

# ***Archaeology of Santa Barbara Island: Past Projects and Future Directions***

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## **Abstract**

Santa Barbara Island, the smallest and most centrally located of California's eight Channel Islands, contains a diverse archaeological record spanning much of the last 4200 cal yrs BP. The island's relatively remote location, small size, and harsh terrestrial environment have led numerous researchers to suggest that it played a relatively minor role in regional prehistory. These assertions are speculative since the island has received only limited attention from researchers and the few archaeological projects that have been conducted on the island remain largely unpublished and relatively inaccessible to other researchers and the general public. To stimulate archaeological research on Santa Barbara Island, I provide a history of archaeological research for the island and present a series of new radiocarbon dates that extend its human occupation by roughly 500 years. Santa Barbara Island contains an archaeological record capable of playing a role in a number of important theoretical and methodological research issues, including studies of regional exchange and interaction, maritime adaptations, and human responses to climate change.

## **Introduction**

Over the last 25 years, archaeological research on California's Channel Islands has rapidly increased. The National Park Service, US Navy, and a number of universities, museums, and other agencies have sponsored a variety of archaeological projects on the eight islands. These research expeditions have drawn national and international attention to the region, which contains an impressive archaeological record that spans over 11,000 years (Erlandson et al. 1996; Johnson et al. 2000) and has some of the best preserved evidence of coastal hunter-gatherers in the

world (see Arnold 1992; Arnold, Colton, Pletka 1997; Moss and Erlandson 1995; Raab and Larson 1997).

Similar to many areas in California, much of the region's archaeological record contains a number of temporal and spatial gaps. Santa Barbara Island is one of the least known areas of the southern California coast and has often been excluded from regional overviews (e.g., Raab, Bradford, and Yatsko 1994). In fact, only two short papers have been published on the archaeology of this island—one on an abalone pry bar recovered from SBI-16 (Swartz 1960) and another presenting the first radiocarbon dates for the island (Erlandson et al. 1992). Despite the dearth of publications focused on Santa Barbara Island, a number of archaeological projects have been conducted, including several survey and excavation projects (e.g., Rozaire 1978; Greenwood 1978; Sneathkamp 1986). For the most part, this research remains largely unreported or buried in the gray literature.

In this paper, I present a history of archaeological research on Santa Barbara Island, indicating the type of research performed, the archaeological materials recovered, and the information each project contributed to the island's cultural history. I also update the island's radiocarbon chronology and offer suggestions for future research, summarizing potential lines of inquiry for the Early, Middle, and Late Holocene.

Similar to other Channel Islands archaeology overviews provided by Schwartz and Martz (1992) and Raab, Bradford, and Yatsko (1994), my goals are to stimulate archaeological research on Santa Barbara Island and provide a framework for understanding its role in regional cultural developments.

### Environmental and Cultural Context

Santa Barbara Island is located 62 km offshore, situated roughly equidistant between Santa Catalina Island (38 km to the east) and San Nicolas Island (44 km to the southwest; Fig. 1). The island is also roughly 66 km from Anacapa Island—the closest island in the northern chain. Santa Barbara Island is about 2.6 km<sup>2</sup> in area and has a relatively steep and rugged shoreline with two main peaks projecting to a maximum height of 194 meters (Fig. 2). The island is primarily volcanic, containing Miocene basalts that

erupted under water (Kemnitzer 1933:38; Norris 1991:148; Schoenherr, Feldmeth, and Emerson 1999:349). Depending on global and local climatic and geological events, at various times during the past, the island has been totally submerged underwater or larger than its present size (see Schoenherr, Feldmeth, and Emerson 1999). Porcasi, Porcasi, and O'Neill (1999:6) suggest that between about 12,000 and 10,000 years ago the island was between 17-30 km<sup>2</sup>, roughly 5-10 times larger than the current island.

Although the island today is relatively small in total landmass, it contains over three miles of coastline with abundant rocky-intertidal and kelp bed habitats and a few small, sandy beaches. These marine habitats are home to a variety of shellfish, fishes, and marine mammals, including breeding elephant seals and sea lions (Schoenherr, Feldmeth, and Emerson 1999). The island also contains a variety of sea and land birds.

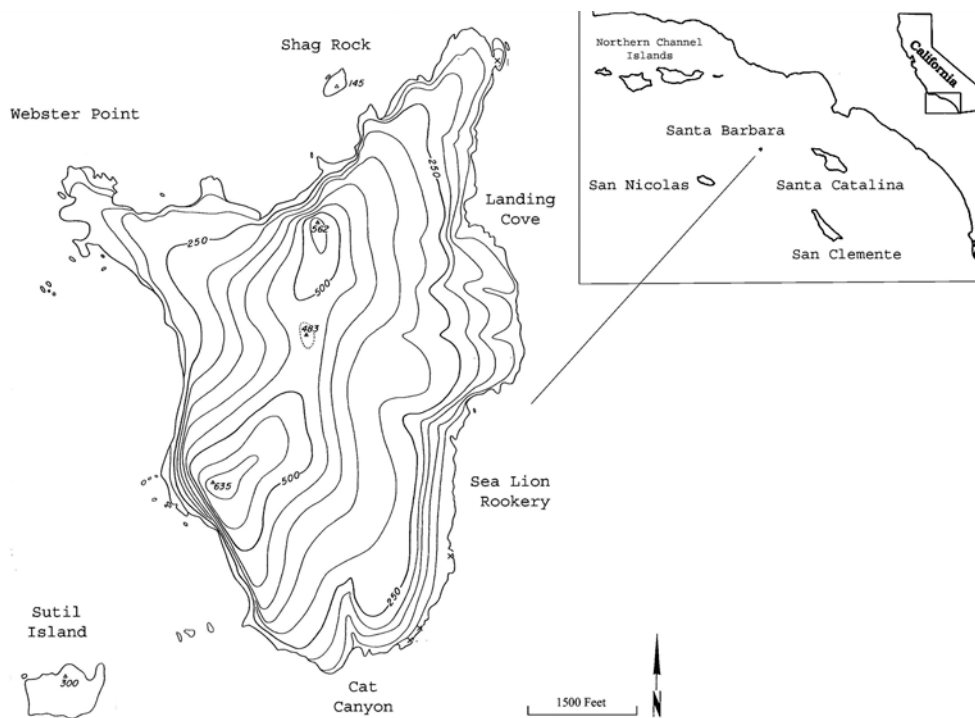


Fig. 1. Location of Santa Barbara Island.

While areas for safely landing a boat are limited, the island's rich marine life would have been attractive to people who visited the island.

Similar to the other Channel Islands, Santa Barbara contains a relatively harsh terrestrial environment, with extremely limited freshwater (see Philbrick 1972:330) and only two small terrestrial mammals, California bat and deer mouse (Schoenherr, Feldmeth, and Emerson 1999:348, 355). Junak, Philbrick, Drost (1993:68) discuss 127 plant taxa (86 native) on Santa Barbara Island, including prickly pear, rattlesnake weed, yarrow, morning glory, filaree, clover, and wild cucumbers. Introduced rabbits and herbivores and other historical activities have heavily disturbed the island's vegetation (Schoenherr, Feldmeth, and Emerson 1999:350). Along with Anacapa, Santa Barbara was declared Channel Islands National Monument in 1938. The Island was later declared part of Channel Islands National Park in 1980. Under National Park Service management, introduced

mammals were removed from the island, and its native vegetation has steadily recovered.

On December 4, 1604, Sebastian Vizcaíno was among the first Europeans to visit the island (Norris 1991:147; Schoenherr, Feldmeth, and Emerson 1999:348). He named the island Santa Barbara in honor of Saint Barbara's day on which his vessel reached the island, but descriptions of his visit are relatively limited. Recent research has demonstrated that Native Americans have visited Santa Barbara Island for several millennia prior to Vizcaíno's visit (Erlanson et al. 1992). The island was uninhabited during the Historic period, however, making it difficult to determine primary cultural affiliation for the island. The absence of Historic period occupation has also worked to peripheralize the archaeology of Santa Barbara Island. The island is thought to have been visited and occupied primarily by *Tongva* (Gabrielino) peoples who inhabited nearby San Nicolas and Santa Catalina islands (see Johnston 1962:96; McCawley 1996:75). McCawley (1996:77)



Fig. 2. Santa Barbara Island as viewed from the ocean in 2001.

suggests that the Gabrielino and Fernandeano referred to the island as '*Ichunash*, a Chumash word meaning "a notice" or "whistle." According to Heizer (1975:65, 79) the Chumash called the island *Siwot*, *Siwat*, *Sinot*, or *Siout*. Limited archaeological and ethnohistoric data suggest that the island was undoubtedly visited or occupied by the *Tongva*, Chumash, and their predecessors, but the extent of this occupation remains largely unknown.

### Archaeological Research on Santa Barbara Island

In 1977, Glassow presented a summary of archaeological research on Santa Barbara Island as part of a resource assessment for the National Park Service. The history of research presented here is an update of the 24 years since Glassow's (1977) report and expands on data presented by Baldwin (1996) and Erlandson et al. (1992). Additional assessments of unpublished notes, reports, or collections housed at Channel Islands National Park, the Natural History Museum of Los Angeles County (NHMLAC), University of California Santa Barbara (UCSB), and the Santa Barbara Museum of Natural History (SBMNH) also were conducted by the author (Table 1).

Relatively little is known about archaeological work on Santa Barbara Island prior to 1958. Swartz (1960) suggests that early researchers visited the island beginning in the 1870s, but he makes no reference to who conducted this research. Notes and archives at a variety of museums and clearinghouses in southern California also contain little information on early research on the island. Paul Schumacher (1877:51) visited Santa Barbara Island and reported seeing a shell midden and fragments of mortars and pestles, but he apparently did not excavate any sites. He was one of the first researchers to speculate that the island served as a way station for travelers between Catalina and other islands (Schumacher 1877:51). Eisen (1904:12) suggested that the island was once densely populated, but descriptions of his impressions of the

island are limited to just a few sentences. It is also possible that other early researchers (e.g., de Cessac, Bowers, Glidden, Malcolm Rogers) who worked on San Nicolas or Catalina islands spent a brief amount of time on Santa Barbara, but no reports have been located that would validate this possibility. Arthur Woodward probably conducted surface reconnaissance and survey of the island in 1939 associated with the Channel Islands Biological Survey but little is known of his work (Baldwin 1996:36, 42). As Baldwin (1996:41-42) noted, determining if and when early scholars worked on the island is complicated by possible confusion with generic descriptions of mainland coastal Santa Barbara.

In 1958, B. K. Swartz and C. J. Sutton conducted the first well documented archaeological project on Santa Barbara Island, performing reconnaissance and test excavations for the UCLA Archaeological Survey. They recorded the location of one archaeological site (SBI-1) where they spent most of their time excavating three 5-by-5 foot units. This site has recently been renumbered by Greenwood (1978:33) to SBI-16. Swartz (1960) presented one of the few journal publications for the island, arguing that a modified sea mammal rib "pry bar" was the first evidence that the island was inhabited by Native Americans. He argued that Santa Barbara Island was occupied intermittently, perhaps for quarrying crystalline rock (Swartz 1960:9). Crystalline rock outcrops were not noted during later survey and excavation by Rozaire, who indicated that milky quartz was the dominant stone type found in their research (Rozaire 1978:35). A collection of 32 objects from the Swartz and Sutton research is housed at the Fowler Museum, University of California, Los Angeles under Acc. No. 199.

P. Schumacher visited Santa Barbara Island during the summer of 1958 and recorded the location of SBI-2, -3, -4, and -5, but apparently made no surface collections (Glassow 1977:30). In 1961, J. Nichols and C. Rozaire recorded the location of SBI-6 and surface

Table 1. Overview of major archaeological research projects on Santa Barbara Island.

Researcher	Date	Description	Reference
A. Woodward	1939	Survey and reconnaissance related to Channel Islands Biological Survey.	Baldwin 1996
B. Swartz and C. Sutton	1958	Surveyed the island and excavated three 5 x 5 foot pits at SBI-16.	Swartz and Sutton 1958; Swartz 1960
P. Schumacher	1958	Recorded at least 4 additional sites, SBI-2, to -5. No excavation or surface collection.	Glassow 1977: 29-30
J. Nichols and C. Rozaire	1961	Recorded five additional sites, including surface collection at SBI-2, -4, -5, -6.	Rozaire 1978: 3; Glassow 1977: 32
C. Rozaire, G. Kritzman, and R. Desautels	1964	Surveyed the island, checked the location of previously documented sites, and recorded 15 sites.	Rozaire 1978: 3
C. Rozaire, G. Kritzman, J. Fitzwater, and H. Gonzales	1964	Excavated six 5 x 5 foot pits in six inch arbitrary levels with 1/4-inch mesh at SBI-9.	Rozaire 1978: 7; Colten 2002; Walker 1978
M. Bright	1966	Surveyed most of the island, relocating SBI-1, -3, and recording a number of isolates, but probably did not collect any artifacts.	Glassow 1977: 37-38
R. Greenwood and V. Bente	1977	Surveyed island for recorded and unrecorded sites. Recorded three new sites and gave trinomial designations to a total of 19 sites.	Greenwood 1978
T. Hudson, T. Blackburn, and P. Howorth	1981	Searched for location of <i>toshowaat</i> stones that were thought to come from Santa Barbara Island.	Timbrook 2000:637
D. Morris	1985	Surface survey and reconnaissance to determine future sites for test excavation by the NPS.	Morris n.d.
P. Snethkamp and D. Morris	1986	Conducted reconnaissance, surface collected, and excavated test pits at SBI-2, -3, -9, -12, and -16.	Snethkamp 1986; Erlandson et al. 1992; Rick and Erlandson 2001; Rick et al. n.d.
D. Morris and J. Lima	1980s- 90s	Extensive survey for historic shipwrecks.	Morris and Lima 1996
D. Morris	1985-2000	Intermittent monitoring and survey for NPS related activities, including augering at SBI-19.	Morris n.d.
T. Rick	2001	Surface Reconnaissance of sites on eastern coast. Radiocarbon dated SBI-19.	—

collected at SBI-2, -4, -5, and -6 (Glassow 1977; Rozaire 1978). A collection of 33 objects from their research is housed at the Fowler Museum, University of California, Los Angeles under Acc. No. 312. As part of a trip for the Western Speleological Society, Phil Orr visited the island in 1964 on a brief stopover on his way to San Nicolas Island. According to

Glassow (1977:33-34), Orr noted only that there was an archaeological site near the landing point on the island. Roughly 68 of Orr's photos, primarily of the island's coastline, are currently housed at the SBMNH.

One of the most extensive projects on Santa Barbara Island was conducted by Charles Rozaire, George Kritzman, and Roger Desautels in May 1964. Rozaire, Kritzman, and Desautels recorded 15 archaeological sites on the island, demonstrating that most of the island was occupied in the past (Glassow 1977; Rozaire 1978). Rozaire's survey and later research by Greenwood and Bente in 1977, documented a wide variety of sites on the island ranging from fairly dense shell middens to sparse lithic scatters. Rozaire, Kritzman, Fitzwater, and Gonzales later excavated six 5-by-5 foot units at SBI-9 located on the northwest coast of the island in June 1964. A collection of this research is housed at the NHMLAC.

Rozaire (1978) describes SBI-9 as one of the primary residential sites on Santa Barbara Island. The deposits at the site are relatively shallow (6-16 inches) and appeared to have been disturbed by plowing (Rozaire

1978:7, 31). One radiocarbon date on marine shell of roughly 2330 cal yrs BP was obtained from a depth of 15 to 30 cm of Unit 4/5 (Table 2). Rozaire (1978:13, 137) recovered 189 artifacts from 13 sites on Santa Barbara Island, with the most diverse assemblage from the SBI-9 excavations (n= 108). Of the 108 artifacts recovered from SBI-9, 84 are ground or flaked stone artifacts, including mortars, pestles, manos, and metates, eight are shell artifacts such as fishhooks and beads, and 16 are bone artifacts, including pry bars and awls (Table 3). Interestingly, during the course of survey and excavation, Rozaire (1978:136) documented roughly 23 mortars, 10 steatite bowls, 24 pestles, and numerous other pieces of groundstone distributed across much of the island. Greenwood (1978:10) also noted a high degree of groundstone objects on the island. The presence of this relatively high concentration of groundstone suggests a fairly substantial occupation.

Table 2. A radiocarbon chronology for Santa Barbara Island.

Site*	Sample number	Material	Provenience	Uncorrected <sup>14</sup> C Age	<sup>13</sup> C/ <sup>12</sup> C Adjusted Age	Calibrated Age Range BP (1 σ)**
CA-SBI-1	Beta-52008	<i>Astraea undosa</i>	Trench 2	3580 ± 60	4030 ± 60	3830 (3730) 3640
CA-SBI-2	OS-31083	<i>Mytilus californianus</i>	Unit 1: 0-2 cm	—	3450 ± 35	3340 (3030) 2750
CA-SBI-2	Beta-139948	<i>Astraea undosa</i>	Unit 1:2.5-18 cm	3380 ± 70	3830 ± 80	3610 (3470) 3390
CA-SBI-2	Beta-30634	<i>Haliotis</i> sp.	Unit 1: 29-32 cm	3630 ± 80	4060 ± 80	3890 (3800) 3670
CA-SBI-3	Beta-30635	<i>Haliotis</i> sp.	Unit 1:20-25	1540 ± 110	1930 ± 110	1350 (1260) 1160
CA-SBI-9	UCLA-2796	<i>Haliotis</i> sp.	Unit 4/5:15-31	2470 ± 185	2890 ± 190	2680 (2330) 2120
CA-SBI-12	Beta-139949	<i>Haliotis cracherodii</i>	Unit 1: 0-6	860 ± 60	1290 ± 60	670 (640) 560
CA-SBI-12	Beta-30636	<i>Haliotis</i> sp.	Unit 1: 11-16	940 ± 90	1370 ± 90	770 (680) 630
CA-SBI-16	Beta-42605	<i>Mytilus/Lottia</i>	Pit 3: 0-15	840 ± 70	1280 ± 70	670 (630) 550
CA-SBI-19	Beta-156058	<i>Haliotis cracherodii</i>	Probe 1: 7 cm	3900 ± 70	4330 ± 70	4260 (4140) 4060

\* Dates for CA-SBI-1, -2, -3, -9, -12, and -16 were obtained from Erlandson et al. (1992), Beta-139948 and OS-31083 for CA-SBI-2 were obtained from Rick et al. (n.d.), and Beta-139949 from CA-SBI-12 was obtained from Rick and Erlandson (2001).

\*\* All dates were calibrated using Calib 4.3 (Stuiver and Reimer, 1993, 2000), applying a ΔR of 225 ± 35 years. <sup>13</sup>C/<sup>12</sup>C ratios were either determined by the radiocarbon labs, or an average of 430 years was applied. Numbers in parentheses indicate calibrated intercept.

Table 3. Summary of artifacts from SBI-9.\*

Artifact	Number	Percent
Groundstone		
Mortar	10	9.3
Pestle	6	5.6
Mano	6	5.6
Metate	1	0.9
Steatite Bowl	8	7.4
Doughnut Stone	1	0.9
Stone Bead	1	0.9
Pendant Blank	4	3.7
Reamer	1	0.9
Pitted Hammer	2	1.9
Subtotal	40	37.0
Flaked Stone		
Scraper	5	4.6
Scraper Plane: Split Cobble	9	8.3
Scraper Plane: Core/Flake	13	12.0
Chopper-Uniface	6	5.6
Chopper-Biface	6	5.6
Hammerstone	3	2.8
Projectile Point	2	1.9
Subtotal	44	40.7

Artifact	Number	Per cent
Shell Artifacts		
Fishhook	2	1.9
Fishhook blank	4	3.7
Bead-Spire Lopped	1	0.9
Cut Shell	1	0.9
Subtotal	8	7.4
Bone Artifacts		
Abalone Pry	3	2.8
Harpoon Head	4	3.7
Awl	2	1.9
Bone bead	1	0.9
Cut Bone	2	1.9
Worked thin bone	1	0.9
Flat, broad pointed tool	2	1.9
Blunt pointed tool	1	0.9
Subtotal	16	14.9
Total	108	—

\* Data based on Rozaire (1978:136-137).

Walker (1978) and Rozaire (1978) present descriptions of faunal remains for SBI-9, and Colten (2002) recently presented data on the analysis of marine mammal remains from the site. While the faunal remains from SBI-9 are from 1/4-inch screen residuals that may underestimate the importance of smaller taxa, the assemblage includes the remains of fur seals, California sea lions, harbor seals, dolphins, unidentified bird, and a variety of fishes (Table 4). Rozaire (1978:8) also presents a list of shellfish from SBI-9 that includes rocky intertidal species, such as black and pink abalone (*Haliotis cracherodii* and *H. corrugata*) and owl limpets (*Lottia gigantea*). He also

recovered trace amounts of calm water species such as rock oyster (*Ostrea lurida*), Venus clams (*Chione* spp.), and common littleneck clams (*Protothaca staminea*) that were probably brought from estuaries on the mainland. Rozaire's archaeological excavation at SBI-9 remains the most extensive excavation of a single archaeological site on Santa Barbara Island to date. The recovery of a diverse artifact and faunal assemblage supports Rozaire's idea that this may have been a primary residential site and clearly illustrates that Santa Barbara Island was used as more than just a stop-over for quarrying activities.

Table 4. Vertebrate faunal remains from SBI-9 and SBI-12. \*

	CA-SBI-9		CA-SBI-12	
Taxa	NISP	% NISP	NISP	% NISP
Bird	23	7.7	51	8.1
Reptile/Amphibian	—	—	60	9.5
Rodent	—	—	108	17.1
<i>Enhydra lutris</i> (sea otter)	3	1	—	—
<i>Arctocephalus townsendii</i> (Guadalupe fur seal)	5	1.7	—	—
<i>Callorhinus/Arctocephalus</i> (fur seal)	1	0.3	—	—
<i>Phoca vitulina</i> (Harbor seal)	1	0.3	—	—
<i>Zalophus californianus</i> (California sea lion)	9	3	—	—
Otariidae (eared seals)	68	22.7	—	—
Pinniped (seals and sea lions)	102	34.1	—	—
Delphinidae	11	3.7	—	—
Cetacean (large)	3	1	—	—
Sea Mammal Undif.	6	2	44	7
Sea Mammal Subtotal	209	69.9	44	7
Teleost (Bony Fishes)	25	8.4	216	34.1
Atherinidae (silversides)	—	—	4	0.6
Clupeidae (herrings)	—	—	13	2.1
Cottidae (sculpins)	1	0.3	6	0.9
Embiotocidae (surfperch family)*	2	0.7	2	0.3
Labridae (wrasses)	—	—	18	2.8
<i>Sebastes</i> spp. (rockfish)	3	1	1	0.2
<i>Semicossyphus pulcher</i> (California sheephead.)	32	10.7	1	0.2
Serranidae (sea basses and grouper)	1	0.3	—	—
<i>Thunnus</i> spp. (tuna)	1	0.3	—	—
<i>Squatina californica</i> (angel shark)	—	—	1	0.2
Elasmobranch	2	0.7	—	—
Fish subtotal	67	22.4	262	41.4
Bone undifferentiated	—	—	108	17.1
Total	299	—	633	—

Data from SBI-9 obtained from Walker (1978; 71, 89, 103, and 138; see also Colten 2002: 16). All data are from Rozaire's excavations and are from 1/4-inch screen residuals or surface collections. Data from SBI-12 obtained from Rick and Erlandson (2001) are from 1/8-inch screen residuals from Unit 1 excavated by Snethkamp and Morris in 1986.



In 1966, M. Bright performed a brief reconnaissance covering much of the island, and located sites SBI-1 and -3. She also identified the location of numerous isolates, but apparently did not collect any artifacts (Glassow 1977: 38). About 11 years later, Roberta Greenwood and Vince Bente performed a thorough surface survey on October 15-18, 1977. Greenwood and Bente were under contract with Channel Islands National Monument and the National Park Service (NPS) to evaluate the condition of archaeological sites on Santa Barbara Island, San Miguel Island, and Anacapa Island. Their goals were to locate sites that had been identified by previous researchers, record any new archaeological sites, and assist in formulating a management plan for the island's archaeological resources (Greenwood 1978). They located all but one (SBI-15) of the 15 archaeological sites recorded by Rozaire. They rerecorded the sites using his original number scheme, but slightly adjusted some site locations (Greenwood 1978:7). They also identified three previously unrecorded sites (SBI-17, -18, and -19), including a bedrock mortar and historic rock wall, and several isolated archaeological occurrences. Their research makes a total of 19 recorded sites for the island. Greenwood and Bente's project was the most thorough survey of the island to date and documented several potential disturbance processes that have affected the island's archaeological sites. These include wind and water erosion, gulying, historic land use and construction, and public visitation.

In 1981, Travis Hudson, Thomas Blackburn, and Peter Howorth performed another surface survey of Santa Barbara Island in an attempt to locate a geological formation that contained rocks possibly used as *toshaawt* stones (Timbrook 2000). *Toshaawt* stones hold religious and spiritual powers for some southern California tribes and ethnohistoric accounts indicated that *Siwot* (Santa Barbara Island) was the only place that a particular form of these stones could be obtained (Timbrook 2000:637). A thorough survey of the island by Hudson and colleagues, however, failed to

locate any such deposits, and it now appears that San Nicolas Island was the primary place for obtaining these stones (Timbrook 2000).

Pandora Snethkamp and Don Morris, following recommendations made during a survey assessment by Morris in 1985, conducted an extensive subsurface testing program on the island in 1986 (Snethkamp 1986). Snethkamp and Morris performed surface reconnaissance at several archaeological sites and excavated one 0.5-by-1 meter unit at SBI-2, -3, -9, -12, and -16 (Fig. 3). They also excavated a few profile trenches at SBI-1 to determine if the deposits were *in situ*. These materials are housed at UCSB under Acc. No. 502, but until recently remained largely unreported. Erlandson et al. (1992) presented the first radiocarbon dates for these archaeological sites, demonstrating that the island had human occupation dating back nearly 4,000 years (see Table 2). Midden analysis of two of the archaeological sites (SBI-2 and -12) excavated by Snethkamp and Morris are also the focus of two recent research projects (Rick and Erlandson 2001; Rick et al. n.d.). The analysis of these two sites, along with Rozaire's (1978) research at SBI-9, has demonstrated that Native American occupation of Santa Barbara Island was more variable than previously recognized. Rick and Erlandson (2002) suggest that occupation at SBI-12 was relatively brief and specialized, occurring during the Middle to Late Period Transition between roughly 680 to 640 cal BP. However, a fairly diverse faunal assemblage including surfperch, rockfish, California sheephead, unidentified sea mammal, and black abalone and owl limpets was recovered from the site (see Table 4).

Historical archaeological projects on Santa Barbara Island have also been relatively limited. As part of a broader Channel Islands project, Don Morris and James Lima conducted a survey for historic shipwrecks lying off the coast of the Northern Channel Islands and Santa Barbara Island during the 1980s and 1990s. Their research documented at least eight



Fig. 3. Excavation at SBI-2 by Snethkamp and Morris in 1986 (note eroding shell midden on bottom of photo).

shipwrecks around the coastline of Santa Barbara Island (Morris and Lima 1996:197-204). Greenwood (1978:36) recorded the location of a historic tank or cistern, rock alignment, and earthen berm (SBI-18) possibly constructed by the Hyder family in the early 20th century. These features may be the remains of a water control or storage system (Greenwood 1978: 36). It is likely that a variety of other Historic-period resources have yet to be documented on the island.

### Recent Reconnaissance

In May 2001, the author performed a surface reconnaissance of archaeological sites on the eastern half of the island, ranging from Cat Canyon to the coast adjacent to Shag Rock. The goals of this project were to assess the integrity of SBI-2 and -12 excavated by Snethkamp and Morris in 1986, and to obtain radiocarbon samples from previously undated SBI-14 and -19. Both SBI-2 and -12 were located and appeared to

be in fair condition with the exception of erosion and argilliturbation occurring at both sites.

After locating these archaeological sites, I collected a sample of abalone shell for radiocarbon dating from SBI-19. SBI-19, located just a few hundred meters from SBI-16, has been disturbed by the construction of the island's campground and interpretive trail. The site surface in 2001 was covered by dense grasses and other low lying vegetation, making it difficult to determine the site area and depth of the deposits. The recorded site boundary is roughly 25 by 32 meters (Greenwood and Bente 1977 site record), however, and excavation of a small probe to obtain the  $^{14}\text{C}$  sample indicates the deposits are at least 10 to 15 cm deep. Greenwood (1978:38) noted four types of shell (black abalone, owl limpet, wavy top turban, and California mussel) and sea mammal and fish bones on the surface of SBI-19. Because of its close proximity to SBI-16, Greenwood (1978) argued that these two sites may have been associated with one another.

Erlandson et al. (1992) provided a calibrated intercept of 630 cal yrs BP for SBI-16. Radiocarbon dating of a single black abalone (*Haliotis cracherodii*) shell obtained from approximately 7 cm below the surface at SBI-19, however, provided an intercept of 4140 cal yrs BP. SBI-19 is currently the earliest dated archaeological site on the island and is roughly 3500 years older than the available date from SBI-16, suggesting that these sites probably contain distinct occupations.

SBI-14, a small archaeological site overlooking the island's sea lion rookery, was also located during the 2001 reconnaissance. Greenwood and Bente (1977 site record) indicated that the site is roughly 27 by 25 meters, consisting of a sparse scatter of stone tools, and black abalone, owl limpet, and chiton shell. Similar conditions were noted during the 2001 reconnaissance. Unfortunately, no materials suitable for radiocarbon dating were identified.

### Future Directions and Research Issues

The history of research on Santa Barbara Island demonstrates that it has a more substantial and diverse human occupation than previously recognized. Research at SBI-9, for example, demonstrates that people conducted a variety of activities on the island supported by diverse artifact and faunal samples recovered during Rozaire's excavation. In contrast, occupation of SBI-12 appears to be brief and specialized. In this section, I briefly highlight several avenues of potential archaeological inquiry on the island. This is done on a temporal basis, with detailed issues for the Early, Middle, and Late Holocene dealt with separately. A final section deals with broad issues concerning all of the island's archaeological resources.

Currently, the earliest documented site on Santa Barbara Island (SBI-19) dates to about 4,100 cal yrs BP. Since San Nicolas Island has human occupation dating back to about 7,000 years ago (Vellanoweth and Erlandson 1999:260), San Clemente Island has produced dates in excess of 9,000 years (Erlandson 1994; Raab and Yatsko 1992), San Miguel Island has yielded dates of roughly 11,000 years (Erlandson et al. 1996), and Santa Rosa Island may have occupation at roughly 13,000 years ago (Johnson et al. 2000), it seems likely that Santa Barbara Island was visited at least intermittently during the Early Holocene. Porcasi, Porcasi, and O'Neill (1999) recently indicated that during the terminal Pleistocene and Early Holocene, Santa Barbara Island was over five times its present size and was surrounded by a series of small islands that have since been inundated by rising sea levels. This increased land area might have made travel between Santa Barbara, San Nicolas, and San Clemente islands somewhat easier than it was later in time.

Future research on early occupation of Santa Barbara Island should follow several lines. First, eroding sea cliffs and gullies should be thoroughly surveyed for

buried archaeological sites that have yet to be recorded. Rozaire (1978) inspected several sea cliffs, but was unable to access many areas due to rugged terrain. Swartz and Sutton (1958) also noted the presence of several caves on the island, but stated that many of these were covered in sterile fill or had rock floors. These caves should be cored to determine if any archaeological deposits are present. Cave sites on San Miguel Island have recently produced evidence of human occupations of great antiquity (Erlandson et al. 1996; Rick, Erlandson, and Vellanoweth 2001), and it is possible that many of the caves on Santa Barbara Island also contain human occupation. Additional open-air archaeological sites should also be sampled and radiocarbon dated to determine their antiquity.

Three sites (SBI-1, -2, and -19) have produced Middle Holocene radiocarbon dates. Many of the same tactics used to find Early Holocene sites could also be used to locate Middle and Late Holocene sites. One of the most interesting aspects for Middle Holocene research is determining the role that Santa Barbara Island played in early interaction spheres and exchange networks. Schumacher (1877), Swartz (1960), McCawley (1996), Vellanoweth and Grenda (2002:72), and others suggest that Santa Barbara Island was occupied intermittently or primarily as a prehistoric stopover or way station. Raab and Howard (2000) and Vellanoweth (2001) have recently documented an extensive Middle Holocene exchange network of *Olivella* grooved rectangle beads ranging from the Southern Channel Islands to the Great Basin. *Olivella* grooved rectangle beads have yet to be identified on Santa Barbara Island, but the island's central location make it likely that Santa Barbara Island played a role in this interaction sphere.

Four Santa Barbara Island sites date to the Late Holocene and the other three sites that have been dated were occupied near the end of the Middle Holocene (see Erlandson et al. 1992). Similar to most other areas of coastal southern California, it seems

likely that the most intensive human occupation of Santa Barbara Island occurred during the last 3,000 years. However, only two Santa Barbara Island sites (SBI-12 and -16) have calibrated age ranges that extend into the Late period. Late Holocene human occupation of the island was relatively substantial at sites like SBI-9 and future research should focus on the extent and variability of this occupation.

One of the most intensely debated topics in coastal California archaeology is determining the effects of drought or sea surface temperature perturbations during the Medieval Climatic Anomaly or Middle-to-Late Period Transition, dating from roughly AD 1100 to 1300 (Arnold 1992; Arnold et al. 1997; Jones et al. 1999; Kennett and Kennett 2000; Raab and Larson 1997; Yatsko 2000). Several researchers have argued that there was a dramatic reorganization of human settlement and social organization during this time period, including the abandonment of several island villages. Interestingly, Santa Barbara Island contains two sites (SBI-12 and -16) that yielded dates extending into this time period. The presence of these sites on small Santa Barbara Island raises questions about human responses to these proposed environmental disasters. Although occupation of SBI-12 appears to have been brief and specialized, faunal remains from the site clearly illustrate that people exploited a variety of fish and shellfish primarily from nearshore rocky intertidal and kelp bed habitats (Rick and Erlandson 2001). Further research could help evaluate the extent of human occupation on Santa Barbara Island during the Medieval Climatic Anomaly.

Following suggestions made by Glassow (1977), Greenwood (1978), Rozaire (1978), and Erlandson et al. (1992), detailed studies on island taphonomy and site disturbances should also be performed. The island appears to have been impacted by a variety of processes including wind and water erosion, argilliturbation, agriculture and grazing, and other processes. Argilliturbation, or the shrinking and

swelling of clay rich soils, appears to affect a number of Santa Barbara Island sites (Rick and Erlandson 2001; Snethkamp 1986). Unfortunately, the degree to which these processes have affected the island's archaeological record remains poorly understood. Taphonomic and site formation studies could be highly beneficial for improving future management plans and site stabilization efforts.

### Summary and Conclusions

Currently, 19 archaeological sites dating to the Middle and Late Holocene have been recorded on virtually all parts of Santa Barbara Island. Many archaeological projects have been conducted on the island, including the excavation of six of the island's sites. Several additional stopovers and expedient surveys have also been performed by a variety of archaeologists. Other than preliminary reports on survey and excavation projects, however, relatively little is known about the nature and extent of the island's human occupations.

While many of the island's archaeological sites are relatively discrete and appear to have been occupied for short periods of time, Santa Barbara Island has a wealth of archaeological data that pertain to a number of important regional archaeological topics. Unfortunately, the dearth of published literature on the island, its small size, and marginal terrestrial environment have helped peripheralize the island in regional prehistory. The presence of a variety of artifacts and faunal remains, however, indicate that the island may have served as more than just a stop-over used when traveling to nearby islands or the mainland (see Glassow 1977; Greenwood 1978). I hope future research will explore the topics outlined in this paper and provide a more detailed and comprehensive picture of Santa Barbara Island's rich cultural history.

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