

The State of California's Role in the Conservation of Sea Otters and Other Aquatic Resources

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The State of California plays an important role in the protection and management of California's sea otter population. However, that role has changed substantially over the years, from primary responsibility for protection and management of sea otters to a role secondary to the federal government. Within California State government, responsibility for wildlife resources, including sea otters, rests with the California Department of Fish and Game (CDFG). The CDFG is part of the Resources Agency which oversees the management of California's natural resources. Overseeing and regulating policies that guide the CDFG in fulfilling its public trust responsibility are provided by the State Legislature and the California Fish and Game Commission. Thus, the state's public trust responsibilities are expressed through the CDFG.

CDFG management policies

The CDFG's mission is to serve the public by conserving the state's living natural resources for their ecological values and for their use and enjoyment by the public today and in the future. The foundation for this mission is contained in policies established by the State Legislature over the last several decades. When considering the conservation of aquatic resources, the Legislature declared it to be state policy to encourage the conservation, maintenance, and utilization of the living resources of the ocean for the benefit of all the citizens of the state, and to promote the development of local fisheries in harmony with the conservation of the ocean's living resources (California Fish and Game Code, Section 1700).

Six objectives were delineated to give guidance in carrying out the policy for conserving aquatic resources. These objectives provide the foundation for the CDFG's ongoing evaluations of alternative sea otter management strategies. The objectives are abbreviated below and appear in the order in which they have been prioritized.

- (1) Maintain sufficient populations of all species of aquatic organisms to insure their continued existence.
- (2) Recognize the importance of the aesthetic, educational, scientific, and nonextractive recreational uses of aquatic resources.
- (3) Maintain sufficient resources to support a reasonable sport use.
- (4) Encourage the growth of local commercial fisheries, consistent with aesthetic, educational, scientific, and recreational uses of such living resources, and to foster the use of unused resources.
- (5) Manage fisheries under the state's jurisdiction on a basis of adequate scientific information promptly promulgated for public scrutiny with the objective of maximizing a sustained harvest.
- (6) Encourage the development of commercial aquaculture.

Broadly translated, these objectives espouse a conservation-oriented perspective. How that perspective has been expressed in action has changed appreciably through the course of the sea otter's recovery in California.

History of California's role in sea otter protection

Early in the population's recovery from over-exploitation (see Anderson et al., this issue), just after the turn of the century, the sea otter population was provided complete protection under state law (California Fish and Game Code, Section 4700). Complete protection was deemed to be commensurate with the population's precarious status. The emphasis was placed on achieving the first objective mentioned above, in this case to establish and maintain a sufficient number of sea otters to insure the population's continued existence in state waters. That emphasis remains unchanged. With protection provided at the turn of the century by state law and international treaty, the population grew and expanded its range at a fairly consistent rate. The State augmented its protection by establishing the Sea Otter Game Refuge in 1941 (see Figure 1). The refuge boundaries were expanded to include virtually the entire sea otter range in 1959. However, with continued growth came controversy and eventually the recognition that achieving all of the objectives for the conservation of aquatic resources might require a modification of the CDFG's protective posture.

Otter-fisheries conflict

In the early 1960s, views differed within the CDFG about the relative influence of sea otter predation and human consumptive uses on the loss of red abalone (*Haliotis rufescens*) fisheries. The prevailing view was that human over-exploitation was responsible for the loss of abalone fisheries within areas reoccupied by sea otters. However, the ongoing controversy and legislative action (described below) prompted a reevaluation of that subjective appraisal and the status of the sea otter population.

In 1967, the State Senate passed a resolution directing the CDFG to determine the feasibility of containing the sea otter population in an effort to protect the existing recreational and commercial abalone fisheries while maintaining the sea otter population (Bissel and Hubbard 1968). In compliance, the CDFG initiated studies to evaluate the status of the population and to obtain the background biological information necessary for safe management of the sea otter population. Studies were also conducted to assess the effects of sea otter foraging on shellfish resources, with an emphasis on abalone fisheries (Ebert 1968; Wild and Ames 1974; Wendell et al. 1986).

Sea otter range expansion, between 1967 and 1972, into the state's most productive red abalone fishing grounds near Point Estero afforded an opportunity to assess the status of the red abalone resource before, during, and after reoccupation of the area by sea otters. This research yielded compelling evidence that sea otters were responsible for the loss of recreational and commercial abalone fisheries within the sea otter's range (Wendell 1994). The progression in the precipitous decline in abalone densities closely corresponded to the southward progression of sea otter foraging activity in the area.

Zonal management

Clarifying the factual basis for the resource-use conflict underscored the problem in achieving the state's policy objectives if sea otter range expansion continued. The only management strategy that appeared to have potential for insuring the continued existence of a sea otter population in state waters (objective Number 1) and sufficient shellfish resource for human use (objectives Numbers 3 and 4) was to establish geographically separate zones for these apparently incompatible uses of the state's shellfish resources. This concept, suggested in the 1967 State Senate resolution, has come to be known as zonal

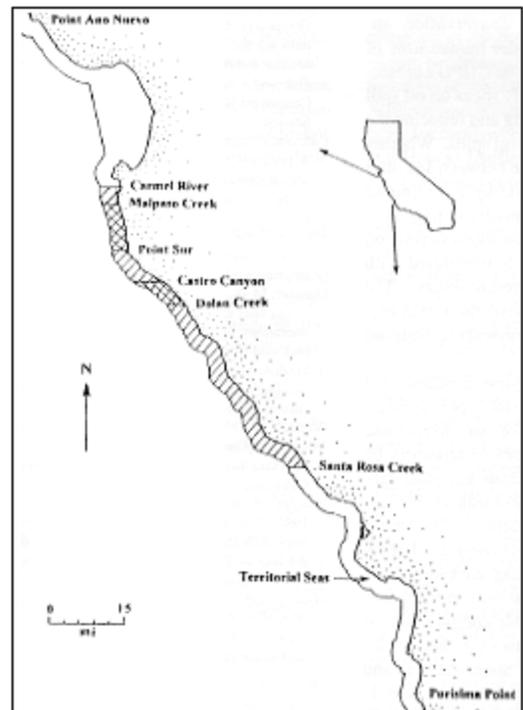


Figure 1. Location of California's sea otter game refuge as originally established in 1941 (cross hatch) and expanded in 1959 (diagonal hatch).

management.

In 1968, the CDFG began conducting research to evaluate capture, tagging, and transport techniques for sea otters (Odemar and Wilson 1969). The effort was designed to assess the utility of translocating otters from the area of conflict at the range periphery back into the well-established range. The effort established basic translocation protocols but did little to test the technical feasibility of zonal management before the concern over the loss of commercial and recreational shellfish fisheries became a secondary issue.

Shift to federal control

The passage of the federal Marine Mammal Protection Act (MMPA) in 1972 placed responsibility for sea otters under federal control and imposed a legislative mandate that focused on increasing the numbers of sea otters within state waters (see Baur et al., this issue). This dramatically changed the CDFG's role. Addressing the state's other policy objectives is not easily achieved under the MMPA mandate. The single-species emphasis effectively delayed the implementation of any form of zonal management designed to achieve a balance that recognized both the objectives of protecting the sea otter population and providing for human uses of shellfish resources. As a consequence, the CDFG's role shifted to one that emphasized advocacy of zonal management as well as sea otter protection.

Southern sea otters and the Endangered Species Act

This historical perspective is relevant because it gives the background for the CDFG's recommendations concerning the population's possible listing under the Endangered Species Act (ESA). While the CDFG did not establish what measures would be necessary to protect the sea otter population from the threat of a large-scale oil spill within a zonal management context, it concluded that a sufficient number of sea otters existed to insure the population's continued existence (California Department of Fish and Game 1976). As a consequence, the CDFG recommended against the listing of this population under the ESA. The U.S. Fish and Wildlife Service nevertheless listed the population in California as threatened.

While the CDFG questioned the assessment that the population's status was precarious, the response to the listing proposal did not signal a change in the CDFG's policy on protection of sea otters. When protection was warranted, action was taken. A case in point is the legislation to limit the accidental drowning of sea otters in large-mesh set nets (California Fish and Game Code, Section 8664.5). The accidental drowning of sea otters in gill and trammel nets, used to catch California halibut (*Paralichthys californicus*), was identified as a source of mortality that had probably increased as the sea otter population expanded into areas of intense fishing. The estimated number of otters drowned annually during a two year study period in the early 1980s (80 otters) was of a magnitude sufficient to contribute significantly to the lack of sea otter population growth during that time period. Legislative action created a spatial separation between the fishing activity and sea otters by closing waters less than 30 fathom depth to that fishery. The level of accidental drowning declined to virtually zero; however, the fishery was not sustainable with the depth restriction and essentially collapsed within a few years. The balance between competing objectives cannot favor human uses of the state's resources if those uses conflict with insuring the existence of a viable sea otter population. Rather, the CDFG's opposition to the listing reflected concern over the institution of yet another single-species mandate that had significant ramifications on the state's ability to manage its wildlife resources.

Safeguarding the population of sea otters in California is a common goal for all of the regulating agencies involved. However, the CDFG also recognizes that determining what constitutes a safe population level has been and will likely continue to be a contentious process. The CDFG is also concerned that the management strategy proposed in the second recovery plan moves away from a recovery strategy that considered impacts to human uses of shellfish resources. In that regard, the second recovery plan rejects a broadly supported compromise developed to implement the original recovery plan that addressed the

CDFG's desire for balance between competing and conflicting uses of the state's shellfish resources. In fact, the second recovery plan questions the validity of the view that sea otter predation has directly caused the loss of shellfish fisheries. Thus, where consideration of human uses of affected resources will balance against additional sea otter population growth remains to be seen. This raises the question of whether the recreational and commercial shellfish fisheries that are an important part of California's colorful heritage will survive.

The ESA's inability to consider the socioeconomic impacts of recovery actions has contributed significantly to the polarized positions taken by groups concerned with the sea otter-shellfish fishery conflict. Pub. Law 99-625 and the translocation plan (see Baur et al., this issue) were supported by the CDFG because they recognized socioeconomic impacts. In effect, Pub. Law 99-625 acted as an interim long-term management plan by providing the sea otter population with an additional safeguard while recognizing the need to limit sea otter distribution because of the conflict with human uses of shellfish. It created a workable compromise that generated the legal authority necessary to attempt to maintain the beneficial uses of both the state's sea otter population and shellfish resources.

Conclusion and recommendations

The implementation of Pub. Law 99-625's containment management provisions afforded the first opportunity to evaluate the technical feasibility of zonal management. The effort achieved limited success while demonstrating that ongoing efforts would likely prove to be costly and labor intensive. However, the effort raised more questions about the technical feasibility, efficacy and safety of zonal management than it answered.

Subsequent CDFG actions related to sea otter management will continue to emphasize protection for sea otters and advocacy for conservation approaches that consider human uses of aquatic resources. The CDFG's protective efforts will likely focus on oil spill contingency planning and reducing the risk associated with oil spills. Whether a balance is possible between sea otter protection and providing a continuing resource that will support existing shellfish fisheries will now likely depend on how the MMPA is administered with regard to socioeconomic issues. The MMPA seems to have the flexibility, however its expression will require broad public support.

In the CDFG's view, a balance that considers all of the state's policy objectives would provide for more diverse and, potentially, better uses of resources by considering both human and other species' needs. The CDFG realizes that successful implementation will require partnerships among a variety of interests. One crucial component in creating those partnerships is to achieve a common view, or at least a workable compromise, on reasonable human uses (aesthetic, educational, scientific, nonextractive, and consumptive) of natural resources in the marine environment.

It is likely that sea otter conservation efforts under state and federal law will be successful in securing a future for sea otters within California waters. However, our conservation efforts will not end with achieving that goal. Recognizing that, we should ensure that a long-term perspective is built into our conservation planning process. It is from that perspective that I offer the following specific recommendations.

- (1) Initiate a dialogue on long-term management of aquatic resources that provides opportunity for involvement by all interested parties to fully discuss the merits of zonal management.
- (2) Develop funding mechanisms to support the testing and, if subsequently found to be appropriate, the implementation of zonal management.
- (3) Initiate studies that focus on the efficacy and safety of limiting sea otter population growth potential through contraception.

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