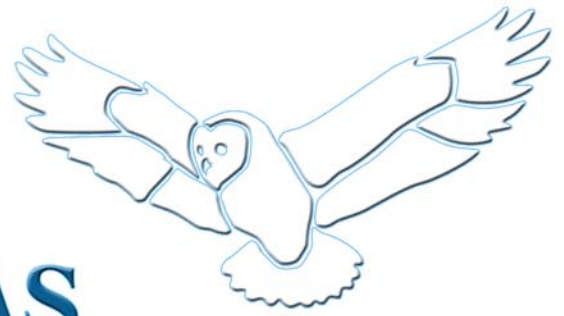
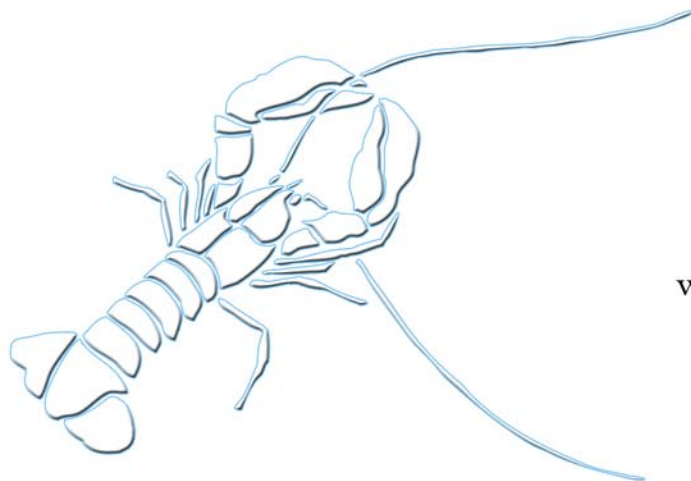
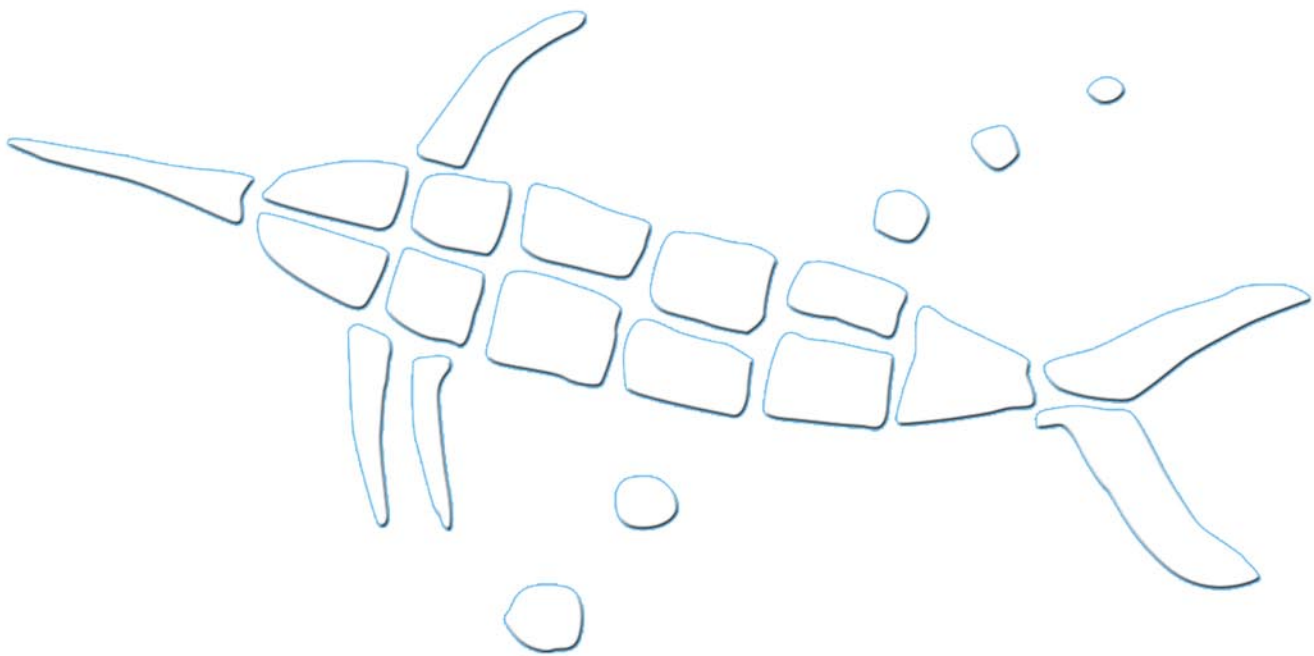


TRIBAL MARINE PROTECTED AREAS



Protecting Maritime Ways
and Cultural Practices



**A Special White Paper for
the Wishtoyo Foundation**

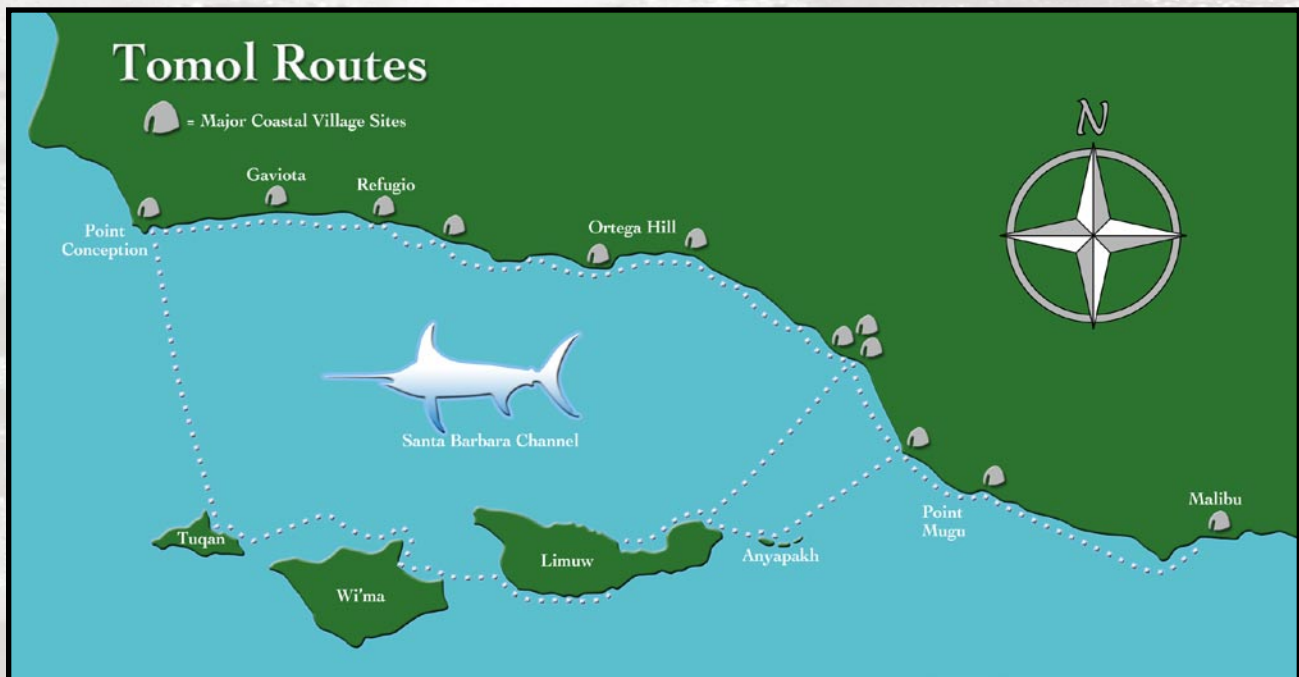
By Michael Vincent McGinnis, Ph.D.
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EXECUTIVE SUMMARY

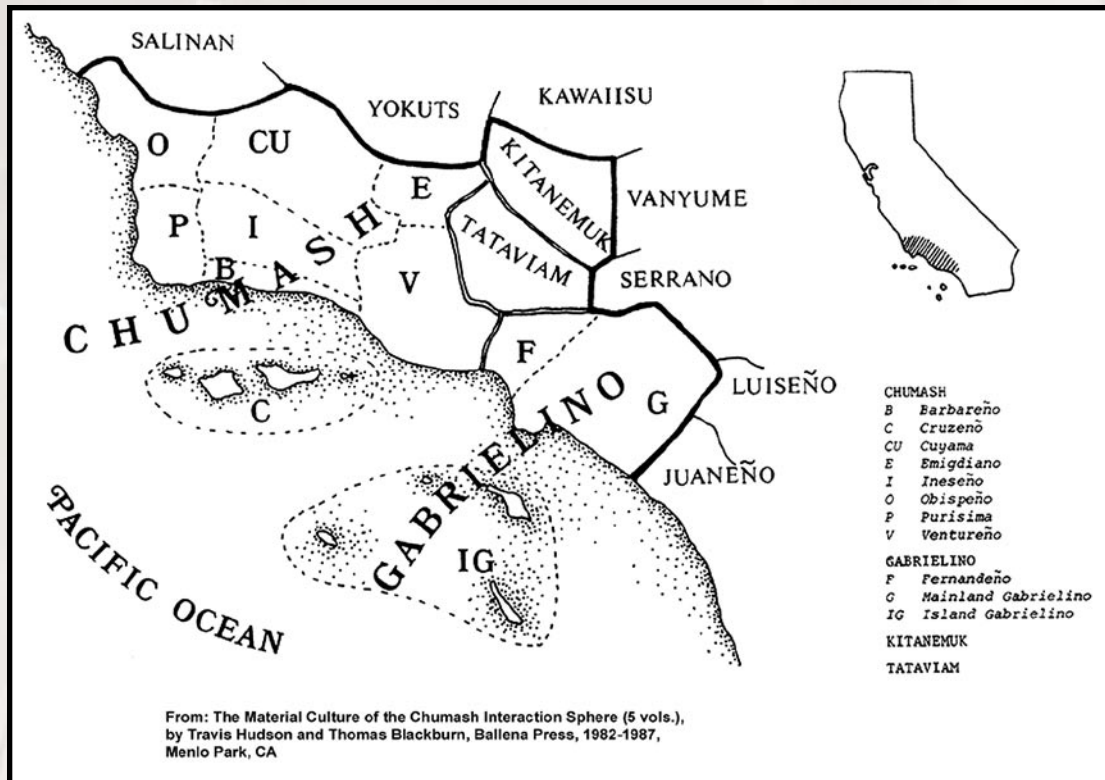
The White Paper entitled *Tribal Marine Protected Areas: Protecting Maritime Ways and Practice* published by the Wishtoyo Foundation (Ventura County, Santa Barbara) in 2004 describes the ecological and cultural significance of south-central California's marine environment as a suitable area to establish new marine protected areas or MPAs. Tribal MPAs can be one tool for tribal people to co-manage and protect important submerged Chumash cultural sites and coastal marine ecosystems. The Chumash people lived in villages along the south-central California coast from the present day sites of Malibu to Morro Bay and extended to the northern Channel Islands. The Chumash reference for the northern Channel Islands are *Tuqan* (San Miguel), *Wi'ma* (Santa Rosa), *Limuw* (Santa Cruz) and *Anyapax* (Anacapa). *Limuw* means "in the sea is the meaning of the language spoken" while Chumash villages were named after the sea, such as *Mikiw* or "the place of mussels".

Evidence of Chumash village sites and tomol routes show an intimate relationship with the culture, sea and northern Channel Islands. The map below shows the villages and tomol routes within the greater Chumash bioregion.



The varied maritime culture was diverse and depended on the rich array of animals and plants. Many animals, such as the swordfish, played a central role in Chumash maritime song, ceremony, ritual and dance. The Chumash people were heavily dependent on a healthy marine environment; the marine component of the Chumash diet consisted of over 150 types of marine fishes as well as a variety of shellfish including crabs, lobsters, mussels, abalone, clams, oysters, chitons, and other gastropods. Shellfish were essential to the Chumash economy and material culture. In fact, the Chumash produced

the majority of shell bead money used by peoples throughout southern California. The map below shows the diverse tribal relationships that existed in the Chumash region.



The abundance of prehistoric Chumash artifacts found in the Santa Barbara Channel have helped archaeologists piece together Chumash trade networks, fishing practices and submerged village sites. Archaeologists suggest that portions of the northern Channel Islands were likely sites of Chumash villages, and are now submerged by changes in sea level. Thousands of years ago the sea level was at least 150 feet lower than it is today and the northern Channel Islands were joined as one island. Some submerged artifacts may have been deliberately deposited in the water during religious ceremonies, washed to the sea from shore, or been deposited in the water through cliff erosion.

Recently discovered paleontological remains have also contributed to the rich record of the coastal area. In 1994, for example, a relatively complete pygmy mammoth was discovered on a coastal bluff on the north shore of Santa Rosa Island. This discovery represents the most complete pygmy mammoth discovered in the world to date. The discovery suggests a high probability of the existence of submerged paleontological remains.

To date, there have been no Tribal MPAs designated in southern or central California. However, the last 10-15 years have seen an increasing trend toward recognition of traditional and tribal roles in marine use and ecosystem-based management and planning. One reason for this is that tribal peoples have a great understanding and culture-based respect for nature, which has typically developed from their long and profound associations with coastal marine ecosystems. There is also wider acknowledgement for the need to secure tribal rights to traditional lands, waters and resources - including the right to full and effective protection of some areas.

Tribal Marine Protected Areas: Protecting Maritime Ways and Practice (Wishtoyo Foundation, 2004) first introduces the historical inhabitation of the Chumash people in the region, with a focus on Chumash maritime history. Second, the paper describes the coastal watersheds, marine ecosystems

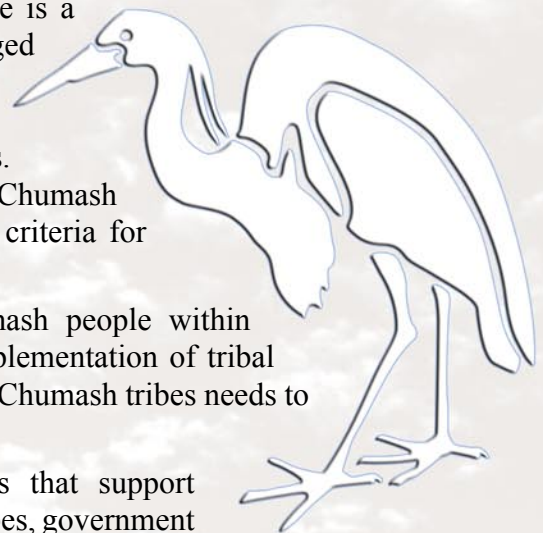
and associated biodiversity of the region, with a characterization of the general decline of biodiversity and ecosystem health of the south coast. Third, the paper describes the relevant federal and state agencies that are responsible for marine life protection. The paper describes the recent policy initiatives that support marine ecosystem-based management and the use of MPAs in state (0-3 nm) and federal (3-200 nm) waters. New policy that supports the designation of Tribal MPAs is needed in California. Fourth, the paper offers a number of recommendations for Tribal MPA policy and program development with a particular focus on Chumash issues and concerns.

In general, Tribal MPAs have been shown to be an important way for indigenous people to maintain and restore their maritime ways and practices. The paper includes case studies and examples of important Tribal MPA that have been established across the world. The following general principles should guide policy and program development of tribal MPAs:

- Tribal people should be recognized as rightful, equal partners in the development, implementation and management of MPAs. This includes rights to participate and co-manage important marine areas.
- Common objectives, commitments and responsibilities for the conservation and management of protected areas should be sought and defined between government agencies and tribal people.
- Tribal people should be provided with adequate resources to participate in future MPA designation and design efforts. More often than not, tribal people lack the necessary resources to participate as equals in formal, government-sponsored negotiations and collaborative efforts.
- The development of any tribal policies should be framed within, and consistent with, national or state MPA objectives and laws. Where necessary, the legal and institutional structure of MPA systems should be reformed to accommodate the values and interests of tribal people.

With these general principles in mind, there are a number of ways to improve and strengthen the role of Chumash people in future federal and state MPA designation and co-management. The paper offers the following specific recommendations:

- Develop baseline information on marine archeology and submerged Chumash cultural sites (and artifacts). To date, there is a paucity of information and data on existing submerged Chumash cultural sites. Important cultural sites may be near coastal wetland areas, nearshore kelp and rocky reef areas, and river or creek mouth areas. Given the importance of kelp and other marine life to Chumash people, cultural information should be used as one criteria for designating tribal MPA areas.
- Develop and enhance relationships between Chumash people within the region is key to successful development and implementation of tribal MPAs. Collaboration and partnership building across Chumash tribes needs to take place before tribal MPAs are designated.
- Develop and implement co-management programs that support collaborative efforts between Chumash people and tribes, government agencies, resource users and marine conservationists. In some cases,



Memorandum of Understanding (MOUs) may be required to formalize partnerships between government agencies and coastal tribes.

- Develop marine ecological restoration programs in or near existing or future State MPAs. For example, white abalone restoration and other marine life restoration programs should be integrated into future MPA development. Marine ecological restoration programs should support education and public outreach components.
- Develop and support co-management programs that can enrich tribal cultural practices and renew traditional values. Co-management programs should also include tribal people in the monitoring and enforcement of MPAs.
- Creation of Tribal Marine Education Program. Program development should include resources for tribal education, public outreach, and ecological and cultural literacy programs. These programs can also be used to sponsor collaborative tribal relationships and maritime partnership building.
- Promotion of Sustainable Fishery Practices. Future tribal MPAs within the region should be designated as no-take reserves given the general decline in the health of south coast marine ecosystems and the general lack of resource use by Chumash people of marine resources. Tribal MPAs can be part of a larger network of MPAs or other marine conservation areas. Note marine conservation areas are a type of MPA that allow some form of human use of the marine system, e.g., lobster or pelagic fishing. These types of MPAs that allow use may not protect marine ecosystems from over-exploitation.
- Designate MPAs in areas of high ecological quality and cultural significance. With respect to this last recommendation, CDFG's Master Plan Team made up of nationally recognized marine scientists recommend the following nearshore marine areas for possible designation in the region: Point Purisima Area; Point Conception Area; Refugio Reef; Naples Reef; Coal Oil Point; Carpinteria reef; Leo Carrillio reef; and the Santa Monica Bay Area. Other areas that include important submerged Chumash areas may also be appropriate for Tribal MPA designation.

These important nearshore marine areas should be protected in a Marine Protected Area in accordance to the California Marine Life Protection Act. Moreover, there is a unique opportunity today to also designate special nearshore marine areas as Tribal MPAs to protect important submerged cultural sites.

For additional information or to request a copy of *Tribal Marine Protected Areas: Protecting Maritime Ways and Practice* by The Wishtoyo Foundation 2004. Please contact: Mati Waiya, Executive Director The Wishtoyo Foundation/Ventura Coastkeeper, 3600 So. Harbor Blvd., Suite 222 Oxnard, California 93035
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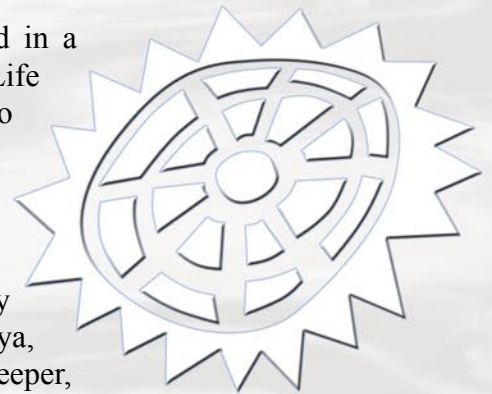


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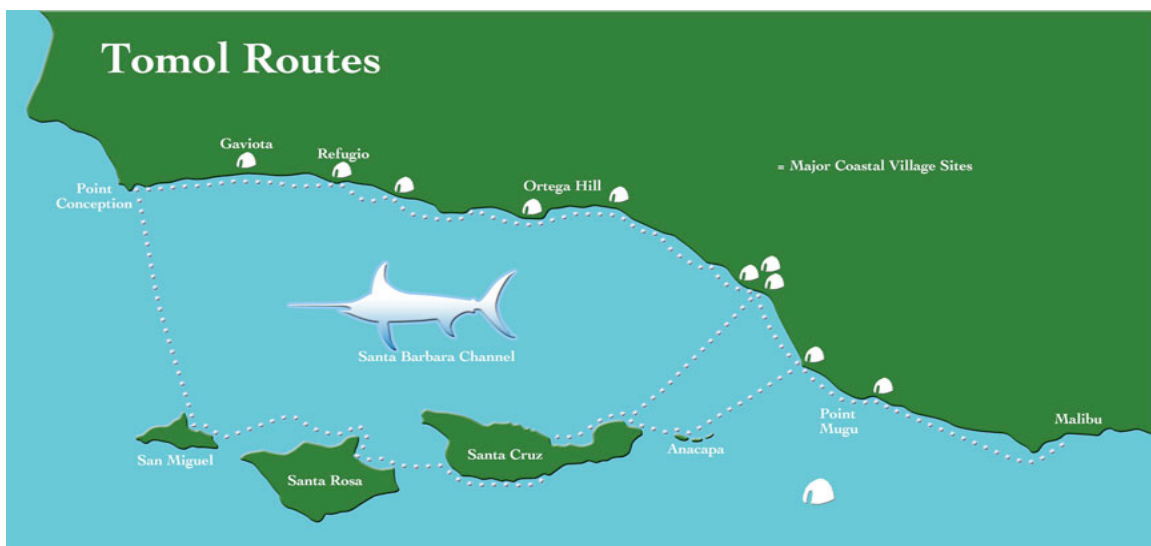
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1.0 INTRODUCTION

Ya 'iyitak husiwon kakunupmawa
Let us listen to the ancient song of the mystery behind the sun
Kihu sak'ni'tox lokoi xutash
So that you will pay attention to the voice of the earth
Ka' lo'kal'ixipsh 'iti 'ishup
That which there is of creatures in this land
Hu'am susamha sip' entes
That all we creatures of the earth may feel the powers of the sun,
the spirit of this land
--A prayer of the late Chumash elder, Maria Solares --

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The Chumash had an intimate relationship with the culture, sea and northern Channel Islands. Many animals, such as the swordfish, played a central role in Chumash maritime song, ceremony, ritual and dance. These first inhabitants of the region recognized and celebrated the connection between coastal, marine and island areas. Today, as we try to recover a sense of place and community, we recognize the urgent need to re-build a bridge to our historic maritime traditions and to the other creatures that share this region with us.

Threats to Submerged Cultural Resources

Submerged cultural resources (SCRs) are divided into two categories: 1) cultural, consisting of Native American artifacts and 2) historic, consisting of artifacts from non-Native American cultures.

There are two main threats to SCRs: human behavior and natural phenomenon. Site looting (where objects are intentionally pilfered from submerged sites) is the single largest threat to submerged archeological resources. Artifacts that are small and light enough for divers to carry are pilfered most often. Most events go unnoticed, while some cases occurring in the Sanctuary have been documented with evidence for successful prosecution.

Divers who may not have any intentions to loot or vandalize artifacts may still cause damage through poor diving techniques or tampering. Divers may inadvertently harm resources by kicking up sand from the bottom, holding onto



artifacts or accidentally breaking fragile resources when striking them with scuba tanks.

Vessel activity can also cause serious damage to SCRs. An anchor dropped on an artifact can result in serious and permanent damage or drag it away from the context of its original site location. Seabed disturbance by mobile bottom fishing gear has emerged as a concern due to the damaging effects of heavy trawl doors and nets dragging through archaeological sites.

The process of trenching communications cables can have permanently damaging effects to submerged archaeological resources during grappling and (sea) cable installation. To mitigate such a threat, qualified archaeologists are required to conduct cultural resources inventories and avoidance plans with supervised magnetometer and side-scan surveys of the proposed regions.

The laying of oil pipelines and other structures that support offshore oil and gas processing facilities can destroy cultural and historic resources as well. Dredging operations to clear harbor entrances can destroy and/or dislodge submerged archaeological resources, thus losing important clues to their history.

To date, there have been no Tribal MPAs designated in southern or central California. However, the last 10-15 years have seen an increasing trend toward recognition of traditional and tribal roles in marine use and ecosystem-based management and planning. One reason for this is that tribal peoples have a great understanding and culture-based respect for nature, which has typically developed from their long and profound associations with coastal marine ecosystems. There is also wider acknowledgement for the need to secure tribal rights to traditional lands, waters and resources - including the right to full and effective protection of some areas.

Tribal Marine Protected Areas: Protecting Maritime Ways and Practice (Wishtoyo Foundation, 2004) first introduces the historical inhabitation of the Chumash people in the region, with a focus on Chumash maritime history. There is evidence that the Chumash inhabited the region for more than 10,000 years. There are six separate cultural periods of indigenous maritime tradition associated with the northern Channel Islands and the coastal mainland: the Paleoindian Period, from 13,000 to 8,500 years ago; the Initial Early Period or Millingstone Horizon, from 8,500 to 6,500 years ago; the Altithermal Period, from 6,500 to 5,000 years ago; the Terminal Early Period, from 5,000 to 3,200 years ago, the Middle Period, from 3,200 to 800 years ago; and the Late Period, from 800 years ago to the *missionization* of the Indians, which occurred from 1772 to 1822. Over time, these cultures changed from reliance on gathering seeds and shellfish to increased hunting activities, and still later, to steadily increasing maritime technology, including the hunting of large fish and marine mammals as well as the netting of fish.

Second, the paper describes the coastal watersheds, marine ecosystems and associated biodiversity of the region, with a characterization of the general decline of biodiversity and ecosystem health of the south coast. Scientists show that there has been a decline in primary and secondary levels of ecological productivity. Scientists also show that the



designation of Marine Protected Areas is necessary to begin to protect marine ecosystems. Protection of marine ecosystems is integral to protection of cultural heritage.

Third, the paper describes the relevant federal and state agencies that are responsible for marine life protection. The paper describes the recent policy initiatives that support marine ecosystem-based management and the use of MPAs in state (0-3 nm) and federal (3-200 nm) waters. New policy that supports the designation of Tribal MPAs is needed in California.

Fourth, the paper offers a number of recommendations for Tribal MPA policy and program development with a particular focus on Chumash issues and concerns. To address the dramatic decline in the health of the oceans, a number of government and non-government organizations support a serious overhaul of existing coastal and marine policies. The independent Pew Oceans Commission (2003) calls for “immediate reform of existing U.S. ocean laws and policies” to protect and restore coastal marine ecosystems and associated biodiversity.

The Pew Oceans Commission writes (2003: 3):

National ocean policy and governance must be realigned to reflect and apply principles of ecosystem health and integrity, sustainability, and precaution. *We must redefine our relationship with the ocean to reflect an understanding of the land-sea connection and organize institutions and forums capable of managing on an ecosystem basis.* These forums must be accessible, inclusive, and accountable. Decisions should be founded upon the best available science and flow from processes that are equitable, transparent, and collaborative [*emphasis added*].

Both the U.S. Commission on Ocean Policy (2004) and the Pew Oceans Commission (2003) support the use of MPAs as a tool to protect marine ecosystems.

A number of state and federal marine policy initiatives support the creation of a network of marine protected areas or MPAs (McArdle 2002; CDFG 2002; PEW Oceans Commission 2003; U.S. Commission on Ocean Policy 2004). The establishment of large networks of MPAs is recognized by marine scientists as key to the protection of coastal marine ecosystems (Roberts and Hawkins 2000 among others). The U.S. Commission on Ocean Policy (2004: Chapter 6) and the Pew Ocean Commission (2003) also recommend the use of MPAs as a policy tool that can support marine ecosystem-based management.

In *The Summary of Governor and Tribal Leader Comments* (July 22, 2004) to the U.S. Commission on Ocean Policy coastal tribal leaders stress “the importance of acknowledging the need for increased coastal tribal participation in the development and implementation of ocean and coastal policy”. Tribal MPAs have been recognized as an important policy tool to protect indigenous or tribal areas (Witty 1994; Adams 1998; Lam 1998).



Since 1999, scientists, policymakers and the members of the public have been involved in planning efforts that *may* lead to the designation of Marine Protected Areas or MPAs within the California waters (0-3 nm). MPAs have been designated for the State waters around the northern Channel Islands and within the Channel Islands National Marine Sanctuary (CINMS). Today there is an opportunity to incorporate the values of the diverse Chumash people and other coastal tribes of California into the planning and decision-making process associated with designating MPAs in State waters. The formal MPA designation and planning process will likely begin in late 2005.

The development and planning of new networks of MPAs within State waters (0-3 miles) and the region should include recognition of the cultural significance of the first inhabitants of this region, the Chumash peoples, and the role that native peoples have traditionally played in preservation and conservation of habitats and species.

To date, the voices of indigenous peoples have not been well integrated into the planning or designation process for state or federal MPAs. Future collaborative efforts should include tribal members who can best represent the diverse interests of indigenous people.

Early human remains of a woman ("Arlington Springs Woman") were discovered at Arlington Canyon on Santa Rosa Island, dating back to the end of the Pleistocene, approximately 13,000 years ago. This Channel Islands' site represents the oldest human yet discovered in North America.

A poem by Julie Cordero symbolizes the Chumash return to *Limuw*:

Limuw, our home
crystal houses of the 'elye'wun
domed like good houses are,
like those of our children,
when they are grown and remembering
beginning of the rootedness
to this place.

--Julie Cordero, "Families Gathered at Limuw" (September 2001)

The Chumash people should participate in the designation process for future MPAs in State waters; the Chumash can play an important role in restoring a more sustainable relationship to the region's more than human maritime community. Marcus Lopez (in Cordero 1998: 11), a member of Chumash Maritime Association, builder and crew member of a recent tomol crossing to Limuw (Santa Cruz Island), writes, "One can imagine ... life among the Chumash people, especially if one is Chumash, always looking to the ocean and to the beach for answers of who our people were and – most importantly – what lies ahead of us." The building of 'Elye'wun (swordfish) and the crossing to the island is a manifestation of a new effort by the Chumash people to



reconnect and restore their relationship to the sea and northern Channel Islands. A brief history of Chumash maritime history is described below in the next section.

1.1 Chumash Maritime History by Roberta Reyes Cordero

The following section is written by Roberta Reyes Cordero, who is a founding member of the Chumash Maritime Association. The following section clearly shows the intimate connection between Chumash people, the land and sea.

To understand the people who have since time out of memory been a part of this place is an important first step in having a reason to establish a Chumash Tribal Marine Protected Area. This section describes elements of Chumash cultural history intended to aid that understanding. As well, it highlights the sustainability and potential abundance of resources available to those who approach the land where they live with knowledge of and respect for their place in the life web. It is not intended to idealize the pre-contact lifeways, but to acknowledge the success of generations and to learn from it.

The ancestors of the autochthonous people of the region—now known as Chumash—were so well-integrated into and adapted to their habitats that they were able to thrive here continuously and sustainably for some thirteen thousand years. However, like the place itself, they have also been greatly reduced, changed, and degraded by European contact. For the 1770's, conservative estimates by current scholars number the people from 15,000 to 20,000 (Churchill 1997; Stannard 1992; Timbrook 1973). By some estimates, in less than 100 years they would be reduced to 600 (Walker 2002). Today there are approximately 5,000 Chumash people living within the state of California,+ many of whom are involved in revitalizing the understanding of ancestral values.

The story of the local holocaust is a grim one (Churchill 1997; Stannard 1992), involving disease, slavery, starvation, legislative subordination, and intentional genocide (M. Cordero 2004).* While this venue is not the appropriate one to recount that history in full, it is relevant to remind ourselves here because it reveals a worldview that in the past openly espoused rapacious exploitation of land, waters, humans and other creatures. That same worldview is still largely operative and, hopefully, may be helped to transform by examining the lifeways of a people who learned so well how to live here that they far surpassed mere survival over several millennia.

The sophistication and complexity at which the Chumash culture had arrived when early European explorers viewed it was “as elaborate as that of any hunter-gatherer society on earth” (Moratto 1984:118). The people lived here richly in times of plenty and well enough through times of drought, performing subsistence labor for less than 19 hours

+ Personal communication, 2004, Deana Dartt, M.A., Coastal Band of the Chumash Nation. Only one Chumash tribal entity is Federally recognized, with an enrollment of less than 200 persons.

* Quoting California State's first governor: A war of extermination will continue to be waged between the races until the Indian race becomes extinct.”



average per week.€ Along with providing themselves with an impressive and balanced array of foods from fishing, hunting and gathering, they were superb artisans concerned with meticulous craftsmanship (Hudson 1982:20-26). They were adept astrologers, healers, and spiritual practitioners (Applegate 1978).

What were the underlying principles of the Chumash ancestors' culture that evolved over such a long period of time and yet continued to support such prosperous and interesting lifeways? Of what importance might those principles be in the current scheme of things in the Chumash homeland?

Because of the great complexity of ancestral Chumash culture before it was interrupted, the following discussion will be limited to a few main subject areas as representative of the culture. In trying to uncover underlying principles, we will examine the nature of the relationships of the people with one another and with their habitats. Of specific interest are 1) methods of procuring food from the marine environment and the coastal plains—the geographical area under consideration; 2) governance and social organization; and 3) the role of the traditional Chumash redwood plank canoe, the tomol, past and present.

Food Procurement

Ocean and Freshwater Harvesting

The Chumash were excellent fishers, a point noted by such early explorers as Cabrillo, Cermeno, Vizcaino, and Font. Fages, noting that “Some of them follow fishing ... The fishing is so good, and so great is the variety of fish... that this industry alone would suffice to provide sustenance to all” (Hudson 1982:165).

During the Chumash ancestors' long tenure before Euroamerican contact, the marine component of the Chumash diet consisted of over 150 types of marine fishes as well as a variety of shellfish including crabs, lobsters, mussels, abalone, clams, oysters, chitons, and other gastropods. Shellfish were also important to the economy and material culture. The following survey of fishing methods and implements used is exemplary of the complex knowledge and skilled craftsmanship that the people applied to every aspect of their lives and livelihoods.

Fishing & Sea Mammal Hunting

In the volume on food procurement, the authors of *The Material Culture of the Chumash Interaction Sphere* describe numerous implements used for fishing (Hudson 1982:148 ff). The variety of items is a direct reflection of the variety of food resources available. For each item, the materials, design of manufacture, and the method of use illustrate intimate knowledge of habitat and of the behavior of the intended prey. For instance, nets and

€ Personal communication, 2004, Jan Timbrook, Santa Barbara Museum of Natural History. Based on extrapolation in comparison to the Kung San of the Kalahari Desert who expend 19 hours average per week.



traps vary from the weir trap—a conical device into which freshwater fish were skillfully driven using a team strategy—to the seine net. A seine net is a long, weighted net that hangs vertically in the water to encircle and trap schools of ocean fish. The top edge was kept afloat with wooden floats, while the whole was pulled along by *tomols*. Others included: a baited lobster trap; a dip net—a small bag-like net baited with ground-up cactus leaves and hand-cast to snare sardines and other small fish; a drag net—a tubular small-mesh net used to catch bonita, dragged on a long line from the stern of a tomol; and a gill net—a large-mesh net suspended vertically into which fish swim and become entangled. For the 2- or 3-ply net cordage, several kinds of fibers were used according to preference and availability: tok or dogbane (*Apocinum cannabinum*), yucca (*Yucca whipplii*), nettle (*Urtica dioeca*), and surf grass (*Phyllospadix* spp.). Traps were made of woven sticks of plants such as mulefat (*Baccharis glutinosa*), sometimes in combination with netting.

Besides the fish-trapping methods mentioned above, hook and line was used for surf fishing, kelp fishing, and trolling, sometimes with several hooks on the line. In trolling for barracuda, a composite decoy hook was used while “paddling fast”! And, as Kitsepawit reported, “Sometimes there were regular schools of corbinas or agujas....Two men would be rowing, making the tomol ‘flying aguja,’ while a third man tended to the two fish lines, which trailed on either side of the canoe’s stern” (Hudson 1982:166).

Lines for this method of fishing were as long as 160 feet and were made from the same variety of plant fibers listed above for nets, with “tok” or dogbane being preferred by many because it shrinks when wet, thus becoming harder and tougher in the water. Conversely, line manufactured from animal hide or sinew was avoided because it stretches and then stiffens when used in water, especially salt water. Hooks were of many sizes, styles and materials. The circular hook was somewhat J-shaped and was made from a single piece of bone or hard shell such as abalone, mussel, or clam. The V-shaped composite hooks were made from two pointed pieces of shell, wood or bone bound together at one end to form an acute angle. Each type of hook was designed for the swallowing behaviors of specific kinds of fish.

In addition, several kinds of harpoons and spears were also used for hunting fish and sea mammals. To shoot from the prow of a tomol at both large and small fish—and possibly sea otters and porpoises—there was the harpoon arrow made with a fletched cane shaft and a detachable foreshaft with barbed point and retrieval line. Another composite spear was the 8-9 foot long harpoon used for impaling large sea mammals or fish such as barracuda and giant black sea bass. Here the shaft would be 4 inches in diameter and made of ironwood or holly. Styles of points for the harpoon could be barbed, composite bone or stone, or a toggle point. The retrieval line was made from horsenettle or from tok, inch diameter and anywhere from 240 to 350 feet in length. A shallow basket was kept in the tomol for the coiled harpoon line; the basket exterior may have been coated with asphaltum for protection from wear and water.



Wild Salmon and ti'wo'y

A simple fish spear called ti'wo'y was used especially to spear salmon. The shaft was made from toyon (*Heteomeles arbutifolia*) with a bone point fixed with asphaltum into a hole at the end. Maria Solares told Harrington*: "It was used here by fishermen, but informant never saw any man using the ti'wo'y in the Santa Ynez River. It is said that an old Chumash here named konoyo, at Arroyo Hondo, had a ti'wo'y and a modern boat. He used it for fishing at sea." She also said that "(h)arpoons were used for spearing salmon in streams, but not for spearing trout" (Hudson 1982:194).

Kitsepawit reported that "(T)he Indians used to spear salmon in the Ventura River. One time the salmon were very numerous. They used to harpoon them with barracuda spears" (Hudson 1982:194).

Coyote and Qi_qi_ (Magpie)

Long ago, when the animals were people, Coyote got to worrying about his poverty, and one day he said to himself, "I'm going to travel around and see what I can find." So he left Syuxtun (Sta. Barbara) and started across the mountains. He climbed way up on Seneq mountain (west of SB) and rested for awhile, looking all around. He saw a place on the plains on the other side of the mountains where there were green trees, and he thought he would go there and see if he could get a drink. Just then he met a stinkbug and said, "Well, I'll eat it, it's a good morsel." He ate the stinkbug and went a little further down the mountain. Next he found a Jerusalem Cricket. "Ah, how fine!" he said. He ate it and said, "Now I'm satisfied, and I can go farther." He left the hills behind and started across the plains.

Pretty soon he reached the place of the willows and cottonwoods he had seen and found that there was a stream of water as well. After resting awhile under a cottonwood, he lay down and drank and drank, and when he finally lifted his head he saw that there were big salmon swimming in the water. "Ah, how fine!" he thought to himself. "Now what can I do? Ah, I will bewitch them and see if I can get them out that way!" He began to sing, "Jump, salmon, jump So you may see your uncle dance!"

Then he started to dance, and pretty soon first one salmon and then another came jumping out of the water of their own accord and landed on the bank. Finally he had a great pile of fish in front of him and he was content.

Now Coyote didn't know it, but Qi_qi_ (Magpie) was up in a cottonwood tree watching everything he did. Coyote looked at his pile of fish and said, "I'm not

* John P. Harrington was an ethnographer and linguist who recorded what now comprises the main body of written material about ancient Chumash traditions.



even going to waste the entrails—I'm going to use everything!" He dug a hole, built a fire in it and put in rocks to heat. Finally, he put the fish in and covered them up so that they would cook just right. Then he began to think, "I can't eat that much. I'd better go and purge myself first." He started off for Tejon so he could drink brackish water to cleanse his stomach. As soon as he left, Qi_qi_ flew down out of the tree and began to eat and eat—he dined royally—and before Coyote had even reached Tejon, the fish were all gone. Poor Coyote walked and walked and by the time he returned to where he had left his fish baking, he was sweating and half-dead from hunger, and he was now thin, very thin.

He sat down and groaned and was content, smiling to himself at the thought of all those roasted salmon. He removed a rock and groped around, scraped away some dirt, but he didn't see a thing. "They must have burned!" he exclaimed. The Qi_qi_ was up in the tree again watching, and when Coyote said this the thief burst out laughing and said, "Even licking the rocks, haha! You think they burned. I ate them!" He was hanging head down with joy. Now Coyote lost hope. "I'm going to kill you!" he yelled. He grabbed a sharp piece of flint that was lying nearby and began to saw away at the trunk of the cottonwood tree in which the bird was sitting. Who knows how many days he sawed at that tree before it fell? And just before it did fall Qi_qi_ flew to another tree nearby, laughing. Coyote stayed thin (Blackburn 1975:text 48).

Shellfish

Another specialized tool—used for gathering shellfish—was described by Kitsepawit to Harrington:

The Indians used to remove abalones from the rocks using shinbones of seals or a stick of ironwood 1 ft. long and having one end shaped like a shovel. With it they would pry the animal off the rocks. A good abalone stick should be 3 ft long. At San Nicolas Island, FL* saw such sticks which were 3 or 4 ft long, and 1_ in. diameter. They were not weighted with a stone, as would be the case for a digging stick. One end of the abalone stick was shaped like a chisel.

They used to get Pismo clams with their feet during low tide. But for clams in rock places the pry stick was used. Sometimes you would find a whole row of shellfish under a stone. Abalones are open, being up from the rock a bit, watching for a little seaweed to go by before they close down and eat it. You hit the abalone when it is unaware, and when you pry it, the animal falls from the rock. Sometimes a blow will knock it off (Hudson 1982:253).

* "FL" in Harrington's notes is Fernando Librado whose Chumash name was Kitsepawit.



Following are other ethnographic accounts of this type of pry bar. “Jose Venadero used to knock mussels from the rocks using a thin-edged sharpened stick...(Juan de Jesus Justo).” “Used bones of whales to pry abalone off the rocks “(Maria Solares). “ushqo’yina’ash was the name for the ironwood stick used to collect shellfish of any kind—abalones, clams in the sand, etc. Sometimes you used it to dig clams with, such as at Ventura beach, in the pebbly, rocky sand, for you could not use your fingers (Simplicio Pico).” And Luisa Ygnacio: “wiqa’li’ is the name of the stick used to pry abalones. You get the abalone off the rock using this stick which had a chisel end. You would hit it against the animal repeatedly” (Hudson 1982:253-4).

Coastal Plant Food Gathering & Vegetation Burning

The discussion presented here of plant food gathering is intended to highlight certain principles of adaptation by noting the effects of the peoples’ practice of vegetation burning. In their article, “Vegetation Burning by the Chumash”, Timbrook et al. state that their purpose in writing is “to call attention to the ethnohistoric evidence which shows that the Chumash did deliberately use fire in ways which may have had pronounced long-term environmental effects, and to demonstrate that encouragement of growth of certain plant resources was the principal reason for the practice of burning” (Timbrook 1982:163-4). An overview follows of the ethnohistoric accounts examined.*

As with fish, shellfish and game, the people’s diet of plant foods was impressive not only for the variety gleaned by a sedentary hunter-gatherer society, but also for the knowledge and ingenuity shown in maximizing desired foods. It is well known that acorn was a chief staple. Still widely used by California Native people, this highly nutritious food was valued by the ancestors as a relatively non-perishable food which could be stored for winter use as well as for periods of drought when the oak trees’ production was reduced.

A less well-known staple item—arguably even more nutritious than acorn and far less labor-intensive to prepare—was chia seed, the seed of an annual sage, *Salvia columbariae*. In “Vegetation Burning by the Chumash,” the authors quote Steve Craig:

Small seeds of flowering annuals were still remembered by Chumash people after the turn of the (20th) century. Chia...is one of the best known of these, and it was frequently mentioned by Harrington’s consultants as a staple food.... The question is often asked today where the Chumash got the quantities of chia they were reported to have eaten, because the plant is not common in the coastal area....(T)he plant is still found in certain places under favorable conditions, but is not common overall (Timbrook 1982:173).

Why are the conditions for chia currently unfavorable along the coastal plains? What changed?

* Italic emphases in quotes from “Vegetation Burning”.



Vegetation burning observed, 1769-1793

In answering these questions, Timbrook, et al. cite the travel journal of Fray Juan Crespí, who accompanied the Portolá expedition in 1769-1770 along the Santa Barbara Channel mainland coast. His detailed observations frequently include not only a description of the soils through an agriculturalist's eye, but they also record the many places that had been burnt. Fray Crespí:

August 20, 1769, setting out from camp at Arroyo Burro Creek (village of Sqo'non), near Santa Barbara: "We went over land that was all of it level, dark and friable, well covered with fine grasses, and very large clumps of very tall, broad grass, burnt in some spots and not in others...All about are large tablelands with big tall live oaks..."

August 21, 1769, setting out westward from Goleta area (5-7 villages) towards Point Conception: "...in sight of the shore, over some low-rolling tablelands with very good dark friable soil and fine dry grasses; in many places it had all been burnt off..."

August 24, 1769, leaving from near a large village probably in Tajiguas Canyon: "We set out...taking a due westerly course...and went up to some low-rolling tablelands...well covered with very fine grasses that nearly everywhere had been burnt off by the heathens."

After reaching the village at Gaviota Canyon, Crespí described the rough and steep mountains, saying they were "white-colored here and there, as though from white earth or stone, and, where not whitish, well covered with dry grass."

August 27, 1769, Crespí described grassy tablelands that had been burned near Chumash settlements near Point Conception. He repeatedly mentions treeless tablelands with good soil covered with fine dry grasses.

August 29, 1769, northward past villages at Jalama Beach and Cañada Agua Viva and on to Point Arguello towards San Juan Bautista Village and across level ground near the shore...“(w)e went almost all the way over salt-grass, all very much burnt off by the heathens.” Later, soldiers scouted for fresh water and forage, but the grass had all been burned off. Later still, “we came to a hollow where the heathens had said there were some pools of water, and although it had been burned off, there were spots that had not been and where there was good grass for the animals...”

The last time Crespí mentions grassland burning within Chumash territory during this journey, the expedition is almost to the plains of the Santa Maria Valley. He notes “...fine soil and dry grass almost all of which had been burned by the heathens.”

The following May took Crespí northward again:



At once after setting out (from the village at San Juan Bautista), we commenced to find the fields all abloom with different kinds of wildflowers of all colors, so that, as many as were the flowers we had been meeting all along the way and on the Channel, it was not in such plenty as here, for it is all one mass of blossom.” He also comments, “We have not seen a bush nor a single heathen.”

The authors note that the expedition encountered “spectacular wildflower displays...in the very same area which Crespí had noted as having been burned the previous summer.” They continue by pointing out that

(I)t is apparent from these descriptions that shrub communities of coastal sage scrub and chaparral were once considerably less extensive than they are today.* For example, the mountains between Tajiguas and Gaviota—or at least their lower flanks—were described as covered with grasses in August 1769, whereas dense chaparral is found there today. In addition, “not a bush” was seen in the South Vandenberg area north of Point Arguello in May, 1770; today the vegetation there is coastal sage scrub.... It is...clear that what Crespí saw was the result of fires which were set deliberately in grasslands by the Indians...since he speaks of grass being “burnt off by the heathens.

While Crespí apparently did not comment on the purpose of this widespread practice of vegetation burning, two Spanish colonial officials did—Fernando Rivera y Moncada and José Longinos Martínez.

The military governor of California from 1774 to 1777, Rivera y Moncada had frequent contact in his travels with many of the people who had not been completely missionized. In April 1776, after staying the night near “Mezcaltitan” at the mouth of the Goleta Slough, he traveled eastward past Ventura (village), stopping at the Santa Clara River. He recorded that “(t)he gentiles...destroy and consume the pastures with their burnings.” Later, as he passed through the southeastern part of Chumash territory, he complained about the dearth of pasture which made it difficult to camp due to “the horses and mules not having grass, all occasioned by the great fires of the gentiles, who...burn the fields as soon as they gather up the seeds....”

Describing Native practices in the Monterey area, Rivera y Moncada explicitly stated that the “heathens” (i.e., non-Christian Indians) burned vegetation “so that new weeds may grow to produce more seeds.” The authors infer from this that promoting the growth of vegetable foods for their own consumption was also the purpose of vegetation burning by the Chumash:

The phrase “they burn the fields as soon as they gather up the seeds” indicates that seeds of grassland plants were sought-after and that burning was not done until these had been harvested. Seeds of most annual wildflowers ripen in late spring or early summer; seeds of native grasses are usually shed in June or July. This fits well with Crespí’s reports of burned grasslands on his August visit, and

* 1982, date of the article.



with the usual burning of vegetation in summer or fall by other Indian groups elsewhere in California.... Small, hard seeds such as those of grasses and sage were important in the diet of many California Indian groups and were likely so for the Chumash....

José Longinos Martínez traveled as a naturalist through California in 1791 and 1792 under orders from King Carlos III of Spain. As he passed through the Santa Barbara Channel area, he “noted certain cultural features which seemed to be widespread or universal throughout the territory of New Spain”:

(I)f a chief merely makes an attempt to pass through another’s jurisdiction, fighting and quarreling result.... Their wars are frequent and...originate over rights to seed-gathering grounds.... The gentiles living between San Diego and San Buenaventura store up against the winter the plants that bear the most seeds...These nations (north of Santa Barbara) continually keep on hand small baskets of seeds and other foodstuffs...

The prohibition of burning

By this time, Spanish colonization was well under way with the result that California Native people were more and more denied their traditional practices, and specifically the practice of vegetation burning. In fact, in May of 1793, Governor José Joaquín de Arrillaga issued a proclamation prohibiting “all kinds of burning, not only in the vicinity of the towns, but even at the most remote distances, which might cause some detriment, whether it be by Christian Indians or by Gentiles....” Specifying annual publication by proclamation in the presidios, missions, and towns, Arrillaga ordered that his edict be made known to all classes of Indians, Christians as well as Gentiles,...with the full understanding that whatever lack of observance may be noticed in this matter (which is) of such great interest will be worthy of the most severe punishment.

Arrillaga’s proclamation and an accompanying letter were issued in Santa Barbara which the authors interpret as “indicating that grassland fires were considered a major problem in coastal Chumash territory.” In the letter, Arrillaga had exhorted the Padre Presidente of the Missions to “particularly (warn) the old women, not to become liable for such offense” because women were most prominent in this activity as well as being the principal gatherers of seeds.

Later mission documents examined by Timbrook et al. indicate that “The baptized Indians were permitted to continue gathering their wild seeds but prevented from setting the fires that...promoted a more abundant harvest.” This prohibition, together with the incursion of grazing animals, the invasion of European grasses and broadleaved weeds and the introduction of agriculture all combined to create drastic alteration to the environment and “probably contributed to a gradual abandonment of traditional seed foods by the Chumash.” By the time John P. Harrington—among other ethnographers—interviewed Chumash survivors (1912 to 1950’s), only one person made mention of vegetation burning although some others mentioned use of seeds.



Botanical information and evidence

Combining the ethnohistoric evidence with botanical information, the authors note that of the relevant native plant species, there are 70 genera known to have been eaten by Chumash and other California Native people. About half of those occur after fire and 15 others—sometimes called “fire followers” —“reach their peak of abundance in areas that were burned the previous year.”

Plants found after grassland fires, and those that probably provided significant food resources for the Chumash, included grasses—especially perennial bunch grasses—and herbaceous plants in the sunflower, mustard, parsley, pea, buttercup, evening-primrose, sage, figwort, lily and amaryllis families. Plant parts consumed included seeds, green leaves, shoots, and corms or bulbs (Timbrook 1982:175).

Some conclusions about vegetation burning

In their closing remarks, the authors state that the evidence indicates that the ancestors’ “reason for setting fires was to encourage the growth of seed plants, bulbs, and green shoots for human consumption.” They add:

Of these food resources, seeds were most important in Chumash diet because of the quantities that could be obtained and because they could be stored for long periods of time. It is our opinion that the Chumash could have obtained the large quantities of chia and red maids seeds found as burial accompaniments and reported in the ethnographic literature only by burning the coastal grassland and savanna.

They conclude that “burning was...truly a food production technique more efficient than agriculture in this ecological setting. Indians were allowed to continue gathering wild seeds in Mission times because agriculture could not support the neophyte population.” They conclude that “(t)he practice of vegetation burning by the Chumash should be added to the list of important ecological factors in southern California” (Timbrook 1982:182).

Effect on hydrologic cycle

As the authors of “Vegetation Burning” observed in 1982, the coastal sage scrub and chaparral plant communities that we see today along the coast were once much less extensive. Besides creating an environment hostile to the production of traditional seed foods, this alteration affects the hydrologic cycle to the extent that rainwater that might otherwise recharge the creeks and springs instead cycles through the shrubs and trees. Local ranchers have observed the higher water levels following wildfires and speculate that an important link in the drastic reduction of steelhead is the reduction in spawning habitat caused by this hydrologic phenomenon.*

* Personal communication, Sept. 2004, Eric Hvolboll of La Paloma Ranch.



Governance & Social Organization

Kitsepawit's grandfather told him that all animals are related
and that an old man told him that we are all siblings,
and our mother is one: this mother earth.
He has always believed what the old people told him when he was a boy
—that the world is God.
(Blackburn 1975: text 14)

Archaeologists trace the cultural evolution of the Native people of this region by measuring epochs of time and examining such evidence as mortuary data, subsistence stress, sea-surface temperature changes, and so on (see, e.g., King 1990). The scholarship includes several theories that includes detailed information about ecological shifts and changes that necessitated response and adaptation from the people. Whichever of their fascinating and controversial theories about the people's deep past might be accurate, perhaps the most cogent observation to be made for the sake of this venue is that through those epochal changes the people did survive, did adapt, did thrive and increase.

What can be shown are those practices and beliefs which were still in living memory, and sometimes in current practice, at the time of the first descriptions written by non-native people and, later, recounted by the old ones to ethnographers like Harrington. Just as aspects of material culture and food harvesting reveal a breathtaking complexity—even under the brief scrutiny offered above—so it is with what we are told about the social and economic governance.

Concepts of Power

In his study of the “dream helper complex”* in south-central California, Applegate (1978) observes that “(s)outh-central Californian cosmologies do not explain the origin of power; it is assumed to have existed always. The origin of the first figures to appear in myth is likewise not explained.” In contrast to several more northerly California groups, as well as some in southern California, “There is no single being who controls all power.... Rather, an indeterminately large pantheon of supernatural beings possess or control power to some degree.” Power may be bestowed on human beings by some of these helpers either gratuitously or, more often, because a person has followed a protocol for seeking power, especially through dreaming (Applegate 1978:14 ff). “But the vision quest, per se, does not appear in myth, in keeping with Blackburn's observation...that ‘life crises do not play as prominent a role, or at least as explicit a role, in the narratives as one might perhaps expect’ (Applegate 1978:16).

Even though danger is intimately associated with power, “the average south-central Californian seeks power as a means of exercising some control over an unpredictable and often hostile world.... Power is dangerous, but not having it is far more dangerous.”

* “...a specialization of the guardian spirit concept found almost all over North America”, p. 7.



Furthermore, “power is an amorphous, creative and energizing force which pervades the universe...but...it is not evenly distributed. It is most concentrated in the uppermost of the three superimposed worlds” of Chumash cosmology. Living in this Upper World are creator figures and other powerful beings and entities, no single one of which controls all power, no high god. These spirits, identified with the First People, are the ones who may enter a dream helper relationship, bestowing supernatural power on individual humans. They are the ones who, “(a)t the end of mythic time...turn into the animals and plants that we know today, as well as a few natural forces personified as Night or Thunder.” The power granted by a dream helper might reflect its mythic role as one of the First People as well as the traits in which the living animal excels.

As well, times and places to seek power are outside the ordinary flow of life. “Lonely hilltops, as opposed to the plains and valleys where people gather, are excellent places to approach power, and so are bodies of water. Water is a very powerful medium” used to revivify the dead (in myth), to cure, or to change a person’s ritual status (Applegate 1978:39).

The Sky People

There is a place in the world above where Sun and Slo’w, Morning Star and _nilemun (the Coyote of the Sky—not the Coyote of this world) play peon. There are two sides and two players on each side, and Moon is referee. They play every night for a year, staying up till dawn... When _nilemun’s side comes out ahead there is a rainy year. Sun stakes...acorns, deer, islay, chia, ducks, and geese...and when _nilemun is the winner he cannot wait for the stakes to be distributed, but pulls open the door so that everything falls down into this world. And we humans are involved in that game, for when Sun wins he receives his pay in human lives... Each one of those beings has a task to perform: Sun lights the day, Morning Star the dawn, and Moon the Night. Moon is a single woman. She has a house near that of Sun... _nilemun was like God to the old people... Sun is our uncle, but _nilemun is our father—that is why he works for us giving us food and sparing our lives. He watches over us all the time from the sky... And Slo’w is up there watching the whole world too. He never moves... When he gets tired of sustaining the upper world, he stretches his wings a little and this causes the phases of the moon. When there is an eclipse of the moon it is because his wings cover it completely... (Blackburn 1975: text 2).

The dream helper relationship is a highly personal one, available to any individual, and not inherited. Some relationships brought the power to be curing doctors or sorcerers at a “professional” level in which those individuals were sought out and paid for the exercise of their power. And some brought a sort of “lay” version of power that was more for personal and familial use and protection. Both lay and professional might have the same helpers, with some helpers being more clearly associated with “shamanistic” powers. Typically, however, a professional had several helpers and the layperson only one or two.



By contrast, the clan helper is an inherited moiety bringing family and social connections. In fact, the Chumash term, *_kaluk_*, is used only to refer to the clan helper and not as a synonym for the dream helper which has its own term, *'ati_win*. An individual need not have the same helper for an *'ati_win* as for her/his *_kaluk_*. In a more formalized and public relationship than the dream helper relationship, certain expectations were dictated by the clan helper on the members of the group, such as prescribed ceremonies honoring the helper, as well as political and professional obligations.

The term, *'ati_win* encompasses a very rich set of concepts which are central to Chumash understanding of power. In his discussion on the term, Applegate offers the following:

The Chumash *'ati_win* with its wide range of meanings gives some idea of the conceptual ramifications of the dream helper complex.... The two commonest senses of the term *'ati_win* are “dream helper” and “talisman.” By extension, since the helper and the talisman both bestow power, *'ati_win* also refers to supernatural power in general as possessed not only by spirits, human beings, and animals, but even by things and places. On the physical side, *'ati_win* is not only the talisman representing the dream helper, it is any item of magical paraphernalia through which power flows, such as charm stones, shaman’s pipes and whistles, and also medicines and poisons.

The verb-based Chumash languages do not readily translate into the noun-based terms of English. It is therefore not surprising that there is more to be said about the meaning of *'ati_win*. In a discussion of the word’s meaning in relation to medicine plants’ power, Julianne Cordero offers critical insight by interpreting “(t)he Chumash verb for power, *'ati_win* (as meaning) ‘to heal’, ‘to dream’ and ‘to poison’” (J. Cordero 2004). As example, she describes the possible actions of two of the strongest local herbs, datura and tobacco. Either of these can cause us to heal, dream, or be poisoned:

As with any medicine, the difference between cure and poison lies in the skilled administration of the medicine in proper dosage.” This illustrates excellently Applegate’s observation that “(a)s an amoral force, power is unpredictable and potentially dangerous except to a person who knows how to use it and who approaches it with circumspection.”

In addition, there were checks and balances on the exercise of power built into certain relationships:

“In pre-contact times, a balance of secular and supernatural power was maintained between chief and shaman...in which chief and shaman worked together covertly to their mutual advantage. This balance kept any individual from acquiring too much power; the shaman could invoke supernatural sanctions against the chief, and the chief had sanctions at his disposal against excessively powerful shamans.... In historic times, this balance was disrupted as the chief lost power while the shaman’s activities continued largely unchecked. This, combined with



decaying social conditions, may have led to an increase in the more malevolent uses of supernatural power....”

Let us look more closely at the social constructs existing not long before the disruption of such a dynamic balance.

Political-Religious-Economic Organization: An Interwoven System

Political systems--the provinces and the 'antap

Central to the 'ati_wini_ relationship is the importance of the individual's receiving power that is not communicated through human authority or by privilege of class, but, rather, directly and uniquely from a greater-than-human source. By contrast, we have seen inferred above that the leadership of political systems was determined—at least in part—by one's clan. Integrated into the political system were the 'antap, a powerful religious cult which required that “(a)ll wots ('captains' or 'chiefs') and their families were required to join, as were other important officials...and men and women of the community with wealth or social standing” (Hudson 1978:29).

Hudson and Underhay provide an interesting description for us, beginning with the observations of Juan Rodríguez Cabrillo, in 1542 the first European to visit the Chumash. Cabrillo recorded that there were two large provinces along the Santa Barbara Channel mainland—one of them ruled by a woman—Xucu and Xexo. Even though it is not certain how many provinces may have existed, several others are known along the coastal areas, the “Island Province” with its capital on Limuw, and at least six along the mainland coast. From “Point Conception Province” in the west to “Malibu Province” in the east, “all the coastal mainland capitals were located on major trading routes which connected seaports used by canoes with trails used by inland inhabitants.” In between were “Dos Pueblos Province”, “Santa Barbara Province”, “Ventura Province”, and “Mugu Province.” Different Chumashan languages and/or dialects were spoken from province to province, and each province was a “defined geographic territory which included a number of towns, villages, and hamlets.”

Each community was headed by at least one wot, and these leaders apparently were organized into a “larger governing council for the entire province, with one man or woman among them serving as the principal ruler, called a paqwot ('big chief') by the islanders.” The paqwot's town was the capital of that province and served as the legal, economic, political, and ritual center. At the time the presidio was founded near Syuxtun in “Santa Barbara Province”, the leader—Yanonalit—exercised legal and political jurisdiction “over some 13 towns and villages, including those around La Patera in Goleta, many of which were heavily populated. Distant Shnahalyiwish, situated at the head of the Santa Ynez River...was also included under his control.” Apparently, there was much political conflict both from within and from without; the authors cite that circumstance to indicate the independent nature of each Chumash province.



Woven into this system was the very powerful religious cult known as 'antap, the organization of which was also layered, appearing both at the village level and at the provincial level where the members apparently acted as a council to the paqwot:

The duties of the cult members were varied, but all involved ritual knowledge and the exercise of power for the benefit of the province inhabitants. The "Twenty," as they were called, were subdivided into two operating bodies, one of which was the "Twelve" or 'antap, the eight lesser officials being called shan.

The "Twelve"...alone had the ritual knowledge to use power for maintaining, directing, and controlling man's interaction with his celestial, physical, and social environments. They, along with their leader, exercised this power to maintain a dynamic equilibrium or balance of power in the universe.... The eight remaining members...were assistants...who helped perform other duties...(and who) roamed the province at large to see how each community and its inhabitants were doing (Hudson 1978:29-30).

Evidently, the wot of a village was frequently also the 'antap leader of the same village. The "Twelve" presided either individually or together as well as "owned and used all ritual paraphernalia, cured illness, maintained the essential cosmic balance, and provided the needed astrological advice to the wots on when and where to hold important legal, economic, political, or ritual events."

Integrating all the political and ritual functions of these official bodies was a leader who could be either the province's wot, the wot of the village, or the paxa, the wot's ritual assistant. When operating in the role of ritual presider, this person's authority "transcended that of the province wot if they were separate individuals, or at least seldom came into conflict with it." This office was reinforced by the Twelve along with the shan helpers and was the "central focus in maintaining the cosmic balance of forces in every major Chumash ceremony" (Hudson 1978:30).

Territorial religious organization

There is some indication that religious practice was additionally governed by two political "territories" with their own leaders and ceremonial calendars and that "the events...were distinct, yet similar and somehow synchronized...(enabling) large and mutually beneficial economic and political events to be coordinated." It was at this level of organization that all the wots of the regions gathered in a conference approximately every five years to coordinate ritual, political and economic matters and to adjust their shared calendar system. This was also the time to settle the many disputes arising out of the apparently "cautious and even untrusting relationship(s)" existing between some groups.

Hudson and Underhay raise the speculation whether these two systems represent "some sort of political evolution in the direction of emerging 'national states.'" They conclude that



(w)hatever the level of social integration—town, province, or religious territory—it is clear that the 'antap cult was central to its operation and maintenance, with the most powerful and influential men and women in the highest political and religious circles as members. Every wot was a required member, and certainly every paxa. Its power extended from simple hamlets to large towns, and affected virtually the entire spectrum of Chumash affairs either directly or indirectly.

Economic functions—the “gremios” or “guilds”

From the beginning of outside contact, observers marveled at the high quality and meticulous workmanship of Chumash men and women in the manufacture of all their goods, from baskets to canoes (Hudson 1982:20 ff; 26). The early Spanish reported the existence of “gremios”* to which Chumash artisans belonged. The guilds consisted of basketweavers, bowlmakers, bowmakers, canoemakers, and other artisan organizations which apparently promulgated the high standards and requisite skill-level of each craft through apprenticeship and other training. In addition to the manual skill needed, there was also the expectation that members had access to the “supernatural power necessary for success in the craft” either through heredity or by adoption. Following apprenticeship, the artisan became a full member of these “kinship-based corporate groups in which an individual profit motive operated in accordance with the law of supply and demand.” At death, that member’s portion “reverted to the guild and was ‘paid out’ to the remaining members in the form of financial shares” and a new member could fill her/his vacancy.

Along with supplying the members’ own needs with the objects created, the guilds must also have been active as suppliers of trade goods. In turn, maritime trade was chiefly controlled by the guild we know as the brotherhood of the tomol, described within the next section.

Tomol

Palatino made three canoes at Mitsqanaqa'n
with the help of Vicente Qoloq, Teodoro, Leandro,
Almuastro, myself, and others...
When Palatino finished making them, they went to sea.
One of his canoes was like a flower on the water.
-- Ysidro, mid-1800's --
(Hudson, ed., 1978:157)

As for many indigenous maritime cultures, the canoe is central to our understanding of who we are as a people on this specific place on the earth. Until the missionization of the Chumash people, our waters were filled with watercraft, especially the redwood plank

* The Spanish term, “gremio,” can be variously interpreted as “guild”, “association”, “society”, or “brotherhood”.



canoe, the tomol, among the most advanced technological achievements of North America's indigenous peoples. These elegant and versatile canoes wove together coastal and island communities in a complex system of trade, kinship and a resource stewardship that was sustained over thousands of years. Until it was formally disbanded around 1834, the Brotherhood of the Tomol governed the manufacture and use of the tomols (Hudson, ed., 1978:167 note 365).

The Brotherhood of the Tomol

Ysidro, a canoemaker during the 19th century, described the brotherhood of the tomol:

Before the introduction of Christianity, all the people associated with canoes were united. Wherever a canoe might go ashore, its occupants were well received.... At Santa Rosa Island, and all the islands, they were united, and for that reason it was called a society or brotherhood—a Brotherhood-of-the-Canoe. It was everywhere along the channel coast, and every member always had a friend anywhere he got stranded.

There was one inspector of all the deeds of his people. It was his duty to see that all the members of the canoe brotherhood fulfilled their obligations to all the villages on the coast. The inspector was the head of the Brotherhood-of-the-Canoe. At every village on the coast there was an inspector, and all those of the brotherhood nominated him (Hudson, ed., 1978:155).

The Brotherhood is described by Hudson et al. as a kinship-based organization of occupational specialists that crosscut all the localized tribal affiliations. As reliant as the other guilds on the law of supply and demand, one of the most important functions “was to operate as sea traders, transporting most of the manufactured goods produced on the islands where natural resources were rare, to the mainland where an exchange was made for mainland products or for various foodstuffs” (Hudson, ed., 1978:155 note 334).

There is strong indication that the local chapters of the brotherhood were linked into a higher order of political structure, “quite probably...tied into the large picture of Chumash political controls as well as the...’antap, to which some members of the canoe brotherhood did belong” (Hudson, ed., 1978:155-6, note 335).

Stringent controls were exercised over the membership of the guild as well as over the manufacture of the canoes. Again, Kitsepawit paints a vivid picture for us:

The board canoe was the house of the sea. It was more valuable than a land house and was worth much money.... A tomol was worth more than a dugout, and a dugout was worth more than a tule balsa.



The man who directed the work in building a board canoe was also its captain at sea.... (T)he proper expression for a canoe captain was ‘alaleqwel ‘itomol, meaning “proprietor of a canoe.” The Indians also used the word tomolelu....*

Only the canoemakers know how to build a canoe. They are called ‘altomolich, meaning “maker of canoes...” An old canoemaker would have his helpers and he would allow no one else around. There was much to know. The boards had to be fitted together well, then the boards had to be tarred and tied.... They knew all the secrets in order to make a tomol which was agile on the sea....

With their tools the Indians were united in spirit. They had plenty of time to take in their canoe workmanship.... The Indians wanted to build good canoes and they did not care how long it would take. A long time was needed if they were going to make a good canoe.... Sometimes the Indians would finish building a canoe in about forty days, but sometimes it took from two to six months before it was done (Hudson, ed., 1978:39-40).

The Ancestral Makings for a Tomol

The old ones were accustomed to gathering redwood driftwood from island and mainland beaches. Specialists cured, processed, and stored planks for use in building canoes. Other woods were sometimes used, but redwood was favored. Others were expert at gathering and processing plant fibers into the mile or two of cordage to be used along with yop—an epoxy-like mixture of asphaltum and pine pitch—to join the planks together. Along with the inside part of tule used for caulking, these were the principal materials comprising the nail-less, peg-less tomol, constructed with the numerous tools specialized for each step. Sharkskin for sanding, red ochre for staining, and abalone inlay for embellishment completed this work of high craftsmanship and art (R. Cordero 1998).

By winter solstice of 1834, there were so few tomols—less than ten—and so few brotherhood members left, that the society was formally disbanded by Saqt’ele (Palatino), one of the last tomol captains of that time. Addressing the remaining members, he said:

I say to you now that I cannot fulfill my obligations to the brotherhood. Now is the end, for there is no one else who will build a tomol. It is over. There are many children now, but they do not know about the Brotherhood of the Canoe.... This world is our body and it is this world which gives us food. Have courage! Do not be lazy when it is time to harvest and we go out to gather food—only there, on the land, will you find it. If you go to sea, you will not get food, you do not know the ways of the sea...(Hudson, ed., 1978:163-167).

In 1976, 142 years later, Helek (Peregrine Falcon) was the first tomol to be built in modern times. Her design based on ethnographic and historic accounts as well as

* From the Spanish, “tomolero,” a tomol sailor.



archeological data, she was paddled by a crew comprised of ten members of the modern Brotherhood of the Tomol from Tuqan to Wi'ma and then to Limuw in a grueling and much-celebrated journey (Hudson 1977).

The tomol, 'Elye'wun (Swordfish), was built by the Chumash community in 1996-97 under the leadership of the Chumash Maritime Association. 'Elye'wun has now made two Channel Crossings, in 2001 and in 2004, from the mainland to Limuw. Each crossing culminated in a cultural celebration with about 150 Chumash families and friends encamped on the island. The 2004 journey was a milestone for the community in that the crew landing 'Elye'wun were five Chumash youths aged 14 to 22, marking a significant passing on of knowledge and experience to our young people.

As with other coastal indigenous nations (R. Cordero 1998), Chumash people are restoring our heritage of intimacy with the sea for the dual purpose of protecting her and as a means of rediscovering our dignity and identity as a people sprung from this place. Much of this revitalization is concentrated around resurgence of the canoes. In this way, we are hoping once again to “know the ways of the sea” to counter the terrible despair voiced through our ancestor, Saqt'ele, when he believed there would be no more canoes because of all that had been taken away. It is a beginning.

Summary

In this brief history and against overwhelming odds, what we have seen is a cultural spirit so compelling that the tree once considered dead has sent up strong, resilient shoots and branches. The resurgence of the canoe is but one example, but one that stands as an icon for what is happening in the hearts of many Chumash people as we strengthen the knowledge of our heritage. Another indication of the revival of that cultural spirit is the strong desire to protect village and other important cultural sites and resources, whether on or in the land or submerged by the sea.

The vitality of the ancestral culture was rooted first and foremost in its understanding and respect for the integrity of the natural world. So intimate was that knowledge and so tender that regard that Saqt'ele could say, “This world is our body and it is this world which gives us food.” And so practical that he could say in the same breath that if “you do not know the ways of the sea”, you will not be able to get food from the sea. So simple—you have to be there and you have to learn how it works. We have seen that the old ways included both formal and informal hands-on teaching to support the complex learning necessary to become a competent human being and that those ways drew very clear lines of leadership, accountability, and reciprocity. They also came with very high standards for excellence in craftsmanship and performance.

That intimate knowledge of “the ways” of a habitat also supported the adoption of a natural and non-detrimental means to expand a resource, i.e., vegetation burning to increase the availability of high-nutrition resources such as chia and other edible flower seeds which could be successfully stored against periods of drought. It also made the Chumash excellent and versatile fishermen.



The nurture of the individual within the context of the group was well-developed, notably in matters of access to supernatural guidance and power. Individuals' acquisition of and relationship to dream-helpers was a purely personal matter while other spiritual helpers were available because of membership in a moiety or a guild, bringing specified responsibilities. The notion of power was not regarded as intrinsically either good or evil, but depended on how one wielded it. As well, there were inherent in the social structures certain checks on the harmful use of power.

Perhaps the most effective balancing was based on the notions of kinship or relationship described by Kitsepawit: all animals are related, and we are all siblings with one mother, the earth. The world is God, he says. With that worldview and coupled with Seqt'ele's "the world is our body," to harm another is to harm oneself, and to harm the earth is to harm oneself.

We saw that governance of the people was highly complex and multi-layered, with many overlapping boundaries for political, religious, and economic authority. As this reflected a worldview that sees the supernatural as immanent rather than separate and transcendent, not surprisingly it was very effective. At each level of organization, the chain of authority was strongly analogous to the descriptions of the First People of the stories, with a clear overall leader and a powerful counsel of advisers sharing both authority and responsibility. There was great unity among the people on many levels but they were not without contentions, animosities, and disputes as one might imagine among such an intelligent and creative bunch! Therefore, there was also regularly-scheduled ritual provision for dispute resolution that could not be resolved at the day-to-day level. Indeed, ceremonial events—purposely not described here—were an integral means to strengthen bonds, mourn, celebrate and otherwise express the beliefs which give meaning to human life everywhere.

This is a time when contemporary Chumash people—like other indigenous maritime nations—are consciously adopting the values of the old ways. We believe it is critical that we do so in order to restore "our" health; that is, the health of the earth, the ocean, the animals, and all the humans. A measure of health for one restores a measure of health for all. Establishing a Chumash Tribal MPA would be deeply welcomed so that we can be there and learn how it works.

Me'pshumawish. Together we are making health, harmony, peace.

2.0 THE ECOLOGY OF THE BIOREGION

The loss of a species such as white abalone or wild southern steelhead salmon has dramatic cultural significance that transcends mere economic or commercial value for the animal. The ceremonial significance of the animal may also fade in time with the loss of the presence of the animal as a distinct but interdependent part of the greater circle of animals, plants and insects. This section provides an overview of the general patterns of ecosystem disturbance within the bioregion.



Without the designation of large-scale MPAs within the State waters of southern California, the future of the Southern California Bight is in jeopardy (McGinnis In Press).

Ghost Salmon

One indicator of the general health of the coastal watersheds of southern California is the southern steelhead -- the presence of wild salmon in the region signifies the “bridge” and ecological linkage that has existed between health coastal and marine ecosystems and human society. There were once two species of salmon that swam the creeks of this region. The ghost Chinook or King salmon is part of the region’s soil and natural history. Our relationship and treatment of the last remaining wild southern steelhead and the watersheds that we all depend on is a test of our willingness to be responsible members of this maritime community.

The southern steelhead trout is the oldest of all Pacific coast steelhead; their DNA is literally pre-Ice Age.

The loss of wild southern steelhead in the region is an indicator of the degradation of the ecological productivity of coastal and terrestrial ecosystems of the south coast. It also signifies the loss of an essential resource of the Chumash peoples.

The section first describes the ecology of the bioregion with an emphasis on the threats to coastal and nearshore marine ecosystems. The Southern California Bight (SCB) is the most studied marine ecosystem in the world (Dailey et al. 1993). Within the SCB, the Santa Barbara Channel includes patterns of warm, saline water from the Southern California Countercurrent and the colder water from the California Current. Rocky intertidal areas in the SCB probably include more than 220 plant species and up to 610 invertebrate species (Dailey et al. 1993). In the SCB, 492 species of algae and 4 species of seagrasses are known to occur out of the 637 species described for the entire coast of California. Of these 492 species, 59 are green algae, 86 are brown algae, and 347 are red algae.

Giant kelp is the most important marine habitat of the SCB, and was at one time common at depths between 3-30 meters. This highly productive plant provides food, attachment sites, and shelter for marine life. Kelp contributes substantially to the primary productivity of coastal waters. Giant kelp is especially important to juvenile fishes as the dense thicket of kelp in the water column provides for their nursery grounds.

About 481 species of fish inhabit the SCB (Dailey et al. 1993). About 30% of the species and 40% of fish families in the SCB depend on kelp habitat.

Eelgrass beds are also important for primary production, nutrient cycling, and substrate stabilization. Like kelp and surfgrass, eelgrass beds provide food and habitat for a diverse



assemblage of plants and animals. At the Channel Islands, a total of 278 species were identified and associated with eelgrass beds, excluding infaunal species.

The SCB is also a major migratory route for birds, and acts as a stopover during both north (April-May) and south (September-December) migrations. The habitats of the SCB provide breeding, nesting, and feeding sites for many species and large numbers of seabirds, including many federally and state listed endangered and threatened species.

2.1 Coastal Watersheds

There are 24 major drainage systems within the 32,000 square km of the SCB (Saint, Maloney, and Bomkamp 1996). Of these, 53 percent of the drainage area is controlled by major water retention structures, such as dams and reservoirs. In general, coastal watersheds of southern California have been transformed and degraded to serve agricultural, industrial and urban development interests (McGinnis In Press).

The coastal mainland of the region also includes the San Antonio Creek watershed and 34 small coastal watersheds draining the south side of the Santa Ynez Mountains (National Park Service 2003). The creeks of these watersheds provide important nutrients to the marine environment as well as pollution from industrial, agricultural and urban runoff. These creeks and rivers were also essential areas for food gathering by the Chumash peoples.

Several special status species depend on marine and coastal habitats (California Coastal Conservancy 2001). Coastal wetlands are recognized as a “significant biological resource” (Zedler 1982) and “environmentally sensitive habitat” (Santa Barbara County Coastal Plan 1982).

Coastal wetlands were once the “nurseries to the sea”. Today, these coastal wetlands have been destroyed or degraded to the point where they no longer serve as nurseries to the marine environment. Southern California has lost roughly 92% of its coastal wetlands. The loss of this important habitat has led to a general decline in coastal biodiversity. Virtually every coastal ecosystem of southern California is considered threatened or endangered by the U.S. Department of the Interior.

The loss of coastal ecosystems and habitats have contributed directly to the reduction in coastal and marine biodiversity of southern California, as evidenced by estimates that 55% of the animals and 25% of the plants designated as threatened or endangered by the State depend on wetland habitats for their survival.

Notable examples of wetland types that largely have been eliminated in southern California include: estuarine wetlands (i.e., salt marshes) as an entire subsystem at 75-90%; "the riparian community" at 90-95% including loss of 40% of the riparian wetlands in San Diego County during



the last decade alone; and vernal pools at 90% (California Coastal Conservancy 2001).

2.2 Marine Ecosystems and Associated Biodiversity

The marine region includes patterns of warm, saline water from the Southern California Countercurrent and the colder water from the California Current currents (Harms and Winant 1998). This mixing of oceanographic currents is one reason the region is rich in species and habitat diversity (McGinnis 2000).

As the ecosystem health declines the cultural values of these coastal and marine systems are also threatened. The values for a healthy coastal marine ecosystem are linked to a vibrant economy and maritime tradition.

The south coast also includes sandy beach and rocky shore habitats. For example, the 110 miles of coastline in Santa Barbara County (from the Santa Maria River to Rincon Point) consists of 24% rocky shores and 76% sandy beaches. The 41 miles of the Ventura County coast (from Rincon Point to Leo Carrillo State Beach) is 7% rocky shores and 93% sandy beaches. Due to the lack of major drainage basins and higher wave energy, the Channel Islands are predominantly rocky shore (77%).

Rocky intertidal areas of the bioregion include more than 220 plant species and up to 610 invertebrate species. In general, island sites have greater species diversity and better developed algal assemblages compared to coastal mainland sites, because of dramatic human impacts on mainland rocky shores and reefs.

2.3 Human Impacts and Ecosystem Disturbance

Scientific information from extracted cores from the Santa Barbara Channel includes high quality data that can be tracked in increments of close to 50 years. The cores show rapid and extreme shifts in water temperatures during the last 60,000 years (Cannariato, Kennett and Behl 1999). These shifts are known as “regime shifts” that influence the distribution and abundance of marine animals and plants of the SCB (McGowan et al. 1998). A regime shift is a physical change in sea temperature. The change in sea temperature influences the distribution and abundance of marine life and habitats. Despite regime shifts and changes in sea temperature, no extinctions appear to have taken place among the benthic plant and animal communities (Cannariato et al. 1999). The last major regime shift occurred in 1977 (McGinnis 2000).

In a number of creative studies of the Pacific, marine scientists show a substantial decline in the abundance and distribution of animals, such as pelagic and shore birds, and habitats, including kelp and reef systems (CDFG 2002). Evidence indicates that the maintenance of community structure and patterns of native species diversity have dramatically changed (McGowan et al. 1998).



Marine scientists show large-scale changes in primary and secondary productivity throughout the north eastern Pacific between 1951 and 1993. Note this long-term trend in the decline in ecological productivity predates the 1977 warm-water and low-nutrient regime change. This evidence suggests that the maintenance of community structure and patterns of native species diversity has changed in accordance to climate-ocean variability (McGowan et al. 1998).

A general summary of the factors that are contributing to ecosystem disturbance are (McGinnis 2000, In Press; CDFG 2002):

The Euphotic Zone (upper sunlight zone of the sea, less than 120 m thick. Scientists show a long-term deficit in the supply of food necessary to meet the metabolic demands of the sediment community. The long-term increase in sea surface and upper water column temperatures and physical stratification in the system has resulted in a lower rate of supply of nutrients to the euphotic zone. This has led to a decrease in productivity and a general decline of zooplankton and other species (e.g., larval fish production, seabirds, kelp production and a shift in benthic, intertidal community structure). Despite this decline in food supply, the food demand of the deep-benthic sea community remain constant. With the demand on food constant, and the supply diminishing, a net deficit in available food occurs.

Macrozooplankton. Since the late 1970s, macrozooplankton volume in the California Current has declined over 70 percent, in concert with increasing sea surface temperatures (McGowan et al. 1998). Reduced macrozooplankton has a major impact at higher trophic levels by changing the nature of the food supply.

Fishes and Invertebrates. CDFG data show decreases in landings for several categories of groundfish, California sea urchin, swordfish and selected shark species, Pacific mackerel, Pacific herring, California halibut, market squid (for the period 1997-1998) among others.

Oceanic Birds. Ecological theory predicts that in a stable ecosystem those species occupying high trophic levels maintain native species diversity and community structure. Upper trophic level animals such as pelagic birds are indicators of the health of the marine environment. Evidence suggests that the abundance of oceanic birds in the region and the SCB have declined steadily since 1988. For example, the sooty shearwater, the most abundant bird in the SCB, has declined by 90 percent.

Southern California Kelp. Dr. Mia Tegner and colleagues at UC San Diego have shown a two-thirds reduction in standing biomass since 1957 in southern California kelp forests.

Global Climate Change. There is also some indication that the frequency of climatic events is increasing (McGowan et al. 1998).



It is important to recognize that species loss or extinction is forever. The field of marine ecological restoration and enhancement is in its infancy; we do not know how to restore native species diversity or coastal ecosystem habitats, such as coastal wetlands or salt water marshes.

There are two primary reasons for the degradation of coastal marine ecosystems of the region. First, scientists show that the introduction of non-native species influence native species diversity. Second, the destruction of habitat, such as wetlands, oak forests, riparian areas, coastal sage scrub and marine ecosystems continues to threaten native species diversity.

Anthropogenic (human-caused) impacts such as overfishing, pollution and urban development are exacerbating the ability of native species to adapt to turbulent climate and natural changes in the ecology of southern California. In the marine environment, recent evidence from marine scientists shows that overfishing is the primary cause of the decline in kelp ecosystem health. This is becoming a common scene throughout the world -- unsustainable use of coastal marine life continues to have dramatic impact on local maritime cultures and coastal marine ecosystems.

From a 1930 Publication on Southern California Fishing

Fish indigenous to the waters became scarcer, not so much on account of increased ocean traffic or sport catches, as because of commercial live-bait boats. These crafts, equipped with tanks holding thousands of live bait in water kept fresh with pumps, found a rich harvest and reaped it with profit to themselves, but with a decimation of many varieties of smaller game kinds. Where once yellowtail were caught in numbers from the shore, it became difficult to find a few specimens after days of search in fast, modern launches, and unless live bait in quantity was used to attract these fish, it was difficult to secure any yellowtail. White sea bass diminished in proportion. The same situation pertained to various other varieties. Even the rock fish crop decreased in size and numbers... There is a steady and alarming decrease of these fisheries.

- Thomas and G.C. Thomas. 1930. *Game Fish of the Pacific: Southern Californian and Mexican* (London: J.B. Lippincott Company), p. 24.

Fishers and marine ecologists continue to document the collapse of precious coastal marine ecosystems, and important commercial and recreational fishes. Boccacio, for instance, is the first listed threatened marine rockfish of the region with 97% decline in abundance.

Noted oceanographer and marine ecologist Jeremy Jackson et al. (2001) describe the history of the collapse of kelp and other coastal marine ecosystems. "Overfishing and ecological extinction," according to Jackson et al. (2001), "predate and precondition modern ecological investigations and the collapse of marine ecosystems in recent times, raising the



possibility that many more marine ecosystems may be vulnerable to collapse in the near future”. Water pollution and natural factors contribute to general ecosystem health and integrity.

The bioregion remains one of the most threatened “hot spots” for threatened biodiversity in the world (National Park Service 2003; McGinnis In Press). Indeed, California ranks second in the nation in the number of threatened and endangered species.

3.0 MARINE POLICY

A detailed description of jurisdictions and the various agencies with regulatory authority is provided in *California's Ocean Resources: An Agenda for the Future* (Resources Agency of California 1997) and the Channel Islands National Marine Sanctuary Draft Management Plan and DEIS (2004). The section below focuses on federal and state resource agencies that are responsible for protecting coastal marine ecosystems.

3.1 Channel Islands National Marine Sanctuary

The Channel Islands National Marine Sanctuary (CINMS) includes forests of giant kelp, and is home to numerous populations of fish and invertebrates (NOAA 2004). At least 27 species of whales and dolphins have been sighted in the CINMS and about 18 species are seen regularly and are considered "residents". The largest concentration of blue whales in the world can be found within the area. The CINMS lies on the migratory pathway of the California gray whale and other large baleen and toothed whales. Over 60 species of marine birds may be using sanctuary waters to varying degrees as nesting and feeding habitat, for wintering, and /or as migratory or staging areas. Of the 16 resident species of marine birds in the SCB, eleven breed in the CINMS. San Miguel Island supports the most numerous and diverse avifauna in the CINMS, with nine species having established colonies. Santa Barbara Island has several nationally and internationally significant seabird nesting areas, including the largest nesting Xantus' murrelet colony and the only nesting site in the United States of black storm-petrels. The brown pelican, a listed endangered species, maintains its only permanent rookery in California on Anacapa Island.

Because of the species richness and unique habitats of this marine system, this marine area received international recognition by the United Nations (UN) as one of the world's biosphere reserves.

In accordance to the National Marine Sanctuary Act, the priority goal of marine sanctuary management is to “maintain, restore, enhance, living resources by providing places for species that depend on marine areas to survive and propagate” (The National Marine Sanctuary Act 16 U.S.C. 1431 ET. SEQ., Sec. 301(b)(5)(9)). The National Marine Sanctuary Program (NMSP) emphasizes the importance of marine biodiversity conservation from an “ecosystem-based approach”. According to the NMSP:



The [program] expands our nation’s long history of protecting special areas on land to embrace the seas. It brings an ecosystem approach to marine environmental protection and asks us to adopt a new ethic of marine stewardship, but perhaps most of all, it challenges us to work together to find creative solutions to the problems facing our oceans and coasts.¹

The NMSP defines ecosystem management as a process that “should protect and restore ecological components, functions and structures according to socially defined values and scientific information, in an integrated, holistic manner.”

In addition, the use of marine resources within a sanctuary must be “compatible” with the goal of protection of biodiversity. The NMSP states:

The National Marine Sanctuaries Act of 1972 (NMSA) authorizes the Secretary of Commerce to designate and manage areas of the marine environment with nationally significant aesthetic, ecological, historical, or recreational values as National Marine Sanctuaries. The *primary objective of this law is to protect marine resources, such as coral reefs, sunken historical vessels or unique habitats, while facilitating all "compatible" public and private uses of those resources [emphasis added].*²

The National Marine Sanctuaries Act (NMSA) states that “while the need to control the effects of particular activities has led to enactment of resource-specific legislation, these laws cannot in all cases provide a coordinated and comprehensive approach to the conservation and management of the marine environment” (16 U.S.C. 1431 et seq., §301(a)(3)). As a consequence, one of the CINMS’s management priority is to “maintain for future generations the habitat, and ecological services, of the natural assemblage of living resources that inhabit these areas” (16 U.S.C. 1431 et seq., §301(a)(4)(A),(C)). This management priority requires that the CINMS take a broad and comprehensive approach to resource protection. Such an approach brings a focus on large-scale, ecosystem level protection and management, which is unique among the various agencies and laws directed at managing single or limited numbers of species or specific human activities within the ocean.

3.2 Other Federal Agencies

The National Park Service (NPS) is administered under the Department of the Interior and includes the Channel Islands National Park (CINP). The NPS conserves scenery, national and historic objects and wildlife and provides for the enjoyment of those resources in a manner that will leave them unimpaired for the enjoyment of future generations. CINP's proprietary jurisdiction extends out to one mile offshore around Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara islands, and non-proprietary jurisdiction extends out to one mile offshore from San Miguel Island.

¹ <http://www.sanctuaries.nos.noaa.gov/natprogram/natprogram.html>

² <http://www.legislative.noaa.gov/sanct.html>



NOAA Fisheries (also known as the National Marine Fisheries Service or NMFS) administers NOAA programs that assess, manage and promote the domestic and international conservation of living marine resources within the United States Exclusive Economic Zone (3-200 miles offshore). In conjunction with state resource agencies (such as the California Department of Fish and Game) NOAA Fisheries approves and enforces Fishery Management Plans (FMPs) prepared by regional fishery management councils under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). NOAA Fisheries also shares responsibility with the U.S. Fish and Wildlife Service for the implementation of the Marine Mammal Protection Act and the Endangered Species Act, both of which prevent the taking of any endangered, threatened or otherwise depleted species.

The Pacific Fishery Management Council (PFMC) is one of eight regional fishery management councils established in 1976 for the purpose of managing fisheries. The PFMC is responsible for select fisheries off the coast of California, Oregon and Washington.

The U.S. Fish and Wildlife Service (USFWS) is administered under the U.S. Department of the Interior. USFWS works to conserve, protect, and enhance fish (freshwater species), wildlife, and plants and their habitats. USFWS shares responsibility with NOAA Fisheries for implementing the Marine Mammal Protection Act and the Endangered Species Act. For example, USFWS is responsible for managing sea otters and brown pelicans, while NOAA Fisheries is responsible for Steller sea lions, and gray whales.

3.3 State Agencies and Commissions

The Resources Agency of California is a cabinet-level agency responsible for the conservation, enhancement, and management of California's natural and cultural resources. The Resources Agency oversees the activities of 19 state departments, boards, commissions and conservancies, including the Department of Fish and Game and the California Coastal Commission. While the Resources Agency does not implement specific prohibitions or regulations, individual entities under its oversight do.

The California Coastal Commission (CCC) establishes policies and issues permits for the protection of coastal resources and the management of economic development throughout California's coastal zone. The CCC is the only State agency in California with regulatory authority over federally permitted or funded projects, as well as those directly undertaken by federal agencies, that affect the state's coastal zone resources.

The California Department of Fish and Game (CDFG) is responsible for protecting, managing, restoring, and enhancing fish, wildlife, and native plant resources in California. CDFG monitors the effectiveness of state regulations, including those within the Sanctuary, and considers changes to those regulations through the California Fish and Game Commission, the state legislature, and the Office of the Governor to the State of



California. The California Fish and Game Commission is involved in the management of California's fish and wildlife resources. Formed in 1870, the Commission is composed of up to five members who are appointed by the Governor and confirmed by the state Senate. The Commission meets to publicly discuss various proposed regulations, permits, licenses and management policies, including fisheries issues. In addition, the Commission has general regulatory powers for state fisheries management.

The California State Lands Commission (SLC) has jurisdiction over all state-owned lands and submerged lands. The SLC has adopted regulations for the protection and use of public trust lands in the coastal zone.

The California Historical Resources Commission (HRC) is the state agency responsible for the preservation of representative and unique archaeological, paleontological and historical sites in the land and water areas of the state. The Commission also makes recommendations to federal agencies.

The California Office of Historic Preservation Office (OHP) has published a series of preservation planning bulletins which provide guidance for preparation and review of cultural resource management reports.

The California Environmental Protection Agency (Cal/EPA) works to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

The State Water Resource Control Board (SWRCB) and the nine water quality control boards have primary authority for regulating water quality in California. The authority to administer the National Pollutant Discharge Eliminations System (NPDES) permits has been delegated by EPA to the SWRCB and by the state to the regional boards. The SWRCB is the regional lead in water quality management.

The California Air Resources Board (ARB) is charged with the maintenance and enhancement of the ambient air quality of the state. The ARB has set air quality standards designed to meet National Ambient Air Quality Standards and delegated their implementation to local Air Pollution Control Districts.

3.4 The Importance of Marine Ecosystem-based Planning and Management

Since the early 1990s, federal and state resource agencies and programs have supported the development of marine ecosystem-based management. In accordance to federal law, the CINMS is responsible to protect the marine ecosystems of the northern Channel Islands in accordance to a marine ecosystem-based approach. The CDFG is also required to protect marine life in accordance to marine ecosystem-based management and planning.



An ecosystem is a dynamic and interrelating complex of plant and animal communities and their associated non-living environment. The living organisms in an ecosystem are collectively called a community or the biotic community. A biotic community is defined by the species that occupy a particular locality and the interactions between those species. A biological community together with its associated physical environment is considered an ecosystem.

Marine ecosystem-based management implies the protection of the various elements of the food web – those that are consumed and those species and habitats that are not consumed which are essential to the reproduction, growth, and survival of marine life. The designation of a larger network of MPAs that can protect quality habitats, such as kelp forests, should be understood as a critical part of ecosystem-based protection.

The word community derives from Latin *munus*, which has a number of meanings that are relevant here, including service, duty, gift and sacrifice. Community is an assemblage of individuals bound by a relationship and partnership. This relationship and partnership is based on mutual obligation, an exchange of gifts, and shared service. Membership in a community requires the establishment of an intimate relationship with the landscape and seascape, the animals and plants.

Both the Pew Oceans Commission (2003) and the U.S. Commission on Ocean Policy (2004) recommend the development of marine ecosystem-based planning and management. In addition, a number of state and federal marine policy initiatives support the creation of a network of MPAs (PEW Oceans Commission 2003; McArdle 2002; CDFG 2002).

Table 2 describes recent federal and state initiatives that support marine life protection.

Table 2
Federal and State Initiatives for Marine Protection

Title	Brief Description of Process or Activity
California Interagency Marine Managed Areas Workgroup	California Resources Agency established this ad-hoc advisory group in the summer of 1998 to evaluate an array of marine managed area classifications and make recommendations for improvements.
Assembly Bill (AB) 993. Marine Life Protection Act	Introduced in 1999, the Marine Life Protection Act went into effect in January 2000. The Act sets goals for a comprehensive marine protected area program in state waters (0-3 miles offshore).



Channel Islands Marine Reserves Working Group	From 1999 to 2001, the California Department of Fish and Game and the CINMS developed a joint federal-state process to consider the establishment of no-take marine reserves in the sanctuary.
AB 2800 (2000). Marine Managed Areas Improvement Act.	Effective January 2001, this Act identifies a mission and statement of objectives for state MMAs in California, and establishes a new classification system. This new classification system will consolidate over a dozen categories of MMAs into six, with clearly defined goals for each category.
President Clinton's Executive Order #13158 on Marine Protected Areas	Directs federal agencies to establish a national network of ocean conservation areas or marine protected areas (MPAs), and directs the EPA to take new steps to limit pollution of beaches, oceans and coasts.
Pacific Fisheries Management Council	The Council has begun the process of designating marine reserves as a fishery management tool for species under the Council's administrative jurisdiction.

One can be hopeful but pessimistic about the future of marine life within the SCB. In 1999, the California Marine Life Protection Act (Chapter 10.5, Section 2851 [g]) indicated that the proportion of genuine no-take marine reserves in California and federal waters (0-200 miles offshore) is six thousandths of one percent, or .06%. (14 square miles out of 220,000). There are a range MPAs offshore California, but few are no-take reserves (McArdle 2002).

To date, there are no tribal MPAs that have been established in southern California. The designation of Tribal MPAs could be an important part of the creation of a larger-scale network of MPAs for the region.

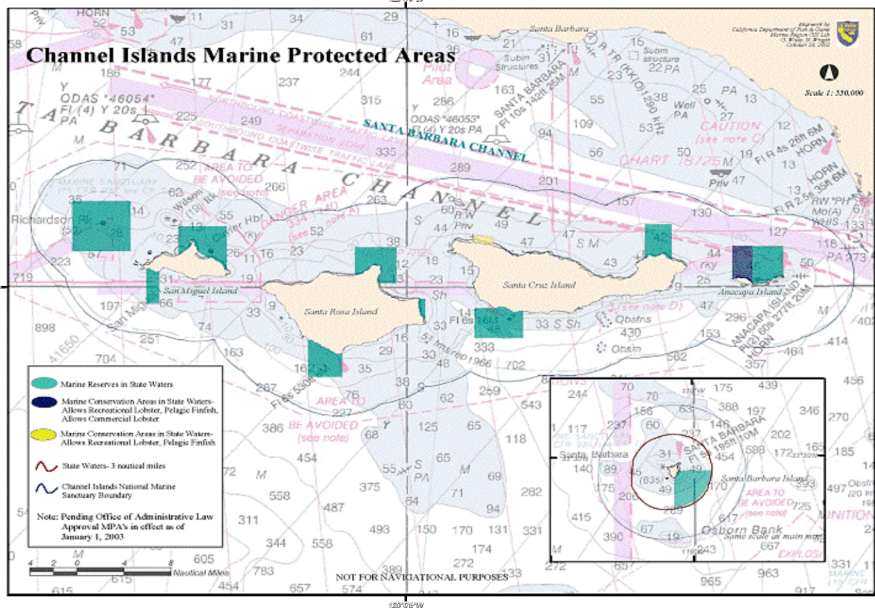
3.5 The California Marine Life Protection Act

Appendix I provides a brief characterization of the process of designation of MPAs within the CINMS while Appendix II describes the MPA designation process in accordance to the California Marine Life Protection Act (1999).

After nearly five years of contentious environmental review and negotiation, the CDFG Commission designated 12 MPAs around the northern Channel Islands in April 2003. Map 2 depicts the MPAs that have been designated within the State waters of the CINMS.



Map 2
Channel Islands Marine Protected Areas (in State Waters)



The level of marine area set aside as a no-take MPA by the State represents a mere .4% of the SCB and 2.5% of State waters. Ten of the 12 MPAs are State Marine Reserves, where no take of living, geological or cultural resources is allowed. Two of the MPAs, one on the northwest side of Anacapa and one at Painted Cave on Santa Cruz, are State Marine Conservation Areas where limited take is allowed. The total area protected by the state within the CINMS is approximately 12% of the entire “sanctuary”, which represents the largest protected area within the eastern North Pacific.

The Governor of California decided to postpone the planning process for MPAs in State waters until late 2005. It is important to consider the role of coastal tribes in planning, decision-making and implementation of the California Marine Life Protection Act.

By 2006, the federal government is expected to complete the environmental review process that could set aside deeper waters of the CINMS (3-6 miles offshore) as MPAs or Marine Conservation Areas.

4.0 INDIGENOUS MARINE PROTECTION AREAS

The importance of designating a network of large MPAs that include co-management by government agencies, fishers, and local communities is increasingly recognized (U.S. Ocean Commission 2004). Co-management of designated MPAs by tribal people has been shown to be an important part of general ecosystem-based management and cultural renewal. Co-management regimes, which can be defined as collaborative strategies between government and local stakeholders that incorporate institutional mechanisms to



share the power, responsibility and accountability for marine ecosystem-based management and planning (Singleton 1998) are one strategy that have shown demonstrable success at improving marine ecosystem management (Karp et al. 2001).

Co-management is viewed as a “middle ground” between state level concerns for equity and efficiency in management and local level concerns for self-governance, self-regulation and active participation. Co-management involves governments going beyond the call for more community involvement and participation in management decisions - a commensurate delegation of rights and power to regional governing councils is also recommended (U.S. Commission on Ocean Policy 2004).

Co-management of designated MPAs is one way for tribal people to maintain their traditional maritime ways and practices (Witty 1994; Adams 1998; Lam 1998). The challenge is how to develop, implement and integrate co-management into future marine policy frameworks that will likely include the use of MPAs.

The last 10-15 years have seen an increasing trend toward recognition of traditional and tribal roles in marine use and management (Adams 1998). One reason for this is that indigenous and traditional peoples have a great understanding and culture-based respect for nature, which has typically developed from their long and profound associations with coastal and marine ecosystems. There is also wider acknowledgement for the need to secure tribal rights to traditional lands, waters and resources - including the right to full and effective protection of some areas (Beltran 2000).

However, there are numerous political and cultural boundaries to developing and implementing conservation policies specific to tribal peoples, especially within the framework of large and often-rigid federal or state marine policies. The section below first characterizes some of the basic principles and guidelines of policy development, with respect to tribal MPAs. Second, the section offers some specific recommendations with respect to the Chumash involvement and participation in the MPA designation process. The principles are primarily adapted from Beltran (2000), the basis for which are the conclusions and recommendations of the IV World Congress on National Parks and Protected Areas, regional and national workshops with indigenous peoples held by the World Wildlife Fund (WWF), and established WWF and IUCN (The World Conservation Union) policies on indigenous peoples and conservation. Third, the section briefly describes case studies of tribal MPAs. A number of useful web links are also included in this section.

4.1 Tribal MPA Case Studies

Tribal people are participating in marine life protection through developing and managing MPAs around the world. The three case studies presented below show but a small sample of these interactions as well as illustrating successful co-management strategies used to adopt various types of MPAs.



Fagatele Bay Marine Sanctuary, Tutuila, American Samoa

The process of establishing a small marine sanctuary (0.85km²) in 1986 at Fagatele Bay, on the island of Tutuila, American Samoa provides an example of a success story in recognizing and incorporating local Samoan culture and traditions into marine life protection. A management plan for the sanctuary was developed between Samoa territorial agencies and NOAA after extensive planning with the village head, Samoan elders, the village council and interested Samoan public. Three major goals of the sanctuary management plan include: (1) protecting Fagatele Bay's relatively pristine coral reef ecosystem; (2) studying recent coral reef disturbances to the island and (3) contributing to the preservation of traditional culture of Samoan people (Guenette et al. 2000). The collaborative planning process used in this case study focused on the role of traditional culture, the importance of village life, and pre-existing village regulations. For instance, NOAA agreed to adjust the proposed sanctuary boundary to coincide with the village's customary marine tenure area.

The designation of Fagatele Bay as a marine sanctuary resulted in prohibition of activities such as spearfishing, trawling, seining, damaging natural and cultural resources, and the taking of sea turtles (Guenette et al. 2000). The sanctuary still permits subsistence fishing and traditional gleaning of shellfish and has a zone for commercial fishing. The sanctuary management plan incorporated an interpretive center displaying practices and traditions of the Samoan people, an education program that included the history of traditional rights in Samoa and an outline of their roles in conservation efforts. A community advisory board for the sanctuary was also developed and training of local Samoan personnel in management techniques was provided to aid Samoans in managing the sanctuary.

Ulunikoro Marine Conservation Area, Ono Island, Kadavu, Fiji

The Ulunikoro Marine Conservation Area is located on the small Fijian island of Ono and is part the third largest reef system in the world - The Great Astrolabe Reef. The conservation area is Fiji's first no-take MPA and was designated in 2000 after protective efforts by a local indigenous community and support from the World Wildlife Fund (WWF). The no-take zone is 0.2km² in size and located in a unique area, where two deep lagoons split a fringing coral reef in the traditional fishing region of Ono's Waisomo Village.

The dwindling abundance and size of fish catches over the past 10 years in Ono's waters led Waisomo village's headman to seek new techniques for protecting the islands marine life. The idea of no-take MPAs made particular sense because it was consistent with the centuries old Fijian marine tenure custom of "taboo". Taboo involved declaring a village's key fishing area off limits for 100 nights after the death of a king to ensure a bountiful harvest of fish necessary for the celebrations marking the crowning of a new king (<http://www.wwf-pacific.org.fj/livingexamplefiji.htm>). The village headman reasoned that if short-term taboo closures led to rich celebratory harvests, then permanent



closures of key fisheries areas could restore the productivity of traditional fishing grounds, ensuring sustainable harvest for present and future generations.

Permanent no-take areas had never been attempted before in Fiji and implementing the Ulunikoro Marine Conservation Area posed considerable challenges. The Waisomo village headman sought support from WWF to facilitate the design and implementation of a culturally appropriate community-based marine conservation process. The basics of this process involved the headman arranging a series of village meetings to persuade the elders and people of his village that to fish less could result in improved catches. Second, under the Fiji Native Lands Fisheries Commission, the written consent of all seven-village chiefs within the district was required to legally support a MPA. Community workshops were held that included cultural ceremonies to provide a forum for villagers to discuss issues critical to understanding and establishing a MPA. In the final workshop, villagers drafted additional basic fishery management guidelines to those traditionally used. Complementing these efforts, in 2000 the Fijian government adopted a policy of empowering selected villagers on Ono as Honorary Fish Wardens, who then become legally authorized to enforce provisions of the Fisheries Act. The final result of this cooperative and community-based effort with WWF was that signed statements of support from all other villages in the district were given and the village head received legal endorsement for the MPA. The Waisomo village also adopted their new marine management guidelines.

Less than three years after the MPA and village fishery management guidelines were employed, Waisomo fishers note that fish are already coming back in both size and abundance. The co-operative implementation of the MPA has empowered local people to better protect marine life.

Northwest Hawaiian Islands Coral Reef Ecosystem Reserve

The network of islands, atolls, coral reefs and shoals that extend over 2200km (1200 nm) to the northwest of the island of Kauai are collectively known as the Northwest Hawaiian Islands (NWHI). The region encompasses over 70% of the coral reefs within US waters and supports roughly 7000 species, of which half may be endemic (<http://www.monachus-guardian.org/mguard11/1121covsto.htm>). Exploitation of the marine area is evidenced by the near extinction of the Hawaiian monk seal via hunting; use of seabirds for feathers products and crashed populations of the black-lipped pearl oyster and lobster fisheries. The need to protect this unique area has been pending for close to 100 years (<http://hawaiiireef.noaa.gov/>).

Presidential Executive Order 13178 established the NWHI Coral Reef Ecosystem Reserve in December 2000, which was later amended by Executive Order 13196 in 2001, following a public comment period. Executive Order 13196 is intended to preserve and protect the Northwestern Hawaiian Islands in their natural state and to uphold Hawaiian cultural access rights. At 340,000 km² (84 million acres), the natural reserve area is the largest under the jurisdiction of the US (<http://www.kahea.org/nwhi/index.html>). However, the process of permanently protecting the area and defining its official



protective status continues. This process has included extensive public input and support. In particular, support has come from native Hawaiians, partly owing to the regions historic and cultural significance.

The first Hawaiians arrived at the NWHI from Polynesia over 2000 years ago. The NWHI served as a stopping place on the way to the main Hawaiian Islands. The atolls and coral reefs of the NWHI formed a pu`uhonua – or a place of safety and regeneration. Traditional songs and chants as well as agricultural, religious and burial sites signify and document the importance of the area to Hawaiian culture as well as highlighting extensive traditional ecological and cultural knowledge (http://www.kahea.org/nwhi/pdf/NWHI_brochure.pdf). The following examples demonstrate the actions and support shown by the native Hawaiian community to protect the NWHI.

Native Hawaiians have led the fight in efforts to uphold and even augment the protective measures of the Presidential Executive Order for the NWHI Coral Reef Ecosystem Reserve. For example, a native Hawaiian fisherman drafted a community-based protection plan for the NWHI, which was later re-worked by Hawaiian elders from five islands and widely circulated via the media and workshops (http://www.kahea.org/nwhi/pdf/NWHI_brochure.pdf). The public overwhelmingly supported the strong conservation measures outlined in the community plan. In addition, a non-profit group called KAHEA, led by native Hawaiians including cultural practitioners, kumu hula (master teachers of dance and chant) and environmental activists have been instrumental in protecting the NWHI (<http://www.kahea.org/>). KAHEA laid much of the groundwork for the current Reserve by recommending specific policies for the future of the reserve as well coordinating the response of other environmental groups and generating public support.

The continued involvement and support of the Hawaiian community will be crucial to defending the comprehensive marine protection measures offered by the NWHI Executive Order 13196. Securing protection for the NWHI is proving to be an inspiring means of re-discovery for native Hawaiians, who are unearthing and reclaiming a wealth of ancient knowledge and history that can only expand and strengthen this vibrant and vital culture (<http://www.monachus-guardian.org/mguard11/1121covsto.htm>). The next challenging step to implementing ecosystem protection for the NWHI includes a federal process to determine whether the NWHI Coral Reef Ecosystem Reserve will become a National Marine Sanctuary (<http://hawaiiireef.noaa.gov/>).

Overall, there are numerous and ever-increasing examples of tribal involvement in the creation and management of MPAs around the world. These efforts toward improved marine ecosystem protection are motivated partly by environmental, cultural, spiritual and economic concerns.

Where co-management of MPAs by tribal people has been slow to evolve, informal consultation and discussions between government agencies, indigenous groups and non-governmental organizations may be a positive step in assisting the process. Working towards and developing effective



co-management strategies that involve and empower local and indigenous people offers a solid foundation for improved marine ecosystem-based management.

4.2 Recommendations for Tribal MPA Policy and Program Development

The following general principles should guide policy and program development of tribal MPAs:

- Tribal people should be recognized as rightful, equal partners in the development, implementation and management of MPAs. This includes rights to participate in determining priorities and strategies for MPAs, decision-making processes and the control and co-management of MPAs.
- Common objectives, commitments and responsibilities for the conservation and management of protected areas should be sought and defined between government agencies and tribal people. Open dialogue and collaboration should be promoted early in the MPA designation process to develop effective partnerships and understandings between tribal people and government agencies.
- Tribal people should be provided with adequate resources to participate in future MPA designation and design efforts. More often than not, tribal people lack the necessary resources to participate as equals in formal, government-sponsored negotiations and collaborative efforts.
- The development of any tribal policies should be framed within, and consistent with, national or state MPA objectives and laws. Where necessary, the legal and institutional structure of MPA systems should be reformed to accommodate the values and interests of tribal people. For example, the New Zealand Fisheries Act of 1983 was amended by the Maori Fisheries Act of 1993 to permit local Maori and the wider community to manage local fisheries in areas of special significance as a food source, or for spiritual or cultural reasons (<http://www.commerce.otago.ac.nz/epmrc/8-13.html>).
- Policies should be streamlined so that they create the minimal bureaucracy necessary to ensure efficient and transparent co-management. This will also aid in the clear accountability for the fulfillment of defined responsibilities, objectives and plans.

With these general principles in mind, there are a number of ways to improve and strengthen the role of Chumash people in future state MPA designation and co-management:

- I. Develop baseline information on marine archeology and submerged Chumash cultural sites (and artifacts). To date, there is a paucity of information and data on existing submerged Chumash cultural sites. Important cultural sites may be near coastal wetland areas, nearshore kelp and rocky reef areas, and river or creek mouth areas. Given the importance of kelp and other marine life to Chumash



people, cultural information should be used as one criteria for designating tribal MPA areas.

- II. Develop and enhance relationships between Chumash people within the region is key to successful development and implementation of tribal MPAs. Collaboration and partnership building across Chumash tribes needs to take place before tribal MPAs are designated.
- III. Develop and implement co-management programs that support collaborative efforts between Chumash people and tribes, government agencies, resource users and marine conservationists. In some cases, Memorandum of Understanding (MOUs) may be required to formalize partnerships between government agencies and coastal tribes.
- IV. Develop marine ecological restoration programs in or near existing or future State MPAs. For example, white abalone restoration and other marine life restoration programs should be integrated into future MPA development. Marine ecological restoration programs should support education and public outreach components.
- V. Develop and support co-management programs that can enrich tribal cultural practices and renew traditional values. Co-management programs should also include tribal people in the monitoring and enforcement of MPAs.
- VI. Creation of Tribal Marine Education Program. Program development should include resources for tribal education, public outreach, and ecological and cultural literacy programs. These programs can also be used to sponsor collaborative tribal relationships and maritime partnership building.
- VII. Promotion of Sustainable Fishery Practices. Future tribal MPAs within the region should be designated as no-take reserves given the general decline in the health of south coast marine ecosystems and the general lack of resource use by Chumash people of marine resources. Tribal MPAs can be part of a larger network of MPAs or other marine conservation areas. Note marine conservation areas are a type of MPA that allow some form of human use of the marine system, e.g., lobster or pelagic fishing. These types of MPAs that allow use may not protect marine ecosystems from over-exploitation.
- VIII. Designate MPAs in areas of high ecological quality and cultural significance. With respect to this last recommendation, CDFG's Master Plan Team made up of nationally recognized marine scientists recommend the following nearshore marine areas for possible designation within the greater Chumash area:
 - Purisima State Marine Conservation Area
 - Conception State Marine Park
 - Refugio State Marine Park
 - Naples State Marine Conservation Area
 - Coal Oil Point State Marine Reserve



- Carpinteria State Marine Park
- Leo Carrillo State Marine Reserve
- Santa Monica Bay State Marine Conservation Area

IX. Several of the marine areas noted above were important for Chumash people, given the bounty that these ecosystems provided at the time. Appendix III describes in more detail these important culture and ecological marine habitat areas within the region that warrant protection.

Overall, policymakers need to begin to develop new institutions that can protect coastal marine ecosystems and submerged cultural sites from human impacts and behavior. Coastal tribes in California can begin to participate and collaborate with state and federal resource agencies in the planning and administration of future MPAs.

Ultimately, the protection of coastal marine ecosystems and submerged cultural sites will require policy development in the following general area: (1) the development and implementation of coastal watershed-based programs for California; and (2) the development of a regional institutions that can protect and enhance coastal marine ecosystems (McGinnis *In Press*).

Watershed plans should incorporate the following general consideration and planning issues:

- Identification of sensitive habitat areas and important ecological linkages;
- Buffer and core zones to be protected near and adjacent to sensitive habitat areas;
- Identification of land-use activities in and near sensitive areas that are compatible with protection and restoration goals;
- Point and non-point source pollution sources and reduction programs;
- Strategies for ecological restoration of ecosystem functions which have been altered through human activity; and
- Alternative land-use practices that support general watershed health.

With respect to future MPA designation, a regional approach to coastal marine ecosystem-based protection and planning will require a kind of vision across boundaries. Table 3 provides an outline of values that should be part of coastal marine ecosystem-based planning (McGinnis *In Press*).

Table 3
The Coastal Marine Ecosystem Planning Process

<i>Defining the Problem</i>
<ul style="list-style-type: none"> ➤ Emphasis is placed on healthy coastal marine ecological processes and linkages, and whole habitats and communities rather than individual species or projects. ➤ Problems are defined without regard to jurisdictional boundaries or technical disciplines, and cooperative solutions and framework agreements are sought when the problem crosses jurisdictional boundaries.



<ul style="list-style-type: none"> ➤ Problems are defined with regard to diverse cultural values, such as the historic use of a species by indigenous society, and practices.
<p><i>Assessing Marine Ecosystem Health</i></p>
<ul style="list-style-type: none"> ➤ Assessment and monitoring strategies are prioritized in part based on their ability to provide insight into the strength and dependencies on one habitat or community upon another, and into both the structure and functional processes of the ecosystem. ➤ Assessment and monitoring strategies are prioritized in part based on their ability to detect long-term trends and the cause of significant ecosystem change. ➤ Assessment and monitoring strategies are identified that shed light on how the marine system sustains vibrant, healthy, and economically diverse human activities. ➤ Assessment of ecosystem health should also be linked to the importance of protecting cultural artifacts and sites.
<p><i>Ecosystem Planning Process</i></p>
<ul style="list-style-type: none"> ➤ Ecological, social, and economic goals are integrated. ➤ The Process involves diverse government and nongovernmental groups and advisory bodies that are representative of broad community interests. ➤ The Process should include members of the indigenous community as formal stakeholders.
<p><i>Management Strategies</i></p>
<ul style="list-style-type: none"> ➤ Management works at multiple scales appropriate to the problem. ➤ The precautionary principle is important to marine ecosystem planning and decision-making. The precautionary principle focuses on the goal of protecting all marine systems and species, regulates the over-use and human impacts to these systems, and links the land and sea. The precautionary principle is used to prevent harm to marine life rather than attempting to enhance or restore the system after ecological impacts and over-use. ➤ Co-management strategies should be developed that link government agency programs to tribal interests to protect cultural sites.
<p><i>Implementation</i></p>
<ul style="list-style-type: none"> ➤ Management and research are implemented at multiple scales appropriate to the understanding of the problem, and to encourage experimentation and innovation. Adaptive management and public outreach or education are encouraged. ➤ Emphasis is on cooperative, interjurisdictional, cross-boundary conservation partnerships, with potential new roles for government and nongovernment groups and tribal people. ➤ Project evaluation draws on socio-economic, archeological and ecological studies and expertise, as well as the local knowledge of biologists, indigenous people, citizens and resource managers.
<p>Source: McGinnis In Press.</p>



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For Further Information:

- *Marine Protected Areas with an Emphasis on Local Communities and Indigenous Peoples: A Review.*
<http://www.fisheries.ubc.ca/publications/reports/8-1.pdf>
- *Indigenous and Traditional Peoples and Protected Areas: Principles, Guidelines and Case Studies.*
http://www.iucn.org/themes/wcpa/pubs/pdfs/Indig_people.pdf
- *Co-management and Community-Based Management. Chapter 8.*
http://web.idrc.ca/en/ev-28111-201-1-DO_TOPIC.html
- **Insights on Indigenous Peoples and MPAs – Part I**
- **Indigenous Peoples and MPAs: Interview with Gonzalo Oviedo of WWF.**
<http://depts.washington.edu/mpanews/MPA25.htm>
- *Insights on Indigenous Peoples and MPAs – Part II. Feature: Indigenous Involvement Often Influenced by Culture and Regional Circumstances -- Four Examples.*
<http://depts.washington.edu/mpanews/MPA26.htm>
- *Co-management: A Community and Resource Management Tool in New Zealand* <http://www.commerce.otago.ac.nz/epmrc/8-13.html>
- *Guidelines for Coastal and Marine Site-Planning and Examples of Planning and Management Intervention Tools.* Eric Gilman. 2002. *Ocean & Coastal Management* 45 pp. 377-404.
- ***Ono Island, Fiji Living Example: Community Motivation at Ono Island, Fiji Islands - Ulunikoro Marine Conservation Area, Ono Island, Fiji*** <http://www.wfpacific.org.fj/livingexamplefiji.htm>
- *Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve*
<http://hawaiiireef.noaa.gov/>
- **KAHEA Organization:** <http://www.kahea.org/>
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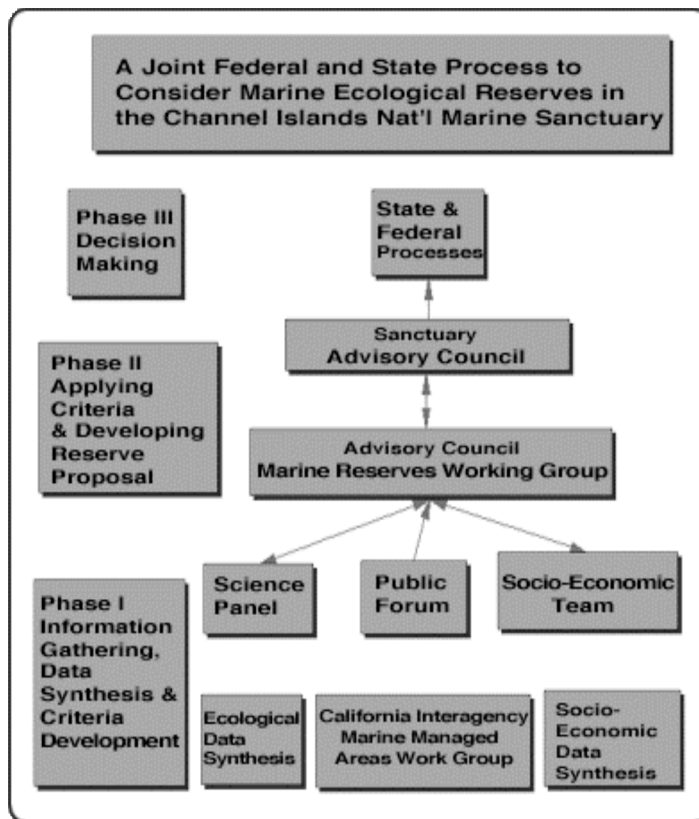


APPENDICES

APPENDIX I

THE DESIGNATION OF MPAS IN THE NORTHERN CHANNEL ISLANDS MARINE ECOSYSTEMS

With respect to the northern Channel Islands, three advisory groups were established by the CINMS and the California Department of Fish and Game (CDFG) to consider the creation of marine protected areas– the Marine Reserve Work Group, Science Advisory Panel, and Socioeconomic Panel.



This appendix focuses on the politics of the Marine Reserve Work Group or MRWG. The MRWG included 17 members that were purported to represent a wide diversity of interests and values within the “community”. The MRWG included representatives from state and federal resource agencies, user groups (e.g., commercial and recreational fishers), local and national conservation organizations, and academics. The MRWG met for 22 months from July 1990 to May 2001. The group represented the first collaborative effort to develop and establish no-take MPAs for the bioregion.

In September 2000 the 15-member Science Advisory Panel recommended to the MRWG that a network of no-take marine reserves of 30-50% of the total national marine sanctuary would be required to protect marine life (Airame 2000). This Panel included



many of the top marine scientists in the country, including Joan Roughgarden (Professor, Stanford University), Bob Warner (Professor and Researcher, National Center for Ecological Analysis and Synthesis), and Steve Gaines (Professor and Director, University of California Santa Barbara's Marine Science Institute). The Panel stated (Airame 2000),

The best available science demonstrates that the minimum area set aside should be no lower than 30%, and perhaps at 50%, of representative and unique marine habitats, features, and populations of interest in all bioregions ...

Marine scientists show the following (Roberts and Hawkins 2000):

- Larger reserves (from 30 to 70% of habitat) can protect more habitat and populations of species while providing a buffer against losses from environmental fluctuation or other natural factors;
- No-take marine reserves can enhance species diversity, biomass, abundance and size of marine animals;
- Case studies of no-take marine reserves shows positive spillover effects from reserves into fishing areas;
- Reserves that are designed to protect ecosystem biodiversity can also protect fisheries.

The Panel recommendation included a range of maps and reserve scenarios that captured between 30 and 50% of the CINMS (Airame 2000). The "characteristic" scale associated with each recommendation, scenario and map determined the level of marine protection. Panel members reached consensus on this recommendation; there were few objections by members of the Panel. Note the Panel's recommendation did not reflect the needs of all the species that are associated with the marine area. The Panel estimated that the 30% recommendation may protect up to 70% of the sanctuary's biodiversity while a 50% reserve design captures roughly 85%. The Panel did not believe that less than 50% would protect birds or mammals.

The Panel recommendation was based on the current state of the literature on the importance of marine protected areas as both a fishery management tool and biodiversity conservation strategy (Airame 2000). In addition, the Panel noted the importance of "insurance" by developing larger reserves that can be resilient to major disturbance events and potential human impacts such as an oil spill and severe storm-related event. Dr. Gaines, a member of the Panel, showed that any reserve scenario should include a multiplier (i.e., 120 to 180% of the reserve spatial design) in case of catastrophic events. The multiplier was described as "insurance" against catastrophe. This insurance factor was described as essential factor in reserve design given ocean-climate variability of the SCB.

The Panel provided the participants in the MRWG process with one of the prerequisites for marine ecosystem protection – no less than 30% of a network of no-take MPAs could protect a majority of the species of the CINMS. Unfortunately, the National Marine Sanctuaries Program does not have a clear mandate to develop MPAs. After several



months of political debate the members of the MRWG failed to reach consensus on the value of the scientific information. During the negotiation process, representatives from participating resource agencies (including the manager of the CINMS), commercial and sports fishing interest groups, and The Ocean Conservancy, compromised on the scientific information, and did not support the Science Panel's recommendation. In May 2001, the MRWG was disbanded after failing to reach a consensus on the size and location of where to establish MPAs.³

After the break-up of the MRWG, the state proposed a network of MPAs in state waters (0-3 miles) of the northern Channel Islands in accordance to the priorities of the California Marine Life Protection Act (CDFG 2002). Both commercial and recreational fishing industries opposed the creation of a large network of reserves around the CINMS. The special interests of the fishing industries was represented by the participating member of the National Marine Fisheries Service (NMFS), the sister agency to the sanctuaries program under the U.S. Department of Commerce. Mark Helvey, a representative of the NMFS, noted during the MRWG deliberation that NMFS "preferred small reserves that could be easily enforced".

As described in the white paper and in accordance to the CDFG California Environmental Quality Act (and associated environmental document or Environmental Impact Report), the California Department of Fish and Game Commission designated MPAs in the State waters of the CINMS.

The environmental and technical analysis has begun to complete a draft National Environmental Impact Statement (DEIS) that will evaluate MPA alternatives in federal waters (3-6 nm) of the CINMS (<http://www.cinms.nos.noaa.gov/marineres/main.html>). This action is being considered to complement the California's recent establishment of a network of marine reserves and protected areas within the State waters of the CINMS. The NMSP conducted three public scoping meetings during the 2003 to gather information and other comments from individuals, organizations, and government agencies on the scope, types and significance of issues related to consideration of marine reserves in the Sanctuary. During the summer of 2004, the NMSP will receive comments on a Staff Preliminary Working Draft Environmental Document for Consideration of a Network of Marine Reserves And Marine Conservation Areas within the Channel Islands National Marine Sanctuary (http://www.cinms.nos.noaa.gov/marineres/PDF/6_2_04.pdf). This document is a building block for the development of a Draft Environmental Impact Statement (DEIS) expected later this year.

The level of protection within the CINMS will be less than the 30% recommendation made by the Scientific Advisory Panel during the MRWG process.

There remain significant political and administrative barriers to this MPA designation process, given the influence and power of the commercial and recreational fishing industries (Okey 2003). The values and interests of traditional society and culture would be important to consider in this future designation process.

³ http://www.cinms.nos.noaa.gov/marineres/PDF/mpa_history%20of%20process.pdf



APPENDIX II
THE NEED FOR MPAS IN STATE WATERS:
The California Department of Fish and Game & Marine Life Protection Act

In July 2001 the CDFG released Initial Draft Concepts for Marine Protected Areas in California (http://www.dfg.ca.gov/mrd/mlpa/concepts_toc.html). These concepts were discussed at a series of ten public meetings along the coast. The concepts were developed with the assistance and advice of the Master Plan Team as directed by the Marine Life Protection Act or MLPA. This appendix includes an overview and depiction of these concepts and potential sites for MPA designation.

Additional information on these concepts (such as background information, MLPA goals, MLPA designations, and design criteria established by the Master Plan team) can be found at http://www.dfg.ca.gov/mrd/mlpa/concepts_toc.html. Some of this information has been reviewed in this White Paper and will not be repeated here. Overall, a large network of MPAs within the study area should protect quality habitats for their cultural and ecological values. Per the burgeoning literature on the merits of large network of MPAs, scientists generally agree that between 30-50% of representative habitats (e.g., kelp, eel grass, rocky reef, sandy bottom) should be protected. Less than 30% protection diminished the general ecosystem-based protection of the marine area and associated biodiversity.

Based on the [comments](#) from the public meetings and the CDFG's desire to involve a range of stakeholder input in the MLPA planning process, [Regional Working Groups](#) were established. The Initial Draft Concepts, their scientific rationale, and comments received were made available to the Working Groups to aid their planning process. The Working Groups did not use the Initial Draft Concepts as a starting point. Instead, the Working Groups began by analyzing the existing array of MPAs then initiated a determination of what changes were needed to reach the goals of the MLPA and their own regional objectives.

These Regional Working Groups were disbanded soon after the Recall Election for the Governor of California. The MLPA process has been put on hold until 2005 or later.

In the near future, a new MLPA process should be initiated that considers both the cultural and ecosystem-based values of MPAs within State waters (0-3 miles off California). The purpose of this appendix is to depict the Master Plan Team's characterization of important nearshore marine areas that warrant protection within the study area. Additional cultural and ecologically significant areas may also warrant protection.

Master Plan Team Recommendations

Fish and Game Code Section 2855(b) requires the CDFG to convene a Master Plan Team to advise and assist in the preparation of the master plan to implement the Marine Life Protection Act. The team members were picked because they have expertise in marine



life protection and are knowledgeable about the use of protected areas as a marine ecosystem management tool. The members are also familiar with underwater ecosystems found in California waters, with the biology and habitat requirements of major species groups in the state's marine waters, and with water quality and related issues.

The Master Plan Team made the following recommendations for nearshore marine areas for the study area (http://www.dfg.ca.gov/mrd/mlpa/concepts_south.html)

1. Purisima State Marine Conservation Area
2. Conception State Marine Park
3. Refugio State Marine Park
4. Naples State Marine Conservation Area
5. Coal Oil Point State Marine Reserve
6. Carpinteria State Marine Park
7. Leo Carrillo State Marine Reserve
8. Santa Monica Bay State Marine Conservation Area

The section below describes these eight marine ecological areas, and draws from the CDFG web link http://www.dfg.ca.gov/mrd/mlpa/concepts_south.html

1. Draft name of MPA: Purisima State Marine Conservation Area

Draft boundaries: Northern boundary is latitude 34° 45.3' N from Purisima Point (34° 45.3' N, 120° 38.2' W) out to 1 nautical mile. Southern boundary is latitude 34° 41.6' N from an unnamed onshore point (34° 41.6' N, 120° 36.1' W) which is the north of Ocean Beach Park at the Santa Ynez River. Offshore boundary 1 nautical from shore.

Total Area: 4.52 square nautical miles

Total Shoreline length: 5.18 nautical miles

Does this encompass an existing MPA site? No

If yes, is this an expansion of an existing site? N/A

Habitats: Rocky intertidal and rock reefs characteristic of the region; kelp forests, soft bottom. Depth range 0-17 fathoms, or 0-31 meters.

Draft regulations: No commercial or recreational fishing permitted, except for finfishing by hook-and-line from shore.

If this is an existing site, is this a change in existing regulations? This is a new draft marine protected area.

Criteria and rationale for recommendation: The area surrounding Point Conception is of great biological value because it is the transition between the biotas of central and



southern California. In addition, the area near Purisima Point is one of the few areas of reef and kelp between Point San Luis and Point Conception, and the reef areas there support a somewhat distinct assemblage of species. Brown rockfish is targeted in fisheries here, as well as rock crab offshore of the draft MPA. Finfishing from shore would be allowed to accommodate personnel stationed at Vandenberg Air Force Base.

2. Draft name of MPA: Conception State Marine Park

Draft boundaries: Northern boundary is latitude 34° 36.3' N from Point Pedernales (34° 36.3' N, 120° 38.3' W) out to 3 nautical miles offshore. Eastern boundary is longitude 120° 27' W from Government Point (34° 26.8' N, 120° 27' W). This State Marine Park is in both the South Central and South Regions.

Total Area: 55.45 square nautical miles (in south region area is 0.47 square nautical miles).

Total Shoreline length: 19.95 nautical miles (in south region shoreline length is 1.81 nautical miles).

Does this encompass an existing MPA site? Yes (Vandenberg Marine Resources Protection Act Ecological Reserve)

If yes, is this an expansion of an existing site? Yes

Habitats: Rock reef, sandy bottom, and kelp beds. Cultural artifacts (shipwrecks). Depth range 0-77 fathoms, or 0-140 meters.

Draft regulations: No commercial fishing permitted. No recreational fishing permitted except for finfish by hook and line from shore.

If this is an existing site, is this a change in existing regulations? Yes, this would allow recreational finfishing from shore, which is now prohibited, within the existing Vandenberg MRPA Ecological Reserve, It would prohibit fishing in the draft expanded area except for recreational finfishing from shore.

Criteria and rationale for recommendation: The area surrounding Point Conception is of great biological significance. It is one of the world's most striking biogeographic boundaries marking the abrupt transition from cold water northern species (Oregonian province) to warm water southern species (California province). The region of overlap in this draft reserve includes a unique mix of species that is not found anywhere else along the Pacific coast. The sharp transition in species arises from the collision of ocean currents. The cold, nutrient rich waters of the southward flowing California Current collide with the warmer, nutrient poor waters of the Santa Barbara Channel in the vicinity of Point Conception. The region between Point Arguello and Point Conception is characterized by extensive upwelling during the spring and summer because of the strong, persistent north winds. Extensive research has been done on the biology and



oceanography of coastal ecosystems around Pt. Conception, including many long-term studies. These databases will enable detailed evaluations of reserve effectiveness. The sensitivity of this region to human disturbance is greatly accentuated, because the settlement of young fish and invertebrates to the region is chronically low, probably due to the strong surface currents moving offshore due to the intense upwelling. The direction of ocean circulation in this region also suggests that young produced on the mainland coast in the Point Conception area may commonly be exported to the northern Channel Islands. Low larval settlement coupled with the likely importance of these populations as a source of young to island populations make this a critical area to reduce impacts. In addition to the special ecosystem features of this region, there are substantial culturally important features of the park, including several historically important shipwrecks. Limited shoreline access makes this a low-use area, so the effects on consumptive users should be minimal. Shore based finfishing around Jalama Beach and Boathouse are relatively common and will be permitted to continue in this marine park.

3. Draft name of MPA: Refugio State Marine Park

Draft boundaries: Western: the mean high tide line at 34° 27.67'N, 120° 05.75'W south along longitude 120° 05.75'W to a distance of _ nautical mile offshore. Eastern: the mean high tide line at 34° 27.76'N, 120° 02.75'W south along longitude 120° 02.75'W to a distance of _ nautical mile offshore. The offshore boundary is _ nautical mile from shore.

Total Area: 1.07 square nautical miles

Total Shoreline length: 2.64 nautical miles

Does this encompass an existing MPA site? Yes, Refugio State Beach.

If yes, is this an expansion of an existing site? Yes, a small expansion along shore and offshore.

Habitats: Rocky reef and ledges and sandy bottom. Depth range 0 to 17 fathoms, or 0 to 31 meters.

Draft regulations: No commercial fishing allowed, no extraction of archaeological or geological resources.

If this is an existing site, is this a change in existing regulations? Yes. The area within the existing state beach boundary allows the commercial and recreational take of fishes, certain invertebrates, and the commercial take of kelp out to 1,000 feet from shore. Existing regulations beyond 1,000 feet from shore allow commercial and recreational fishing under the general Fish and Game regulations.

Criteria and rationale for recommendation: Refugio State Beach is the newest underwater unit of the state park system, leased from State Lands Commission in 1998. The area was leased for significant natural values as well as extremely sensitive



archeological sites. The reefs in this area support high levels of marine invertebrates and fish. The draft state marine park would give higher levels of protection to the many submerged historical resources in this once popular trading ship anchorage. This area is one of the few coastline reserves with easy access to recreational divers. Local dive clubs already support the park by maintaining a kiosk and dive map of the area.

4. Draft name of MPA: Naples State Marine Conservation Area

Draft boundaries: Western: Edward's Point (34° 27.00'N, 119° 59.3'W) south along Longitude 119° 59.3'W to a distance of 3 nautical miles offshore Eastern: Coal Oil Point (34° 24.40'N, 119° 52.6'W) south along Longitude 119° 52.6'W to a distance of 3 nautical miles offshore. Offshore boundary is 3 nautical miles from shore.

Total Area: 18.98 square nautical miles

Total Shoreline length: 6.49 nautical miles

Does this encompass an existing MPA site? No. This is a new draft marine protected area.

Habitats: Rocky reef, kelp beds, sandy bottom. Depth range 0 to 145 fathoms, or 0 to 265 meters.

Draft regulations: No commercial or recreational fishing permitted, except for commercial lobster fishing and recreational lobster and finfishing.

Criteria and rationale for recommendation: The reefs in this area are incredibly diverse, particularly the offshore Naples reef. The varied topography of this reef is home to a rich diversity of benthic invertebrates, fish and seaweeds that form a unique ecosystem in this area. Naples Reef is one of the two most thoroughly studied rocky reefs in Southern California, and scientific understanding of coastal ecosystems of this region have been greatly enhanced by work at this site. Naples Reef is currently one of the core monitoring sites of the National Science Foundation's Santa Barbara Coast Long Term Ecological Research (LTER) program, which examines long term changes in ecosystems in the face of climate change and human use. This ongoing and historical research will help determine the effectiveness of this conservation area in the face of some continuing consumptive use. This conservation area will protect nearshore species from increased take in the future, while allowing for present, low-level, recreational and commercial take.

5. Draft name of MPA: Coal Oil Point State Marine Reserve

Draft boundaries: Western: Coal Oil Point (34° 24.40'N, 119° 52.6'W) south along Longitude 119° 52.6'W to a distance of 3 nautical miles offshore Eastern: Goleta Pier (34° 24.99'N, 119° 49.75'W) south along longitude 119° 49.75'W to a distance of 3



nautical miles offshore. Offshore boundary is 3 nautical miles from shore. Includes Devereux and Goleta Sloughs.

Total area: 7.94 square nautical miles

Total Shoreline length: 2.93 nautical miles

Does this encompass an existing MPA site? No. This is a new draft marine protected area.

Habitats: Rocky reef, kelp beds, sandy bottom. Depth range 0 to 89 fathoms, or 0 to 163 meters.

Draft regulations: No commercial or recreational fishing permitted

Criteria and rationale for recommendation: This section of coast includes Isla Vista Reef, a very productive subtidal reef with abalone and abundant lobster, two coastal estuaries (Devereaux and Goleta Sloughs), and several intertidal rocky reefs. The adjacent estuaries serve as nursery habitat for a number of marine fish. They are rare remnants of much more extensive estuarine systems that were once prevalent along the Southern California coastline. One of the estuaries, Devereaux Slough, is part of the University of California Natural Reserve System, a terrestrial and wetlands reserve that promotes education and research activities and serves thousands of public visitors each year.

6. Draft name of MPA: Carpinteria State Marine Park

Draft boundaries: Western: Sand Point (34° 23.78'N, 119° 32.28'W) south along longitude 119° 32.28'W to a distance of 3 nautical miles offshore. Eastern: Rincon Point (34° 22.37'N, 119° 28.71'W) south along longitude 119° 28.71'W to a distance of 3 nautical miles offshore. Offshore boundary is 3 nautical miles from shore.

Total Area: 10.09 square nautical miles

Total Shoreline length: 3.71 nautical miles

Does this encompass an existing MPA site? No. This is a new draft marine protected area.

Habitats: Rocky reef and sandy bottom. Depth range 0 to 21 fathoms, or 0 to 38 meters.

Draft regulations: No commercial fishing permitted. No recreational fishing permitted except for shore-based hook and line finfishing.

Criteria and rationale for recommendation: This draft state marine park would include Carpinteria reef, a National Science Foundation Santa Barbara Coast Long Term



Ecological Monitoring (LTER) site. The park is offshore from the Carpinteria Salt Marsh, which is a University of California Natural Reserve Site. Carpinteria reef contains rich rocky habitat and the Carpinteria marsh is the largest estuary and salt marsh in the Santa Barbara Channel. The estuary is an important nursery habitat for a wide diversity of fish species. Recreational opportunities along the shoreline would still be allowed to reduce possible impacts on the community.

7. Draft name of MPA: Leo Carrillo State Marine Reserve

Draft boundaries: Western: Point at 34° 02.83'N, 118° 57.24'W south along longitude 118° 57.24'W to a distance of 3 nautical miles offshore (at the tank northwest of Arroyo Sequit). Eastern: Point Dume (33° 59.99'N, 118° 48.51'W) south along longitude 118° 48.51'W to a distance of 3 nautical miles offshore. Offshore boundary is 3 nautical miles from shore.

Total Area: 24.39 square nautical miles

Total Shoreline length: 8.56 nautical miles

Does this encompass an existing MPA site? No. This is a new draft marine protected area.

Habitats: Rocky reef, boulders, rocky outcrops, kelp beds, and deep-water canyon. Depth range 0 to 332 fathoms, or 0 to 607 meters.

Draft regulations: No commercial or recreational fishing permitted

Criteria and rationale for recommendation: The area off Leo Carrillo is well studied by the State Dept of Parks and Recreation and by others. It has served as a control site in numerous studies because it is relatively unimpacted and not directly affected by discharges. The area was recognized as an Area of Special Biological Significance in 1979. A wide variety of habitats and organisms are found there. Some of the richest diversity of intertidal organisms in southern California can be found among the bedrock and boulders. Offshore kelp forests provide habitat to many fish species including sand bass, halibut and rockfish as well as abalone and numerous other invertebrates. Sandy beaches provide habitat for Pismo clams and sand dollars. Near Point Dume, the head of a small submarine canyon provides some deeper water habitat. Several State beaches including Leo Carrillo and Point Dume State Beaches could provide enforcement and education components to the reserve.

8. Draft name of MPA: Santa Monica Bay State Marine Conservation Area

Draft boundaries: Western: Malibu Pt. (34° 01.80'N, 118° 40.90'W) along a line to; Southern: Palos Verdes Pt. (33° 46.40'N, 118° 25.70'W) (Note: This is Fish and Game District 19A). Offshore boundary varies from 3 to 6.5 nautical miles from shore.



Total Area: 69.08 square nautical miles

Total Shoreline length: 28.78 nautical miles

Does this encompass an existing MPA site? No. This is draft for re-naming only (see below).

Habitats: Sand, rocky reef, artificial reef, and shale. Depth range 0 to 204 fathoms, or 0 to 373 meters.

Draft regulations: No change in current regulations.

Criteria and rationale for recommendation: Santa Monica Bay has many existing fishing regulations that are more restrictive than the surrounding area. Most commercial fishing is currently prohibited, with a few exceptions. Designating this area as a State Marine Conservation Area creates consistency in the MPA network and acknowledges the special regulations in this area.



