

ARCHAEOLOGY OF THE ISLANDS IN THE SAN LORENZO CHAIN, GULF OF CALIFORNIA, MEXICO

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The peninsular-side islands in the Midriff region of the Gulf of California are sometimes referred to as the San Lorenzo chain. Until recently, the archaeology of these islands was completely unknown. Basic exploration conducted since 2004 has shown that nearly every major island in this archipelago was exploited by indigenous peoples, some intensively. Although the resources of each island, and hence the archaeological assemblages, are distinctive, there are many elements in common. Sites include camps, quarry-workshops, and feature-rich localities of unknown function. Most artifacts are simple flaked stone tools that emphasize useful working edges rather than overall form. Milling stones are unshaped but some are well-used. Features include stone circles, piled rock enclosures, talus pits, rock clusters, and rock cairns. In general, the archaeological record appears to be a simplified version of the Comondú culture of the adjacent peninsular coast. However, one site is a historic Seri camp, and linguistic and historical evidence suggests that these people may have travelled widely among the islands. Regional chronology suggests that native peoples could have exploited the islands over several millennia, raising the possibility that they might have had a significant role in shaping modern insular ecosystems. Although we need more information on the prehistory of the archipelago, one island, Rasa, also offers a superb opportunity for historic archaeological investigations.

The Midriff islands span the narrowest part of the Gulf of California between latitudes 28° and 30° north (Figure 1). The two large islands on the Sonoran side, Tiburón and San Esteban, are known from surveys conducted during the 1970s and 1980s (Bowen 1976, 2000; Villalpando 1989), but the islands on the peninsular side, sometimes referred to as the San Lorenzo chain, have been complete blanks on the archaeological map. Since 2004, four colleagues and I have been conducting fieldwork in this archipelago, and this now includes the major islands of San Lorenzo, Las Ánimas (San Lorenzo Norte), Salsipuedes, Rasa, Partida Norte (Cardonosa), Ángel de la Guarda, and several smaller islands.

I emphasize that our work has been archaeological exploration of the most basic sort. Our objective has been simply to determine if indigenous peoples made use of these islands, and, if they did, to ask who they were, when they were there, and what they were doing. By keeping questions basic, we have been able to limit our field methods to simple non-destructive observation. By neither collecting nor excavating, we have left the archaeological record intact.

MAJOR ELEMENTS OF THE ARCHAEOLOGICAL RECORD

Our observations show that indigenous peoples made use of nearly every major island in the San Lorenzo chain. In general, the island assemblages can be considered stripped-down versions of the cultural pattern of the adjacent peninsular coast. Cultural elements missing entirely include true shell middens, burials, rock art, mission-influenced

ceramics, and bone and shell ornaments. Other elements are rare, including projectile points, faunal remains, and evidence of fire.

On the other hand, certain artifacts and features are common to all, or nearly all, of the islands. Artifacts include simple percussion-flaked core and flake tools, quarry-workshop debris, and milling stones. Many tools are large primary flakes that have been retouched along one edge. Core tools are often domed -- steeply convex on one face and flat or nearly flat on the opposite face. Apparently, overall form was unimportant; the intent was to produce useful working edges for specific tasks, including chopping,



Figure 1. The Midriff region of the Gulf of California.

cutting, scraping, planing, and gouging. Gouging seems to have been especially important, to judge from the abundance of beaked tools and denticulates. Many denticulates have two well-defined teeth, and some even have three (Figure 2). The only flaked artifacts made to a standardized form are oval bifaces, which are both common and often broken. Whether these are themselves tools or are preforms is uncertain. Some apparently finished specimens are thick and characteristically domed, while others have been carefully thinned.



Figure 2. Denticulate of local rhyolite with three teeth and a flaked thumb rest. Isla San Lorenzo.

Many rock types were used, but nearly all were available locally. Favored materials include crystalline quartz, quartzite, chalcedony, a dark gray basalt, and a fairly good pink or brown rhyolite. Obsidian was extensively quarried on Isla Ángel de la Guarda but apparently for export (Ritter 2006a:174) as the island has virtually no finished obsidian tools. Shells, mostly large *Dosinia* clams, were also flaked and made into cutting or scraping tools. Milling stones -- metates and manos -- are generally water-worn rocks with naturally flat or basin-shaped faces. Although used without shaping, some show extensive wear on the grinding surfaces.

Rock structures are common features and on some islands are much more prevalent than artifacts. The most widespread structures are stone circles and arcs (Figure 3), which we have found on nearly every island. They typically consist of about six to 12 individual rocks placed on the ground in a circular or oval pattern, with an inside diameter usually between 1 m and 2 m. Although some are complete circles or ovals, most have an opening on one side, and many are semicircles or arcs. A single stone circle can sometimes be found at camps or quarry-workshops, but most are isolated features, unassociated with other remains. Nevertheless, a careful search in the general vicinity of one circle will sometimes turn up others.

Also widespread among the islands but much less common are piled rock enclosures (Figure 4). These range



Figure 3. Stone circle, 105 cm long, 95 cm wide (inside dimensions), with an opening 65 cm wide facing northwest. Isla Ángel de la Guarda. Photo looks east.



Figure 4. Piled rock enclosure, 230 cm long, 160 cm wide (inside dimensions) with walls 40 cm high, an opening 70 cm wide facing east, and a cleared interior. Isla Ángel de la Guarda. Photo looks north-northwest.

from vague circles or ovals to well-defined structures with walls of rocks piled up to four high. Most are open on one side, and some are no more than semicircles. Inside diameters are typically between 1 m and 2.5 m. Maximum wall heights may be as high as 70 cm, often tapering toward the opening. In most cases, no attempt was made to remove rocks from the interior of the structure. Some, however, were partially cleared, and a few enclosures were carefully cleared of all rocks, exposing the soft underlying silt.

Piled rock enclosures sometimes occur in groups and in association with debitage and shell fragments. These are presumably sleeping shelters or windbreaks (Aschmann 1967:108-110). They are probably similar to the eighteenth-century "houses" described by del Barco (1981:46 [ca. 1770s]), who observed that they were so small the Indians could not stretch out in them. Isolated enclosures on high ridges and summits may have had more esoteric functions.

Talus pits are more or less circular depressions where rocks were removed from talus slopes. In some cases, a few of the rocks were piled on the downhill edge of the pit. Pits are typically around 1 m in diameter and vary from about 30 cm to 80 cm deep, measured from the downhill edge. We have found them only on Islas Partida Norte and Ángel de la Guarda.

Rock clusters usually consist of about 15 to 20 rocks gathered together into a circular or oval aggregation, in most cases between 1 m and 2 m in diameter. Although not abundant, we have found them on most islands and in a variety of settings, including ridges and hilltops. Their function is unknown.

Rock cairns (Figure 5) are widespread but scarce on all islands except Ángel de la Guarda. They range in form and size from a single rock placed on an underlying boulder to massive mounds, consisting of as many as 40 large rocks, and measuring up to 2 m in diameter and 1 m in height (see below).



Figure 5. Rock cairns approximately 60 cm high. Isla Ángel de la Guarda. Photo looks east.

We have also found a few well-worn trail segments, but only on Isla Ángel de la Guarda.

OVERVIEW OF INDIVIDUAL ISLAND ASSEMBLAGES

Despite these common elements, the assemblage of each island is distinctive and probably reflects individual combinations of topography, food resources, availability of fresh water, raw materials, and perhaps factors related to aesthetic and spiritual needs, as the following summary suggests:

Isla San Lorenzo is topographically rugged, and much of the island appears to be archaeologically sterile. The few recorded sites are predominantly small quarry-workshops, located mainly at quartz outcrops. Some are accompanied by stone circles. The most distinctive site is situated on a high plateau at an elevation of 300 m. It consists of a V-shaped linear rock alignment, two rock clusters, and three stone circles. One circle includes outlier rocks that accurately mark the cardinal directions (Figure 6). *Tinajas* (bedrock pools) in two locations may hold water after a rain, but fresh water is clearly scarce and temporary. Although there are a few isolated metates, we have found only two small camps, one of which is Seri (see below).



Figure 6. Stone circle with eight outlier rocks marking the cardinal directions. Inside diameter 290 cm. Isla San Lorenzo. Photo looks east.

Isla Las Ánimas and Isla San Lorenzo were a single island until the mid-Holocene when sea levels reached their modern high stand. Today, the two islands are separated by a channel less than 120 m wide and only about 1 m deep at low tide, yet their flora, fauna, and archaeological assemblages are distinct. Unlike San Lorenzo, flaked stone tools are common on Isla Las Ánimas and are scattered throughout the island. Strangely, these include agave (mescal) knives (Figure 7; see also Bowen 2000:375-376) even though the island today has no agave. Structures are also common, consisting mainly of partial stone circles plus a few rock clusters and cairns. Several *tinajas*, concentrated in one locality, hold water after



Figure 7. Giant agave knife of local rhyolite in situ. It is bifacially flaked, 21.8 cm long, 16.5 cm wide, and 6.0 cm thick. Isla Las Ánimas.

a rain, but we have found no camps, no metates, and only a single doubtful mano.

Resource-poor Salsipuedes has a meager cultural record, consisting mainly of two small flake and shell scatters, a few simple core and flake tools, a well-used metate, three rock clusters, and four stone circles. Since the island has no water, it may be that indigenous people spent little time there. However, the island is a favorite anchorage of modern recreational boaters, and there is considerable physical and anecdotal evidence of their onshore activities. It is certainly possible that a formerly much richer archaeological record has been destroyed by unauthorized collecting.

Isla Rasa is a tiny, waterless, and geologically recent basalt platform. It is famous today as a nesting site for hundreds of thousands of sea birds, which might have provided native peoples with a virtually limitless supply of eggs each spring. Unfortunately, the island was mined for guano during the nineteenth century. This activity obliterated nearly the entire surface of the island, including whatever cultural remains native peoples might have left there.

The cultural record of Isla Partida Norte includes flaked stone tools and debitage, two isolated metates, several rock clusters, talus pits, and poorly defined stone circles. It also includes two heavily used camps, one with piled rock enclosures that make effective windbreaks. These camps are probably related to the island's dense forests of dwarf cardon cactus, which in summer could have supplied literally tons of ripe fruit for immediate consumption, and seeds that could have been ground and stored (see Aschmann 1967:81). Both camps contain well-used metates and manos, suggesting occupation by family groups since neither Cochimí nor Seri men used these implements. Although the island has no known fresh water sources, cardon fruit might have supplied the fluid requirements of visiting Indians for considerable periods. Small game might also have provided a food source. The island's talus slopes are important nesting sites for least

storm petrels (*Halocyptena microsoma*) and black storm petrels (*Oceanodroma melania*), and they serve as day roosts for fish-eating bats (*Myotis vivesi*). It is tempting to speculate that the talus pits in these slopes are the result of hunting these small animals.

Ángel de la Guarda, by far the largest island in the group, has often been thought waterless and uninhabited (see Bowen 2000:480). Neither is correct. To date, we have seen more than 60 *tinajas* containing water, and some of these unquestionably retain water for many months. We have also found extensive archaeological evidence of native peoples throughout the island.

Several sites are clearly camps. Two are shoreline camps, and these are the only sites among the islands that have yielded direct and substantive evidence of indigenous diet. Faunal remains include mollusk shells and the bones of fish, sea turtles, and especially sea lions. Well-used metates at these two sites offer indirect evidence of plant foods. Other camps consist of debitage, shell fragments, and, in one case, 27 piled rock enclosures.

The island's flaked stone tool assemblage is unremarkable except for three undiagnostic leaf-shaped projectile points and a giant biface nearly 26 cm long (Figure 8). We have also found several agave knives, no surprise in view of the local abundance of an edible agave (*Agave cerulata cerulata*). Metates and manos commonly occur at camps and sometimes in isolated locations.



Figure 8. Giant biface of local rhyolite in situ. It is 25.8 cm long, 11.4 cm wide, and 3.7 cm thick. Isla Ángel de la Guarda.

On the whole, features on Isla Ángel de la Guarda predominate over artifacts. The entire range of Midriff island structures is represented, including stone circles, piled rock enclosures, talus pits, rock clusters, rock cairns, and trails. One kind of structure we have seen nowhere else is a "backrest clearing" (for want of a better label), which consists of a narrow horizontal excavation or clearing in front of a more or less vertical bedrock or boulder face, an arrangement that would allow a person to rest his or her back against the vertical surface with legs stretched out in front.

What sets Ángel de la Guarda apart, however, is its literally thousands of piled rock cairns. Most, but not all, are situated on high ridges, often in long lines, and positioned so as to appear on the skyline from the valley below. Cairns occur throughout the island, but especially on the southeastern coast, where we have counted more than 2,500 in an area of less than 10 km². They sometimes occur with piled rock enclosures, but rarely with artifacts. Although their function is unknown, it might be related to an eighteenth-century Cochimí religious practice. According to Clavigero (1971:110-115 [1789]), the Cochimís periodically celebrated a visit from a deity, referred as “the Man come from Heaven” (p. 110), with a day of feasting and dancing. In preparation for the visit, shamans required penitents “to open some new road in the mountains so that the spiritual visitor [impersonated by a Cochimí youth] could descend with more ease and to erect on it at certain distances some heaps of stones on which he might rest” (Clavigero 1971:115 [1789]).

Some cairns on Ángel de la Guarda are hollow. These strange features consist of a circle of piled rocks overlain by slabs that form a “roof,” thereby creating a structure in the form of a cairn but with an empty interior. Some, but not all, occur at camps. They are, to say the least, enigmatic.

CULTURAL IDENTITY AND CHRONOLOGY

The obvious similarities between the cultural remains of the islands and the adjacent peninsular coast (Ritter 1998; Ritter et al. 1994) suggest that the island assemblages are predominantly the product of local Cochimí Indians and their late prehistoric predecessors, referred to archaeologically as the Comondú culture (Ritter 2006b:102). Unfortunately, this is hard to support empirically because nearly all artifacts and structures are forms widespread in space and time, and hence of little diagnostic value. Additionally, we know almost nothing about the extent of Cochimí sea voyaging. Although they used the cane *balsa*, by the time the Jesuits described them they seldom paddled far from the peninsular coast (Burrus 1967:29).

In the Midriff region, the Seri Indians have often been portrayed as the great sea voyagers and, as the Seris themselves assert, the people who lived on Isla San Esteban were the undisputed masters of the *balsa*. Seri oral history tells of San Esteban Seris paddling to Isla San Lorenzo and staying as long as a year (Bowen 2000:23). In 2004 we discovered hard evidence of these voyages in the form of a historic Seri camp on the west coast of San Lorenzo (Bowen 2005). Although most of the artifacts are undiagnostic, 20 sherds of historic Seri pottery provide unequivocal identification of the site as Seri. Not only did the Cochimí not make pottery at all (except under mission influence), but Seri pottery is distinctive and usually cannot be mistaken for anything else.

Hints of Seri voyaging to islands in the San Lorenzo chain have been accumulating. Nineteenth century documents accuse the Seris of using these islands as staging areas for raids on the peninsula (Bowen 2000:231-233). Although Seris have not visited most of these islands in the remembered past, linguist Stephen Marlett has elicited traditional Seri names for the majority of them (Moser and Marlett 2005). With these factors in mind, we have actively searched for other historic Seri camps, especially on Isla Ángel de la Guarda. However, finding one would be largely a matter of luck -- a camp can only be identified as Seri if some poor soul broke a pot there.

I am purposely restricting this discussion to the historic period because, apart from the Seri camp, we have no chronological data whatever. All we can say is that the *potential* time depth for human use of the islands is great. Clovis or Clovis-like points have been found on both sides of the Gulf (Hyland and Gutiérrez 1996; Sanchez 2001), and the cane *balsa* has been widely construed as an ancient form of watercraft (Heizer and Massey 1953). Hence it is entirely possible that people have been visiting the islands since the late Pleistocene.

IMPLICATIONS FOR MODERN INSULAR ECOSYSTEMS

Whether from the mainland or the peninsula, the evidence of native peoples exploiting nearly every island in the San Lorenzo chain has important implications for understanding modern insular ecosystems, a point not all our biological colleagues appreciate. Although the islands have astonishingly few introduced Old World species, indigenous peoples might have played a significant role in dispersing *native* plants and animals within the Midriff region, either by accident or intent (reviewed by Nabhan 2003:70-97). For example, the black chuckwalla (*Sauromalus hispidus*) on Islas Ángel de la Guarda and San Lorenzo are morphologically and genetically indistinguishable, and some biologists suspect that the San Lorenzo population was introduced there by Seris in the comparatively recent past (Case 2002:237-238). Other possible translocations by native peoples include the piebald chuckwalla (*Sauromalus varius*) (Case 2002:237-238; Grismer 2002:133), the spiny-tailed iguana (*Ctenosaura conspiciosa*) (Grismer 2002:120), and the organ pipe cactus (*Stenocereus thurberi*) (Bowen 2003:23-26).

Indigenous human impact on insular ecosystems frequently includes extirpation of local species as well as dispersal (Steadman 2006). In this context, it is pertinent to consider that the traditional Seri name for Isla Ángel de la Guarda is *Xazl Imt*, “Where the Pumas Live” (Moser and Marlett 2005:583). In the early 1920s Seris believed that the island had supported coyotes and deer as well as pumas (Sheldon 1979:116). Whether this is ecologically

plausible, even assuming greater precipitation in the past, or imaginative Seri legend, is debatable, but with at least 13,000 calendar years available for human manipulation, the impact of native peoples on island ecosystems might have been substantial.

THREATS AND PROSPECTS

The outlook for the future of the islands is uncertain. Many potential visitors pose a threat to the cultural resources of the Midriff islands (Bowen 2004:201-203). The greatest threat probably comes from recreational boaters, some of whom are compulsive artifact collectors. This threat will likely increase as the Mexican government pursues Escalera Náutica, a massive development project intended to increase recreational boating in the Gulf manyfold (Hafner and Riddell 2005:239). The smaller islands, with fewer cultural remains to absorb damage inflicted by insensitive visitors, will likely suffer most. Some, like Isla Salsipuedes, could easily be stripped clean of artifacts. Cultural resources of the larger islands, though vulnerable in the vicinity of sheltered anchorages, may be protected in interior locations by distance from shore and precipitous topography.

The prospects for future research are mixed. We have surveyed the smaller islands fairly thoroughly but only sampled the larger islands. We have barely touched Isla Ángel de la Guarda and, as the recent discovery of hollow cairns and “backrest clearings” shows, the island may hold many more archaeological surprises. Probably the greatest challenge to future research is locating sites with potentially stratified deposits; with rare exceptions, the sites we have found consist entirely of surface remains. Chronology will be especially elusive because most remains are probably undatable. The best prospects for radiocarbon assays are shells and burned bones at shoreline camps, and organic residue on metates.

Any research on the islands also faces the logistic challenge of living and working in isolated, uninhabited settings with no facilities and no resources. The lone exception is Isla Rasa, where biologists have established housing, electricity, water storage facilities, radio links, and other conveniences. Ironically, this island is also an archaeological treasure. Although nineteenth century guano miners probably destroyed the record of native peoples, their village and trash deposits are still extant and well-preserved. The few known documentary sources focus on guano tonnages and reveal nothing of living and working conditions or other social aspects of the resident community. The miners' village offers a superb opportunity to conduct historic archaeology on a little-known aspect of Mexico's socioeconomic history.

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