Sea Otters and the Role of Provincial Protected Areas in Recovery

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Abstract: The sea otter (*Enhydra lutris*) was extirpated from British Columbia by the early 1900s. Between 1968 and 1972, relocations of sea otters from Alaska were successful in establishing a colony in Checleset Bay. Soon after, biologists called for protected area status for the area. In 1981, the Checleset Bay Ecological Reserve was established to provide high quality marine habitat for the reintroduced sea otters so they could increase their range and abundance. Sea otter colonies have now been found well beyond the ecological reserve and are established in a number of other provincial protected areas. Protected areas serve to reduce threats to sea otter recovery; hence, sea otter managers could use protected area designation more effectively for conservation of sea otters and their habitat.

Key Words: sea otter, *Enhydra lutris*, ecological reserves, parks, protected areas, recovery actions, British Columbia

Introduction

Starting in the mid-1700s, sea otters (*Enhydra lutris*) in the north Pacific were hunted intensively for the fur trade; by 1929, the species was extirpated from British Columbia (B.C.). Between 1968 and 1972, relocations of sea otters from Alaska resulted in the establishment of a colony in Checleset Bay, B.C. In 1977, Ian MacAskie, a federal research scientist at the Pacific Biological Station, requested that Checleset Bay be designated under the *Ecological Reserve Act* as a means of aiding the recovery of the reintroduced population. In 1981, Checleset Bay Ecological Reserve was established to provide high quality marine habitat for the reintroduced population of sea otters so it could increase its range and abundance. Sea otter colonies have now been found well beyond the ecological reserve and are established in a number of other provincial protected areas. In 1989, BC Parks staff discovered an established sea otter colony in Hakai Lúxvbálís Conservancy Area, 230 km from Checleset Bay.

As the sea otter population recovers and expands its range, a number of existing protected areas could be used as focal areas for sea otter conservation. Provincial protected areas[1] include parks, nature conservancy areas, and recreation areas designated under the *Park Act* and the *Protected Areas Act of British Columbia*; ecological reserves designated under the *Ecological*

[1]Protected area (lower case) is the general term used for any reserve in B.C.'s protected areas system. Protected Area (upper case) is a specific category of protected area that is designated under the *Environment and Land Use Act*.

Reserve Act; and Protected Areas designated under the *Environment and Land Use Act.* More than 20 years ago, Ian MacAskie and other biologists saw protected area designation as a valuable tool for sea otter conservation. This paper attempts to answer two questions: (1) is there any evidence that protected areas have mediated any of the threats to sea otters that were identified in the draft sea otter recovery strategy (DFO 2004), and (2) are there ways to enhance the role of protected areas in sea otter conservation?

Threats

The draft sea otter recovery strategy identified seven threats to sea otters: oil spills; disease and parasites; loss of genetic diversity; marine biotoxins; contaminants; entanglement in fishing gear and collisions with vessels; and illegal kill and human disturbance. Of these seven threats, oil spills, disease and parasites, entanglement and collisions, and illegal kill and human disturbance are potentially mitigated through protected area management. In addition, protected area management has a role in the research and monitoring that is required to better understand all seven threat categories.

Oil Spills

Catastrophic oil spills are the most significant threat to the recovery of sea otters in B.C. Protected areas cannot reduce the risk from large oil spill events, but protected area management can contribute to disaster planning and response. Most coastal provincial parks have identified oil spill response as a management issue, and Parks staff participate in spill response planning. At a fine scale, protected areas contribute to oil spill risk reduction by providing areas of minimal development, which thereby reduce the distribution of potential localized oil spills and chronic oiling sites. For example, 90 km of Vancouver Island shoreline from San Josef Bay to Shushartie Bay is protected from development by Cape Scott Provincial Park. Marine industrial infrastructure, such as fueling facilities and docks, are not allowed in the park, and other activities that are commonly associated with chronic oiling are severely limited. This reduces the threat of oil spills.

Disease and Parasites

An increased incidence of disease in sea otter populations in California is thought to be associated with runoff from urban and agricultural areas (e.g., encephalitis caused by a parasite normally found in domestic cats [DFO 2004]). Large terrestrial protected areas along the coast of B.C. may reduce similar risks associated with developed landscapes. For instance, the combined area of Checleset Bay Ecological Reserve, and Brooks Peninsula and Big Bunsby parks forms a continuous terrestrial and marine protected area of 87,000 ha within the sea otter's core habitat in

British Columbia. Along the 500 km shoreline of Vancouver Island's west coast where sea otters are expanding their range, about 290 km or 58% is protected in federal or provincial protected areas. Protecting coastal areas from development limits the links between land use and disease in sea otters.

Entanglement and Collisions

Within provincial protected areas, federal fisheries management and protected areas management can develop complementary restrictions that reduce the potential for sea otter entanglement in fishing gear and collisions with marine vessels. As an example, at Race Rocks Xwayen Ecological Reserve/Marine Protected Area, limits on boat landings, restrictions on fishing, and voluntary best management practices for marine wildlife viewing have reduced vessel movements in the reserve. These actions have reduced the risk of collision between marine mammals and vessels.

Illegal Kill and Human Disturbance

While the recovery strategy has identified illegal kill and human disturbance as potential threats to sea otter recovery, they are thought to be insignificant at this time; however, as the sea otter population grows, interactions with humans will be more common. Protected areas can function in a number of ways to mediate these threats by designating restricted access or low use areas, providing areas of reduced interaction between seafood harvesters and sea otters, and most importantly, serving as a focal point for place-based education. Checleset Bay Ecological Reserve has a number of complementary fisheries closures to conserve prey species for sea otters and reduce interaction with harvesters.

Research and Monitoring

With appropriate planning and management, protected areas can provide long-term benchmark sites that can be used for research and monitoring. Of course, this requires cooperation and coordination among various researchers and government agencies. Protected areas management can fill this role. As an example, BC Parks staff made the first observations of an established sea otter population in the Goose Islands. Since then, Parks staff have partnered with researchers and Fisheries and Oceans Canada (DFO) to inventory sea otters.

Occurrence of Sea Otters in Provincial Protected Areas

Sea otters have been observed in 16 provincial protected areas (Table 1). As the sea otter expands its range, it will establish colonies in more protected areas. To determine which protected

areas have potential to support sea otters, we used the B.C. Marine Ecosystem Classification System (MEC) (MSRM 2002) as a simple model for sea otter habitat. MEC divides the benthic marine environment into 1201 ecounits based on seven physical parameters. There are 263 unique ecounit codes along B.C.'s coast. Using eight ecounit codes that corresponded to known sea otter sites in Checleset Bay and the Goose Islands, we determined which other protected areas might support sea otters (Table 1).

Table 1. Provincial protected areas with observed and potential occurrences of sea otters.

Observed occurrence	*Potential occurrence*
Anne Vallee Ecological Reserve	Beresford Island Ecological Reserve
Big Bunsby Marine Park	Byers Conroy Harvey Sinnett Islands Ecological Reserve
Brooks Peninsula Park	Juan de Fuca Park
Cape Scott Park	Duke of Edinburgh Ecological Reserve
Catala Island Marine Park	Naikoon Park
Checleset Bay Ecological Reserve	Race Rocks Xwayen Ecological Reserve/Marine Protected Area
Flores Island Park	Scott Islands Park
Hakai Lúxvbálís Conservancy Area	Sartine Island Ecological Reserve
Hesquiat Peninsula Park	Vladimir J. Krajina Ecological Reserve
Lawn Point Park	
Maquinna Park	
Mitlenatch Island Nature Park	
Nuchatlitz Park	
Raft Cove Park	
Rugged Point Marine Park	
Vargas Island Park	

Enhancing the Role of Protected Areas in Sea Otter Recovery

Including sea otter habitat in protected areas provides a number of measures that contribute to sea otter recovery; however, these measures are limited. Indeed, the conservation tools available to any single government agency are limited. It takes coordination and cooperation between a number of federal, provincial, and First Nations government agencies and various community groups to really make protected areas work for sea otter conservation. In the 1970s, sea otter biologists saw a role for provincial protected areas. Today, it is up to sea otter managers to use protected area designation as a tool for conservation. Steps to improving the role of protected areas in sea otter conservation include

- identifying key sites for conservation and determining their overlap with provincial protected areas;
- determining which existing protected area management measures assist sea otter conservation;
- designating selected protected areas as sea otter conservation focal sites; and

- developing management directions for the focal sites to guide complementary measures used by cooperating agencies.

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