

Exploitation of California Sea Lions, *Zalophus californianus*, Prior to 1972

VIRGINIA L. CASS

Introduction

This article summarizes the results of an investigation made into historical sealing activities on the California coast and Channel Islands. Of primary interest were the numbers of California sea lions, *Zalophus californianus*, killed on San Miguel Island. The harvesting of the northern or Steller sea lion, *Eumetopias jubatus*, is also discussed. Literature was reviewed for records on the number of sea lions taken for commercial purposes. Many other potential sources of information on numbers of animals killed were also investigated. A summary of take levels is given in Table 1.

Literature Review

After a thorough review of the literature, I discovered that few reliable data have been recorded on specific numbers of sea lions harvested in California. However, several papers provide information on the extent of exploitation in a general sense and give some idea of the level to which sealing operations depleted the sea lion population.

The breeding range of *Zalophus* extends south from San Miguel Island (Bartholomew, 1967; Bonnot, 1928b) to the central Mexican coast (Starks, 1921). Rookeries of the Steller sea lion are considered to be from Santa Rosa Island north to the Bering Sea (Bonnot, 1928b; Bartholomew and Boolootian, 1960). These breeding ranges overlap on San Miguel Island

Virginia L. Cass is with the Southwest Fisheries Center, National Marine Fisheries Service, NOAA, P.O. Box 271, La Jolla, CA 92038.

Table 1.—Summary of sea lion (*Eumetopias* and *Zalophus*) kill, 1800–1972.

Year	Species indicated	Population level	Harvest	Source
1800–1850	Mixed	Pristine	30–70 animals/year	Ogden, 1933
1860–1870 ¹	Mixed	High	9,000–15,000	Scammon, 1874
1874 ¹	Mixed	Low	9,000–15,000	Bartholomew, 1967
1899	<i>Eumetopias</i>	Moderate	2,000 on Ano Nuevo Island	Bonnot, 1928b
1900	<i>Eumetopias</i>	Moderate	"Great many"	Rutter et al., 1902
1907	<i>Zalophus</i>	Low	Practically all bulls killed on San Miguel Island	Bonnot, 1928a
1909–30	<i>Zalophus</i>	Low	No organized kill but a steady drain from trimming hunters and various collectors	Bonnot, 1931
1913	<i>Eumetopias</i>	Moderate	8,000 killed	Townsend, 1918
1927	<i>Zalophus</i>	Low	400 adults and nearly every pup on San Miguel Island killed	Bonnot, 1928b
1937–39	<i>Zalophus</i>	Moderate	Organized kill for pet food in Mexican waters and perhaps off the coast of California. 180 animals killed per day	Abbott, 1939 and text footnote 4
Late 1920's–1972	<i>Zalophus</i>	Moderate to high	Commercial, sport fishing take for interference in fishing operations	Jones, 1981

¹ It was not known whether this was on an annual basis or not.

(Bartholomew, 1967; DeMaster¹), and it should be noted that references made in the literature to sea lions during sealing activities in the 1800's and into the early 1900's have not always distinguished between northern and California sea lions.

Sea lions are vulnerable primarily as breeding animals on rookeries and not as nonbreeders on hauling grounds. During the breeding season, they will remain on breeding territories or soon return if driven off. Hauling sea lions will abandon hauling areas if harassed (DeLong²). For purposes of simplicity, all animals above Pt. Conception are regarded here as Steller sea lions and those south of Pt. Conception as California sea lions unless otherwise specified in

¹ DeMaster, Douglas. 1981. National Marine Fisheries Service, 8604 La Jolla Shores Drive, P.O. Box 271, La Jolla, CA 92038. Pers. commun.

² DeLong, Robert. 1981. National Marine Mammal Laboratory, 7600 Sand Point Way N.E., Bldg. 32, Seattle, WA 98115. Pers. commun.

kill records. All animals reported without locations will be referred to simply as "sea lions." Bartholomew and Boolootian (1960) showed that an insignificant percentage of Steller sea lions occurred on southern California islands. Similarly, in censuses when the species were separated, an insignificant number of California sea lions occurred north of Pt. Conception.

Although no population estimates are available from the historical literature, both species of sea lions are reported to have been abundant along the California coast and offshore islands before 1860 (Bonnot, 1928b). In the early to middle 1800's, Russian sea otter hunters and Aleutian Indians used sea lion skins for their canoes, food, oil, and clothing. Reported Ogden (1933), "Every year from . . . 3,600 to 7,200 pounds of sea lion meat were salted down in barrels and boxes." With the advent of commercial harvest, sea lion numbers decreased steadily (Bonnot, 1928a).

From about 1860 to 1870, thousands of seals and sea lions were harvested for oil (Scammon, 1874).

Scammon (1874) described the commercial products of sea lions; his account gives some idea of the extent of the harvest: "The testes are taken out, and with the selected spires of whiskers, find a market in China, the former being used medicinally, and the latter for personal ornaments." Scammon went on to say that, "a few years ago great numbers of sea lions were taken along the coast of upper and lower California, and thousands of barrels of oil obtained. The numbers of seals slain exclusively for their oil would appear fabulous, when we realize the fact that it requires on an average, throughout the season, the blubber of three or four sea lions to produce a barrel of oil."

If 1,000 barrels is assumed, and a minimum of three sea lions produces one barrel of oil, then these data indicate a take of about 3,000 animals. Assuming 5,000 barrels indicates a take of 15,000 animals. A more extreme estimate of 10,000 barrels increases the estimate to 30,000 sea lions, or 40,000 assuming 4 sea lions per barrel. Scammon indicated that the sea lions were not eliminated on the California shores but would soon be exterminated or "driven away to less accessible haunts."

Whiskers and "trimmings" (the testes and penises of breeding bulls) of California sea lions were still commercially valuable as aphrodisiacs in Oriental trade through the 1930's (Bonnell et al., 1979). Collectors for exhibition and scientific purposes, who worked year-round, were responsible for many California sea lion pup deaths as they took only cows (Bonnot, 1931). The principal cause of the decimation of the Steller sea lion was from the hunters who took them for "trimmings." They killed bulls in such great numbers that Bonnot (1931) expressed his surprise that there were enough left to carry on breeding.

Steller Sea Lion

Isolated accounts of northern sea lions killed in large numbers can be found scattered in the literature. From 1899 to 1902, during the height

of the sea lion-salmon fishery conflict, the California State Board of Fish Commissioners requested permission to kill sea lions on Federal lighthouse reservations (Smith, 1902). It was the intent of the Commission to kill 10,000 of the presumed population of 30,000 sea lions along the California coast; however, others more familiar with the sea lion rookeries said this was an overestimation of the population size, which they believed to be less than 10,000 (Merriam, 1902). Permission was granted and soon rescinded due to protests from several Federal agencies, the New York Zoological Society, and various other groups (Bonnot, 1928a, b). The Commission, however, felt its position was justified, and a great many sea lions were killed (Rutter et al., 1902). Bonnot (1928b) reported that several thousand were killed on Año Nuevo.

Townsend (1918) reviewed a report on the sea lion question in British Columbia written by a commission appointed by the Biological Board of Canada. The report covers the years 1915-16. From this report Townsend summarizes that ". . . it appears that a bounty of \$2.00 was paid on 4,074 sea lions. It is stated that '. . . at a conservative estimate there must have been 8,000 killed . . .'" Townsend (1919) later reports on the general negative attitude of salmon packers who destroyed many hundreds of sea lions annually on the Rogue River Reef for several years.

Statistics for numbers of seals and sea lions taken under a bounty system for Oregon and in raiding operations in Queen Charlotte Sound from 1921 to 1926 are reported by Scheffer (1928):

Scalps taken in the state of Oregon:

Eumetopias and *Phoca*
1921-26 8,865

Queen Charlotte Sound during
May and June of each year:

Eumetopias
1921-26 7,714
1925-26 . . . 1,880 (sea lion pups)

On various occasions sea lions were killed for trimmings. Professional hunters used destructive methods for

harvesting; therefore, a significant number of animals killed could not be recovered. As a result, any figures given on the numbers killed anywhere in the country at that time should be supplemented by at least 10 percent in order to arrive at true figures (Bonnot, 1928a, 1931).

From 1927 to 1946 periodic censuses of sea lions were made (Bureau of Marine Fisheries, 1946).

California Sea Lions

Again, specific records of animals killed are sparse and only weakly indicate the extent of commercial harvest for California. Bonnot (1928a) wrote: "Captain H. B. Nidever of San Pedro has supplied me with the information that in 1907 and 1908 several men systematically hunted sea lion bulls at San Miguel Island and killed practically all the bulls of breeding age." Bonnot (1928b) also stated that "a large number of sea lions were killed at San Miguel in violation of the law protecting sea lions in district 19. The methods used by these men would exterminate the sea lions in a few seasons. Bulls, cows and pups were killed indiscriminately . . ." In addition to "trimmings" hunters, sportsmen, and fishermen, sea lions were taken in unknown numbers by various collectors. From a personal investigation of Flea Island (San Miguel Island), in June of 1927, Bonnot describes the death of every pup of a mixed rookery and of nearly 400 adults. From the late 1920's until the passage of the Marine Mammal Protection Act in 1972, commercial and sport fishermen were allowed to kill sea lions that interfered with their fishing operations (Jones, 1981).

Sea lions were not only exploited for their oil, hides, and "trimmings," but also for use in dog and cat food products (Abbott, 1939; Fry, 1939).

Unpublished Information

If a pet food company used sea lions as a main ingredient in its products before 1972, it was thought that the company(s) might have contract records of the numbers of sea lions procured. Thus, six pet food manufacturers were contacted and representatives of each were question-

ed about possible use of sea lions in pet food at any time during the company's existence. None were aware of any such use of sea lions or could provide any records of sea lion harvest or purchase.

However, Nathan Lewis, a partner in the Lewis Food Company³ that bought out Dr. Ross Dog Food in the 1940's was located and supplied the following information: Nathan and his brother D. B. Lewis bought out Dr. Ross at an auction when the company went bankrupt. The company manufactured Skippy and Dr. Ross brand dog food. Nathan Lewis said he believed that Dr. Ross had purchased boats and equipment with the intent to capture sea lions for pet food but failed to pursue this endeavor as his business then went bankrupt.

In Abbott's (1939) account of sea lions killed for pet food, he stated that the harvest occurred on the coast of Mexico under a 20-year concession from the Mexican government. Clinton Abbott was director of the San Diego Museum of Natural History from 1922 to 1946. The Museum's files⁴ of Abbott's correspondence on the sea lion slaughter were accessed to uncover further details. The following is information gleaned from these letters that could be pertinent to Channel Island sea lion kill data:

December 1, 1937. To the California Fish and Game Division: Abbott stated that he had received information that the Dr. W. J. Ross Dog Food company was killing sea lions supposedly in Mexican waters. He believed that the Ross company was actually, or at least also, slaughtering sea lions off the coast of California. Abbott had been informed that three boats were operating out of San Pedro and an airplane passing over them counted a large number of seals on their decks. (In his 1939 paper he named the vessels as: the *Romancia*, a killer ship; the *Lotti Bennett*, a tender vessel; and a mother ship, the *F. S. Loop*.)

December 28, 1937. To Dr. W. J. Ross Dog and Cat Food Company: Abbott wrote to the Ross Company and ask-

³Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

⁴Unpublished correspondence. 1937-1938. San Diego Museum of Natural History Historical Files. San Diego Museum of Natural History, P.O. Box 1390, Balboa Park, San Diego, CA 92112.

ed many pointed questions about when and how many animals were killed in their operations.

January 10, 1938. To Mr. T. N. Faulconer: Abbott referred to when Mr. Faulconer had given him the names of the cannery boats, operated by Dr. Ross' company, as the *F. S. Loop* and the *Romancia*. He went on to say that the Protective Committee of the American Society of Mammalogists' secretary indicated the boats operating as sealing vessels may have actually been the following: A canning factory ship *California*, U.S. Registry 209117, and two killer boats, *Hawk* 220149 and *Port Saunders* 220150, and that they were killing 180 sea lions per day. There is no information to indicate if Mr. Faulconer was affiliated with an agency or organization.

January 19, 1938. To Mr. Clinton G. Abbott: Dr. Ross replied to Abbott's questionnaire by stating the company was in "no position to make any definite statements." The letter did imply the use of sea lions as an "experimental venture."

April 19, 1938. To Abbott from Brazier Howell, Department of Anatomy, Johns Hopkins Medical School, Baltimore, Md: Mr. Howell told Abbott he obtained a figure of 180 sea lions killed per day from a newspaper article.

February 8, 1938. To Abbott from Ing. Miguel A. de Quevedo, Head of the Mexican Conservation Department: de Quevedo assured Abbott that Dr. Ross's annual permit would expire on the 10th of February. (Abbott stated this in his 1939 paper and reported that the slaughter nonetheless was continuing.)

July 13, 1938. To Joseph Grinnell, Museum of Vertebrate Zoology, Berkeley, Calif.: Abbott wrote to Dr. Grinnell that a G. E. Matlock had been hired by Dr. Ross as a "Contact Man." Mr. Matlock had told Abbott that even without a Mexican permit issued to the Ross Company, the Mexicans welcomed the killing of sea lions.

Conclusion

There are few specific data for numbers of California sea lions killed in sealing activities. References in the literature are sparse and inconclusive. Sealing activities on other species of pinnipeds are also poorly documented. Log records, if they exist, of any of Dr. Ross's sealing vessels or other known sealing ships may provide the information needed to begin to estimate the numbers of sea lions killed on San Miguel Island, other Channel Islands, and along the California coast.

Acknowledgments

I would like to extend my appreciation to D. DeMaster, R. DeLong, W. Perrin, G. Dudley, and D. Seagers for their critical reviews of various drafts of the manuscript. J. Dire kindly assisted me in accessing library files of the San Diego Museum of Natural History.

Literature Cited

- Abbott, C. G. 1939. Sea lion slaughter. *Bird Lore*. XLI(193):265-270.
- Bartholomew, G. A. 1967. Seal and sea lion populations of the California Channel Islands. *In Proc. Symp. Biol. Calif. Islands*, p. 229-244. Santa Barbara Botanic Garden.
- _____, and R. A. Boolootian. 1960. Numbers and population structure of the pinnipeds on the California Channel Islands. *J. Mammal.* 41(3):366-375.
- Bonnel, M. L., B. J. Le Boeuf, M. O. Pier-son, D. H. Dettman, G. D. Farrrens, C. G. Heath, R. F. Gantt, and D. J. Larsen. 1979. (Draft) Final Report, Summary of marine mammal and seabird surveys of the Southern California Bight. III (I) Pinnipeds of the Southern California Bight. Univ. Calif., Santa Cruz, and Bur. Land Manage., 534 p.
- Bonnot, P. 1928a. Report on the seals and sea lions of California. *Calif. Dep. Fish Game, Fish Bull.* 14, 62 p.
- _____. 1928b. The sea lions of California. *Calif. Fish Game* 14(1):1-16.
- _____. 1931. The California sea lion census for 1930. *Calif. Fish Game* 17(2):150-155.
- Bureau of Marine Fisheries. 1946. California sea lion census for 1946. *Calif. Fish Game* 33:19-22.
- Fry, D. H. 1939. A winter influx of sea lions from lower California. *Calif. Fish Game* 25:245-250.
- Jones, R. E. 1981. Food habits of smaller marine mammals from northern California. *Proc. Calif. Acad. Sci.* 42(16):409-433.
- Merriam, C. H. 1902. Food of sea lions. *In Smith, H. M.* 1904. Report on the inquiry respecting food-fishes and fishing-grounds, p. 111-135. U.S. Comm. Fish Fish. Part XXVIII. Rep. Commiss.
- Ogden, A. 1933. Russian sea otter and seal hunting on the California coast. *Calif. Hist. Soc., Q.* 12:29-51.
- Rutter, C., R. F. Snodgrass, and E. C. Starks. 1902. Report of the sea lion investigation, 1901, p. 116-119. *In Rep. U.S. Fish Comm.* 1902.
- Scammon, C. M. 1874. The marine mammals of the northwestern coast of North America. John H. Carmany and Co., San Franc., 319 p. [Reprinted by Dover Publ. Co., N.Y., 1968.]
- Scheffer, T. H. 1928. Precarious status of the seal and sea lion on our northwest coast. *J. Mammal.* 9:10-16.
- Smith, H. M. 1902. Report on the inquiry respecting food-fishes and fishing-grounds, p. 111-135. *In U.S. Commis. Fish Fisheries. Part XXVII. Rep. Commiss.*
- Starks, E. C. 1921. Notes on the sea lions. *Calif. Fish Game*, 7(4):250-253.
- Townsend, C. H. 1918. Sea lions and the fishery industries. *N.Y. Zool. Soc. Bull.* 21:1679-1682.
- _____. 1919. The utilization of the sea lion. *N.Y. Zool. Soc. Bull.* 22:32-33.