

Prehistoric Occupation of Espíritu Santo Island, Baja California Sur, Mexico: Update and Synthesis

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Excavations conducted between 1996 and 2006 at 30 sites on Espíritu Santo and La Partida islands in Baja California Sur, Mexico, reveal a long record of cultural occupation with shell middens located in caves, rockshelters, and on mesa tops. Cultural occupation began during the terminal Pleistocene at the J17 Covacha Babisuri and J69E La Ballena #3 sites and intensified during the early Holocene in open mesa and some rockshelter sites. Most cave and rockshelter sites were occupied until the contact period, but mesa sites were apparently abandoned during the middle Holocene. Extensive shell middens were created after 4,500 B.P., first near mangroves in the backs of bays and later at the entrances to bays.

BAJA CALIFORNIA is an elongated, narrow peninsula in northwest Mexico, separated from the mainland by the Gulf of California. No Mesoamerican cultural elements are found on the peninsula. The southernmost portion of the peninsula, termed the “Cape Region,” has been considered the most isolated and marginal area within it (Massey 1955). The term “isolation” generally refers to geographic separation, while “marginality” refers to peripheral inclusion of cultural traditions or elements in archaeology. Thus, an isolated marginal area can only be considered a passive recipient of cultural influences from a core or nuclear area. Indeed, some cultural traditions and elements from the central and northern areas of the peninsula are found in the Cape Region, suggesting influences from the north by either land or sea after the initial occupation. On the other hand, certain specific cultural practices, such as the exploitation and use of thick, heavy old shells as materials for tools, were developed locally in the northeastern Cape Region, beginning in the terminal Pleistocene. In this paper, I will evaluate recent research from Espíritu Santo Island that suggests this locality was the nuclear core of the Cape Region.

ESPÍRITU SANTO ISLAND

Espíritu Santo Island is located in the southern Gulf of California, approximately 30 km. northeast of La Paz, capital of the state of Baja California Sur, Mexico. It is six kilometers off the coast of the peninsula, and is separated from it by the San Lorenzo Channel (Fig 1). The present-day channel is between 20 and 60 m. deep (Cruz-Orozco et al. 1996), but prior to 8,000 B.P., the island was probably connected to the peninsula. A smaller island, La Partida, is separated from the north end of Espíritu Santo Island by a narrow channel. Together the islands are 19 km. long, with an average width of 5.5 km. and a surface area of 99 km.². The highest elevation is 595 m. above sea level.

The eastern coast of the island consists mainly of cliffs, while the western coastline has numerous bays and sheltered beaches with estuaries bordered by mangroves. A marine terrace composed principally of coral remains and some small shells rises behind the coastline. The island was probably formed by tectonic uplift, and its surface consists principally of volcanic rocks from the Upper Miocene and marine sediments from the Pleistocene. The most recent marine terrace in the area is



Figure 1. Location of Espiritu Santo and La Partida Islands, Baja California Sur, Mexico.
Image shows locations of bays discussed in text.

between 123,000 and 142,000 years old (Aranda-Gómez and Pérez-Venzor 1986; Halfer et al. 2001; Ortlieb 1991). Numerous caves and rockshelters are found in the southwest portion of the island. Tectonic movements are tipping the island toward the west, and raising the eastern portion of the island (Ortlieb 1991).

Brief History and Summary of Previous Archaeological Explorations

Hernán Cortés (1971) named this island the “Island of Pearls” because of the rich sources of pearl oyster on its western side. In 1632, Francisco de Ortega named the island Espiritu Santo (Mathes 1970). During the seventeenth century, numerous expeditions attempted

to reap the riches of the coast of Baja California, but all failed. They did, however, result in interesting geographic and ethnographic descriptions of the island that included the types and locations of the natives’ dwellings, their physical type, their clothing, and their fishing activities. The expedition members also documented the abundance of pearl oysters and the exchange of pearls or pearl oyster shells for knives and other metal instruments.

The exploration of funerary caves by Hermann ten Kate in 1883 marked the beginning of archaeological research on the Baja California peninsula. During 1893 and 1894, and again between 1911 and 1913, León Digué explored the southern area of the peninsula. This area has come to be known as the “Cape Region;” it extends

from La Paz to Cabo San Lucas and includes the islands of Espíritu Santo, La Partida, Cerralvo, and San José. On Espíritu Santo Island, and at other sites in the region, the first archaeological investigations focused on the peculiar funerary system and the morphology of the recovered skulls. Researchers concluded that the dolichocephalic (elongated cranium) and hipsistenocephalic (high cranial cavity) cranial shapes were notable characteristics of the ancient Baja Californians who inhabited the southern peninsula and nearby islands. These characteristics have been described as being similar to those of the Melanesians of the southern Pacific and to the inhabitants of Lagoa Santa in Brazil (Diguët 1905; Rivet 1909; ten Kate 1884).

After an 80-year-long hiatus in investigations on the island, Baudelina García-Uranga and Jesús Mora (1980, 1981)—archaeologists from the National Institute of Anthropology and History (INAH)—conducted a survey of the west-central part of the island. They recorded several different types of sites in the La Ballena area, including shell middens, habitational and funerary caves, and open campsites.

Current Archaeological Investigations

I began research on Espíritu Santo Island in 1994. As a part of a large-scale archaeological survey of the Cape Region, 140 sites were recorded on Espíritu Santo and La Partida Islands in 1994, 1996, and 2006. In order to establish the general prehistory and chronology of the area, a project titled “El Poblamiento de América Visto Desde la Isla Espíritu Santo, B.C.S.” [The Peopling of

America as Seen from Espíritu Santo Island, B.C.S.] was initiated in 2001. This project, which continued through 2008, involved excavations at 30 sites on both islands (Table 1) that revealed a long cultural record in caves, rockshelters, mesa-top sites, and shell middens (Fujita 2002, 2004a, 2004b, 2006, 2007a, 2008a, 2008b; Fujita and Poyatos de Paz 1998). During this project, 186 shell, charcoal, and bone samples were collected for radiocarbon dating and processed by three laboratories: INAH, Beta Analytic, and UCIAMS (Tables 2 and 3). The results of the project are summarized below.

Table 1
NUMBER OF EXCAVATED SITES
ON ESPÍRITU SANTO AND LA PARTIDA ISLANDS

Bay	Number of sites			TOTAL
	Cave and rock shelter	Open campsite on mesa	Shell midden	
La Dispensa	4			4
San Gabriel	4		1	5
La Gallina	2		1	3
El Gallo I	3			3
El Gallo II	1		1	2
El Gallo III		1	1	2
La Ballena		6	1	7
Calaveritas	1			1
El Candelero			1	1
Ensenada de La Partida Sur			1	1
El Cardonal	1			1
TOTAL	16	7	7	30

Table 2
¹⁴C DATING OF EARLY OCCUPATIONS ON ESPÍRITU SANTO ISLAND, BAJA CALIFORNIA SUR, MEXICO

Lab number	Site name	Level and depth	Shell species dated	¹⁴ C age BP (RCYBP)
INAH-1770	J69E La Ballena 3	surface	<i>Ostrea fisheri</i>	11,284 ± 121
Beta-236259	J17 Covacha Babisuri	level III n (115–119 cm.)	<i>Turbo fluctuosus</i>	10,970 ± 60
INAH-2544	J65 El Gallo II-1	level 1 (11 cm.)	<i>Ostrea fisheri</i>	9,663 ± 77
Beta-236268	J69G La Ballena 3	level 2 (5–10 cm.)	<i>Spondylus princeps</i>	9,480 ± 60
Beta-236269	J94A El Gallo III-1	level 3 (10–15 cm.)	<i>Ostrea palmula</i>	9,400 ± 50
Beta-245688	J69F La Ballena 3	level 2 (5–10 cm.)	<i>Ostrea fisheri</i>	9,310 ± 60
Beta-259395	J128 La Dispensa II-11	level 6 (50–60 cm.)	<i>Pinctada mazatlanica</i>	8,810 ± 50
Beta-245678	J69D La Ballena 3	level 10 (45–50 cm.)	<i>Chama frondosa</i>	8,770 ± 60
Beta-233673	J30 San Gabriel 10	level 7 (60–70 cm.)	<i>Anadara multicostata</i>	8,320 ± 70
Beta-236265	J57 El Gallo I-8	level 7 (60–70 cm.)	<i>Chione californiensis</i>	8,320 ± 50
Beta-245677	J69B La Ballena 3	level 4 (15–20 cm.)	<i>Strombus galeatus</i>	8,090 ± 60
INAH-1751	J18 La Dispensa II-8	level 3 (20–30 cm.)	<i>Chama frondosa</i>	8,081 ± 73

Reservoir effect: 253 ± 18 years (De los Ríos 2009)

Table 3
OTHER ¹⁴C DATES MENTIONED IN THE TEXT ON ESPÍRITU SANTO ISLAND
AND AT OTHER SITES IN THE CAPE REGION, BAJA CALIFORNIA SUR, MEXICO

Lab number	Site name	Level and depth	Material dated	¹⁴ C age BP (RCYBP)
Beta-173266	J17 Covacha Babisuri	layer III (96.8–99.5 cm.)	<i>Pecten vogdesi</i>	> 47,500
Beta-236257	J17 Covacha Babisuri	layer III level n (115–119 cm.)	<i>Laevicardium elatum</i>	35,550 ± 310
Beta-159193	J17 Covacha Babisuri	layer III level e (70–75 cm.)	preform pearl oyster artifact	8,380 ± 50
Beta-236254	J17 Covacha Babisuri	layer III (79.6–85.7 cm.)	fish vertebrae	8,280 ± 40
Beta-159194	J17 Covacha Babisuri	above bedrock (126.6 cm.)	human bone	800 ± 40
INAH-2291	J69E La Ballena 3	surface	<i>Chama frondosa</i>	6,610 ± 75
INAH-2553	J69D La Ballena 3	level 1 (0–5 cm.)	<i>Ostrea fisheri</i>	6,079 ± 75
Beta-251150	A16 El Pulguero Suroeste	surface	<i>Strombus gracilior</i>	9,470 ± 60
Beta-251151	A16 El Pulguero Suroeste	surface	<i>Turbo fluctuosus</i> *	9,330 ± 60
Beta-251153	A16 El Pulguero Suroeste	surface	<i>Glycymeris maculata</i>	9,000 ± 60
Beta-204269	A110 Cañada de Caimancito #2	Layer I level ñ (70–75 cm.)	<i>Chione californiensis</i>	8,130 ± 40
Beta-204272	A111 Cañada de Caimancito #3	Layer I level o (75–80 cm.)	<i>Chione californiensis</i>	8,170 ± 40
Beta-204275	A112 Cañada de Caimancito #4	Layer III level u (147 cm.)	<i>Chione californiensis</i>	7,060 ± 40
INAH-266	Conchero Puerto Balandra**	level 1 (0–10 cm.)	fragments of diverse species	7,755 ± 80
Beta-239062	C40 La Capilla #2	level 2 (10–20 cm.)	<i>Glycymeris maculata</i>	7,020 ± 40

*operculum

**This site was recorded by Baudelina García Uranga and Jesus Mora (1980) and excavated by Fujita (1985).

Terminal Pleistocene and Early Holocene. Evidence for the first occupation of the islands, dated to 11,284 ± 121 RCYBP (INAH-1770), was obtained from the surface of an open mesa site, J69E La Ballena #3. This date is closely followed by the evidence of human occupation, dated to 10,970 ± 60 RCYBP or 11,930–11,230 cal B.P. (Beta-236259), which was found in the lower layer of the stratified cultural deposit at Covacha Babisuri (J17 La Dispensa II-7), located at the northeastern corner of La Dispensa Bay on the southwestern part of Espíritu Santo Island at 10 m. above sea level (Figs. 2 and 3).¹ This rockshelter is located in a series of conglomerate strata and is 10 m. long, 5 m. deep, and 2.3 m. high along the drip line. The entrance faces east. The rockshelter was formed by wind and water eroding away the finer particles of conglomerate.

The excavation was done by cultural layers, which were then subdivided by levels and archaeological contexts. Approximately 31 m.² were excavated to bedrock or almost to bedrock in this rockshelter (Fig. 4). The depth of the cultural deposit varied between 25 and 140 cm. depending on the nature of the underlying rock formation. Each element was recorded in three dimensions. The soil from the excavation was screened in two stages, using 5 mm. and 1 mm. mesh.

The lower layer was characterized by small gravel, sand, silt, and large clusters of tuff eroded and fallen from the upper part of a hill above the shelter. The oldest occupation date was obtained from a sample of culturally-deposited *Turbo fluctuosus* shell recovered on bedrock in the southwestern corner of the rockshelter at a depth of between 115 and 119 cm. The constituents of this layer provide some indication of the subsistence patterns and technology of the earliest site inhabitants. Most of the shellfish remains consisted of easily collected species, such as bivalves (predominantly *Ostrea palmula* and *Pinctada mazatlanica*), gastropods (*Turbo fluctuosus*, *Nerita scabricostata*, *Strombus gracilior*, *Strombus granulatus*, etc.), chiton, crab, and sea urchin. Other marine animal remains recovered from the late Pleistocene/early Holocene layer included fish, sea turtle, and ray, indicating that the site inhabitants had a broad yet mainly marine-based diet. Evidence of terrestrial mammal exploitation was apparent, as remains from pelican, rabbit, hare, deer, and rodent were recovered from the site; however, these remains were far less abundant than the marine animal remains (Guía 2008; Noah 2002; Porcasi 2002, 2004).

The technology employed in this early occupation was represented by both shell and lithic tools. Heavy,



Figure 2. Known site distribution on Espíritu Santo Island during the late Pleistocene (11,500–10,000 B.P.).

thick shells (such as *Glycymeris gigantea*, *Dosinia ponderosa*, *Laevicardium elatum*, *Codakia distinguenda*, *Pecten vogdesi*, *Ostrea fisheri*, *Lyropecten subnodosus*, etc.) with or without modification suggest use as tools and bowls. Dates collected from some of these shell artifacts fall between $35,550 \pm 310$ (Beta-236257) and $>47,500$ RCYBP (Beta-173266), indicating that the site inhabitants collected old shells, which were probably available in the slightly buried natural shell banks exposed when the sea level was lower, just as it was between 50,000 and 35,000 years ago. In addition, pearl oyster artifacts (see discussion below), worked *Olivella* shells, incised pearls, a bone awl, polished corals, coral



Figure 3. General view of Covacha Babisuri on Espíritu Santo Island.

perforators, and long tubular *Serpulorbis* shells with polished extreme ends were also found. Specifically, the use of thick, ancient shells and corals as tools was found only in the northeastern part of the Cape Region.

The lithic assemblage from this terminal Pleistocene/early Holocene cultural layer included a variety of both chipped and ground stone artifacts. Chipped stone debitage and flakes, some of which were retouched and used, were relatively abundant. Cores and other tools such as projectile points, scrapers, a chopper, and ground and polished stones were also recovered from this layer (Figs. 5 and 6). The predominant forms of projectile points in this early period were leaf-shaped types made from rhyolite and chalcedony.

Other probable evidence of terminal Pleistocene human occupation was found at La Ballena #3 (J69E), a mesa site on the west-central coast of the island. This evidence consisted of concentrated shellfish remains and lithics (debitage and tools, including leaf-shaped



Figure 4. Excavation at Covacha Babisuri in 2005.

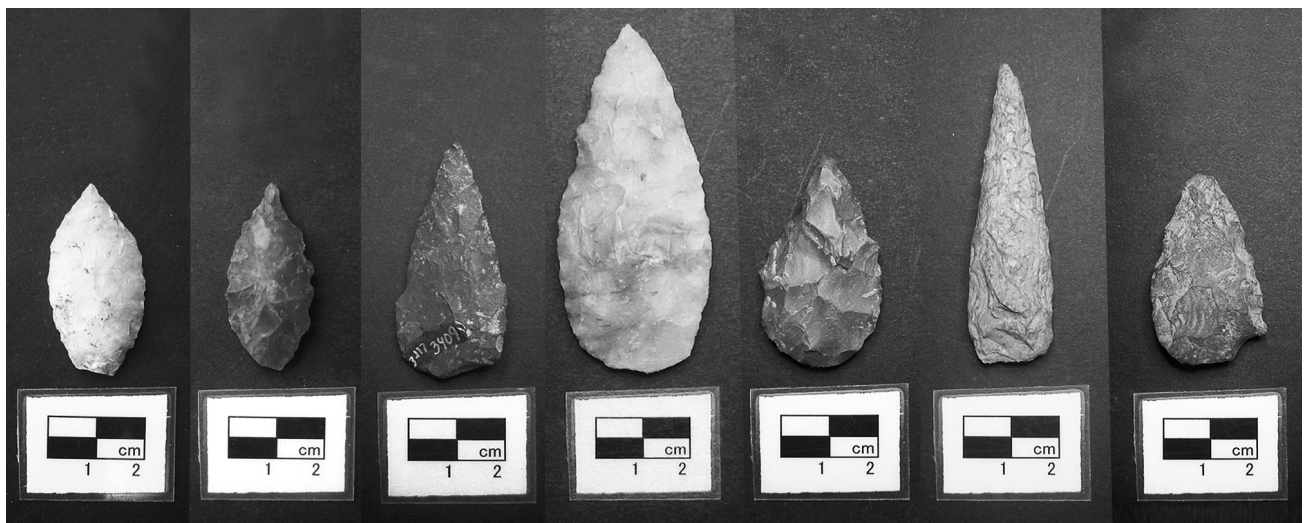


Figure 5. Projectile points dating to the Early Period.

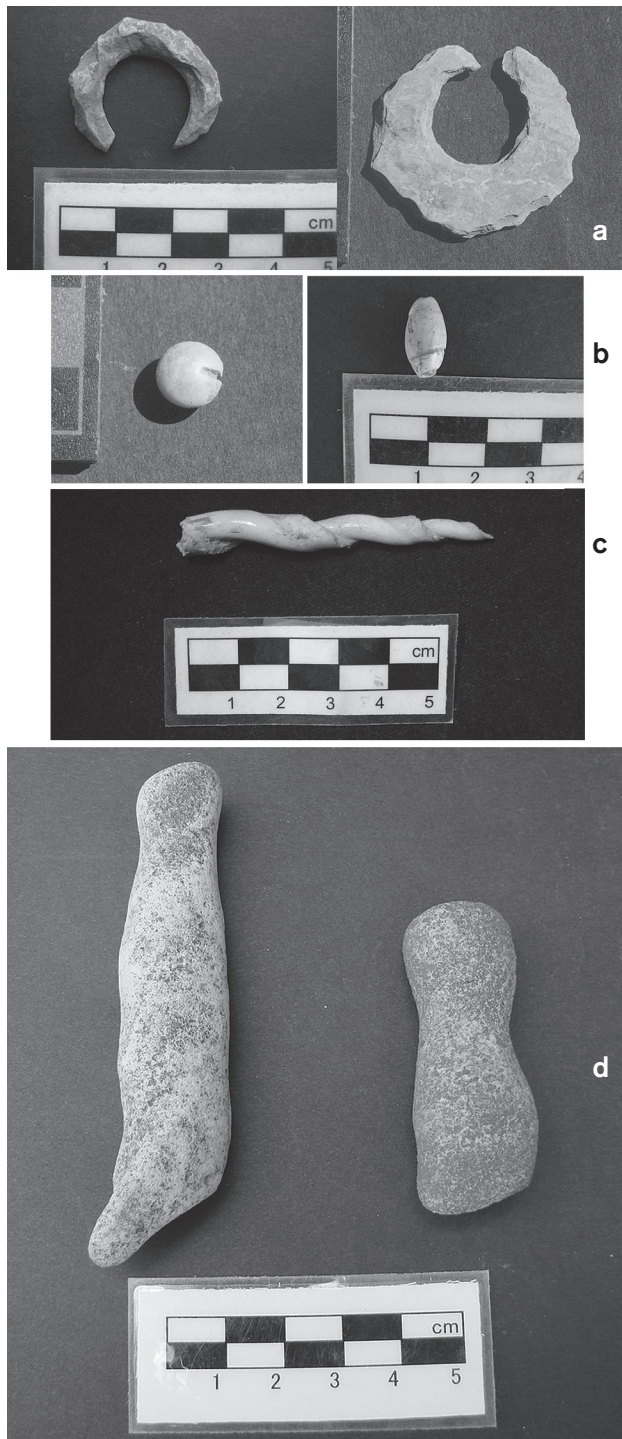


Figure 6. Artifacts recovered from Covacha Babisuri: (a) pearl oyster ornaments/fishhooks, (b) worked pearl and *Olivella* shell, (c) *Fusus* awl, and (d) coral grinders.

projectile points and ground stones), as well as some human bone. However, it is probable that the surface evidence is the accumulated material from various short occupations, since the dates from surface shell

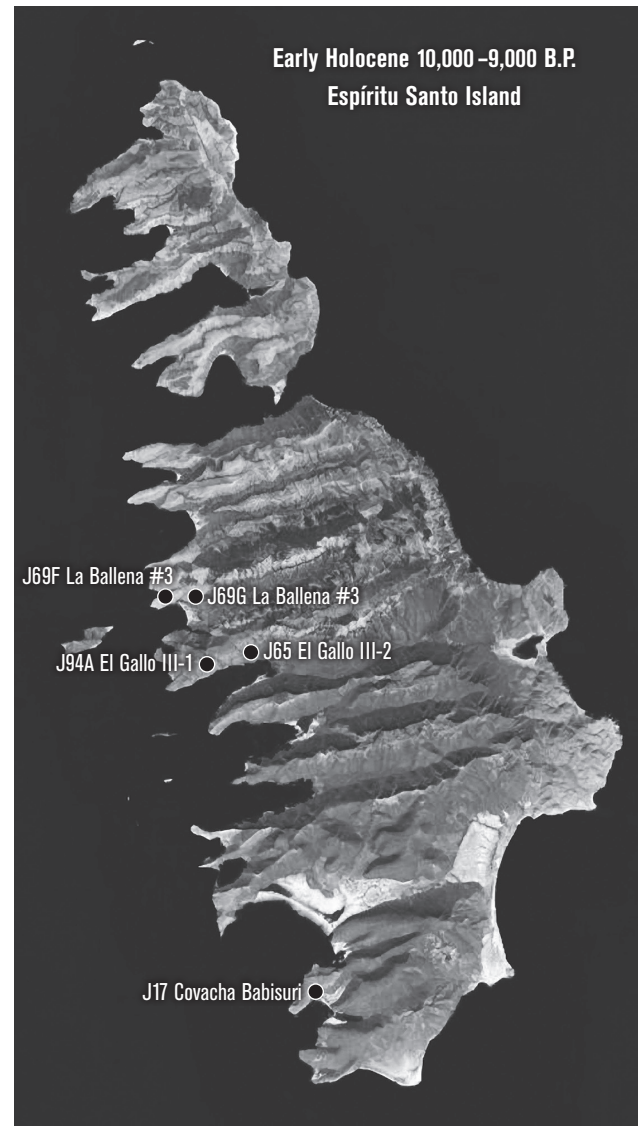


Figure 7. Known site distribution on Espíritu Santo Island during the Early Holocene (10,000–9,000 B.P.).

samples range between $11,284 \pm 121$ (INAH-1770) and $6,610 \pm 75$ RCYBP (INAH-2291). Loren Davis and his crew excavated this site in 2004 and 2006 to investigate site formation and the cultural deposit (Davis 2006).

Another cave (J65) near El Gallo II Bay was occupied between 10,000–9,000 B.P., and open campsites on mesa tops continued at La Ballena (J69F and J69G) and appeared at El Gallo III (J94A) (Fig. 7). In these sites, cultural evidence consisted of lithic scatters or concentrations of easily collected shellfish remains, flaked tools, and debitage, as well as grinding and milling stones. In the cave site J65, various abstract pictographs are present, although their age is unknown.

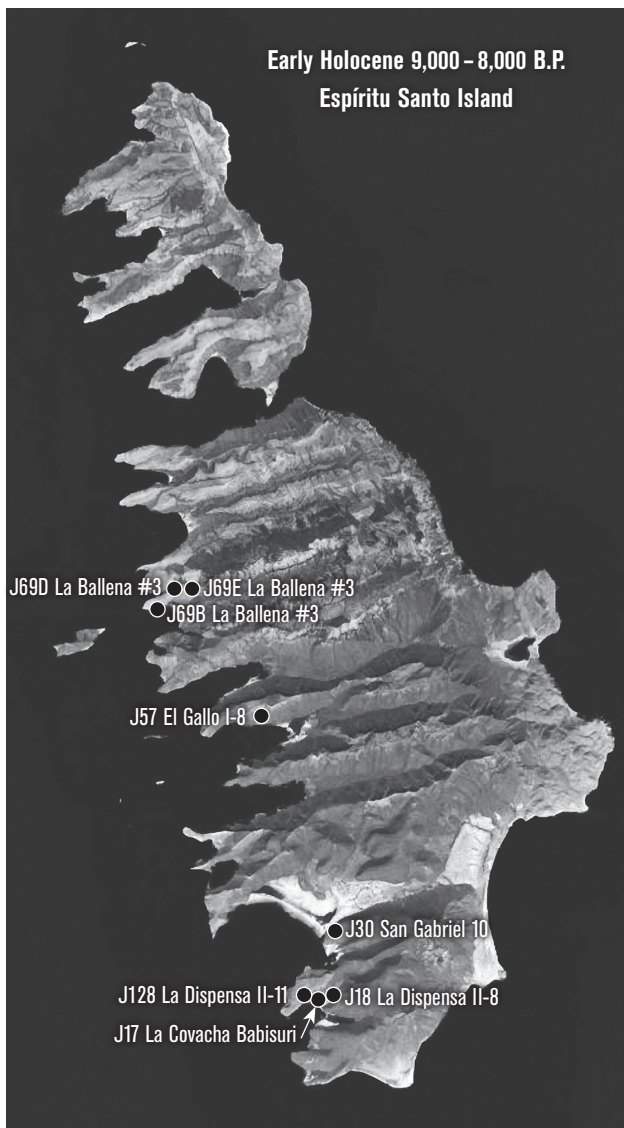


Figure 8. Known site distribution on Espiritu Santo Island during the Early Holocene (9000–8000 B.P.).

Between 9,000–8,000 B.P., occupation in other caves and rockshelters increased (J18, J30, J57, and J128), and campsites on La Ballena and El Gallo III mesas continued (J69B, J69D, J69E, and J94A) (Fig. 8). The earliest evidence of fishing came from Covacha Babisuri, through the radiocarbon dating of fish vertebrae and a probable preform pearl oyster fishhook, dating to $8,280 \pm 40$ RCYBP (Beta-159193) and $8,380 \pm 50$ RCYBP (Beta-236254), respectively.

The uniqueness and antiquity of the preform pearl oyster fishhook recovered from Covacha Babisuri bears further discussion. The pearl oyster shell artifacts recovered from Covacha Babisuri have been identified

as ornaments (earrings) and fishhooks. During the late Pleistocene/early Holocene, shell was the principal material for tools and containers, as well as ornaments. Spire-lopped or ground *Olivella* shell beads dating to the early and middle Holocene have been identified, as were circular pearl oyster ornaments and fishhooks. Worked pearls (with incisions or grooves) were also recovered. According to historical documents written by Jesuit priests and early European travelers, these grooved pearls were used for necklaces, which also included other pieces of shells and fruits. A drawing of a Pericú fisherman at Cabo San Lucas done in the eighteenth century shows the individual wearing circular earrings (Shelvoke in Andrews 1979). It is probable that the Pericú Indians might have worn earrings made from shell. It is also probable that these shell artifacts might have been used as fishhooks, since it was easy to keep this kind of tool hung in the ear as a spare.

Generally, circular fishhooks without barbs are considered to be among the oldest in the world. Some from southeastern Arabian coastal sites date to the fifth millennium (Hurum in Beech 2003:291; Uerpman 1992), while those from the Marquesas Islands fall between 2,000–1,000 B.P. (Rolette and Conte 1995). The pearl shell artifacts and some of the tool assemblage components found at Covacha Babisuri—such as worked preforms and debitage of pearl oysters and stone, and coral files or abraders—are similar to those found in some of the Pacific Island and Arabian Sea sites (Allen 1996; Beech 2003; Méry et al. 2008). The earliest known bone fishhook, a gorge, was reported from Daisy Cave on San Miguel Island, California and dated to between 10,000–8,600 B.P. (Erlandson et al. 2007). Considering the $8,380 \pm 50$ RCYBP date obtained for the shell artifact found at Covacha Babisuri, it can be counted as one of the oldest pearl oyster shell artifacts in the world. It should also be noted that some almost complete circular pearl oyster shell ornaments/fishhooks were found in a lower level of this rockshelter, suggesting an even greater antiquity, similar in age to those found from Cedros Island dating to 9,500 RCYBP (Des Lauriers 2010; Fujita 2002, 2008a).

It is very probable that this shell artifact, and others like it, was made in the Covacha Babisuri rockshelter, judging from the tool assemblages (including used flakes, cores, projectile points, knives, scrapers, files, drills, and polished stones made from basalt and rhyolite; ancient

shells used for scraping, filing, drilling, and as containers; and coral files) and pearl oyster shell debitage, preforms, and complete or fragmented pieces (Fujita 2008b). This suggestion is supported by the discovery of a total of 40 pearl oyster shell ornaments/fishhooks (including complete and fragmented pieces and preforms) found in the lower and middle layers of the site (Fujita 2002, 2004a, 2007a). The complete pieces are circular with tapered extremities and do not have barbs or small holes where lines were tied. Some are retouched and others are polished. The retouched pieces may be preforms, and the polished ones may be the finished form. There are some differences in size, which may indicate different sizes of intended prey.

The principal fish remains found in Covacha Babisuri are large (Guía 2008; Noah 2002). It is, therefore, likely that most fish might have been caught by hook and line, supporting the idea that the pearl oyster artifact could have been used as a fishhook. Although hook and line fishing was the principal technology used, spears with projectile points might have also been used in the early and middle Holocene, although the major fishing method in the Late Period seems to have changed. The use of wooden spears and harpoons might have been more popular during the Late Period, as evidenced by the recovered tool kits and ethnohistoric descriptions of the Cape Region Indians (del Barco 1973; Mathes 1970).

Other sites on Espíritu Santo have also yielded pearl oyster shell artifacts. Two fragmented, polished circular pearl oyster shell ornaments/fishhooks were found at another rockshelter site (J57), and a large preform of a retouched pearl shell ornament/fishhook was found at the La Ballena mesa site (J69D) on the same island. The pieces from site J57 may date to the early Holocene, since the shell sample (*Chione californiensis*) from level 7 was dated to $8,320 \pm 50$ RCYBP (Beta-236265) and the two pieces were found in levels 6 and 8 (Fujita 2008b). The shell sample (*Chama frondosa*) from level 10 of the test pit at J69D was dated to $8,770 \pm 60$ RCYBP (Beta-233678), and the shell sample from level 1 was dated to $6,079 \pm 75$ RCYBP (INAH-2553; Fujita 2008b). The preform was found in level 8, so it is probable that it dates to between 8,000–7,000 B.P.

Middle Period (Middle Holocene). The settlement on mesa El Gallo III was abandoned by 8,500 B.P., although there is evidence of occupation on mesas La Ballena

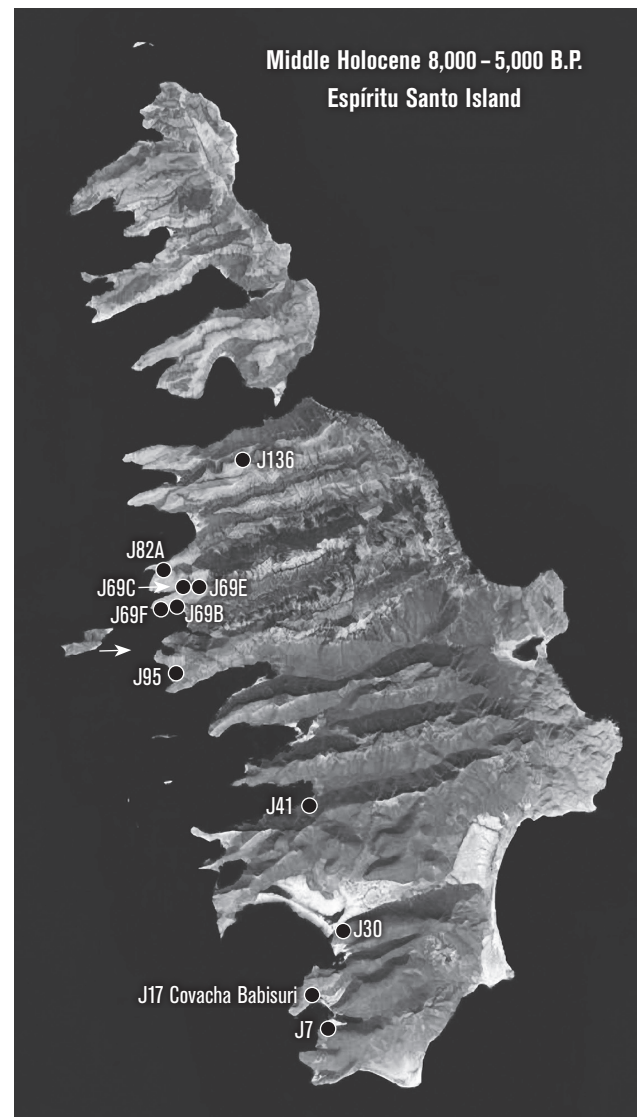


Figure 9. Known site distribution on Espíritu Santo Island during the Middle Holocene (8,000–5,000 B.P.).

(J69B, J69C, J69E, and J69F) and El Puertecito (J82A) between 8,000–5,000 B.P. (Fig. 9). In the Middle Period, the occupation of caves and rockshelters continued and the number of sites even increased in other bays on the west coast (J7, J17, J30, and J41), as well as at an open camp on mesa Mesteño (J136) at the extreme north end of the island. In Covacha Babisuri, old shell tools disappeared and lithic tools—as well as pearl oyster ornaments/fishhooks, worked pearls, coral tools, faunal remains, and floral remains—increased during the Middle Period.

Between 5,000–2,000 B.P. (Fig. 10), the inhabitants of the island seem to have abandoned the occupation of



Figure 10. Known site distribution on Espiritu Santo Island during the Middle Holocene (5,000–2,000 B.P.).

mesa La Ballena #3 and begun settlements on the coast, forming shell middens (J40, J66, J67, J82B, J89, and J129). The occupation of caves and rockshelters continued and increased (J17, J28, J47, J54, J65, and J138). The earliest shell middens developed in the backs of bays near the mangroves. These middens consisted mainly of easily collected mussels and marine snails such as *Ostrea palmula*, *Chione californiensis*, *Strombus gracilior* and *S. granulatus*, *Turbo fluctuosus*, and *Nerita scabricostata*. There are later shell middens composed of pearl oysters and rock oysters at the entrances to bays. In addition to the shellfish remains, large quantities of fish and other marine vertebrate faunal remains (especially of sea



Figure 11. Shell midden J67 La Ballena #1, predominance of *Ostrea fisheri* shells.

turtle and dolphin), were found in the shell middens of La Ballena #1 (J67; Fig. 11), Candelero Sur (J89), and Ensenada de La Partida Sur (J129). In shell midden J89, numerous projectile points were found, including one complete La Paz point (Fig. 12), as well as a large grooved pearl.

Late Period (Middle and Late Holocene). Between 2,000–300 B.P., the occupation of caves and rockshelters (J17, J29, J35, J53, J61, and J96), as well as shell middens sites (J26 and J137), continued and site numbers increased (Fig. 13). Human bone samples from the Las Palmas funeral caves located in Las Calaveritas (J73 and J78) were dated between 1,000 and 800 B.P., at least 200 years earlier than results from peninsular samples. A dolichocephalic skull with red pigment was found in a funeral cave site (J88), in addition to various red painted human bones from a number of individuals. A cave and a shell midden on La Partida Island (J106 and

J107) were occupied during this period. A campsite on La Ballena #3 (J69A), situated on the edge of the mesa, dates to the Late Period and appears to have been ceremonial in nature because of such unique characteristics as bedrock mortars, the starting point of a wide trail, and a serrated Comondú projectile point fashioned from rhyolite.

At Covacha Babisuri rockshelter, worked pearls and pearl oyster ornaments/fishhooks were no longer present in the Late Period. A discovery that was unprecedented in the prehistory of Baja California was made in this rock shelter; it consisted of a human male adult burial in a flexed position with associated metal objects, specifically iron knives, iron shafts called “regatón,” iron nails, and a copper ring attached to the iron knife (Fig. 14). The bone sample dated to 800 ± 40 RCYBP and was calibrated between A.D. 1180 and 1280 (Beta-159194). The nitrogen isotopic value in this individual was 22.0%, and the carbon isotopic value was -11.3% , indicating that the man’s diet depended heavily on marine resources and CAM (Crassulacean acid metabolism) plants, such as agave, pitahaya, and cactaceas (Fujita and Minagawa 2003, 2004). The marine reservoir correction factor for this area is 253 ± 18 . However, it is not correct to use the complete value, considering the fact that the indigenous people also consumed high amounts of CAM plants, which may lower the correction value and may indicate that the metal objects were brought to Espíritu Santo Island before the first official European arrival to Baja California in 1533. Though this is intriguing, additional analysis is required to determine the origin of these items, and more extensive dating is required to unequivocally determine the date of the burial.

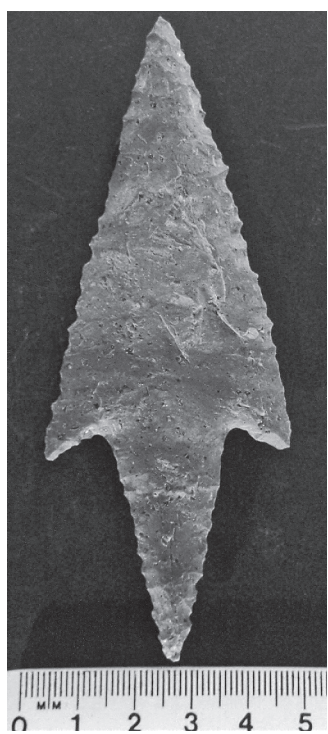


Figure 12. La Paz point from J89 Candelerio Sur #1.

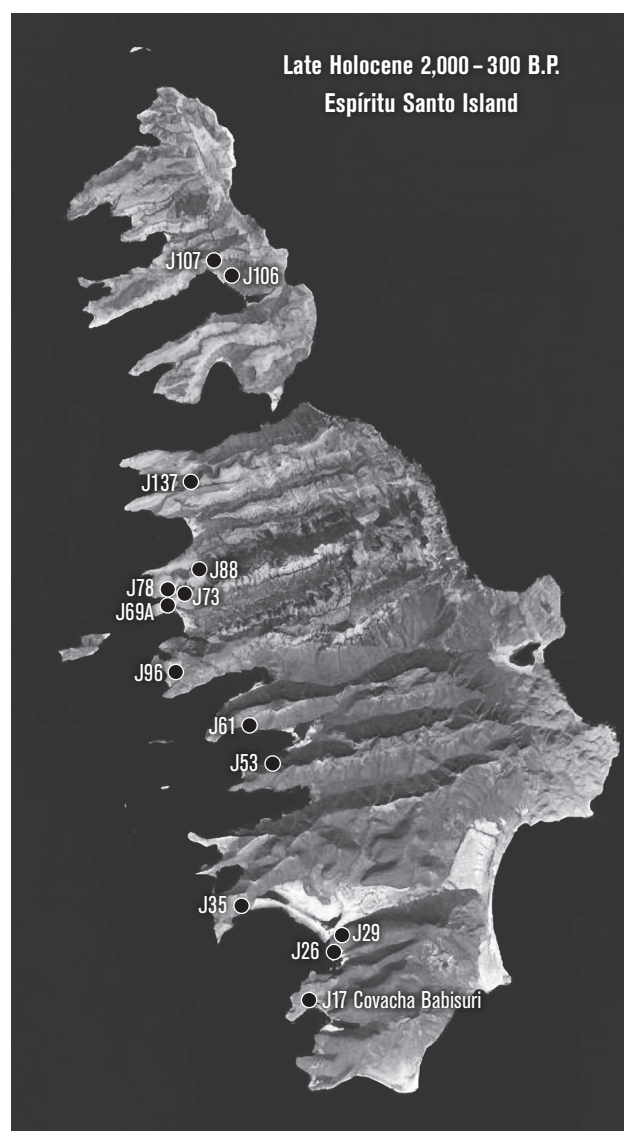


Figure 13. Known site distribution on Espíritu Santo and La Partida islands during the late Holocene (2,000–300 B. P.).

DISCUSSION

The human occupation of Espíritu Santo Island was the earliest in the Cape Region of Baja California, based on the radiocarbon dating results of 185 samples from 40 archaeological sites and one sample from an inundation area on both Espíritu Santo and La Partida islands. The earliest dates correspond to $11,284 \pm 121$ RCYBP for La Ballena (J69E) mesa site and $10,970 \pm 60$ RCYBP or 11,930–11,230 cal B.P. for the Covacha Babisuri rockshelter site. It is likely that Espíritu Santo Island was a preferred place for the initial occupation of the Cape Region approximately 11,000 years ago because of the

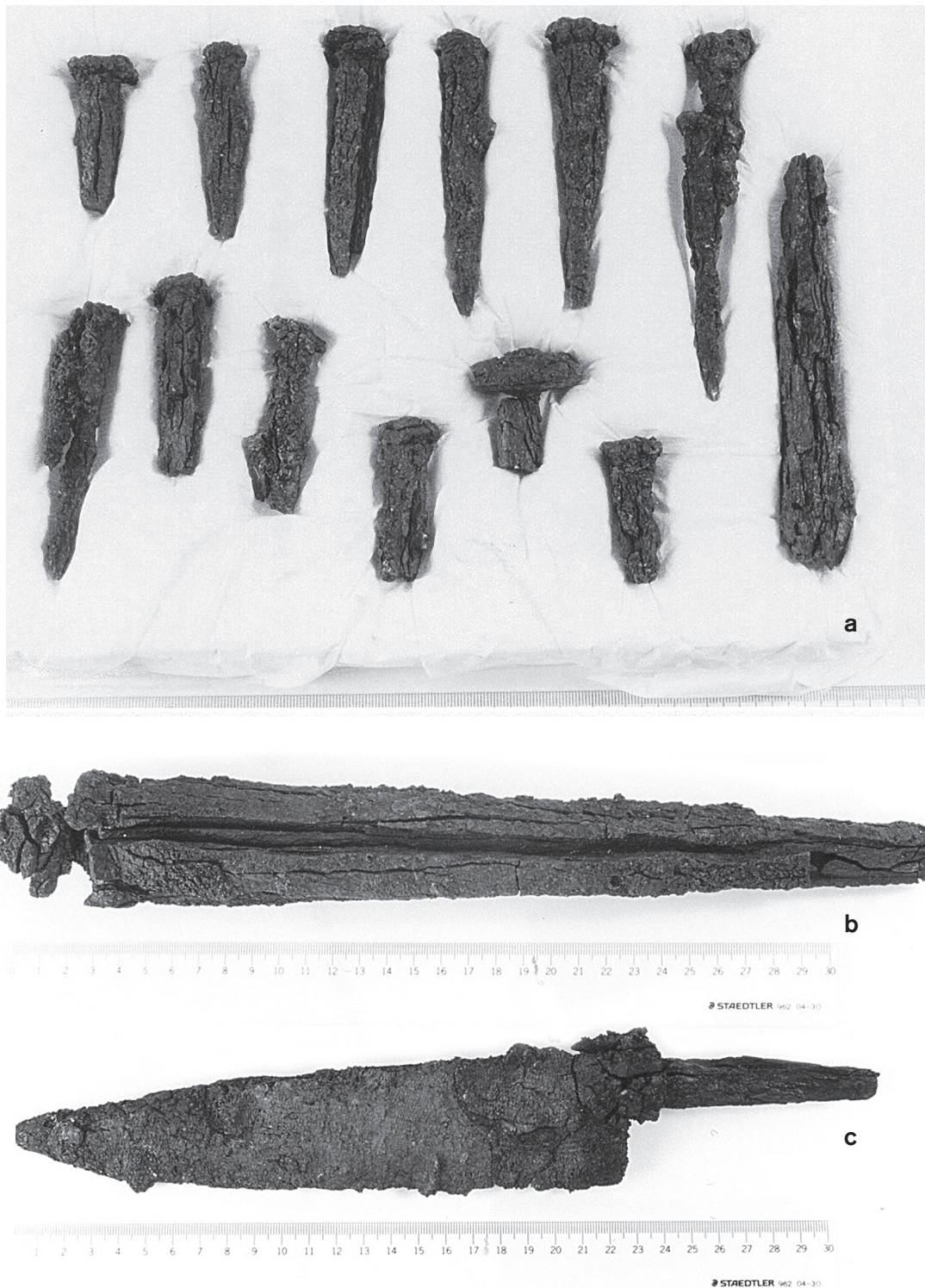


Figure 14. Iron artifacts associated with a human burial from Covacha Babisuri: (a) iron nails, (b) an iron shaft called “regatón,” and (c) an iron knife.

availability of fresh water, food resources, and materials to manufacture tools. In addition, the island provided secure settlement sites in caves and on top of mesas not readily available in most of the other parts of the Cape Region. The early settlements were established in the western portion of the island at the backs of bays and on mesa tops.

There was an apparent change in settlement pattern after 8,500 B.P. The open campsites on mesas were abandoned by 8,500 B.P. at El Gallo III and by 5,000 B.P. at La Ballena #3. After 4,500 B.P., settlements along the coast consisted of shell middens at the backs of bays near mangroves, and later at the entrances to bays. Caves were occupied only in certain periods, although Covacha Babisuri rockshelter had a long occupation that extended throughout prehistory.

Subsistence patterns changed little throughout prehistory, and were based upon such resources as shellfish, crustaceans, sea urchins, and fish, complemented by plant gathering and marine and terrestrial hunting. However, changes in the proportions and amounts of both artifacts and faunal and floral remains can be found. In general, there is an increase in the quantity of large shellfish and fish remains over time, probably caused by a population increase in the late Middle Period into the Late Period. This suggests that larger groups of people were going to sea on rafts and with a more complex organization. At Covacha Babisuri, the quantity of lithics, worked and used shells, coral tools, and faunal and floral remains was the highest in the Middle Period, followed by the Early Period and then the Late Period, underlining the importance of this rockshelter in the earlier periods. However, there are other early sites in the Cape Region. These are as follows: El Pulguero Suroeste (A16), an open campsite on one of the hills facing Espíritu Santo Island, with shell remains dated to $9,470 \pm 60$ (Beta-251150), $9,330 \pm 60$ (Beta-251151), and $9,000 \pm 60$ RCYBP (Beta-251153) (Fujita 2009); Costa Baja cave and rockshelter sites (A110 Cañada de Caimancito #2 and A111 Cañada de Caimancito #3), which are located approximately 5 km. northeast of La Paz and date to $8,130 \pm 40$ (Beta-204269) and $8,170 \pm 40$ RCYBP (Beta-204272) (Fujita 2006); and a neighboring cave (A112 Cañada de Caimancito #4), shell middens in Puerto Balandra located 20 km. northeast of La Paz, and La Capilla (C40 La Capilla #2) in the eastern Cape Region, that date to $7,060 \pm 40$ (Beta-204275),

$7,755 \pm 80$ (INAH-266) and $7,020 \pm 40$ (Beta-239062) RCYBP, respectively (Fujita 1985, 2006; Piña et al. 2009).

An additional point of interest concerning Espíritu Santo Island is that the evidence of terminal Pleistocene-early Holocene occupation on the island may support the hypothesis that people arrived in Baja California by a Pleistocene Pacific coastal migration route using some sort of watercraft. However, the two sites closest to the same period have been reported in the central part of the peninsula, more than 600 km. away from Espíritu Santo Island. One site is in the Sierra de San Francisco, and it reflects a Paleoindian hunting life style (Gutiérrez and Hyland 2002). The other site, reflecting a Paleocoastal subsistence pattern, is found on Isla Cedros (Des Lauriers 2005). No Paleoindian evidence has been found on Espíritu Santo Island, but it is possible that a Paleocoastal group arrived in the Cape region via Cabo San Lucas, and then continued north along the coast into the Gulf of California to Espíritu Santo Island. On the other hand, it is also possible that a Paleoindian group might have moved along the mountain areas, reaching La Paz Bay and Espíritu Santo Island, where they modified their subsistence pattern to exploit the coastal ecology.

CHALLENGING PARADIGMS OF ISOLATION AND MARGINALITY

Although the Cape Region has been characterized as an isolated region with marginal resources, the abundant archaeological materials recovered from it do not completely support this characterization. The hundreds of identified Cape Region archaeological sites indicate that this area had a long period of human occupation, extending back to the terminal Pleistocene, that was one of the oldest in the New World. The materials recovered from these sites represent a well-developed marine adaptation by people who took advantage of the abundant marine resources found throughout the region and developed their own cultural traditions. Burial caves with red painted bones, pearl oyster ornaments, and flutes made from the large marine gastropod *Fasciolaria princeps* are considered indicative of the Cape Region cultural tradition (Fujita 2006; Fujita and Muñoz 2002). These unique cultural elements suggest the inhabitants of the Cape Region were well adapted to their landscape and the resources that it provided.

The remoteness of the Cape Region did indeed cause a certain degree of isolation from areas to the north; however, there is some indication of cultural diffusion both into and out of the Cape Region. The burial traditions, pearl oyster ornaments, and shell flutes that developed in the Cape Region have been identified in both coastal and interior sites to the north (Gutiérrez and Hyland 2002; Ritter 1979). Additionally, the *Olivella* shell beads found at Covacha Babisuri appear to be much older than those found in Bahía Concepción sites (Ritter 1979), again suggesting the possibility of cultural diffusion from south to north. On the other hand, some Comondú-type projectile points, which are indicative of northern cultures, have been identified in some Cape Region Late Period sites.

The relationships suggested by these discoveries are intriguing, and indicate that at least some degree of interaction occurred between Cape Region inhabitants and their northern neighbors. The extent of that interaction needs to be more fully explored. Few investigations have been conducted north of the Cape Region and south of Loreto, the area to which Cape Region inhabitants could have had the easiest access. Regardless, the evidence of diffusion that has been recovered points to at least some degree of interaction between the Cape Region and areas to the north. The extent of that interaction and the effect it may have had on the development of the Cape Region cultural traditions is an issue that future research will hopefully clarify.

CONCLUSIONS

Based on numerous archaeological investigations in the Cape Region, it appears that Espíritu Santo Island was the core or nuclear region from which cultural traditions and elements diffused. The island contained numerous elements favorable for prehistoric human life. Those elements included potable water, plant and animal food resources, tool-making materials, and safe, comfortable habitation sites such as caves and rockshelters that provided protection against severe weather conditions. Coastal *mesetas* provided wind-cooled loci during the warm, humid days of summer, along with direct access to food resources and tool-making materials in the protected bays (Fujita 2006). In addition, the area from northeast La Paz to Tecolote and Pulguero, located

opposite the south coast of the island, has produced evidence of occupation from the early Holocene through the Late Period, much of which resembles cultural materials and settlement patterns on the island (Fujita 2009). Thus, this area can be included as part of the nuclear core of the Cape Region.

The Cape Region hunter-gatherer-fisher groups, who relied on the abundant marine and terrestrial resources for food and materials for tools, and had a well-established social organization for different work tasks and ceremonies, were self-sufficient. Although there is no evidence of contact with mainland Mexico until the arrival of Europeans, the Cape Region groups did borrow a few cultural elements from the north. However, they developed their own identity and traditions, such as the “Las Palmas” funeral rituals, represented by exclusive burial caves (Massey 1955; Molto and Fujita 1995), the production of specialized large rhyolite bifaces, and probably the use of exclusive ceremonial places on mesas and exclusive pictograph sites (Fujita 2007b; Fujita and Poyatos de Paz 2007). Regardless of the degree of isolation and marginality that is assumed for the peninsular groups, it is apparent that they survived quite well until the religious colonization of the Spaniards after 1720, when the Jesuits founded a mission in La Paz.

NOTES

¹Each recorded site in the Cape Region has a code number and a name. Espíritu Santo and La Partida islands are in the “J” area of the Cape Region, so the coded list in this area extends from J1 to the most recently recorded site of J140. For other areas in the Cape Region, area “A” extends from La Paz to Tecolote Beach toward the north and to Las Cruces toward the east, while area “C” is the coastal area south of Buena Vista, between Ensenada de Los Muertos and La Capilla. The names of all sites in these three areas are derived from the bay closest to which the sites are located combined with the consecutively recorded numbers.

ACKNOWLEDGEMENTS

The project “El Poblamiento de América visto desde la isla Espíritu Santo, BCS” [The Peopling of America as Seen from Espíritu Santo Island, B.C.S.] was financed by the Instituto Nacional de Antropología e Historia (INAH), Mexico from 2001 to 2008. I especially thank Jesús Mora Echeverría, ex-Subdirector of the Department of Archaeological Studies of INAH, who provided me with constructive criticism and academic assistance at the beginning of the project. I would also like to express my sincere appreciation to Joaquín García-Bárcena, ex-Technical Secretary of INAH, and the late Alejandro Martínez Muriel,

ex-National Coordinator of Archaeology of INAH. Thanks also to Dr. Judith Porcasi of the Cotsen Institute of Archaeology of UCLA, Don Laylander, and an anonymous reviewer who kindly critiqued the manuscript. Amy Gusick, Ph.D. candidate at the University of California, Santa Barbara, coordinated this issue and gave me helpful suggestions. I am particularly grateful to Dr. Loren Davis of Oregon State University, who arranged the financing that allowed two INAH archaeologists (including me) to participate in the SAA annual meetings in 2009. His interest in the archaeology of Baja California, especially of Espíritu Santo Island, provided me with positive incentives to better understand the early prehistory of the area.

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