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STATUS OF SEA OTTERS (*ENHYDRA LUTRIS*) IN MEXICO

Sea otters in North America historically were distributed from the Near Islands in the western Aleutian Archipelago to about Punta Morro Hermoso on the Pacific coast of Baja California (Kenyon 1969, Rodríguez-Jaramillo and Gendron 1996). During the 18th and 19th centuries they were so common that they formed the basis for a lucrative fur trade (Ogden 1941), but by the early 1900s they were exploited to extinction in Baja California (Kenyon 1969).

For the last 30 yr, however, there have been sporadic reports of sightings along the Pacific coast of Baja California. Here, we compile sightings from Baja California reported since the 1960s, present the results of our sea otter survey of northern Baja California, discuss the possible relationship of sea otter sightings in Baja California with the California sea otter translocation, and evaluate the possibility of sea otters reestablishing a breeding population in Baja California.

We obtained qualitative information on the presence, distribution, and natural history of sea otters by interviewing residents of fishing camps and villages from Ensenada to Punta Santa Rosalillita, Baja California (Fig. 1), from 12 through 21 December 1990. Although we traveled almost 1,700 km by road, it was impossible for us to reach some fishing camps because of the poor condition of some dirt roads. We also interviewed fishermen on Cedros, San Benitos and Guadalupe Islands from 11 through 21 February 1991 while we were conducting a pinniped census.

Interviews were done following the general methodology of Gallo (1991). Fishermen were asked if they recognized postcard-size photographs of local cetaceans, pinnipeds, and the sea otter. If the fishermen recognized the sea otter as a local inhabitant we proceeded to interview them, based on a list of 33 specific questions. We included some questions to determine if the fishermen were sincere, or if they were responding with answers that they thought would please us. Where possible, we walked along the coast and used 10×50 binoculars and a $40\times$ spotting scope to scan the kelp beds for the presence of sea otters. We also walked beaches and searched rubbish heaps near fishing camps for evidence of dead sea otters.

We completed 27 interviews at 16 different locations (Fig. 1). Most of the fishermen were well acquainted with the areas they worked in; the mean number of years each had been fishing locally was 14.1 (SD = 10.2, range: 0.4–36 yr). Seventeen of the 27 fishermen (63%) were divers for abalone, clams, or sea urchins, while 10 (37%) fished for lobsters with traps or took fish with gillnets.

Several fishermen and local residents indicated their familiarity with sea otters by referring to them as “nutria” (otter) and “viejos de mar” (old men of the sea). Seven of the 27 interviews (26.0%) resulted in what we judged were actual firsthand sightings of sea otters. Four of the seven sightings were on the mainland coast, and three around islands (Fig. 1, Table 1). One person knew about sea otters from a documentary seen on television but had no firsthand knowledge of the animals. Seventeen interviews were negative (63.0%) and two (7.4%) confused sea otters with pinnipeds. Sea otters were present in an area for more than one month according to six of the interviews. In one case three sea otters spent an entire winter in one area.

Two of the seven interviewees reported female/pup pairs; all other sightings were of lone adults (Table 1). The two reports of females with pups were from different areas and included detailed descriptions of the females carrying their young on their bellies while swimming on their backs and the pups being left alone floating on kelp while the females dove for prey. These descriptions suggest pups less than six weeks old (pups usually dive with their mothers starting at about six weeks of age; Payne and Jameson 1984).

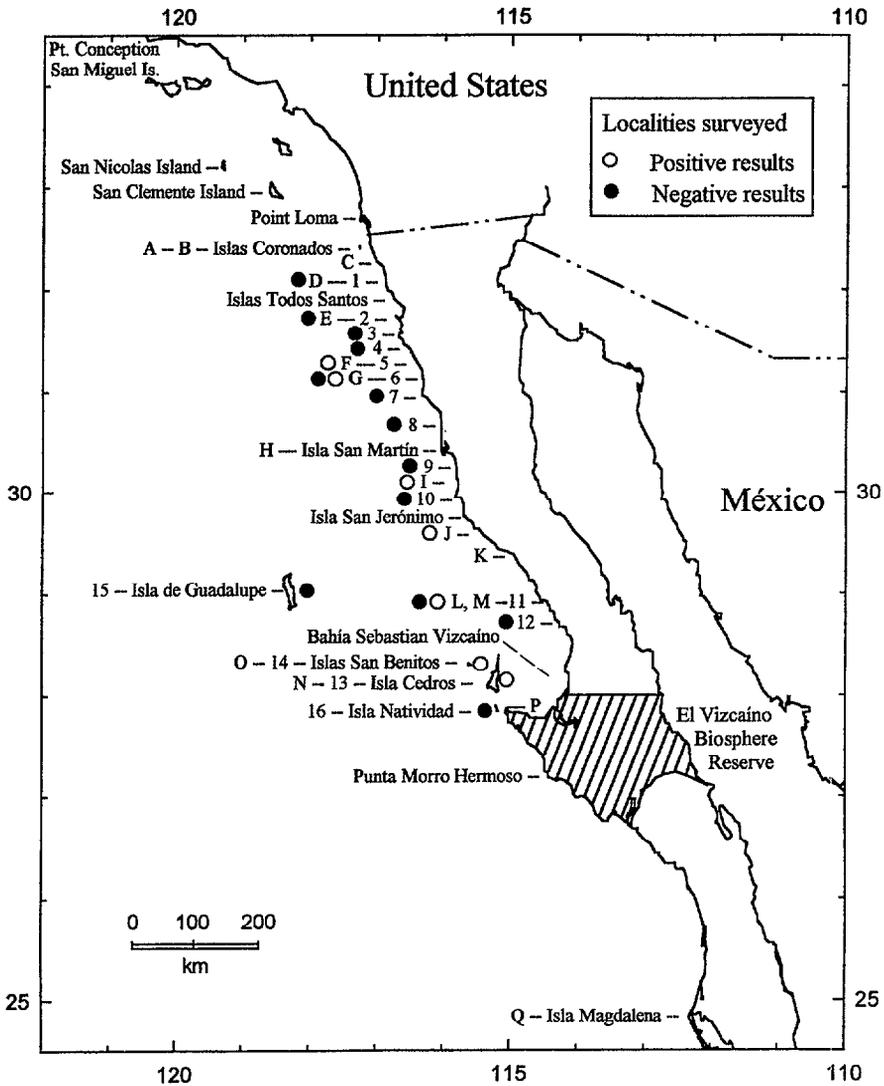


Figure 1. The historical range of the sea otter in Mexico extended from the Islas Los Coronados to Punta Morro Hermoso. Localities visited during the surveys reported in this paper: 1. Popotla, 2. Punta Banda, 3. La Bufadora, 4. Santo Tomás, 5. Punta China, 6. Eréndira, 7. Cabo Colnett, 8. Camalú, 9. El Campito, 10. Punta Baja, 11. Santa Rosalillita, 12. Morro de Santo Domingo, 13. Isla Cedros, 14. Islas San Benitos, 15. Isla de Guadalupe, and 16. Isla Natividad. Localities where sea otters have been reported in Baja California from 1965 to the present are indicated by letters A-Q that are referenced in Table 1, location column.

Table 1. Summary of recent records of sea otters along the Pacific coast of Baja Cali

Dates of sighting. Observer or vessel (source of sighting)	Location	Number of individuals observed	
5 April 1965 R. J. Beck (Leatherwood <i>et al.</i> 1978)	El Sauzal (D, Fig. 1)	Three individuals nearly four feet long	In
1969 C. L. Hubbs, (Ruhlow 1973)	Islas Coronados (A, Fig. 1)	One skull	N
9 April 1971 D. Bostic (Leatherwood <i>et al.</i> 1978)	Punta Falsa (P, Fig. 1)	One individual sighted briefly	O
1974 Miller (Miller 1975)	Isla San Martín (H, Fig. 1)	“Some”	
1975 Baumgartner (Zepeda 1983)	South of Ensenada (E, Fig. 1)	Portion of the spinal column	N
Dec 1975 Fisherman (16 Feb 1991) ^a	Isla Cedros (N, Fig. 1)	Two diving in kelp bed	Se
Feb 1979 J. P. Gallo (Gallo 1991)	Campo Nuevo (K, Fig. 1)	One skull of a young otter	K
Winter 1985 Fisherman (17 Feb 1991) ^a	Islas San Benitos (O, Fig. 1)	One swimming and feeding	Ir
1986 R. Rathbun	Santa Martha (C, Fig. 1)	Single individuals seen on three different occasions	Se
Apr 1986 Fisherman (16 Dec. 1990) ^a	North of Punta Santa Rosalillita (L, Fig. 1)	Several	C
Jun 1989 S. Bishop and S. Tracy (pers. com. to Rathbun 1990)	Punta Cono (J, Fig. 1)	Three individuals swimming, feeding, grooming, and diving	V

Table 1. Continued.

Dates of sighting. Observer or vessel (source of sighting)	Location	Number of individuals observed	Remarks
June 1990 Fisherman (13 Dec. 1990) ^a	Punta China to Punta San José (F, Fig. 1)	Three individuals including a small pup	Swimming between points
June-July 1990 Fishermen (16 Dec. 1990) ^a	Punta Santa Rosalillita to El Tomatal (M, Fig. 1)	Mother with small pup	Fisherman saw female grooming pup
March 1990 Fisherman (16 Dec. 1990) ^a	Eréndira (G, Fig. 1)	Two individuals, each in separate sightings	One gillnetted and released by fishermen
26 January 1992 R. Herrman (Sanders, unpub. data)	Islas Coronados, south of middle island, Moonlight cove (B, Fig. 1)	Sea otter resting near harbor seals	Observed from dive boat
13 March 1992 L. Mansfield (Sanders, unpub. data)	Santa María, 16 km south of San Quintín (I, Fig. 1)	A young individual swimming north	Near a popular clamming area
19 January 1994 Rodríguez-Jaramillo and Gendron (1996)	Off S tip, west coast of Isla Magdalena (Q, Fig. 1)	One individual carrying a sea urchin	Fishermen refer to them as "lobitos con manitas" (seals with little hands)

^a Interviews conducted by authors (see methods and results).

Feeding sea otters were reported by five of the seven fishermen. Prey included abalone, sea urchins, and clams. Animals were observed swimming on their backs in three and "dog paddling" in one of the seven reports. Other behaviors described by fishermen included grooming, breaking shells with rocks, and fleeing approaching boats.

One sea otter was incidentally captured alive in a gillnet (Table 1). The fishermen claimed to have taken care of it at a nearby house before releasing it. All seven fishermen who had seen sea otters said they were not purposefully hunted. Indeed, the fishermen were aware of the Mexican laws protecting sea otters. Three men knew that sea otters had been hunted in Baja California in the past for their fur (two of these fishermen were elders).

None of the fishermen or observers we spoke with had seen tagged sea otters. During our own searches, we saw no sea otters or their remains.

Since Kenyon (1969) declared the sea otter probably extinct in Baja California (based largely on aerial surveys from Isla Natividad to the U.S. border in April–May of 1946 and in January–February of 1965), there have been sporadic sightings in the region (Table 1). One objective of our 1990–1991 survey was to determine if some of the recent sightings were the result of animals dispersing from the 1987 translocation to San Nicolas Island, 110 km offshore of Los Angeles (Brownell and Rathbun 1988). Confirmation that some of these extralimital sightings were from the island was possible because all of the translocated individuals were distinctively tagged on the rear flippers and carried subcutaneous passive integrated transponder (PIT) tags (Rathbun *et al.* 1990). In fact, at least three individuals from San Nicolas Island were identified in the San Diego area (Rathbun and Benz 1991; National Biological Service, unpublished data), which made the dispersal of San Nicolas Island sea otters into Baja California seem very likely.

Although no sea otters from San Nicolas Island have been identified in Baja California (Table 1), they are capable of swimming the distance (*ca.* 400 km), as demonstrated by studies of radio-tagged animals in California and Alaska (Ralls *et al.* 1992, Monnett and Rotterman 1988). Their long-distance dispersal abilities were also demonstrated by the 36 individuals that traveled north about 300 km from San Nicolas Island to their capture sites on the mainland coast (Rathbun *et al.* 1990; National Biological Service, unpublished data). Despite the lack of resighting data to support a San Nicolas Island dispersal into Baja California, we, along with Rodríguez-Jaramillo and Gendron (1996), believe island dispersal is the most parsimonious explanation for recent Baja California sightings. For example, the temporal and spatial pattern of sea otter sightings along the mainland coast of southern California are concordant with the San Nicolas Island translocation (National Biological Service, unpublished data). However, we do not completely exclude the possibility that some Baja California sea otter sightings may be emigrants from central California.

Although it is likely that the two small sea otter pups reported in Baja California (Table 1) were born there (females with pups tend to be sedentary), it is possible, and probable in our view, that the mothers conceived in California. Movements of this type have precedent. A pregnant female translocated to San Nicolas Island in 1987 (No. 278) travelled to the mainland near Los Angeles

and back to the island, where she gave birth (National Biological Service, unpublished data).

Will sea otters reestablish themselves in Baja California? It is at least possible, because they are legally protected in Mexico. It is forbidden to capture, sell, or possess their products (Diario Oficial de la Federación 1986), and the species is listed as "endangered and endemic" in Baja California waters (Diario Oficial de la Federación 1994). The recently created Vizcaíno Biosphere Reserve in central Baja California (Diario Oficial de la Federación 1988; Fig 1), could eventually provide the sanctuary needed by sea otters to reestablish themselves. The Biosphere Reserve extends for more than 150 km along the Pacific shoreline, and includes Isla Natividad, the former southern limit of the sea otter's distribution at Punta Morro Hermoso, and numerous kelp beds and near-shore rocky areas. Even with this protection, however, we believe it is unlikely that they will reestablish themselves. For example, in California the mortality of sea otters in nearshore gillnets has been well documented (Wendell *et al.* 1986), and this mortality has been implicated in the population decline of the late 1970s and early 1980s (Estes 1990). In Baja California, gillnets are commonly used along the entire Pacific coast in waters from 11 to 17 m deep and up to 14 km offshore (Rodríguez 1988). We found that sea otters are being caught in these nets (Table 1). In addition, the lobster, abalone, clam, and sea urchin fisheries are well developed (Gallo and Flores 1982, Orozco and Bertsch 1984, Rodríguez 1988), and fishermen and their representatives probably would oppose any actions that would allow increased competition from sea otters, as they have in California (Estes and VanBlaricom 1985).

We believe re-establishing sea otters in Baja California will be exceptionally difficult. Not only are there biological restraints, the current and foreseeable future economic and social conditions in Baja California, especially in the context of an expanding human population, result in poor environmental conditions for sea otters. However, the re-colonization of Baja California would have great appeal in terms of restoring the near-shore communities to something near their historical condition. By whatever means, sea otters have managed to reach Baja California in small numbers over the last thirty years, and creating a suitable environment for a breeding population to develop should be one of the goals of the El Vizcaíno Biosphere Reserve.

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