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DEFINING THE HISTORIC LANDSCAPE ON EASTERN SANTA ROSA ISLAND: ARCHAEOLOGICAL INVESTIGATIONS AT *QSHIWQSHIW*

Todd J. Braje[1,4], Torben C. Rick[2], Leslie Reeder-Myers[2], Breana Campbell[1], and Kelly Minas[3]

ABSTRACT.—The Chumash village of *Qshiwqshiw*, located on eastern Santa Rosa Island, is described in ethnographic sources as one of the largest Chumash villages on the northern Channel Islands, with 4 chiefs and 119 baptisms according to mission records. The village is thought to correlate with 2 archaeological sites (CA-SRI-85 and CA-SRI-87) that contain large and dense shell-midden deposits. Despite the importance of these sites for helping understand Late (650–168 cal BP) and Historic (AD 1769–1830) Period Chumash lifeways, only limited surface collections, one small column sample, and 4 radiocarbon dates were previously available, leaving unanswered important questions about the chronology and structure of these sites. To help fill these gaps, we recently excavated, mapped, and obtained several new radiocarbon dates for CA-SRI-85 and CA-SRI-87. Radiocarbon dating and artifact analyses demonstrate that CA-SRI-85 served as an important Late Period village that had continued occupation into the Historic Period. Additional radiocarbon dates and glass beads confirm that CA-SRI-87 was likely the epicenter of Historic Period occupation, but testing also revealed that the site was occupied about 3000 years ago. The data paint a complex occupational history for both sites and provide the chronological and spatial context for future investigations into the historical ecology and cultural landscape of eastern Santa Rosa Island.

RESUMEN.—El pueblo Chumash de *Qshiwqshiw,* ubicado en la región oriental de la isla de Santa Rosa, es descrito en las fuentes etnográficas como uno de los pueblos Chumash más grandes de las Islas del Archipiélago del Norte, con cuatro jefes y 119 bautismos documentados en registros de la misión. Se cree que el pueblo esta correlacionado con dos sitios arqueológicos (CA-SRI-85 y CA-SRI-87) que contienen grandes y densos concheros. En contraste con la importancia de estos sitios para ayudar a entender los estilos de vida de los Chumash durante los Periodos Tardío (650–168 cal BP) e Histórico (1769–1830 AD), sólo están disponibles limitadas colecciones de superficie, una pequeña muestra de columna, y cuatro fechas de radiocarbono, dejando preguntas importantes abiertas sobre la cronología y la estructura de estos sitios. Para llenar estos vacíos de información, recientemente excavamos, mapeamos, y obtuvimos varias nuevas fechas de radiocarbono para CA-SRI-85 y CA-SRI-87. La datación por radiocarbono y el análisis de artefactos demuestran que la CA-SRI-85 sirvió como un pueblo importante del Periodo Tardío habitado continuamente hasta el Periodo Histórico. Fechas adicionales de radiocarbono y cuentas de vidrio confirman que CA-SRI-87 muy probablemente fue el epicentro de la habitación de la región durante el Periodo Histórico, pero las pruebas también revelaron que el sitio ya estaba habitado desde hace aproximadamente 3000 años. Estos datos dibujan una historia habitacional compleja para ambos sitios y proporcionan el contexto cronológico y espacial para investigaciones futuras sobre la ecología histórica y el paisaje cultural de la región oriental de la isla de Santa Rosa.

The arrival of Juan Rodríguez Cabrillo and his crew on the California Channel Islands in AD 1542–1543 aboard 3 Spanish ships marked the beginning of a turbulent period of transition and reorganization for the Chumash and other Native Californians (Wagner 1929). Although contacts between southern Californian Indian groups and the Spanish were sporadic over the next 200 years, epidemics (Erlandson and Bartoy 1995, Erlandson et al. 2001) and "crisis cults" (Bean and Vane 1978; Chartkoff and Chartkoff 1984:241) rapidly transformed the world for native peoples. The construction of Mission San Diego in 1769 coincided with the beginning of the Historic Period (AD 1769–1830) and signaled the beginning of an aggressive colonization campaign of Alta California by the Spanish. Anthropologists and historians have consulted ethnohistoric accounts, travel logs, and mission records to document and better understand the lifeways of native peoples at historic contact and the consequences of this meeting of different cultures (e.g., Kroeber 1925, Heizer 1955, Johnson 1999).

For Channel Island archaeologists, much of the Historic Period research has centered on

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identifying the roughly 22 or 23 villages (*rancherías*) named by Chumash consultants in the late 19th and early 20th centuries (Johnson 1999, 2001). Two ethnographic sources laid the foundation for archaeological ground-truthing: mission register data and ranchería locations as described by Chumash elders Juan Esteban Pico (Heizer 1955, McLendon and Johnson 1999) and Fernando Librado (Harrington 1913, Johnson 1982, Arnold 1990). Archaeologists have used radiocarbon dating, identification of metal tools, glass trade beads or other clearly European trade goods, and the presence of dense shell-midden deposits and house depressions to correlate historic rancherías with existing archaeological sites (Orr 1968, Arnold 1990, Johnson 1993, 1999, Kennett et al. 2000, Kennett 2005:91–104, Rick 2007a, 2007b).

After decades of ethnographic and archaeological research, many of the rancherías have been identified with a high degree of certainty. However, inconsistencies between aspects of the mission records and ethnohistoric accounts have resulted in some uncertainty about the names, locations, and number of rancherías at historic contact. Ethnohistorian and archaeologist John Johnson recently summarized the work of Channel Island archaeologists to archaeologically verify the historic island rancherías. He determined that only 2 village locations are "definite," 9 are "very likely," 4 are "likely," 5 are "uncertain," 2 are "possible," and 1 is "unknown" (Glassow 2010:3.6–3.15). Questions even remain about some rancherías Johnson believes to be "very likely." These include *Qshiwqshiw* (translated to "bird droppings"), which is thought to be located on the east end of Santa Rosa Island near the mouth of Old Ranch Canyon.

Qshiwqshiw is one of the largest island Chumash villages by baptismal counts (n = 119) and appears to have had 4 chiefs. Johnson and archaeologist Douglas Kennett (1998, 2005, Kennett and Conlee 2002) suggest that CA-SRI-85 and CA-SRI-87 are the most likely corresponding archaeological sites. Glass beads have been found at CA-SRI-87, but only limited fieldwork has been conducted at the 2 sites. It remains to be seen whether both sites were occupied historically or whether only CA-SRI-87 was occupied during the Historic Period, with CA-SRI-85 occupied during the Late Period. Here, we discuss our recent fieldwork at CA-SRI-85 and CA-SRI-87, which included extensive mapping and excavation of auger holes and a test unit, and we present a series of new radiocarbon dates that help define the chronology and occupational histories of these 2 important sites. Our data form the foundation for future investigations into the historical ecology and ethnobiology of eastern Santa Rosa Island.

Environmental and Cultural Context

At 217 km^2 Santa Rosa Island is the second largest of the northern Channel Islands and is situated 44 km off the mainland Santa Barbara coast, approximately 9 km west of Santa Cruz Island and 5 km east of San Miguel Island (Fig. 1; Schoenherr et al. 1999; Table 1). Much like the mainland coast and the other northern Channel Islands, Santa Rosa contains a variety of marine mammals and a diverse array of marine resources, including intertidal and subtidal shellfish, and nearshore, kelp forest, and pelagic fishes. The island supports terrestrial ecosystems, with several perennial streams, high mountain peaks, inland valleys, rolling tablelands, and vegetation communities including island chaparral, oak and riparian woodland, and the Torrey pine (*Pinus torreyana insularis*).

This rich marine ecosystem and its adequate terrestrial resources attracted the first island inhabitants some 13,000 (or more) calendar years ago (Johnson et al. 2002). The number and size of archaeological sites increased throughout the Holocene as more people occupied island habitats (Rick et al. 2005a). During the last 1500 years, however, many of the typically Chumash cultural traits, first described by Spanish explorers, took shape. Large coastal villages were established around the island perimeters; plank canoes (*tomols*) transported food stuffs, people, and trade items between the island and mainland; shell money beads became the standardized trade currency; and hereditary chiefs established sociopolitical authority (Arnold 2001, Kennett 2005, Rick et al. 2005a). Of the 22 or 23 northern Channel Island ethnohistoric villages, 9 were located on Santa Rosa Island, one of which was positioned on the far eastern end of the island near the mouth of Old Ranch Canyon.

Old Ranch Canyon is the largest drainage on the island and runs in a northwest–southeast direction. At its mouth is a large coastal plain and a small predominately freshwater marsh that, along with a similar system at the

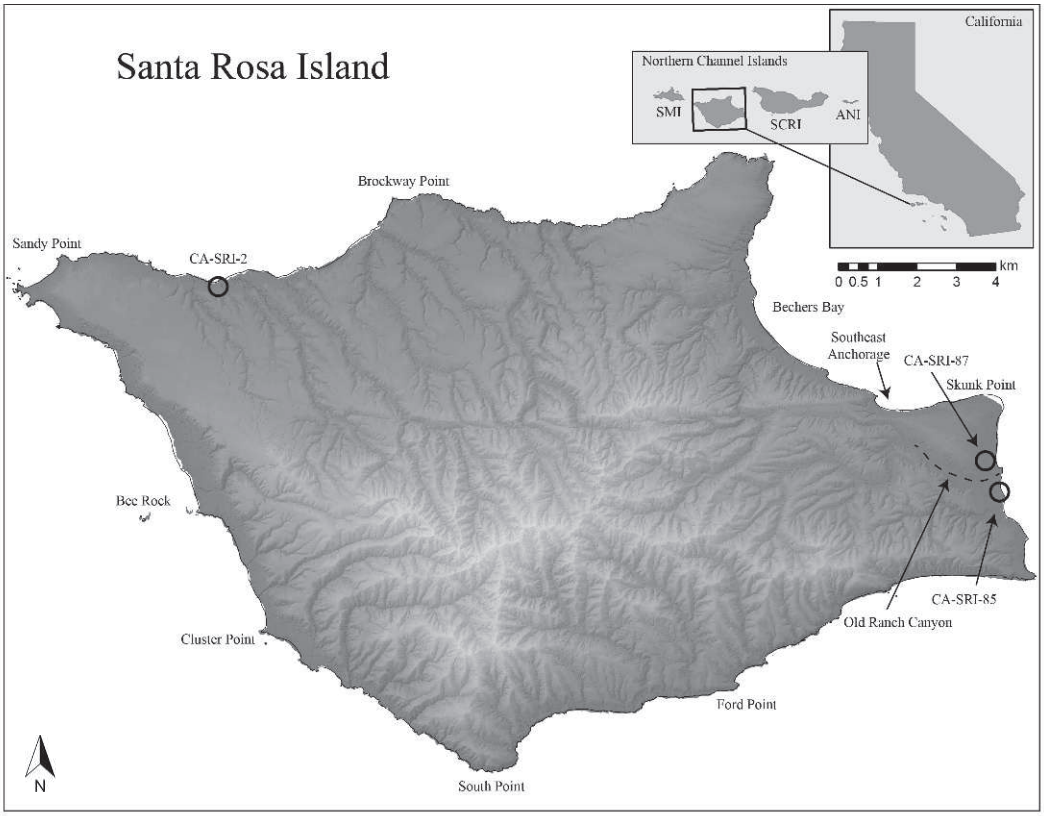

Fig. 1. Map of Santa Rosa Island, the Santa Barbara Channel Islands, and the archaeological sites and geographic features discussed in the text (base map by L. Reeder-Myers).

TABLE 1. Notes from auger-hole excavations at CA-SRI-85 and CA-SRI-87.

Auger	Depth (cm)	Notes
CA-SRI-85		
1	52	Possible house depression; fragmented shell visually dominated by *Olivella* shell
2	100	Possible house depression; dense midden with a variety of shell and fish bone
3	44	Possible house depression; dense shell midden
4	125	Possible house depression; dense midden with abundant shell and bone
5	90	Possible house depression; thin midden deposit
6	135	Possible house depression; 2 strata, one thin then a thick deposit in the lower 50 cmbs
7	89	Possible house depression; thin, moderately dense midden between 50 and 89 cm
8	79	Possible house depression; relatively thin midden deposit in loose sandy soil
9	84	Possible house depression; thin but dark midden soil from 50 to 84 cm
10	70	Dark but thin shell midden beginning at ~50 cm
11	135	Dark and dense midden soil at 80–135 cm; no visible house-depression feature
12	90	Thick midden throughout auger but no visible house-depression feature
13	75	Nearly sterile soil with a few shell fragments in the upper 20 cm
14	12	Sterile
15	20	Trace shell
16	12	One lithic artifact, no shell
17	45	Sterile
CA-SRI-87		
1	67	Moderately dense, highly fragmented shell in sandy matrix
2	157	Exceptionally dense shell midden in upper 80 cm
3	129	Similar deposits to auger 2, with sterile reached at 129 cm
4	105	Dense shell midden with abundant shell and bone remains
5	62	Highly fragmented but dense midden with abundant shell and *Olivella*

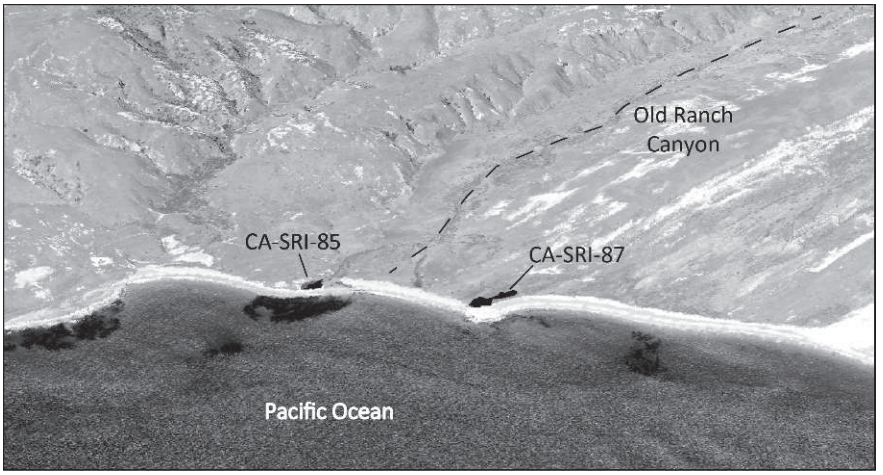

Fig. 2. Locations of CA-SRI-85 and CA-SRI-87, south and north of the mouth of Old Ranch Canyon. For scale reference, CA-SRI-85 is approximately 75 m at its widest point, parallel to the shoreline (by L. Reeder-Myers).

mouth of adjacent Old Ranch House Canyon, was once a large estuary between about 8000 and 5900 years ago (Cole and Liu 1994, Rick et al. 2005b). The mouth of Old Ranch Canyon is flanked by broad sandy beaches to the north and south and a surf-swept sandspit, Skunk Point, to the north. These habitats foster a variety of marine shellfish, seabirds, marine mammals, and other organisms. A recent archaeological survey of the entire canyon documented 46 archaeological sites with associated radiocarbon dates ranging in age from 8180 to 300 cal BP (Rick 2009:25). Even more sites may exist along the canyon bottoms, but these sites have not been identified due to heavy sedimentary accumulation and the introduction of dense, invasive grasses during the historical ranching period.

The 2 largest archaeological sites in the Old Ranch Canyon watershed are found at its eastern terminus, CA-SRI-85 and CA-SRI-87 (Fig. 2), and are the most likely locations for the historic village of *Qshiwqshiw*. In the 1880s, Pico described *Qshiwqshiw*'s location at the mouth of Old Ranch Canyon, but Johnson (1982) originally suspected that the information was incorrect and that the village was located to the northwest at Southeast Anchorage within Bechers Bay. Santa Barbara Museum of Natural History archaeologist Phil Orr (1968) identified a large Late Period village with 10 house depressions at CA-SRI-77, and Johnson (1982) thought that future fieldwork would produce artifacts or radiocarbon dates that would confirm a Historic Period occupation. A substantial historic occupation has never been verified at this site, however, even after repeated visits by Kennett (1998:218); and the majority of the deposits seem to represent Middle (2440–650 cal BP) to Late Period occupations and earlier settlement during the Middle Holocene (7500–3500 cal BP).

Orr (1968) also identified house depressions at the mouth of Old Ranch Canyon at CA-SRI-85. Located directly to the south of the canyon and bordered by a freshwater marsh to the north and a sandy beach to the east, CA-SRI-85 is positioned on a small terrace with deep midden deposits (50–150 cm) visibly eroding from the coastal sea cliff and the drainage front. Much of the site surface is heavily vegetated with low-lying grasses. When Orr first recorded the site, he noted 8 house depressions but no other features or artifacts. Orr recorded the midden at CA-SRI-87 as being directly to the north and separated by approximately 300 m of sandy beach, but he did not report any features or artifacts. CA-SRI-87 is positioned immediately beyond a rocky outcrop to the east. Much of the site is covered by sand and grasses, but dense midden caps a small dune feature running to the northwest.

During an archaeological survey in the early 1990s, National Park Service archaeologist Don Morris identified 8 house depressions and 4 glass trade beads at CA-SRI-87. Subsequent

work at the site by Kennett (1998:218, 2005: 99) recovered several needle-drilled *Olivella*[1] wall beads and at least one glass bead. These findings confirm that CA-SRI-87 is probably the location of *Qshiwqshiw*. However, no radiocarbon dates were obtained, and questions remain about how long the site was occupied. Additional archaeological testing was conducted by archaeologist Ann Munns a little more than a decade ago, but the results of her research have not yet been reported. More recent visits to the site by Rick during 2003–2005 found a site that was well vegetated, with no evidence of house depressions or other features apart from shell midden on the surface.

As part of an effort to document the location of Historic Period villages across Santa Rosa Island, Kennett (2005) obtained 3 radiocarbon dates at CA-SRI-85, along with an earlier date run by ichthyologist Carl Hubbs (as cited in Kennett 1998:458), which all suggested a Late Period occupation. Here, we address 3 interrelated research questions: (1) when people first began to occupy CA-SRI-85 and CA-SRI-87; (2) whether both CA-SRI-85 and CA-SRI-87 were occupied during the Late and Historic periods; and (3) whether CA-SRI-85 was alternatively the locus of a Late Period occupation that was abandoned and relocated to CA-SRI-87 at historic contact.

METHODS

During summer 2012, we visited CA-SRI-85 and CA-SRI-87 to conduct site mapping and subsurface excavations and to collect shell samples for radiocarbon dating. We worked closely with Chumash monitors in order to minimize our impact on these relatively well-preserved deposits while still obtaining information that will assist in understanding the chronology and structure of these 2 sites. Our fieldwork focused on mapping the site features, determining the horizontal and vertical extent of archaeological deposits, and obtaining marine shell samples for radiocarbon dating from in situ shell-midden deposits. High-precision mapping was conducted using a laser transit. Topographic data, house-depression locations and sizes, site boundaries, and locations of augers and test units were all recorded, and maps were drafted using ArcGIS 10.1.

Seventeen auger holes were excavated at CA-SRI-85, along with 5 at CA-SRI-87. These holes were positioned to determine the site boundaries and the depth of site deposits and to obtain radiocarbon samples from various locations at the site. At CA-SRI-85, augers helped ground-truth surface features where possible house depressions are still visible on the surface. All auger samples and a 1.0 × 0.5-m excavation unit at CA-SRI-85 were screened over 1/16-inch mesh to maximize the collection of beads and other small artifacts and ecofacts.

Radiocarbon dates were obtained on single marine-shell fragments collected in situ from site deposits and were analyzed by the National Ocean Sciences AMS (NOSAMS) facility at Woods Hole Oceanographic Institute or the DirectAMS facility in Seattle, Washington. To remove any contaminants prior to dating, all specimens were etched in dilute hydrochloric acid to remove the outer shell layers that are most susceptible to diagenesis. Specimens were then rinsed in distilled water and processed according to standard laboratory procedures and methods at NOSAMS or DirectAMS. All radiocarbon dates, including those run by earlier researchers, were calibrated using CALIB 6.0 and the Marine09 calibration curve (Reimer et al. 2009); an R of 261 ± 21 was applied for all marine samples (see Jazwa et al. 2012:73).

RESULTS

Our field research at CA-SRI-85 helped identify the site boundaries and density of subsurface deposits (Fig. 3). The main site area at CA-SRI-85 is approximately 2060 m^2 and is bordered by a freshwater marsh to the north and a sandy beach to the east. The southwestern site area is bordered by a thin 990-m^2 lithic scatter that is visible within de-vegetated blowouts.

At CA-SRI-85, auger holes were positioned at the center of possible house depressions and along 2 perpendicular, linear transects to help determine the site boundaries. Nine house depressions were tentatively identified based on surface features and the presence of thick midden deposits that formed a circular shape (Table 1). These features ranged in depth from 44 cm to 135 cm, and most contained dense

[1]The genus name for purple olive snail shells has recently changed from *Olivella* to *Callianax*. Since *Olivella* has been used for over 100 years in the archaeological literature, we will continue to use it for consistency.

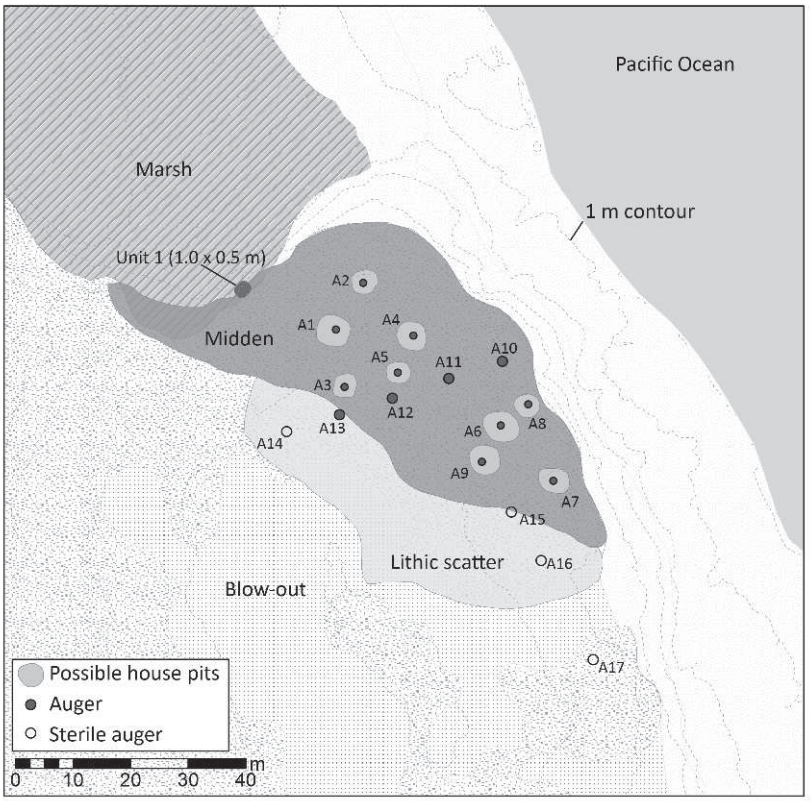

Fig. 3. Map of CA-SRI-85 showing the site boundaries and location of possible house features, auger holes, and excavation unit (by L. Reeder-Myers).

deposits of shell and bone, with limited numbers of artifacts such as chipped stone and whole and broken *Olivella* shell. Unfortunately, sea cliff erosion and trampling and erosion from cattle and sheep grazing may have destroyed or obscured additional house features. The only way to confidently determine the exact number of houses will be with large-scale subsurface excavations that can identify subsurface house floors.

Three new radiocarbon dates were obtained on well-preserved California mussel (*Mytilus californianus*) shell collected from the south wall of unit 1 (Table 2). Eleven new radiocarbon dates also were obtained from the best preserved and deepest auger holes at CA-SRI-85. The 1-sigma age range of these dates combined with the 4 radiocarbon dates run by earlier researchers suggests an occupation at CA-SRI-85 between 1230 and 250 cal BP. Together, these 18 radiocarbon dates indicate a late Middle Period to Historic Period occupation. The artifact assemblage recovered from both the auger holes and unit 1 is dominated by *Olivella* wall and callus cup beads, *Olivella* bead-production detritus, utilized/retouched flakes, chert cores, microblades, and microdrills. Though analysis is still ongoing, no clearly European artifacts such as glass trade beads, needle-drilled beads, or bottle glass have been identified. However, careful measurement of the perforation diameters and maximum bevel widths and identification of perforation types of *Olivella* wall beads from CA-SRI-85 will help identify any needle-drilled beads from our assemblage (see Graesch 2001).

The only auger hole to produce a radiocarbon date with a 2-sigma age range clearly within the Historic Period was auger 7, taken from the possible house depression at the far southeastern extent of the site (Fig. 3). The radiocarbon chronology suggests that the central and northwestern portion of the site was occupied during the Late Period, with the Historic

TABLE 2. Radiocarbon dates from CA-SRI-85 and CA-SRI-87.[a]

Site no.[b]	Provenience	Lab no.	Material[c]	Conventional ^{14}C age	Calibrated age (cal BP, 1 sigma)	Calibrated age (cal BP, 2 sigma)	Calibrated age (cal AD/BC, 2 sigma)	Source
SRI-85a	Unit 1, 0–10 cmbs	Beta-96870	*Hc*	1060 ± 60	500–370	520–300	AD 1430–1650	Kennett 1998
SRI-85b	Sample A3, unit 1, 70–80 cmbs	Beta-107044	*Mc*	1270 ± 60	640–540	680–500	AD 1270–1450	Kennett 1998
SRI-85c	Sea-cliff profile, 120 cmbs	Beta-100513	*Mc*	1300 ± 80	665–540	750–490	AD 1200–1460	Kennett 1998
SRI-85d	Auger 1, 47 cmbs	D-AMS 002805	*Mc*	1015 ± 30	450–335	470–300	AD 1480–1650	This study
SRI-85e	Auger 2, 10 cmbs	D-AMS 002806	*Mc*	1145 ± 30	530–475	560–440	AD 1390–1510	This study
SRI-85f	Auger 2, 95–100 cmbs	D-AMS 002807	*Mc*	1545 ± 30	880–780	910–735	AD 1040–1215	This study
SRI-85g	Auger 3, 25 cmbs	D-AMS 002808	*Mc*	1330 ± 30	670–605	690–550	AD 1260–1400	This study
SRI-85h	Auger 4, 123 cmbs	D-AMS 002809	*Mc*	1140 ± 30	520–470	550–435	AD 1400–1515	This study
SRI-85i	Auger 5, 50 cmbs	D-AMS 002810	*Mc*	1020 ± 30	455–340	475–305	AD 1475–1645	This study
SRI-85j	Auger 6, 5–10 cmbs	D-AMS 002811	*Mc*	1015 ± 30	450–335	470–300	AD 1480–1650	This study
SRI-85k	Auger 7, 8 cmbs	D-AMS 002812	*Mc*	890 ± 25	310–250	380–145	AD 1570–1805	This study
SRI-85l	Auger 8, 15 cmbs	D-AMS 002813	*Mc*	1060 ± 30	485–410	500–330	AD 1450–1620	This study
SRI-85m	Auger 9, 15 cmbs	D-AMS 002814	*Mc*	985 ± 25	410–320	450–290	AD 1500–1660	This study
SRI-85n	Auger 9, 80–84 cmbs	D-AMS 002815	*Mc*	1095 ± 30	500–440	530–400	AD 1420–1550	This study
SRI-85o	Unit 1, 5–10 cmbs, South Profile	OS-98749	*Mc*	1380 ± 25	660–730	700–640	AD 1210–1330	This study
SRI-85p	Unit 1, 25–30 cmbs, South Profile	OS-98748	*Mc*	1550 ± 20	880–790	910–750	AD 1040–1200	This study
SRI-85q	Unit 1, 45–50 cmbs, South Profile	OS-98747	*Mc*	1880 ± 20	1230–1150	1260–1100	AD 690–850	This study
SRI-87a	Auger 2, 140–14 cmbs, Bottom	OS-98746	*Mc*	3670 ± 25	3335–3245	3370–3190	1420–1240 BC	This study
SRI-87b	Auger 3, 5–10 cmbs, Top	OS-98745	*Mc*	815 ± 20	250–145	270–90	AD 1680–1860	This study
SRI-87c	Auger 3, ~120 cmbs, Bottom	OS-98744	*Mc*	995 ± 20	420–330	450–300	AD 1500–1650	This study
SRI-87d	Auger 5, 50–53 cmbs, Bottom	OS-98743	*Mc*	890 ± 30	320–240	380–145	AD 1570–1810	This study

[a]An additional radiocarbon date (Lab # LJ-0514) was obtained by Hubbs from CA-SRI-85 from charcoal in a hearth. The radiocarbon date yielded a conventional ^{14}C age of 970 ± 250; however, we have not included this date due to the large error range and lack of provenience information.
[b]Letters next to site numbers correspond to calibrated age designations in Fig. 5.
[c]*Hc* = *Haliotis cracherodii*, *Mc* = *Mytilus californianus*.

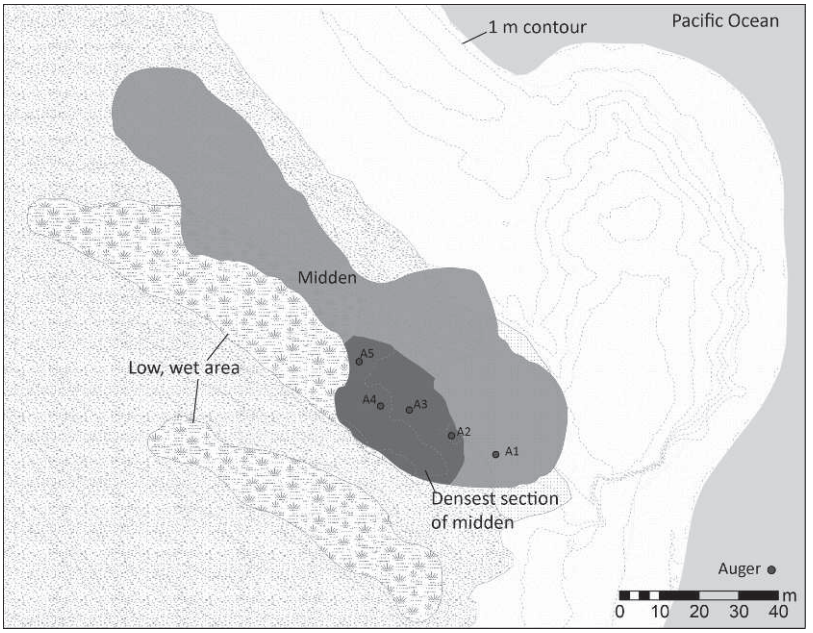

Fig. 4. Map of CA-SRI-87 showing the site boundaries and location of auger holes (by L. Reeder-Myers).

Period occupations concentrated in the southern portion of the site. The midden deposits from auger 7 are relatively stable, and the lack of clearly Historic Period artifacts (metal drills, glass beads, bottle glass, etc.) may be best explained by spatial changes during the occupation of CA-SRI-85.

With no house depressions currently visible on the surface at CA-SRI-87, we positioned auger holes along a linear transect, sampling the thickest shell-midden deposits (Fig. 4). Auger samples revealed deep and thick shell-midden deposits, ranging from 62 to 157 cm, many as thick or thicker than those at CA-SRI-85. These results suggest that house features may exist at CA-SRI-87 but are likely buried below historic dune sands and thick vegetation cover. Large-scale excavations will be the only means of positively identifying living floors and other domestic features at the site.

Bordered on the east by rocky intertidal and sandy beaches and to the west by wetlands, CA-SRI-87 measures at least 6750 m^2, with the thickest shell-midden deposits likely concentrated in a 1230-m^2 area. Auger samples produced very few artifacts, other than fragmented *Olivella* shell, likely used in bead production, and thick accumulations of shell and fish, bird, and sea mammal bone.

Four radiocarbon dates were obtained on well-preserved California mussel shell fragments from CA-SRI-87. Three of the dates, which are from the basal deposits of augers 3 and 5 and the top of auger 3, span the Protohistoric (AD 1542–1769) to Historic Periods, ranging in age from 420 to 145 cal BP. These radiocarbon dates, the first obtained for CA-SRI-87, combined with the glass trade beads and needle-drilled *Olivella* beads recovered by earlier researchers (Kennett 2005:99), suggest that this area was part of the historic village described by Chumash elder Pico. The deposits at the base of auger 2 also produced a 1-sigma age range of 3335 to 3245 cal BP, suggesting that the site was occupied beginning as early as the early Late Holocene (3500 cal BP to present).

CONCLUSIONS

Our mapping, radiocarbon dating, and subsurface excavations suggest that the historic village of *Qshiwqshiw* likely consists of 2 localities: CA-SRI-85 and CA-SRI-87. The primary village during the late Middle Period to Late Period was located at CA-SRI-85. During the Historic Period, *Qshiwqshiw* was expanded to occupy landforms at CA-SRI-87, with a contracted

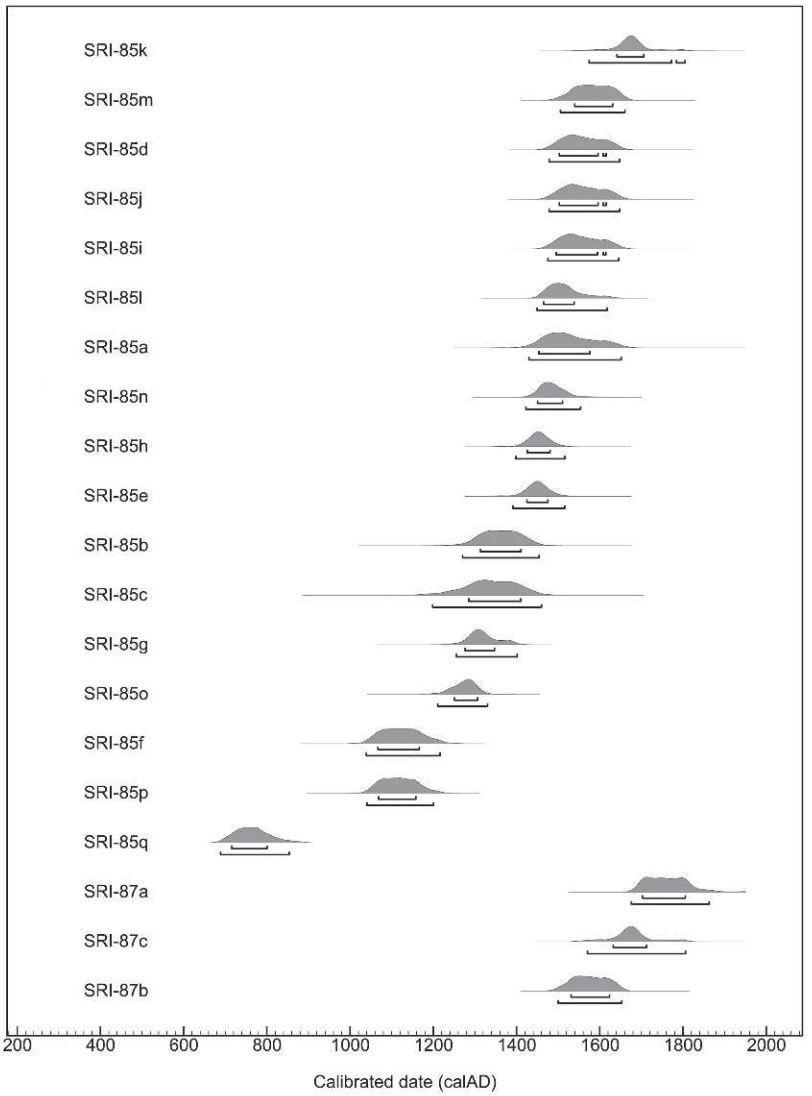

Fig. 5. Radiocarbon chronology for CA-SRI-85 and CA-SRI-87. One- and 2-sigma age ranges are expressed in calibrated years AD (by T. Rick).

historic occupation at CA-SRI-85 concentrated in the southeastern portion of the site. The degree of historic land use at CA-SRI-85 is still uncertain, but the locality seems to primarily be a Late Period village occupied prior to first Spanish arrival. Setting aside the 3200-year-old date from CA-SRI-87 that clearly represents an earlier site component, the 2-sigma radiocarbon age ranges at CA-SRI-85 and CA-SRI-87 suggest a likely Late to Historic Period land-use scenario at the mouth of Old Ranch Canyon. The youngest end of the calibrated radiocarbon age ranges at CA-SRI-85 and the oldest end at CA-SRI-87 suggest that human occupation of the large Late Period village at CA-SRI-85 was contracted right before or was coincident with first contact with Cabrillo and his crew in AD 1542 (Fig. 5). Shortly thereafter, during the more than 200-year period between first contact and the beginning of the California Mission Period, CA-SRI-85 was occupied by a smaller community concentrated in the southeastern portion of the site, with the epicenter of the historic village of *Qshiwqshiw*

established at CA-SRI-87. Determining whether this pattern of land use was due to the introduction of Old World diseases (see Erlandson and Bartoy 1995, Erlandson et al. 2001), human impacts on local subsistence resources, or some other reason will require continued archaeological investigation.

The apparent absence of other potential historic village sites on eastern Santa Rosa Island is also supported by recent radiocarbon dating of most of the shell middens in the Old Ranch vicinity (see Kennett 1998, Rick 2009). The exception is CA-SRI-700, a rockshelter in Old Ranch Canyon that produced needle-drilled beads and which is a likely satellite location used by people who lived at CA-SRI-87 or possibly CA-SRI-85 (Rick 2009).

Our study suggests that historic Channel Island villages are located on ideal settings that often supported earlier occupations, sometimes several millennia before the Historic Period. CA-SRI-87, for example, was first occupied at least 3200 years ago. Similarly, Rick's (2007b) excavations at the historic village of *Niaqla* (CA-SRI-2), located on the northwest coast of Santa Rosa Island, produced a radiocarbon date of ca. 4300 cal BP from a small midden deposit at the site. Arnold (2001) and colleagues also have identified Chumash villages that were occupied from the Middle Period through European contact. Because many of the island Chumash villages are situated along highly productive coastlines and are in close proximity to freshwater, it is likely that earlier components are buried below many of these village sites.

Our research reaffirms findings by a variety of other archaeological studies that landscape use during the Late and Historic Periods was dynamic and included more than the large coastal villages identified in the enthnohistoric records. Several sites that have been identified and dated to the Historic Period are unnamed by ethnohistoric sources, including rockshelters on San Miguel (CA-SMI-516; Rick 2007a), Santa Rosa (CA-SRI-700; Rick 2011: 280), and Anacapa (Rick 2011) Islands and ceremonial shrine sites and temporary campsites on Santa Cruz Island (Glassow 2010:3.12; Perry 2007). Though identifying and ground-truthing the large coastal Chumash villages mentioned in enthnohistoric records will continue to be an important avenue of future research, archaeologists need to investigate the longer history of land use at these sites and consider Historic Period landscape settlement patterns that were dynamic and diverse.

The use of relatively low-impact techniques—such as intensive radiocarbon dating, detailed site mapping, and auger testing—will continue to be a critical part of investigating large Chumash villages on both the islands and the mainland. These sites represent some of the most important areas for better understanding the evolution of sociopolitical complexity, the anthropogenic impacts on marine and terrestrial ecosystems, and the complex interplay between humans and their environments. A detailed understanding of chronology, occupational history, and settlement size at these sites is essential baseline information for building broader archaeological and historical ecological research programs.

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