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## First Reported Occurrence of the Southern Sea Otter *Enhydra lutris lutris* at California's Santa Barbara Island Since 1940

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Sea otters once ranged along the North Pacific rim from the northern Japanese islands to mid-Baja California, Mexico. There are three recognized subspecies of sea otters: the Russian or Asian sea otter (*Enhydra lutris lutris*); the Alaskan or northern sea otter (*E. I. kenyoni*); and the California or southern sea otter (*E. I. nereis*) (Wilson et al. 1991). The southern sea otter occupies the most southerly range, with populations in only two areas of California: the mainland coastline from San Mateo County to Santa Barbara County and San Nicolas Island, Ventura County.<sup>1</sup> Historically, 16,000-20,000 sea otters are believed to have resided in the area that is now California.<sup>2</sup> The southern sea otter was afforded protection in California by the California Department of Fish and Game in 1913.<sup>3</sup>

In the 1970s, the California population of sea otters was restricted to the Central California coast.<sup>4</sup> Primarily due to concerns about the vulnerability of this population to oil spills, the southern sea otter was listed as threatened by the United States Fish and Wildlife Service (the Service) under the Endangered Species Act in 1977.<sup>5</sup> The Service approved the first recovery plan for the southern sea otter in 1982<sup>6</sup> and released a final environmental impact statement in 1987. This EIS evaluated several options including translocating southern sea otters from California's central coast in an attempt to form a discrete colony of animals at San Nicolas Island, located 111 km (60 nm) off the Southern California coastline.<sup>7,8</sup>

Through translocation, the Service hoped to establish a self-sustaining southern sea otter population at a location within their historic range, but well away from the central coast population to lessen the risk to the species should a natural or man-made catastrophe decimate the central coast population. To achieve project goals, the San Nicolas Island colony would

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<sup>1</sup> Tinker, M. T., and Hatfield, B. B. 2016. California sea otter (*Enhydra lutris nereis*) census results, spring 2016: U.S. Geol. Survey Data Series 1018, 10 p., <http://dx.doi.org/10.3133/ds1018>.

<sup>2</sup> California Department of Fish and Game. 1976. A proposal for sea otter protection and research, and request for the return of management to the state of California. Sacramento, California. 270 pp.

<sup>3</sup> Wild, P. W., Ames, J. A., 1974. A report on the sea otter, *Enhydra lutris* L., in California. Calif. Dep. Fish Game Marine Resources Tech. Rep. 20:1-93.

<sup>4</sup> Riedman, M. L., and J. A. Estes. 1990. The sea otter *Enhydra lutris*: behavior, ecology, and natural history. United States Fish and Wildlife Service, Biolog. Report 90(14), Washington, D.C.

<sup>5</sup> United States Department of the Interior, Fish and Wildlife Service. 1977. Determination that the southern sea otter is an endangered species: Fed. Reg. V. 42, No. 10, Jan. 14, 1977. Pp 2965-2968.

<sup>6</sup> United States Department of the Interior, Fish and Wildlife Service. 1982. Southern sea otter recovery plan. United States Fish and Wildlife Service, Portland, Oregon.

<sup>7</sup> United States Department of the Interior, Fish and Wildlife Service. 2012a. Final supplemental environmental impact statement on the translocation of southern sea otters. Ventura Fish and Wildlife Office, Ventura, California. 348 pp. + front matter and appendices.

<sup>8</sup> United States Department of the Interior, Fish and Wildlife Service. 2012b. Endangered and threatened wildlife and plants; termination of the southern sea otter translocation program. Federal Register, December 19, 2012, 77(244).

have to grow to a self-sustainable size, and furnish up to 25 otters per year to repopulate any areas affected by a catastrophe along the central coast.<sup>8</sup> The translocation program established two geographic areas, a translocation zone surrounding San Nicolas Island and an “otter free” management zone that included all other Southern California waters from Point Conception to the Mexican Border. The otter free zone was created as an attempt to exclude translocated otters from other nearby islands and coastal shorelines where potential conflicts between otters and the lobster and shellfish fisheries might occur. It was also created to address the concerns of oil and gas producers that the presence of sea otters could lead to restrictions on oil and gas development (Carswell et al. 2015; Larson et al. 2015). Any otter found within the otter free zone was to be captured and released into habitat occupied by the central coast or San Nicolas Island populations.<sup>8</sup> In practice, captured sea otters were only released along coastal kelp beds, and not at San Nicolas Island.

Between August 1987 and March 1990, the Service released 140 otters at San Nicolas Island (Rathbun et al. 2000). Some otters died as a result of translocation, many swam back to the central coast, and some moved into the otter free zone.<sup>8</sup> Beginning with the first translocation, the Service, in coordination with the California Department of Fish and Game, captured and removed otters found within the otter free zone until 1993, when captures were suspended out of concern that sea otters were dying as a result. In January of 2001, the Service issued a statement that they would no longer remove otters from the otter free zone.<sup>7</sup> A revised recovery plan was issued that detailed why the attempt to create a managed population of otters at San Nicolas Island was not meeting expectations, and that the Endangered Species Act’s goals would be best pursued by allowing otters to expand their range naturally.<sup>9</sup> The Service dissolved the San Nicolas Island translocation and otter-free zones, ending the requirement to capture otters found away from San Nicolas Island.<sup>10 11</sup> In 2016, the annual California Sea Otter Census detected 92 juvenile and older otters and 12 pups at San Nicolas Island, and 3,078 juvenile and older otters and 433 pups within the mainland population.<sup>12</sup>

Since the translocations to San Nicolas Island began, otters have been reported from several Southern California islands and coastal areas<sup>13</sup> as well as several islands and coastal areas of Baja California (Schramm et al. 2014). However, despite Santa Barbara Island being the closest otter-populated land mass to San Nicolas Island, no otter had been reported from Santa Barbara Island since 1940.<sup>14</sup>

Ogden (1941) reviewed the sea otter trade from 1741 to 1848; no mention was made of pelts taken from, or hunting trips made to, Santa Barbara Island. Leatherwood et al. (1978)

<sup>9</sup> United States Department of the Interior, Fish and Wildlife Service. 2003. Final revised recovery plan for the southern sea otter *Enhydra lutris nereis*. United States Fish and Wildlife Service, Portland, Oregon.

<sup>10</sup> United States Department of the Interior, Fish and Wildlife Service. 2012a. Final supplemental environmental impact statement on the translocation of southern sea otters. Ventura Fish and Wildlife Office, Ventura, California. 348 pp. + front matter and appendices.

<sup>11</sup> United States Department of the Interior, Fish and Wildlife Service. 2012b. Endangered and threatened wildlife and plants; termination of the southern sea otter translocation program. Federal Register, December 19, 2012, Vol. 77(244).

<sup>12</sup> Tinker, M. T., and Hatfield, B. B. 2016. California sea otter (*Enhydra lutris nereis*) census results, spring 2016: U. S. Geological Survey Data Series 1018, 10 p., <http://dx.doi.org/10.3133/ds1018>.

<sup>13</sup> United States Department of the Interior, Fish and Wildlife Service. 2015. Southern sea otter *Enhydra lutris nereis* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, Ventura California.

<sup>14</sup> Hatfield, B. July 5, 2016. Personal communication regarding observations of southern sea otters at Santa Barbara Island. Santa Cruz Field Station, Piedras Blancas Office.



Fig. 1. Southern sea otter in kelp at Santa Barbara Island on 2 July 2016 (Photo M. Couffer)

summarized observations of sea otters along the California coast between the 1900s and 1970s. They reported that from the beginning of the 1900s to the date of their publication, only two observations of sea otters at Santa Barbara Island were made, both during March of 1940, before any translocations were made to San Nicolas Island. These observations are often assumed to have been made of two separate animals, however, it is possible that the two observations were of the same animal. A search by individuals at several agencies and institutions failed to produce the original references for comparison.

The first observation at Santa Barbara Island, reported in Kenyon (1969), was a 28 May 1940 letter by J. C. von Bloeker and R. M. Bond that stated “Kenneth E. Stager saw a sea otter asleep in the rocks on the northwest side of Santa Barbara (Island) on March 17<sup>th</sup> [1940]. He approached to within 30 feet of it before it awakened and took to the water. He is familiar with these animals off the Monterey County coast (as I am also) and I see no reason to doubt his record.” Jack von Bloeker (1965) reported a second observation of “...one in the kelp off Santa Barbara Island in March of 1940 by Lloyd Martin, John R. Pemberton, and Kenneth E. Stager”.

On 2 July 2016, the author was in the wheelhouse of the dive charter vessel *Horizon* off the southeastern tip of Santa Barbara Island when he detected a southern sea otter near the outer edge of a bed of giant kelp (*Macrocystis pyrifera*) off the southeastern tip of the Island (Fig. 1). The specific location was 0.83 km (0.45 nm) southeast of the tip of Santa Barbara Island, along the 20 m (66 foot) depth curve at 33° 27.567' N by 119° 01.759' W. The otter was located within the Channel Islands National Marine Sanctuary, as well as within the Santa Barbara Island State Marine Reserve, a Marine Protected Area, where commercial and recreational take of all marine resources is prohibited.

The otter was first sighted at 0700 hours, and the captains, divers and crew were alerted. As the boat moved between dive sites throughout the day, an otter was seen and photographed again at 1540 hours and at 1800 hours floating on the surface amongst kelp within the same general

area of the kelp bed where it was first detected. The otter bore no flipper tags, but both sightings are presumed to be of the same otter. A complete survey of all kelp beds surrounding the island was not conducted, so it is unknown whether or not other portions of the island's perimeter were occupied by otters. No dives were made near the otter.

The otter was not identified to sex. During the periods when the otter was at the surface, its lower abdominal area where one might have detected a bulging baculum to identify a male was below the water's surface or covered by kelp. None of the photos taken of the otter were helpful in sexing the animal. Water temperatures were recorded every few seconds on the author's dive computer during four recreational scuba dives around the southern end of Santa Barbara Island; they varied from 10° C (50° F) at 26 meters (86 feet) to 17° C (63° F) at the surface. Kelp beds in the area on the date of the sighting were expansive, and kelp was visible at the surface during all tides. The *Horizon* returned to Santa Barbara Island on two subsequent voyages; captain Cary Humphries reported to the author that on 12 July 2016 and 16 July 2016, one sea otter was observed in the same kelp bed where the author had first located an otter on 2 July 2016.

Most extralimital otters sighted outside of their established populations have been found to be males that can make occasional long-distance movements for periods of days or weeks, but then return to the established populations.<sup>15</sup> Santa Barbara Island is approximately 45 km (25 nm) east northeast of San Nicolas Island, and 60 km (33 nm) from the closest mainland point. Another possible source population for this otter occupies the Santa Barbara County coastline, approximately 160 km (86 nm) from Santa Barbara Island. The Northern Channel Islands could have been used to island-hop from the Santa Barbara coastline to Santa Barbara Island. Approximate distances from the closest points on the Northern Channel Islands to Santa Barbara Island are 65 km (35 nm) for Anacapa Island, 76 km (41 nm) for Santa Cruz Island, and 101 km (55 nm) for Santa Rosa Island. As the otter was not tagged and had no identifying marks, it is impossible to determine its source population. Santa Barbara Island is surrounded by islands with the mainland to the east, so the otter could have arrived at Santa Barbara Island from any direction while leaving from or returning to a source population.

These observations show that, in the short term, dispersing sea otters can use the Santa Barbara Island kelp beds to rest and forage while transiting between other islands or the mainland. The otter's presence within a marine protected area for a minimum of two weeks may also speak to the benefits of the establishment and maintenance of marine protected areas. In the long term, Santa Barbara Island could become more than just a stop on an island-hopping transit, and eventually support a resident southern sea otter colony.

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<sup>15</sup> Hatfield, B. July 5, 2016. Personal communication regarding observations of southern sea otters at Santa Barbara Island. Santa Cruz Field Station, Piedras Blancas Office.

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