stranding Network (CMMEN)	california-marine-mammal-stranding-network.org

Ecosystem Monitoring	California Seafloor Mapping Program (CSMP)	californiaseaflormapping.org
Ecosystem Monitoring	Channel Islands National Marine Sanctuary Monitoring	channelislands.noaa.gov
Ecosystem Monitoring	Environmental Defense Center (EDC) – Ocean Conservation	environmentaldefensecenter.org
Ecosystem Monitoring	NOAA Fisheries – West Coast Region	fisheries.noaa.gov
Ecosystem Monitoring	California Current Ecosystem Long-Term (CCE-LTER)	https://ccelter.ucsd.edu/
Ecosystem Monitoring	Kelp Forest Monitoring Program	kelpwatch.org
Ecosystem Monitoring	Marine Conservation Group (MCG) – California Marine Biodiversity	marineconservationgroup.org
Ecosystem Monitoring	Marine Life Institute for Research and Conservation (MLIRC)	marinelifeinstitute.org
Ecosystem Monitoring	Marine Biodiversity Observation Network (MBON)	mbon.org
Ecosystem Monitoring	Sequoia and Kings Canyon National Parks – Coastal Ecosystem Monitoring	nps.gov
Ecosystem Monitoring	National Park Service – Point Reyes National Seashore Ecosystem Monitoring	nps.gov
Ecosystem Monitoring	California Ocean Science Trust (COST)	oceansciencetrust.org
Ecosystem Monitoring	Pacific States Marine Fisheries Commission (PSMFC)	psmfc.org
Ecosystem Monitoring	San Francisco Bay Estuary Program (SFEP)	sfei.org
Ecosystem Monitoring	Californian Aquatic Invasive Species Management Plan (AISMP)	wildlife.ca.gov
eNGOS	The Center for Biological Diversity	biologicaldiversity.org
eNGOS	Blue Frontier Campaign	bluefront.org
eNGOS	California Marine Life Protection Act (MLPA) Initiative	californiamarinelifelife.org
eNGOS	California Ocean Alliance	californiaoceanalliance.org
eNGOS	Earthjustice	earthjustice.org

eNGOS	Friends of the Earth (FOE) – California	foe.org
eNGOS	Oceana	oceana.org
eNGOS	The Ocean Conservancy	oceanconservancy.org
eNGOS	Pacific Whale Foundation	pacificwhale.org
eNGOS	Wildlife Conservation International (WCI)	wildlifeconservation.org
Environmental Consulting	URS Corporation (AECOM)	aecom.com
Environmental Consulting	Anchor QEA	anchorgea.com
Environmental Consulting	Cardno	cardno.com
Environmental Consulting	EcoRestore	ecorestore.com
Environmental Consulting	Environmental Science Associates (ESA)	esassoc.com
Environmental Consulting	GeoScience	geoscience.com
Environmental Consulting	ICF	icf.com
Environmental Consulting	Marstel-Day	marstel-day.com
Environmental Consulting	Moffatt & Nichol	moffattnichol.com
Environmental Consulting	Tetra Tech	tetrattech.com
Fisheries associations	National Fisheries Institute (NFI)	aboutseafood.com
Fisheries associations	American Sportfishing Association (ASA)	asafishing.org
Fisheries associations	California Groundfish Collective	cagroundfish.org
Fisheries associations	California Dungeness Crab Fishing Gear Working Group	calcrab.org
Fisheries associations	California Fisheries Association (CFA)	calfisheries.org
Fisheries associations	California Crab Producers	californiacrab.org
Fisheries associations	California Fisheries and Seafood Institute (CFSI)	californiafisheries.com
Fisheries associations	California Squid Producers	californiasquid.com
Fisheries associations	California Albacore Fishing Association (CAFA)	californiatuna.org
Fisheries associations	California Salmon Council	calsalmon.org

Fisheries associations	California Sportfishing League (CSL)	calsport.org
Fisheries associations	California Tuna Federation	caltunafed.org
Fisheries associations	California Fishermen's Welfare Association (CFWA)	cfwa.org
Fisheries associations	California Lobster and Trap Fishermen's Association (CLTFA)	cltfa.org
Fisheries associations	San Francisco Commercial Fishermen's Association (SFCFA)	N/A
Fisheries associations	California Shrimp Fishermen's Association (CSFA)	N/A
Fisheries associations	West Coast Lobster Fishermen's Association	N/A
Fisheries associations	California Marine Sports (CMS)	N/A
Fisheries associations	Southern California Trawlers Association (SCTA)	N/A (not a widely publicized website)
Fisheries associations	Pacific Coast Federation of Fishermen's Associations (PCFFA)	pcffa.org
Fisheries associations	Pacific Coast Federation of Fishermen's Associations (PCFFA)	pcffa.org
Fisheries associations	Pacific Fishery Management Council (PFMC)	pfmc.org
Fisheries associations	Pacific Fisheries Management Council (PFMC)	pfmc.org
Fisheries associations	Port of Monterey Commercial Fishing Fleet	portofmonterey.org
Fisheries associations	Sportfishing Association of California (SAC)	sacalifornia.org
Fisheries associations	San Diego Sportfishing Council	sdsportfishing.org
Fisheries associations	California Sea Urchin Commission (CSUC)	seaurchin.org
Fisheries associations	United Fishermen of Alaska (UFA)	ufa-fisheries.org
Fisheries associations	United Anglers of California (UAC)	unitedanglers.com
Fisheries associations	West Coast Seafood Processors Association (WCSPA)	wcspa.org
Fisheries associations	California Wetfish Producers Association (CWPA)	wetfish.org

Fisheries associations	Western Fishboat Owners Association (WFOA)	wfoa.org
Intergovernmental Organizations (IGOs)	Asia-Pacific Economic Cooperation (APEC)	apec.org
Intergovernmental Organizations (IGOs)	North Pacific Anadromous Fish Commission (NPAFC)	npafc.org
Intergovernmental Organizations (IGOs)	North Pacific Marine Science Organization (PICES)	pices.int
International Non-Governmental Organizations (INGOs)	Ocean Conservancy	oceanconservancy.org
International Non-Governmental Organizations (INGOs)	Pacific Environmental Advocacy Center (PEAC)	peacenow.org
Marine Biotechnology & Pharmaceuticals	Marine Biologics	[No website available]
Marine Biotechnology & Pharmaceuticals	Applied Marine Sciences, Inc.	amarine.com
Marine Biotechnology & Pharmaceuticals	BioMarin Pharmaceutical Inc.	biomarin.com
Marine Biotechnology & Pharmaceuticals	Pfizer La Jolla Laboratories	pfizer.com
Marine Biotechnology & Pharmaceuticals	Seaside Marine International Drug Company	seasidemarinedrugs.com
Marine Business & Trade Associations	California Yacht Brokers Association (CYBA)	cyba.info
Marine Business & Trade Associations	Harbor Association of Industry and Commerce (HAIC)	harborassn.com
Marine Business & Trade Associations	California Association of Harbor Masters and Port Captains, Inc.	harbormaster.org
Marine Business & Trade Associations	Pacific Maritime Association (PMA)	pmanet.org
Marine Business & Trade Associations	Pacific Merchant Shipping Association (PMSA)	pmsaship.com
Marine Business & Trade Associations	Southern California Marine Association (SCMA)	scma.com
Marine Historians & Heritage	California Maritime Museum	calmaritimemuseum.org
Marine Historians & Heritage	Channel Islands Maritime Museum	cimmvc.org
Marine Historians & Heritage	Historical Seaport and Tall Ship Foundation	historicalseaport.org
Marine Historians & Heritage	Mendocino Coast Model Railroad & Maritime Museum	mcmrm.org
Marine Historians & Heritage	Napa Valley Maritime Museum	napamaritimemuseum.org

Marine Historians & Heritage	San Francisco Maritime National Historical Park	nps.gov/safr
Marine Historians & Heritage	Point Reyes National Seashore Association (PRNSA)	pointreyes.org
Marine Historians & Heritage	San Pedro Shipwrecks Museum	sanpedrohistory.org
Marine Historians & Heritage	Santa Barbara Maritime Museum	sbmm.org
Marine Historians & Heritage	Maritime Museum of San Diego	sdmaritime.org
Marine Historians & Heritage	San Diego Maritime Museum	sdmaritime.org
Marine Historians & Heritage	The National Maritime Historical Society	seahistory.org
Marine Historians & Heritage	The Sea Nymph Project	seanymph.com
Marine Historians & Heritage	The Wrecking Crew	shipwrecks.org
Marine Historians & Heritage	SS Jeremiah O'Brien Ship Museum	ssjeremiahobrien.org
Marine Historians & Heritage	USS Pampanito Maritime Museum	uss-pampanito.org
Marine Historians & Heritage	Ventura County Maritime Museum	vcmm.org
Marine Historians & Heritage	Albion River Bridge Shipwreck Site	visitalbion.com
Marine Historians & Heritage	Western Shipwrecks	westernshipwrecks.org
Ocean carbon sequestration & climate mitigation	Captura	capturacorp.com
Ocean carbon sequestration & climate mitigation	Capture6	capture6.org
Ocean carbon sequestration & climate mitigation	Ebb Carbon	ebbcarbon.com
Ocean carbon sequestration & climate mitigation	Equatic	equatic.tech
Ocean carbon sequestration & climate mitigation	Institute of the Americas	iamericas.org/bluecarboninitiative/
Ocean carbon sequestration & climate mitigation	Stanford's Center for Ocean Solutions	oceansolutions.stanford.edu/news/blu-carbon-california-incorporating-blue-carbon-science-climate-policy-solutions

Ocean carbon sequestration & climate mitigation	WILDCOAST	wildcoast.org/bluecarboncollaborative/
Ocean Journalism	Bay Nature	baynature.org
Ocean Journalism	Cal Coast News	calcoastnews.com
Ocean Journalism	Santa Barbara Independent	independent.com
Ocean Journalism	The California Report (KQED)	kqed.org
Ocean Journalism	Los Angeles Times - Environment Section	latimes.com
Ocean Journalism	Marine Conservation News	marinetrust.org
Ocean Journalism	Ocean Conservancy Blog	oceanconservancy.org
Ocean Journalism	Scripps Oceanography News	scripps.ucsd.edu
Ocean Journalism	Sea Change Radio	seachangeradio.com
Ocean Journalism	The Log Newspaper	thelog.com
Ocean Literacy in K-12	Blue Wild Education	bluewildeducation.com
Ocean Literacy in K-12	California Ocean Science Trust (CalOST)	calost.org
Ocean Literacy in K-12	Marine Conservation Group	marineconservationgroup.org
Ocean Literacy in K-12	Project Ocean	projectocean.org
Ocean Literacy in K-12	The Ocean Project	theoceanproject.org
Ocean Monitoring Programs	California Ocean Protection Council (OPC) – California Marine Protected Areas (MPA) Monitoring Program	californiaocean.org
Ocean Monitoring Programs	California Harmful Algal Bloom (HAB) Monitoring Program	caww.org
Ocean Monitoring Programs	California Coastal Water Research Project (CCWRP)	ccwrp.org
Ocean Monitoring Programs	Santa Barbara Channelkeeper	channelkeeper.org
Ocean Monitoring Programs	Coastal Ocean Research and Monitoring Program (CORMP)	cormp.org
Ocean Monitoring Programs	Marine Life Protection Act (MLPA) Monitoring Program	mlpa.ca.gov
Ocean Monitoring Programs	National Oceanic and Atmospheric Administration (NOAA) – California Current Ecosystem Survey	noaa.gov
Ocean Monitoring Programs	National Marine Sanctuary Program (NMSP)	sanctuaries.noaa.gov

Ocean Monitoring Programs	San Francisco Bay and Delta Monitoring Program (SFBay Monitoring)	sfwater.org
Ocean Monitoring Programs	West Coast Ocean Acidification and Hypoxia Science Panel (OAH)	westcoastoah.org
Ocean Monitoring Programs	Integrated Ocean Observing System (IOOS) – West Coast Regional Association (WCGA)	westcoastoceans.org
Ocean Monitoring Programs	California Department of Fish and Wildlife (CDFW) – Ocean Salmon Project	wildlife.ca.gov
Ocean Professional Societies	American Geophysical Union (AGU)	agu.org
Ocean Professional Societies	American Society of Limnology and Oceanography (ASLO)	aslo.org
Ocean Professional Societies	California Association of Professional Scientists (CAPS)	capsweb.org
Ocean Professional Societies	International Association for the Study of the Commons (IASC)	iasc-commons.org
Ocean Professional Societies	Society for Marine Mammalogy (SMM)	marinemammalogy.org
Ocean Professional Societies	Marine Technology Society (MTS)	mtsociety.org
Ocean Professional Societies	National Marine Educators Association (NMEA)	nmea.org
Ocean Professional Societies	International Society for Reef Studies (ISRS)	reefbase.org
Ocean Professional Societies	The Oceanography Society (TOS)	tos.org
Ocean Professional Societies	Western Society of Naturalists (WSN)	wsn-online.org
Ocean Recreation Community	California Surf Lifesaving Association (CSLSA)	cslsa.org
Ocean Recreation Community	Black Surf Santa Cruz	
offshore aquaculture	CalSeafood	california.seafood.org
offshore aquaculture	FishChoice	fishchoice.com
offshore aquaculture	Kona Blue Water Farms	konablue.com
offshore aquaculture	The Marine Stewardship Council (MSC) California	msc.org
offshore aquaculture	Ocean Era	oceanera.com
offshore aquaculture	Pacifico Aquaculture	pacificoaquaculture.com

offshore aquaculture	Regal Springs	regalsprings.com/
offshore aquaculture	Santa Barbara Seafood	santabarbaraseafood.com
offshore aquaculture	The Bay Foundation	thebayfoundation.org
offshore energy	AquaVentus	aquaventus.com
offshore energy	Atlantis Resources	atlantisresources.com
offshore energy	BlueFloat Energy	bluefloatenergy.com
offshore energy	BP (British Petroleum)	bp.com
offshore energy	Chevron	chevron.com
offshore energy	EDF Renewables	edf-re.com
offshore energy	Equinor	equinor.com
offshore energy	ExxonMobil	exxonmobil.com
offshore energy	Minesto	minesto.com
offshore energy	Ocean Infinity	oceaninfinity.com
offshore energy	Orsted	orsted.com
offshore energy	Ørsted U.S. Offshore Wind	orsted.us
offshore energy	Principle Power	principlepower.com
offshore energy	Prysmian Group	prysmiangroup.com
offshore energy	Sempra Energy	sempra.com
offshore energy	Shell Offshore	shell.com
offshore energy	Sustainable Marine	sustainablemarine.com
offshore energy	TotalEnergies	totalenergies.com
Philanthropic & Funding	The Christensen Fund	christensenfund.org
Philanthropic & Funding	The Conservation Fund	conservationfund.org
Philanthropic & Funding	The McKnight Foundation	mcknight.org
Philanthropic & Funding	The Gordon and Betty Moore Foundation	moore.org
Philanthropic & Funding	The Nature Conservancy	nature.org
Philanthropic & Funding	The David and Lucile Packard Foundation	packard.org
Philanthropic & Funding	The Packard Foundation	packard.org
Philanthropic & Funding	Packard Foundation	packard.org
Philanthropic & Funding	The Schmidt Family Foundation	schmidtfamilyfoundation.org
Philanthropic & Funding	The Walton Family Foundation	wffund.org

Ports & harbor operations	Bodega Bay Marina	bodegabaymarina.com
Ports & harbor operations	Harbor Island West Marina	harborislandwest.com
Ports & harbor operations	King Harbor Marina	kingharbor.com
Ports & harbor operations	Monterey Bay Boat Works	montereybayboatworks.com
Ports & harbor operations	Port of Monterey	montereyport.com
Ports & harbor operations	Morro Bay Harbor	morrobayharbor.com
Ports & harbor operations	Port of Morro Bay	morrobayharbor.com
Ports & harbor operations	Newport Harbor	newportharbor.com
Ports & harbor operations	Port of Long Beach	polb.com
Ports & harbor operations	Port of Hueneme	portofhueneme.org
Ports & harbor operations	Port of Los Angeles	portoflosangeles.org
Ports & harbor operations	Port of Oakland	portofoakland.com
Ports & harbor operations	Port of Redwood City	portofredwoodcity.org
Ports & harbor operations	Port of Ventura	portofventura.org
Ports & harbor operations	Port of Sacramento	portsacramento.com
Ports & harbor operations	Ports O' Call Marina	portsofcallmarina.com
Ports & harbor operations	Santa Barbara Harbor	santabarbaraharbor.com
Ports & harbor operations	Santa Cruz Harbor	santacruzharbor.org
Ports & harbor operations	Port of San Francisco	sfport.com
Ports & harbor operations	Shoreline Marina	shorelinemarina.com
Ports & harbor operations	South Beach Harbor	southbeachharbor.com
Ports & harbor operations	Ventura Harbor Village	ventura-harbor-village.com
Public Ocean Education	Birch Aquarium at Scripps	aquarium.ucsd.edu
Public Ocean Education	Aquarium of the Pacific	aquariumofpacific.org

Public Ocean Education	The California Academy of Sciences	calacademy.org
Public Ocean Education	Channel Islands National Marine Sanctuary	channelislands.noaa.gov
Public Ocean Education	Exploratorium	exploratorium.edu
Public Ocean Education	Fisherman's Wharf San Francisco	fishermanswharf.org
Public Ocean Education	Los Angeles Maritime Museum	lamaritimemuseum.org
Public Ocean Education	The Living Coast Discovery Center	livingcoast.org
Public Ocean Education	Living Coast Discovery Center	livingcoast.org
Public Ocean Education	The Marine Mammal Center	marine Mammal Center
Public Ocean Education	Monterey Bay Aquarium	montereybayaquarium.org
Public Ocean Education	Point Reyes National Seashore	nps.gov/pore
Public Ocean Education	Oceanside Harbor Village	oceansideharbor.com
Public Ocean Education	Pacific Science Center	pacsci.org
Public Ocean Education	TY Warner Sea Center	sbnature.org/sea-center
Public Ocean Education	Scripps Institution of Oceanography	scripps.ucsd.edu
Public Ocean Education	SeaWorld San Diego	seaworld.com/san-diego
Public Ocean Education	San Francisco Bay National Estuarine Research Reserve	sfbaynerr.org
Public Ocean Education	Santa Monica Pier Aquarium	sm Pier Aquarium
Public Ocean Education	Triton Museum of Art	tritonmuseum.org
Public Ocean Education	Chula Vista Nature Center	wildlifeexploration.org
Recreational Boaters	Bay Area Association of Disabled Sailors (BAADS)	baads.org
Recreational Boaters	California Yacht Club	calyachtclub.com
Recreational Boaters	California Boating Safety Officers Association	cbsoa.org
Recreational Boaters	Coronado Yacht Club	coronadoyc.org
Recreational Boaters	Delta Yacht Club	deltayachtclub.com
Recreational Boaters	Long Beach Yacht Club	lbyc.org
Recreational Boaters	Orange Coast College Sailing Club	occ.sailingclub.org
Recreational Boaters	Point Loma Yacht Club	plyc.org
Recreational Boaters	Santa Barbara Yacht Club	sbyc.org

Recreational Boaters	San Diego Yacht Club (SDYC)	sdyc.org
Recreational Boaters	San Francisco Yacht Club	sfyc.org
Recreational Boaters	Santa Monica Bay Yacht Club	smbyc.org
Recreational Boaters	Yacht Club of America	yca.org
Recreational Fishers	California Trout	caltrout.org
Recreational Fishers	Golden Gate Fishermen's Association (GGFA)	ggfa.net
Recreational Fishers	California Fishing Passport Community	wildlife.ca.gov/Fishing/Passport/Community
Recreational fishing passenger vessels	Channel Islands Sportfishing	channelislandssportfishing.com
Recreational fishing passenger vessels	Crescent City Sportfishing	crescentcityfishing.com
Recreational fishing passenger vessels	Davey's Locker	daveyslocker.com
Recreational fishing passenger vessels	Los Angeles Sportfishing	fishingsocal.com
Recreational fishing passenger vessels	Stardust	https://www.stardustsportfishing.com/
Recreational fishing passenger vessels	Mendocino Coast Sportfishing	mendocinocharters.com
Recreational fishing passenger vessels	Monterey Bay Sportfishing	montereyfishing.com
Recreational fishing passenger vessels	Morro Bay Charters	morrowbaycharters.com
Recreational fishing passenger vessels	Point Loma Sportfishing	sdfish.com
Recreational fishing passenger vessels	Seven Seas Sportfishing	sevensseasfishing.com
Recreational passenger vessel operators	Big Sur Charters	bigsurcharters.com
Recreational passenger vessel operators	Blue & Gold Fleet	blueandgoldfleet.com
Recreational passenger vessel operators	Channel Islands Harbor Sightseeing Cruises	channelislandsharbor.org
Recreational passenger vessel operators	Crescent City Harbor	crescentcityharbor.com
Recreational passenger vessel operators	Davey's Locker	daveyslocker.com
Recreational passenger vessel operators	Flagship Cruises & Events	flagshipsd.com
Recreational passenger vessel operators	Harbor Breeze Cruises	harborbreezecruises.com
Recreational passenger vessel operators	Hornblower Cruises & Events	hornblower.com

Recreational passenger vessel operators	Island Packers	islandpackers.com
Recreational passenger vessel operators	Los Angeles Harbor Tours	laharborboattours.com
Recreational passenger vessel operators	Mendocino Coast Charters	mendocinocharters.com
Recreational passenger vessel operators	Monterey Bay Sailing	montereybaysailing.com
Recreational passenger vessel operators	Monterey Bay Whale Watch	montereybaywhalewatch.com
Recreational passenger vessel operators	Newport Landing Whale Watching	newportwhales.com
Recreational passenger vessel operators	Pismo Beach Boat Rentals & Sightseeing	pismoboatrentals.com
Recreational passenger vessel operators	Princess Monterey Whale Watching	princessmonterey.com
Recreational passenger vessel operators	Point Reyes National Seashore Boat Tours	ptreyes.org
Recreational passenger vessel operators	Red and White Fleet	redandwhite.com
Recreational passenger vessel operators	Santa Barbara Adventure Company	sbadventureco.com
Recreational passenger vessel operators	Sub Sea Tours	subseatours.com
Recreational passenger vessel operators	Santa Cruz Harbor Sightseeing	whalewatching.santacruz.org
shipping companies	AIT Worldwide Logistics	aitworldwide.com
shipping companies	California Freight	calfreight.com
shipping companies	Clear Lane Freight Systems	clearlanefreight.com
shipping companies	General Logistics Systems US (GLS)	gls-us.com
shipping companies	Kestrel Global Logistics	kestrelgloballogistics.com
shipping companies	Matson, Inc.	matson.com
shipping companies	Schumacher Cargo Logistics	schumachercargo.com
shipping companies	Uber Freight	uberfreight.com
shipping companies	UPakWeShip	upakweship.com
Sightseeing & tour companies	Crescent City Harbor Tours	crescentcityharbortours.com
Sightseeing & tour companies	LA Harbor Tours	laharbor.com
Sightseeing & tour companies	Monterey Bay Aquarium's "Whale Watch"	montereybayaquarium.org
Sightseeing & tour companies	Santa Cruz Whale Watching	whalewatching.santacruz.org

Spiritual & Faith-Based Communities	Bay Area Interfaith Environmental Collaborative	baiec.org
Spiritual & Faith-Based Communities	Concordia Lutheran Church – Malibu	concordiamalibu.org
Spiritual & Faith-Based Communities	The Episcopal Diocese of California	diocal.org
Spiritual & Faith-Based Communities	The Earth Ministry (Pacific Coast) of Unitarian Universalists	earthministry.org
Spiritual & Faith-Based Communities	First United Methodist Church of Santa Monica	fumcsantamonica.org
Spiritual & Faith-Based Communities	The Church of the Good Shepherd (Pacific Grove)	goodshepherdpacificgrove.org
Spiritual & Faith-Based Communities	Grace Lutheran Church – Oceanside	gracelutheranoceanside.org
Spiritual & Faith-Based Communities	The California Interfaith Power & Light	interfaithpower.org
Spiritual & Faith-Based Communities	Ocean Beach Church	oceanbeachchurch.org
Spiritual & Faith-Based Communities	Pacific Coast Church	pacificcoastchurch.com
Spiritual & Faith-Based Communities	Seaside Church (Santa Barbara)	seasidechurchsb.org
Spiritual & Faith-Based Communities	Sacred Earth Ministry (Catholic Archdiocese of Los Angeles)	secareministry.org
Spiritual & Faith-Based Communities	St. Gregory's Episcopal Church	stgregorys-sanmateo.org
Spiritual & Faith-Based Communities	St. Peter's Episcopal Church – San Francisco	stpeters-sf.org
Surfing associations	Coronado Surfing Association (CSA)	coronadosurfingassociation.com
Surfing associations	Malibu Surfing Association (MSA)	malibu.org/list/member/malibu-surfing-association-5383
Surfing associations	National Scholastic Surfing Association (NSSA)	nssa.org
Surfing associations	Coalition of Surfing Clubs (CSC)	surfclubs.org
Surfing associations	Western Surfing Association (WSA)	surfwsa.org
Surfing associations	Swamis Surfing Association	swamissurfingassoc.org
Surfing associations	Venice Surfing Association (VSA)	vsa.la
Tribes	Cahuilla Tribe	cahuillatribe.com
Tribes	Chumash Tribe	chumashindiantribe.com
Tribes	Coastal Band of the Chumash Nation	coastalband.com

Tribes	Pomo Tribe (Coyote Valley)	coyotevalleytribe.org
Tribes	Hupa Tribe	hupa-nsn.gov
Tribes	Karuk Tribe	karuk.us
Tribes	Kumeyaay Nation	kumeyaay.info
Tribes	Pomo Tribe	mendocinotribe.com
Tribes	Miwok Tribe	miwoktribe.org
Tribes	Mojave Tribe	mojave.org
Tribes	Quechan Tribe	quechantribe.com
Tribes	Tolowa Dee-ni' Nation	tolowa.com
Tribes	Viejas Band of Kumeyaay Indians	viejasbandofkumeyaay.org
Tribes	Wiyot Tribe	wiyot.us
Tribes	Yurok Tribe	yuroktribe.org
Whale watching/ecotourism	Big Sur, Big Sur Charters	bigsurcharters.com
Whale watching/ecotourism	Crescent City, Crescent City Whale Watching	crescentcitywhalewatching.com
Whale watching/ecotourism	Newport Beach, Davey's Locker Whale Watching	daveyslocker.com
Whale watching/ecotourism	San Diego, Hornblower Cruises & Events	hornblower.com
Whale watching/ecotourism	Ventura, Island Packers Whale Watching	islandpackers.com
Whale watching/ecotourism	Monterey, Monterey Bay Aquarium's "Whale Watch"	montereybayaquarium.org
Whale watching/ecotourism	Monterey Bay, Monterey Bay Whale Watch	montereybaywhalewatch.com
Whale watching/ecotourism	Morro Bay, Morro Bay Whale Watch	morrobaywhalewatch.com
Whale watching/ecotourism	Newport Beach, Newport Landing Whale Watching	newportwhales.com
Whale watching/ecotourism	Monterey Bay, Princess Monterey Whale Watching	princessmonterey.com
Whale watching/ecotourism	Eureka, Redwood Coast Whale Watching	redwoodcoastwhalewatching.com
Whale watching/ecotourism	Monterey Bay, Sanctuary Cruises	sanctuarycruises.com
Whale watching/ecotourism	San Diego, San Diego Whale Watch	sandiegowhalewatch.com
Whale watching/ecotourism	Santa Barbara, Santa Barbara Adventure Company	sbadventureco.com

Whale watching/ecotourism	Morro Bay, Sub Sea Tours	subseatours.com
Whale watching/ecotourism	Santa Barbara, Channel Islands Whale Watching	whalewatching.com
Whale watching/ecotourism	Santa Cruz, Santa Cruz Whale Watching	whalewatching.santacruz.org
Whale watching/ecotourism	Fort Bragg, Mendocino Coast Whale Watching	whalewatchmendocino.com
Whale watching/ecotourism	Pismo Beach, Pismo Beach Whale Watching	whalewatchpismo.com
	Aquarium of the Pacific – Blue Carbon Initiative	aquariumofpacific.org
	California Air Resources Board (CARB)	arb.ca.gov
	Aquaculture Stewardship Council (ASC) - California	asc-aqua.org
	San Francisco Bay Conservation and Development Commission (BCDC)	bcdc.ca.gov
	Baja California Marine Institute (BCMI)	bcmiexperience.org
	UC Santa Barbara - Marine Science Institute	bfs.ucsb.edu
	Bureau of Land Management (BLM)	blm.gov
	Blue Frontier	bluefront.org
	UC Davis Bodega Marine Laboratory - Monitoring Programs (BOON?)	bml.ucdavis.edu
	Bureau of Ocean Energy Management (BOEM)	boem.gov
	Intergovernmental Renewable Energy Task Force (IRETF)	boem.gov
	California Aquaculture Association	caaquaculture.org
	The California Academy of Sciences - Citizen Science	calacademy.org
	California Cooperative Oceanic Fisheries Investigations (CalCOFI)	calcofi.org
	California Environmental Justice Alliance (CEJA)	caleja.org
	California Environmental Protection Agency (CalEPA) - Marine Ecosystem and Climate Research	calepa.ca.gov

	California Marine Affairs and Navigation Program (MANS)	calepa.ca.gov
	California Coastal Protection Network (CCPN)	californiacoastalprotection.org
	California Marine Protected Area (MPA) Monitoring Program	californiampas.org
	California Ocean Observing System (COOS)	californiaocean.org
	California Institute for Telecommunications and Information Technology (Calit2) - Marine Tech	calit2.ucsd.edu
	California Ocean Science Trust (OST)	calost.org
	California State Polytechnic University (Cal Poly) - Marine and Coastal Technology Research	calpoly.edu
	California Department of Resources Recycling and Recovery (CalRecycle)	calrecycle.ca.gov
	California State University (CSU) - Ocean Technology Development Programs	calstate.edu
	Cal Poly Coastal and Marine Institute Monitoring Program	ccms.calpoly.edu
	California Current System Observatory (CCSO)	ccso.ucsd.edu
	California Department of Technology (CDT)	cdt.ca.gov
	Central and Northern California Ocean Observing System (CeNCOOS)	cencoos.org
	The Center for Ocean Solutions (COS)	centerforoceansolutions.org
	California Integrated Waste Management Board (CIWMB)	ciwmb.ca.gov
	California Climate Action Team (CCAT) Ocean Working Group	climatechange.ca.gov
	University of California, San Diego – Center for Marine Biodiversity and Conservation	cmbc.ucsd.edu
	California Marine Sanctuary Foundation	cmsf.org
	The California Marine Sanctuary Foundation	cmsf.org

	California Coastal Commission	coastal.ca.gov
	California Coastal Commission (CCC) - Research and Policy	coastal.ca.gov
	California Coastal Commission (CCC)	coastal.ca.gov
	California Coastal Cleanup Day	coastalcleanupday.org
	Coastal Zone Management Act (CZMA) Program	coastalmanagement.noaa.gov
	California Public Utilities Commission (CPUC)	cpuc.ca.gov
	Sea Grant California	csgc.ucsd.edu
	Cal State Long Beach – Institute for Integrated Research on Ocean and Coastal Sustainability (IIROCS)	csulb.edu
	California State University, Monterey Bay (CSUMB)	csumb.edu
	California State University, Monterey Bay (CSUMB) – Institute for Applied Marine Ecology (IAME)	csumb.edu
	University of Southern California – Wrigley Institute for Environmental Studies	dornsife.usc.edu/wrigley
	Department of the Ocean and Water (DOW)	dow.gov
	California Department of Toxic Substances Control (DTSC)	dtsc.ca.gov
	Earthjustice - California	earthjustice.org
	Earthwatch Institute	earthwatch.org
	eBird	ebird.org
	California Energy Commission (CEC)	energy.ca.gov
	Environmental Defense Center (EDC)	environmentaldefensecenter.org
	U.S. Environmental Protection Agency (US EPA)	epa.gov
	U.S. Environmental Protection Agency (EPA)	epa.gov
	UC Berkeley - The Energy and Resources Group (ERG)	erg.berkeley.edu

	NOAA Fisheries - California	fisheries.noaa.gov
	U.S. Forest Service (USFS)	fs.usda.gov
	U.S. Fish and Wildlife Service (USFWS)	fws.gov
	Global Sea Mineral Resources (GSR)	gsr.be
	Heal the Bay	healthebay.org
	Healthy Seas Initiative	healthyseas.org
	Stanford University's Hopkins Marine Station	hopkins.stanford.edu
	UC Irvine - Institute for Marine and Desert Research	imdr.uci.edu
	UC Santa Cruz - Institute of Marine Sciences (IMS)	ims.ucsc.edu
	UC Santa Cruz – Institute of Marine Sciences (IMS)	ims.ucsc.edu
	iNaturalist	inaturalist.org
	Integrated Ocean Observing System (IOOS)	ioos.noaa.gov
	Intergovernmental Panel on Climate Change (IPCC)	ipcc.ch
	International Union for Conservation of Nature (IUCN) – Ocean Conservation Program	iucn.org
	California Institute of Technology (Caltech) - Jet Propulsion Laboratory (JPL)	jpl.nasa.gov
	Lockheed Martin (Lockheed Martin Space Systems)	lockheedmartin.com
	Marine Conservation Group (MCG)	marineconservationgroup.org
	California Marine Sanctuary Foundation (CMSF)	marinesanctuary.org
	Oregon State University – Marine Studies Initiative	marinestudies.oregonstate.edu
	Moss Landing Marine Laboratories (MLML)	mlml.sjsu.edu
	Marine Mammal Commission (MMC)	mmc.gov
	Monterey Bay National Marine Sanctuary (MBNMS)	montereybay.noaa.gov
	National MPA Center (NOAA)	mpa.gov
	UC Santa Barbara – Marine Science Institute (MSI)	msi.ucsb.edu

	The Nature Conservancy (California Chapter)	nature.org
	The Nature Conservancy - Oceans Program	nature.org
	The Nature Conservancy - Marine Ecosystem Monitoring	nature.org
	The Nature Conservancy - California Oceans Program	nature.org
	The Nature Conservancy – Ocean Program	nature.org
	The Nature Conservancy – California Ocean Program	nature.org/en-us/about-us/where-we-work/california
	National Fish and Wildlife Foundation (NFWF)	nfwf.org
	National Marine Fisheries Service (NMFS)	nmfs.noaa.gov
	National Oceanic and Atmospheric Administration (NOAA)	noaa.gov
	Marine Mammal Protection Act (MMPA) Task Force	noaa.gov
	National Ocean Research Advisory Panel (NORAP)	noaa.gov
	National Park Service (NPS)	nps.gov
	Natural Resources Defense Council (NRDC)	nrdc.org
	Oceana - U.S.	oceana.org
	Citizen Science Ocean Project	oceancitizenscience.org
	Ocean Conservancy - California Chapter	oceanconservancy.org
	Ocean Conservancy (California Chapter)	oceanconservancy.org
	The Ocean Foundation	oceanfdn.org
	Coastal and Marine Spatial Planning (CMSP) Initiative	oceanplanning.noaa.gov
	The California Ocean Science Trust	oceansciencetrust.org
	California Ocean Science Trust	oceansciencetrust.org
	California Ocean Science Trust (COAST)	oceansciencetrust.org
	Ocean Science Trust (OST)	oceansciencetrust.org
	National Ocean Service (NOS)	oceanservice.noaa.gov

	Oceanic Preservation Society	opsociety.org
	Pacific Marine Mammal Center (PMMC)	pacificmmc.org
	Pacific Institute	pacinst.org
	California Department of Parks and Recreation (State Parks)	parks.ca.gov
	California State Parks	parks.ca.gov
	California Department of Parks and Recreation (DPR)	parks.ca.gov
	Point Reyes Conservation Alliance	ptreyesconservationalliance.org
	Resource Conservation District of Greater San Diego County (RCD)	rcdsandiego.org
	ReefBase - California Marine Life Protection Act	reefbase.org
	California Ocean Protection Council (OPC)	resources.ca.gov
	California Marine Sanctuary Program (NOAA)	sanctuaries.noaa.gov
	Save Our Shores	saveourshores.org
	California State Coastal Conservancy (SCC) - Coastal Science Programs	scc.ca.gov
	California State Coastal Conservancy (SCC)	scc.ca.gov
	The Coastal Conservancy (SCC)	scc.ca.gov
	California Coastal Conservancy	scc.ca.gov
	Southern California Coastal Ocean Observing System (SCCOOS)	sccoos.org
	Southern California Coastal Water Research Project (SCCWRP)	sccwrp.org
	Ocean Observing and Hypoxia (OAH) Network	sccwrp.org
	Scripps Institution of Oceanography (SIO)	scripps.ucsd.edu
	San Francisco Bay Observing System (SFBOS)	sfbos.org
	Sierra Club - California Coastal Program	sierraclub.org

	Surfrider Foundation - Ocean Friendly Gardens	surfrider.org
	Surfrider Foundation	surfrider.org
	Surfrider Foundation - California Chapters	surfrider.org
	Surfrider Foundation – California Chapters	surfrider.org
	National Oceanic and Atmospheric Administration (NOAA) - Southwest Fisheries Science Center	swfsc.noaa.gov
	NOAA National Marine Fisheries Service - Southwest Fisheries Science Center	swfsc.noaa.gov
	The Metals Company (TMC)	themetalscompany.com
	The Ocean Cleanup (Volunteer Opportunities)	theoceancleanup.com
	University of California, Irvine – School of Physical Sciences, Department of Earth System Science	uci.edu
	U.S. Army Corps of Engineers (USACE)	usace.army.mil
	U.S. Coast Guard	uscg.mil
	U.S. Geological Survey (USGS)	usgs.gov
	California Department of Water Resources (DWR) - Ocean and Coastal Policy Research	water.ca.gov
	California Department of Water Resources (DWR)	water.ca.gov
	California Water Quality Monitoring Council (CWQMC)	waterboards.ca.gov
	California State Water Resources Control Board (SWRCB)	waterboards.ca.gov
	State Water Resources Control Board (SWRCB)	waterboards.ca.gov
	Regional Water Quality Control Boards (RWQCB)	waterboards.ca.gov
	California State Water Resources Control Board (SWRCB) & U.S. EPA	waterboards.ca.gov
	Wildlife Conservation Board (WCB)	wcb.ca.gov

	California Wildlife Conservation Board (WCB)	wcb.ca.gov
	West Coast Ocean Alliance (WCOA)	wcoa.org
	National Ocean Council (NOC)	whitehouse.gov
	California Fish and Game Commission - Fisheries Monitoring	wildlife.ca.gov
	California Department of Fish and Wildlife (CDFW)	wildlife.ca.gov
	California Ocean Acidification and Hypoxia Science Task Force	wildlife.ca.gov
	The Wild Oyster Project	wildoysterproject.org
Academic institution	University of California, Berkeley	https://nature.berkeley.edu/ocean-futures/
	Channel Islands National Marine Sanctuary (CINMS)	sanctuaries.noaa.gov/channelislands
	Greater Farallones National Marine Sanctuary (GFNMS)	sanctuaries.noaa.gov/farallones
	Cordell Bank National Marine Sanctuary (CBNMS)	sanctuaries.noaa.gov/cordellbank
	Elkhorn Slough National Estuarine Research Reserve	nerrs.noaa.gov/elkhornslough
	Tijuana River National Estuarine Research Reserve	nerrs.noaa.gov/tijuanariver
Academic institution	California State University, Long Beach - Ocean Studies Institute	csulb.edu/college-of-liberal-arts/ocean-studies
Academic institution	California State University, Monterey Bay	csumb.edu
Academic institution	California State University, San Marcos	csusm.edu/science/biology/marine-science
Academic institution	California State University, Northridge - Institute for Sustainability	csun.edu/health-human-development/institute-sustainability
Academic institution	California State University, Humboldt - Department of Oceanography	humboldt.edu/oceanography
Academic institution	University of Southern California (USC) - Wrigley Institute for Environmental Studies	dornsife.usc.edu/wrigley
Academic institution	Pepperdine University - Seaver College, Environmental Science	pepperdine.edu/academics/seaver/
Academic institution	The Scripps Research Institute	scripps.edu

Academic institution	The California Institute of Technology (Caltech)	caltech.edu
Academic institution	Mills College - Environmental Science and Sustainability	mills.edu
	The Surfrider Foundation	surfrider.org
	The Walton Family Foundation (Marine Conservation Program)	waltonfamilyfoundation.org
	The Schmidt Ocean Institute	
	The Moore Foundation	moore.org
	The Heinz Family Foundation	heinzfamilyfoundation.org
	The Packard Foundation's Ocean Program	packard.org/what-we-fund/ocean-program
	California MPA monitoring	oceanspaces.org
	The California Community Foundation (CCF)	calfund.org
	The California Ocean Protection Council (OPC)	oceanspaces.org