

HISTORICAL ABALONE FISHERS OF SAN MIGUEL ISLAND, CALIFORNIA

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A recent systematic shoreline survey of San Miguel Island identified 17 historic “Chinese” abalone processing sites. Most archaeological investigations on the island have focused on prehistoric sites from which a long sequence of human-marine interaction has been developed. Numerous well-preserved shell middens have been radiocarbon dated and sampled, providing an unparalleled record of trans-Holocene subsistence, settlement, and technological changes and human impacts on local ecosystems. A key, but poorly understood, component of this record is the history and impact of “Chinese” abalone fishermen, who exploited the abundant black abalone stocks of coastal California beginning in the mid nineteenth century. We present results from the first systematic survey of historic abalone processing sites on San Miguel Island and document their abundance and distribution on the island.

The Northern Channel Islands, located off the southern California Coast, have been the object of archaeological investigation for over a century. For millennia the islands and the larger Santa Barbara Channel area were home to the Chumash and their ancestors, some of the most complex maritime hunter-gatherers in the world (see Arnold 2000; Erlandson and Rick 2002; Kennett 2005; Rick 2004). San Miguel Island, the westernmost of the Northern Channel Islands (Figure 1), contains over 600 archaeological sites spanning at least 11,500 calendar years. Work by University of Oregon archaeologists has produced an unprecedented record of human demography, settlement, subsistence, and impacts on San Miguel and the other Northern Channel Islands (e.g. Erlandson et al. 2004, 2005; Kennett 2005; Rick 2004; Rick and Erlandson 2003; Rick et al. 2001).

Largely missing from this record is the study of historic impacts on the marine ecosystem after AD 1822 when the last of the Island Chumash were removed to mainland Spanish missions and towns. Shortly after Chumash removal by colonial authorities, commercial otter hunters and fishermen began heavy exploitation of the productive offshore and intertidal habitats around San Miguel and the other Channel Islands. Historic catch records and occasional newspaper accounts have, thus far, been the primary source of information regarding this industry (see Bentz 1996; Berryman 1995). San Miguel contains a fascinating archaeological record of historic abalone fisheries, largely ignored by earlier archaeologists. Until the completion of our systematic survey in 2005, archaeological evidence of the history, activities, and impacts of commercial abalone fisheries on San Miguel remained largely undocumented. In this paper, we summarize the results of our systematic shoreline survey for historic abalone middens, their associated features and artifacts, and what these sites can tell us about the historical ecology of San Miguel Island and the Santa Barbara Channel.

HISTORIC ABALONE FISHERIES

Beginning in the early 1800s commercial hunting of sea otters, a keystone abalone predator, resulted in their near extermination and allowed for amazingly abundant intertidal abalone stocks. The first documented historic abalone fisheries date to the 1850s, when intensive abalone harvesting by Chinese fishermen began along the California Coast. Immigrant Chinese fishermen dominated the industry by the early 1850s, when they were driven out of or marginalized in other economic pursuits such as gold mining. They collected mostly black abalone from rocky intertidal shores, then processed and dried the meat for other Chinese immigrants or overseas markets primarily in China and Japan. An early account of this commerce was reported by the *Los Angeles Star* (2 March 1861:3):

... the extent and importance of our coast fisheries are not, we think, generally known or appreciated. A very large business is being carried on, in this department, along the coast and the islands in the channel, from Santa Barbara down. . . . we were not agreeably surprised to find the number of men and vessels engaged in our fisheries as well as the capital expended in fitting out the same. . . . [Chinese fishermen] are not limited to any particular kind of fishing, taking. . . . a large quantity of [abalones]. . . .

Other migrant groups such as the Portuguese, Italians, and other Euro-Americans participated in the early abalone fisheries, but none were as successful as the Chinese:

... the number of Americans engaged in fishing on the coast of California is exceedingly limited. . . . The fishing of Americans has been, for the most part, confined to seal hunting, shark fishing, whale fishing, trolling in the barracuda season, and similar industries. In San Diego County, where formerly there was a considerable number of Italians engaged in fishing, there are now none, they having been starved out by the Chinese. . . . In San Diego County there is but one Portuguese fisherman, as is also the case in Los Angeles. . . . (Goode 1887:29, as cited in Berryman 1995:81).

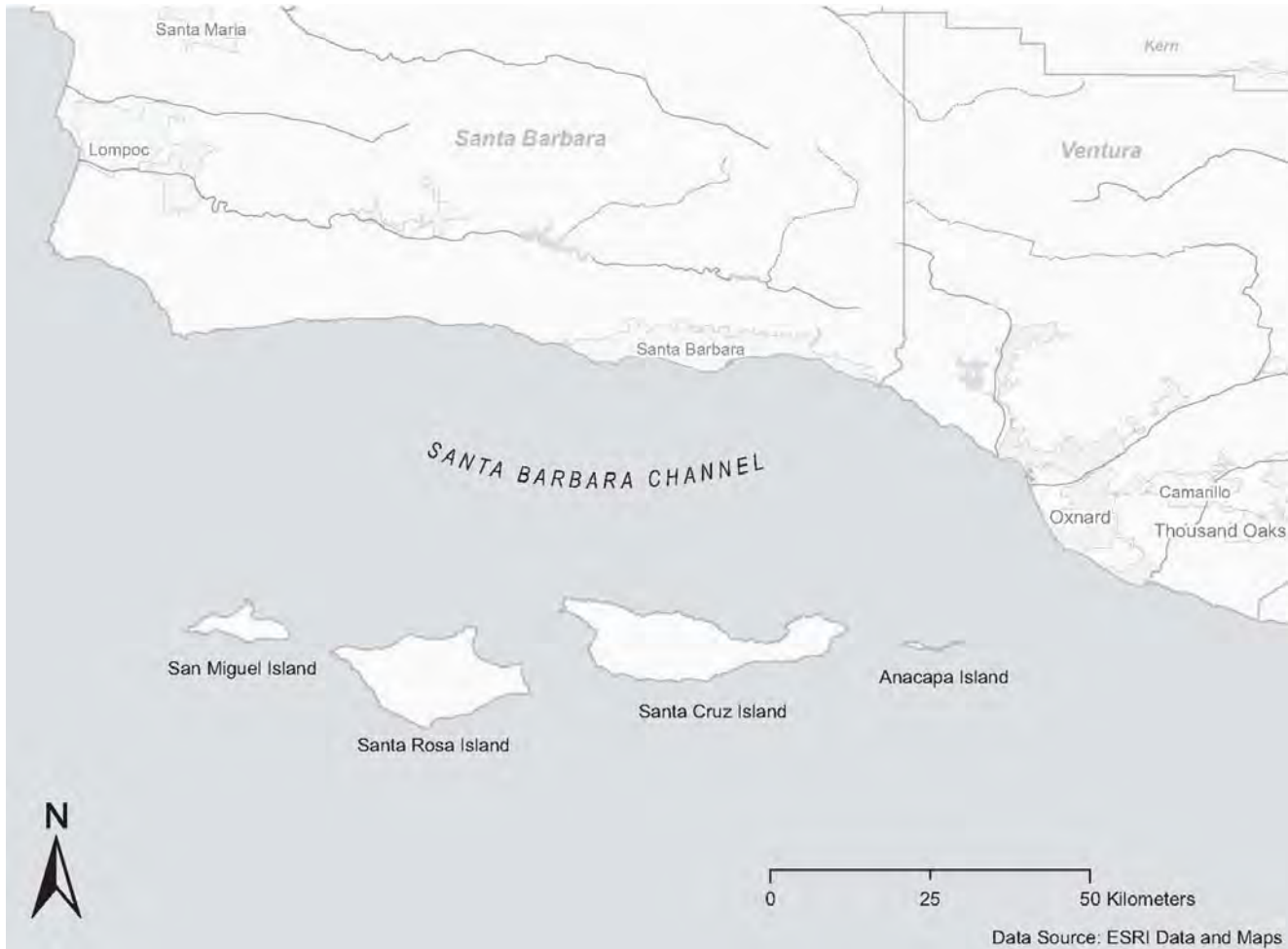


Figure 1: Location of San Miguel Island and the Santa Barbara Channel area (by J. Bartruff).

Chinese success stemmed from their work ethic and ability to adapt traditional knowledge and techniques to dominate the abalone industry. Mainland China's waters had been overfished and were replaced by new fishing grounds in California and Baja. Traditional Chinese fishing boats and junks were built in California ports using time-honored Chinese skills with American tools and materials (Berryman 1995).

In the mid-1860s, commercial interest in lacquerware, shell ornamentation, and lime for construction cement re-emerged (Berryman 1995). Chinese industries made once high-priced items such as shell buttons, Chinese ceramics, and inlaid shell work affordable to a wider audience. To meet the growing demand, Chinese fishermen returned to sites along the coast and shipped tons of discarded abalone shells to China for manufacture. This industry thrived until the 1880s when "...their shell mounds were exhausted, and shells could only be obtained from continued harvesting" (Lydon 1985:35).

By the late 1880s and early 1890s the Mexican and U.S. governments, alarmed by the Chinese domination of the fishing and abalone collecting industry, set out to curtail their involvement. The United States Congress passed three laws (the Scott Act [1888], the revised Exclusion Act [1890], and the Geary Act [1892]) restricting

ownership of Chinese junk vessels, reentry into American ports, and the collection of abalone (Wilcox 1893). With the Chinese forced out of the industry, Japanese and Euro-American divers quickly took their place and expanded the abalone industry to include subtidal species such as red, pink, green, and white abalones.

By the early 1900s, Euro-Americans developed a taste for abalone meat and canneries opened in several coastal California cities. Japanese divers harvested intertidal and subtidal abalone stocks along the mainland coast and the islands (Berryman 1995) until the U.S. government passed the Alien Land Laws in 1913 and handed control of the industry to Euro-American interests. By the 1920s, however, the general depletion of abalone stocks resulted in the steady decline of the industry (Berryman 1995).

Although regulated by government agencies, commercial abalone harvesting along the California Coast survived several cycles of boom and bust due to over-harvesting, changing market forces, and environmental fluctuations. In the 1980s, however, withering foot syndrome swept through Channel Islands abalone populations, devastating the abalone communities and causing the collapse of the industry and government closure of the fishery.

HARVESTING TECHNIQUES ON THE CHANNEL ISLANDS

Historic middens on the Channel Islands consist almost exclusively of large, black abalone shells. These sites are normally found on the tip of rocky points and on terraces overlooking the ocean. The sites took advantage of nearby rocky intertidal outcrops, sunshine, and winds. Fishermen gathered black abalones from the intertidal zone during low tide, then pounded, boiled, and dried the flesh before shipping the meat to nearby ports. The *San Diego Union* (SDU) (5 October 1871:3) described this process:

The abalone is found attached to rocks; and in extreme low tide in greater quantities than at any other time. The fish, covered by dense shell, adheres to the rock as tightly as if glued to it, and is cut loose with a sharp instrument carried by the Chinamen. After filling a large bag with meat, which is removed from the shell, it is carried to the place chosen to dry it. . . it receives a good pounding. After this beating, the meat is thrown into a large kettle and boiled for a short time, then it is spread out to dry in the sun. After a thorough drying, it is nicely packed in strong sacks and shipped to San Diego, to be reshipped from here to Chinese merchants in San Francisco. The meat commands in that city from five to six cents per pound, and is used exclusively by the Chinese. A considerable quantity is shipped to China, where it is regarded as a great luxury, being only used by the better class of people in the country. . . .

It is likely that historic fishing sites are under-represented on the Channel Islands due to a variety of cultural and natural processes. Although historic documents suffer from deficient reporting and inconsistencies in the data (Berryman 1995), they tell us that much of the abalone shell was exported after the mid-1860s to meet growing industrial demands, including the mining of earlier midden deposits. In the sites that survived, much of the shell was probably lost when it was thrown over cliffs during processing, or piled in areas subject to coastal erosion. Historic abalone processing sites, then, probably are only a fraction of their original size and number, and determinations of their original densities and distribution should be made with caution.

ARCHAEOLOGICAL EVIDENCE

The most extensive archaeological investigations of historic abalone middens on the islands have been conducted on San Clemente Island. These were first recorded by McKusick and Warren (1959) who identified four such localities. Beginning in the 1970s Axford (1984, 1987) conducted a ten-year study of the prehistoric and historic sites on the island, identifying 32 "Chinese" abalone camps. All Axford's sites were located within 100 feet of the ocean, near rocky intertidal outcrops, spaced out at about one kilometer intervals, and in various preservational states. According to Hathaway and Greenwood (1981:13) "each site contained opium boxes, smoking pipes, porcelain bowls, brownware pottery, cooking hearths, and quantities of abalone shell."

Beginning in 1987, Berryman and volunteers from the University of California-Riverside systematically surveyed the island's western shore in an effort to relocate previously identified historic sites. Forty-three sites were documented and surface collections, mapping, and test units (1 x 2 m and 1 x 1 m) were conducted at many of the sites.

Berryman (1995) collected hundreds of artifacts from the surface and excavation units, including metal and glass fragments, glazed brownware sherds, and opium pipes and boxes. Hearths (horseshoe-shaped, circular, or double circles) or shelters and windbreaks (horseshoe-shaped or circular stacked-rock enclosures, rectangular depressions, or tent pads) were documented at nearly every locality. Berryman (1995) suggested that hearth features may have been used to render seal bladder into oil or boil abalone meat prior to drying, though none of the sites produced butchered sea mammal bone.

A survey of San Nicolas Island for abalone processing sites, augmenting a preliminary survey by Schwartz and Rossbach (1993), was conducted by Berryman in 1993 and yielded 26 sites, the vast majority on the south coast (Schwartz 1995). Many of these sites consisted of only black abalone shell piles, but a few sites contained Chinese artifacts including ceramic sherds, complete jars, lumber, glass bottles, and amorphous metal. In addition, a few sites contained rectangular stone hearths and sandstone slabs, possibly used to dry abalone meat.

Santa Rosa Island has not been systematically surveyed for historic abalone sites, but concentrations of black abalone shells have been found scattered along its shoreline (see Morris 1994). Ten sites have produced artifact assemblages, including fragments of stoneware and porcelain, opium paraphernalia, cartridge casings, amorphous metal, and bottle glass (Don Morris, personal communication 2005; Bentz 1996:37). These sites may also contain features and a systematic survey and documentation of them is needed.

SAN MIGUEL ISLAND

Beginning in the summer of 2003, we conducted a survey of San Miguel Island for historic abalone middens. Our systematic shoreline survey focused on sea cliff exposures and the supratidal region, documenting 15 unrecorded historic abalone sites, in addition to two sites (CA-SMI-553 and -558) recorded by UCSB archaeologists (Glassow 1980) (Figure 2). Additional sites may exist on offshore islands (i.e. Prince Island and Castle Rock), which we have not yet surveyed.

Thirteen of the 17 sites are located along the south coast, centered on Crook Point. Sites were located on windy points, overlooking rocky shores with productive intertidal habitats and nearby sandy beaches. Although nearly the entire island offers highly productive rocky shore habitats, the south coast may have been the center of historic abalone processing due to the relatively low sea cliffs, the relatively protected shoreline, and greater sunshine. Areas surrounding Cardwell Point, Cuyler Harbor, Harris Point, Point Bennett, and Tyler Bight have relatively steep sea cliffs, making abalone processing difficult from land. Schwartz (1995) and Morris (1994) found similar patterns on San Nicolas and Santa Rosa islands, suggesting that historic abalone processing was restricted to the southern coasts to minimize conflicts with ranchers. This may also be true for San Miguel as the steep southern escarpment probably made access by ranchers to the south shore difficult.

Despite extensive sea cliff exposures and careful surface reconnaissance, few artifacts or features were found at San Miguel abalone camps. A few pieces of lumber were found at several sites and two sites contained features (other than shell middens). One site just west of Crook Point had two large, beach-rolled stone slabs near a pile of discarded abalone shells. The function of these rocks is uncertain but no evidence of burning was evident, so they were probably not related to hearth features. They may have served as sitting stones or drying slabs. Another site (SMI-558) east of Crook Point contained an amorphous cluster of six rocks embedded in dune sand overlying a pile of black abalone shells. In sum, surface reconnaissance at nearly every site yielded no hearths, ceramics, or historic artifacts. All of Berryman's sites from San Clemente Island, in contrast, yielded diverse artifact assemblages and hearth or shelter features.

One exception to this pattern was found. With the help of Bob DeLong of the National Marine Fisheries Service, we located a historic site just behind the beach at Adams Cove near Point Bennett. Historic photos (see Bonnot 1928:9), features, and surface collections suggest that this may be the location of a large base camp centered on abalone collecting and seal hunting. Today, Point Bennett is a thriving pinniped rookery, home to tens of thousands of seals and sea lions. Some brief historic accounts suggest that Point Bennett may also have been the center of pinniped hunting on San Miguel Island in the historic period:

During the summer of 1879, Rogers and Company, of Santa Barbara, had fifteen to twenty men engaged in hunting the seal; the hunters follow along the beach, shooting those they find on the rocks; other parties flay off the blubber and carry it to the drying place, where it is slowly cooked to extract the oil (Account by Thompson and West [1883], as cited in Berryman 1995:278).

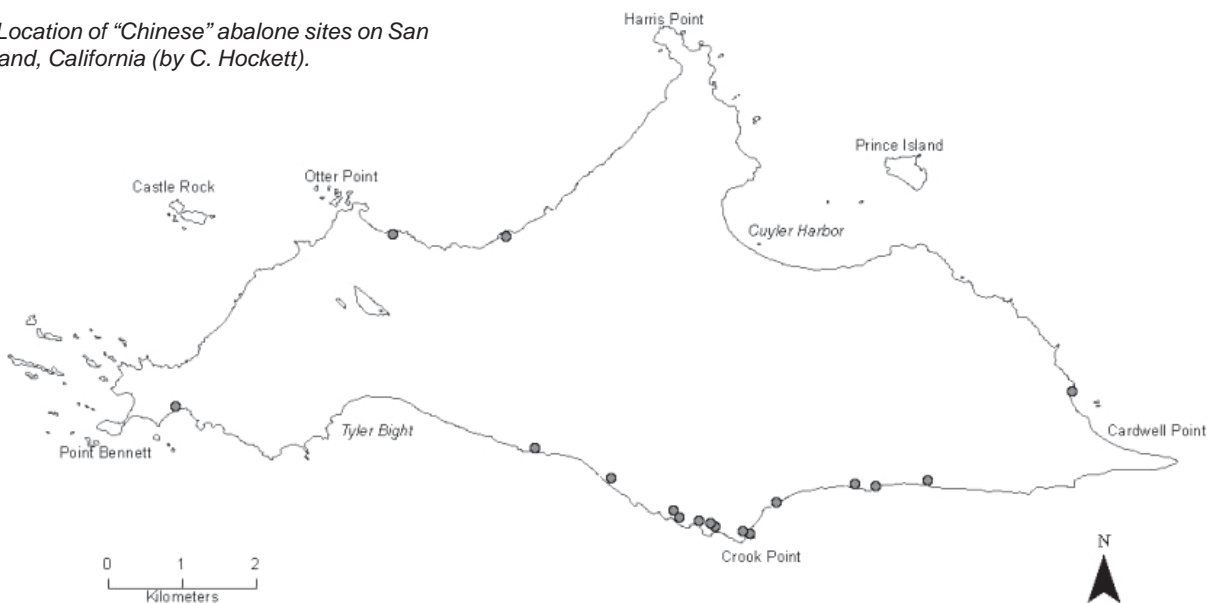
This account is complemented by a historic picture in *The Sea Lions of California* (Bonnot 1928:9) showing drying racks laden with sea lion "trimmings" (penis and testes) to be exported to China. The

Point Bennett historic site contains a circular hearth feature, two roughly rectangular rock features, and an artifact assemblage that includes 32 ceramic sherds of Asian origin, 10 fragments of sawn sea lion teeth, 7 cartridge casings, 6 metal nails and fragments, a rod iron handle, a button, and 9 glass fragments. Two loci of large black abalone shells were also identified. The 32 ceramic sherds include brownware pottery and Celadon porcelain, some of which have been identified as fragments of rice or soup bowls, food or alcohol jars, storage containers, or food jar lids. These features and artifacts strongly suggest a Chinese occupation, although other groups may also have occupied the site. We are planning further studies of the historic occupations at Point Bennett.

The restriction of features and artifacts largely to the Point Bennett historic site suggests that it may have been a base camp from which abalone fishers logistically foraged the intertidal, leaving temporary processing and drying camps along accessible areas of the south coast. Some historic accounts also suggest that Chinese fishermen anchored offshore abalone processing camps, living, cooking, and eating on their junks. The *San Diego Union* (30 September, 1934, as cited in Berryman 1995:154) described these Chinese vessels: "... living quarters were aft, and cooking was done on deck, the stove being a coal-oil tin with some sand in the bottom. They lived on canned goods, fish and turtles. ..." The dearth of artifacts at most of San Miguel's historic abalone "camps" may be a result of this pattern, but the lack of hearth features is curious.

The absence of hearths and presence of wooden timbers at most San Miguel Island sites may be evidence that people were drying abalone meat without boiling it beforehand. It is possible, however, that boiling of abalones took place mostly on the beach or that archaeological evidence is obscured by historic dune sand deposits that blanketed much of the south coast after overgrazing destabilized the island's extensive dune fields (Braje et al. 2005). Understanding variations in the

Figure 2: Location of "Chinese" abalone sites on San Miguel Island, California (by C. Hockett).



location, structure, and contents of historic abalone processing sites between the islands will take further archival research, systematic survey, and excavation.

FUTURE RESEARCH DIRECTIONS

The archaeology of nineteenth and twentieth century Chinese and Euro-American fisheries in Alta and Baja California has only begun to be investigated. Piles of large, black abalone shells, occasional artifacts, and hearth features represent the tantalizing but largely unexplored history of early Chinese and Euro-American commercial interests.

Beginning in the late 1700s, colonial commercial interests severely disrupted California's coastal ecosystems and heavily impacted many marine species. Sea otters, pinnipeds, and several cetaceans were hunted to local extinction and abalones, lobster, sea urchins, sheephead, and other species were heavily overfished. This commercial overexploitation has altered key ecological relationships in California kelp forests and other marine communities and has created tensions between conservation biologists, the fishing industry, and resource managers.

Historic abalone middens are one of the only sources of information on the nature of intertidal communities on the Channel Islands between about AD 1820 and 1920, and can provide invaluable faunal and environmental data. Their history is the record of the early impacts of commercial fishing on Channel Islands ecosystems, as well as the poorly known history of Chinese immigrants in coastal California. These sites are one of the keys to understanding the dynamic ecological systems of southern California over the last 12,000 years, providing a critical link between extensive archaeological data on millennia of Native fishing and ecological data on the impacts of recent commercial and sport fishing. Further archaeological and archival research on these sites is needed to understand this long and complex history.

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