

R E P O R T

**MARINE MAMMAL PROTECTION
ACT SMALL TAKE EXEMPTION
PERMIT APPLICATION FOR
CONTINUED OPERATION OF THE
EL SEGUNDO GENERATING
STATION COOLING WATER
SYSTEM**

Prepared for

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URS Project No. 58-00061015.02-0DAPP

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1.0 INTRODUCTION

In the past, the National Marine Fisheries Service (NMFS), Southwest Region has authorized incidental take of small numbers of marine mammals and sea turtles in coastal power plants under the Regional Stranding Network Program. El Segundo Generating Station (ESGS) (owned by El Segundo Power, LLC) in El Segundo, California, has been operating under this program since 1983. The existing authorization is in the form of a Letter of Authorization (LOA) from the NMFS, which allows El Segundo Power, LLC to take marine mammals and sea turtles at the ESGS. As a result of amendments to the Marine Mammal Protection Act (MMPA), authorization to take small numbers of marine mammals incidental to routine plant operations must be renewed. ESGS requests a small take exemption permit for a small number of seals and sea lions that may be taken as a result of continuing plant operations at the existing ESGS. This document provides a description of the site history and existing plant operations, species accounts, facility impacts on each species, and monitoring recommendations.

2.0 DETAILED DESCRIPTION OF THE SPECIFIC ACTIVITY THAT CAN BE EXPECTED TO RESULT IN INCIDENTAL TAKING OF MARINE MAMMALS

The facility is located in western Los Angeles County, situated in the City of El Segundo along the east coast of the Pacific Ocean (Figure 1). ESGS is bounded on the west by Santa Monica Bay, on the south by Manhattan Beach, and on the north by the Chevron Refinery. The small take exemption permit for marine mammals will allow continuation of existing, planned power plant operation within the framework of existing operations at ESGS.

History of Operations

The ESGS has been in operation since 1955 and utilizes two intake structures (individual structures for Units 1&2 and for Units 3&4) as part of the facility's once through cooling water system. The intake structures of the plant consist of two pipes that extend from the plant into Santa Monica Bay (Photograph 1), both with velocity caps in place on top of the pipes. The velocity cap was installed on the Unit 1&2 intake structure shortly after the units became operational in the mid 1950s and the velocity cap for Units 3&4 was installed during the original construction of those units. The velocity caps change the incoming current from vertical to horizontal. Marine mammals and sea turtles recognize horizontal flows better than vertical flows and are able to swim by the intake structures without impact. The pipes are at a depth of approximately 30 feet and lead into two separate forebay areas on the plant site (Photograph 2), where water collects before reaching the rotating cleansing screens and continues on to the condensers in the plant. Photograph 3 depicts the onshore structures of the ESGS plant. There are also two separate outfall structure pipes (one for Units 1&2 and one for Units 3&4) located in Santa Monica Bay each at a depth of approximately 30 feet. The temperature differential of the water from the intake structures to the outfall structures is approximately 20 degrees. The ESGS NPDES permit with the Regional Water Quality Control Board (RWQCB) allows a maximum combined discharge volume of 605 MGD of once through cooling water (207 MGD for Units 1&2 and 398 MGD for Units 3&4).

Proposed Modifications to the Facility

An AFC was filed in December 2000 to build a nominally rated 630 MW combined cycle electric generating unit on the ESGS property. This new combined cycle unit will consist of two combustion turbine generators, two heat recovery steam generators, and a steam turbine generator. The new generating unit will use the same intake and outfall structures that are currently used for plant operations; therefore, facility impacts to marine mammals will not change. This new generating unit would be included in the new Letter of Authorization for ESGS operations.

3.0 THE DATE(S) AND DURATION OF SUCH ACTIVITY AND THE SPECIFIC GEOGRAPHICAL REGION WHERE IT WILL OCCUR

ESGS is an electric generating facility located in El Segundo, California (Figure 1). Normally, at least one circulating water pump on one of the cooling water systems is continuously running every day of the year. Volume fluctuates on an hourly, daily, and annual basis.

4.0 THE DESCRIPTION OF THE STATUS, DISTRIBUTION, AND SEASONAL DISTRIBUTION OF THE AFFECTED SPECIES OR STOCKS OF MARINE MAMMALS LIKELY TO BE AFFECTED BY SUCH ACTIVITIES

This section describes the marine mammal species of the eastern Pacific Ocean that are most likely to be found within the activity area, and therefore, may be affected by ESGS operations. The historic operation of the ESGS is part of the environmental baseline, and the historic effects of the ESGS operations on these species is used to determine the future effects on marine mammal species pursuant to the MMPA.

Common marine mammals found in the eastern Pacific Ocean include California sea lion (*Zalophus californianus californianus*), harbor seal (*Phoca vitulina richardsi*), elephant seal (*Mirounga angustirostris*), several species of dolphins, and several species of whales. Although many of the whale and dolphin species may make use of coastal habitat, they are transitory in nature and are usually found in the pelagic habitat of the ocean outside of the area of potential effect for this project. Northern elephant seals are usually found on offshore islands and are not expected in the area of potential effect for this facility. Northern elephant seals have never been observed at ESGS; therefore, they are omitted from further discussion herein. Seals and sea lions are also rather transitory in nature; however, they use coastal habitat more extensively and may occur within the area of potential effect for this facility. The status, population size and distribution of each species expected in the activity area (harbor seals and California sea lions), and the historic effects of the ESGS operations on these species are discussed below.

4.1 Harbor Seals

Harbor seals are not considered Endangered or Threatened under the FESA, or depleted under the MMPA. This species is found in near-shore coastal and estuarine areas from Baja California,

Mexico, to the Pribilof Islands in Alaska. There are 400-500 haulout sites distributed along the mainland and offshore islands in the eastern Pacific Ocean, and include intertidal sandbars, rocky shores and beaches. The minimum population size estimated by the NMFS is 27,962 harbor seals, and this number is increasing as fishery mortality is declining (Forney et al. 2000). Harbor seals have been seen hauling out on the sandy beach in the vicinity of ESGS.

Five harbor seals have been entrained at, or found on the grounds of ESGS since 1979, three of which were released unharmed. One of these harbor seals entered the station on land under the fence and was returned to the beach. One harbor seal was found dead and removed from the screenwell on April 22, 1981. On August 24, 1992 a harbor seal carcass was found. See Appendix B for LOA notifications.

4.2 California Sea Lions

California sea lions are not considered 'Endangered' or 'Threatened' under the FESA, or 'depleted' under the MMPA. Sea lions are found from southern Mexico to southwestern Canada, and breed on islands in southern California, western Baja California, and the Gulf of California. The minimum population size estimated by the NMFS is 109,854 California sea lions. The population is growing at 6.2 percent per year (Forney et al. 2000). California sea lions are commonly found in bays and inlets, and on beaches along the coast of the Pacific Ocean. Four rookeries are known in southern California, and haulout sites are located along the coast between Point Conception and the Oregon/California border.

A total of ten California sea lions have been entrained at, or found on the grounds of ESGS since 1979. One was found in the garage and released unharmed on January 24, 1979. A second sea lion was found and released on January 12, 1998. The remaining eight California sea lions were found dead. Two sea lions were found dead in the forebay, and others were found dead near the screens (two of which were dead for more than 2 days). The fact that an animal was reported as dead for more than 2 days suggests that the animal was already dead in the ocean and floated in through the intake structure. See Appendix B for LOA notifications.

5.0 TYPE OF INCIDENTAL TAKING AUTHORIZATION BEING REQUESTED AND METHOD OF INCIDENTAL TAKING

The type of incidental taking authorization being requested in this application is a Letter of Authorization (LOA) for take by harassment, injury and/or death of marine mammals as a result of continued plant operations, which will renew the existing LOA issued by the NMFS Southwest Region in 1983.

6.0 BY AGE, SEX, AND REPRODUCTIVE CONDITION (IF POSSIBLE), THE NUMBER OF MARINE MAMMALS THAT MAY BE TAKEN, AND THE NUMBER OF TIMES SUCH TAKINGS ARE LIKELY TO OCCUR

Under the existing operating conditions of the ESGS, a total of 15 marine mammals have been found in or around the structures associated with power plant operations. These records over the past 22 years are considered the environmental baseline of the power plant. Information regarding age and sex were only included in two marine mammal stranding reports, in which one sea lion was reported as female and one sea lion was reported as adult.

6.1 Harbor Seals

Five harbor seals have been entrained at the ESGS since 1978, three of which were released unharmed. Based on this environmental baseline, future incidental take of less than one harbor seal per year is anticipated. The continued operation of the ESGS has had, and is anticipated to continue to have, a negligible effect on harbor seals. Continuation of existing plant operations will not change the environmental baseline; therefore, the number of marine mammal entrainments is not expected to increase. Continued operation of the velocity cap on the intake structures will continue to serve as a deterrent to future entrainment.

6.2 California Sea Lions

A total of ten California sea lions have been entrained at or near ESGS since 1979. Based on this environmental baseline, incidental take of less than one California sea lion per year is anticipated. The continued operation of ESGS has had, and is anticipated to continue to have, a negligible effect on sea lions. Continuation of existing plant operations will not change the environmental baseline; therefore, the number of marine mammal entrainments is not expected to increase. Continued operation of the velocity cap on the intake structures will continue to serve as a deterrent to future entrainment.

7.0 THE ANTICIPATED IMPACT OF THE ACTIVITY UPON THE SPECIES OR STOCK OF MARINE MAMMAL

The continued operation of the ESGS has had, and is anticipated to continue to have, a negligible effect on the populations or stocks of harbor seals and sea lions. As discussed in the previous section, the stocks of both harbor seals and California sea lions are increasing in the eastern Pacific Ocean, and the minimal historic impacts on these marine mammals resulting from ESGS operations is not reasonably likely to affect these species or stock through effects on annual recruitment or survival.

8.0 THE ANTICIPATED IMPACT OF THE ACTIVITY ON THE AVAILABILITY OF THE SPECIES OR STOCKS OF MARINE MAMMALS FOR SUBSISTENCE USES

There are currently no subsistence uses for harbor seals and sea lions in this area; thus, no impact on the availability of this species for subsistence uses will occur.

9.0 THE ANTICIPATED IMPACT OF THE ACTIVITY UPON THE HABITAT OF THE MARINE MAMMAL POPULATIONS, AND THE LIKELIHOOD OF RESTORATION OF THE AFFECTED HABITAT

The continued operation of the ESGS has had, and is anticipated to continue to have, a negligible effect on the habitat of harbor seals and sea lions in the vicinity of the intake and outflow structures in Santa Monica Bay; therefore, habitat restoration is not necessary. Because there will be no change to the existing conditions, it is not anticipated that the ESGS will have adverse impacts upon the habitats of marine mammals in Santa Monica Bay as a result of continued operation.

10.0 THE ANTICIPATED IMPACT OF THE LOSS OR MODIFICATION OF THE HABITAT ON THE MARINE MAMMAL POPULATIONS INVOLVED

The continued operation of the ESGS has had, and is anticipated to continue to have, a negligible effect on the habitat of harbor seals and sea lions. The existing conditions, which include the intake and outflow structures in their current locations in Santa Monica Bay, are considered the environmental baseline. Because there will be no change to the existing conditions, the habitat of harbor seals and sea lions is not anticipated to be modified as a result of the continued operations of the ESGS.

11.0 THE AVAILABILITY AND FEASIBILITY (ECONOMICAL AND TECHNOLOGICAL) OF EQUIPMENT, METHODS, AND MANNER OF CONDUCTING SUCH ACTIVITY OR OTHER MEANS OF EFFECTING THE LEAST PRACTICABLE ADVERSE IMPACT UPON THE AFFECTED SPECIES OR STOCKS, THEIR HABITAT, AND ON THEIR AVAILABILITY FOR SUBSISTENCE USES, PAYING PARTICULAR ATTENTION TO ROOKERIES, MATING GROUNDS, AND OTHER AREAS OF SIMILAR SIGNIFICANCE

Under the existing operating conditions, the ESGS currently causes no significant adverse impacts on marine mammal species, their habitat, or their availability for subsistence uses. as evidenced by the few incidences of marine mammal entrainments in the past 17 years of reporting and 23 years of operations. Existing ESGS operations also are not reasonably likely to adversely affect these species or stock through effects on annual rates of recruitment or survival. Because there will be no change to the existing conditions, it is not anticipated that ESGS will have significant adverse impacts upon marine mammal species, their habitat, their availability for

subsistence uses, or their annual rates of recruitment or survival as a result of continued operation. There are no known practicable methods of reducing risk to marine mammals beyond those already in place at ESGS. The velocity cap has proven to be an effective means of minimizing entrainment of marine mammals.

12.0 WHERE THE PROPOSED ACTIVITY WOULD TAKE PLACE IN OR NEAR A TRADITIONAL ARCTIC SUBSISTENCE HUNTING AREA AND/OR AFFECT THE AVAILABILITY OF A SPECIES OR STOCK OF ANIMAL FOR ARCTIC SUBSISTENCE USES, THE APPLICANT MUST SUBMIT EITHER A PLAN OF COOPERATION OR INFORMATION THAT IDENTIFIES WHAT MEASURES MUST BE TAKEN TO MINIMIZE ADVERSE EFFECTS ON THE AVAILABILITY OF MARINE MAMMALS FOR SUBSISTENCE USES

The activity does not take place in or near a traditional Arctic subsistence hunting area and does not affect the availability of a species or stock of marine mammal for Arctic subsistence uses.

13.0 THE SUGGESTED MEANS OF ACCOMPLISHING THE NECESSARY MONITORING AND REPORTING OF IMPACTS ON MARINE MAMMALS THAT ARE EXPECTED TO BE PRESENT WHILE CONDUCTING ACTIVITIES

As a participant in the Regional Stranding Network Program with NMFS since 1983, ESGS must complete a marine mammal and marine turtle stranding report for all cases of marine mammal and sea turtle entrainment. NMFS is notified verbally and in writing within 24 hours, and reports are submitted on a monthly basis to the Stranding Network Coordinator at NMFS.

Because there will be no change to the existing conditions, no change in operations are recommended. Continuation of the current monitoring and reporting program is recommended, with the possibility of review and comment by the NMFS.

14.0 THE SUGGESTED MEANS OF LEARNING OF, ENCOURAGING, AND COORDINATING RESEARCH OPPORTUNITIES, PLANS, AND ACTIVITIES RELATING TO REDUCING SUCH INCIDENTAL TAKING AND EVALUATING ITS EFFECTS

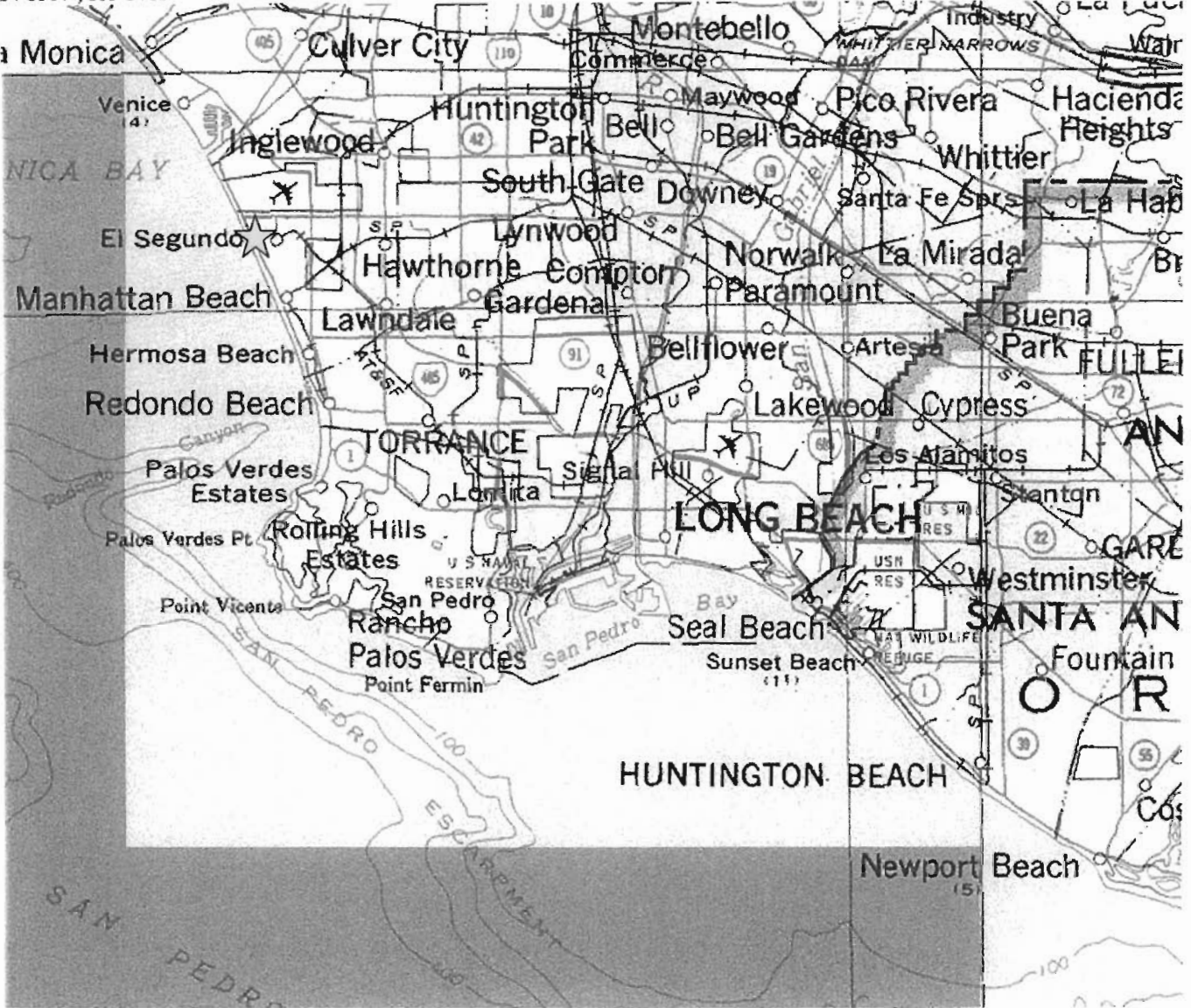
Independent research is currently being conducted on methods to prevent or reduce the lethal incidental taking of marine mammals through intake structures associated with coastal power plants. Should new, improved methods be identified, they could be evaluated, and incorporated if appropriate at some future time. However, less than one marine mammal per year is taken at the ESGS, which indicates that take of marine mammals at this power plant is sufficiently minimized under the current operating conditions and that additional methods are unlikely to provide improvement over existing conditions.

15.0 REFERENCES

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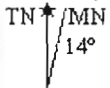
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34°01'57", 117°52'55"



33°32'42", 118°34'18" NAD83

33°32'42", 117°52'55"



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Reference: Topo, 1997, San Diego County

EL SEGUNDO GENERATING STATION

SITE LOCATION MAP

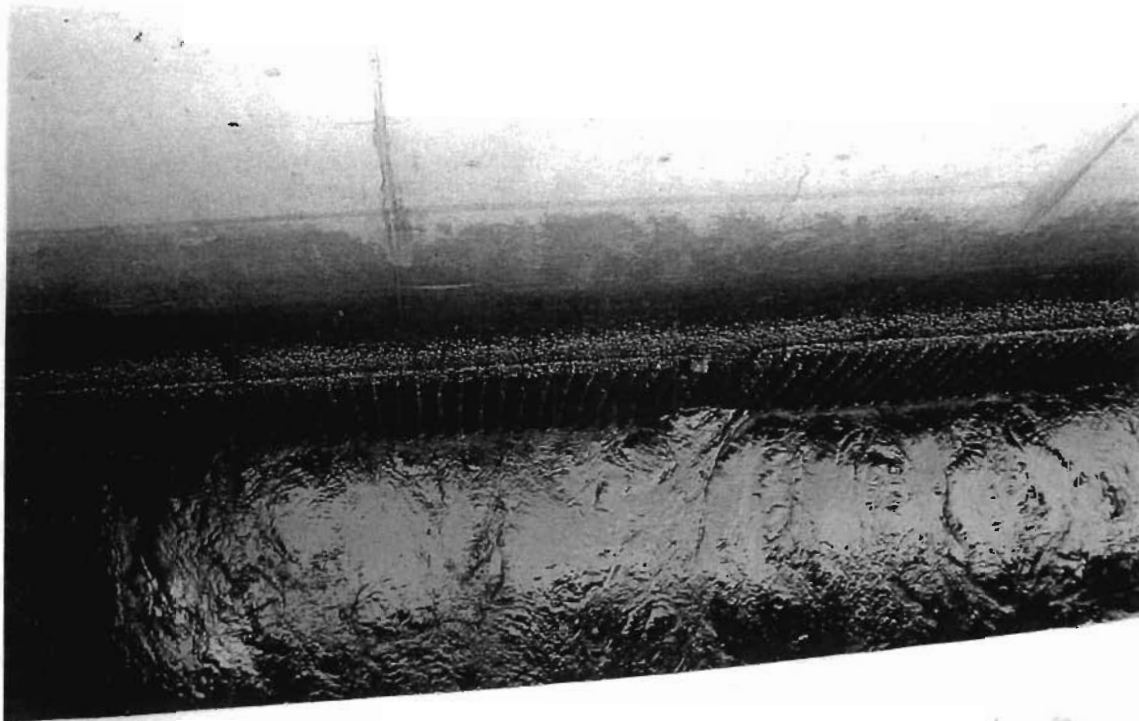


FIGURE 1

☆ = Facility Site



Photograph 1: View west of Santa Monica Bay where intake/outflow structures are located.



Photograph 2: View of forebay area; note low flow rate of the water.



Photograph 3: View of onshore structures of the El Segundo Generating Station.

Marine Mammals and Turtles Entrained at Coastal Electric Generating Stations

DATE ENTRAINED	DATE REMOVED	ANIMAL TYPE	STATION	DISPOSITION	ID NUMBER
7/15/78	7/15/78	CA SEA LION	ESGS	DEAD IN FOREBAY	
1/8/79	1/8/79	HARBOR SEAL	ESGS	RELEASED UNHARMED	
1/24/79	1/24/79	CA SEA LION	ESGS	RELEASED UNHARMED: FOUND IN GARAGE	
7/27/82	7/28/82	CA SEA LION	ESGS	REMOVED DEAD	
8/24/92	8/24/92	HARBOR SEAL	ESGS	CARCASS	SCE92-40
7/7/95	7/8/95	CA SEA LION	ESGS 1&2	LIVE; RELEASED TO SPCA	SCE95-21
1/12/98	1/12/98	HARBOR SEAL	ESGS 1&2	ENTERED STATION UNDER FENCE; RETURNED TO BEACH (0)	SCE98-05
7/30/98	7/30/98	CA SEA LION	ESGS 1&2	DEAD: 48": 80 LBS, FEMALE (CARCASS ABOUT 2 DAYS OLD)	SCE98-47
8/10/79	8/10/79	CA SEA LION	ESGS 3&4	DEAD IN FOREBAY	
2/13/80	2/14/80	CA SEA LION	ESGS 3&4	FULL ADULT; DEAD WHEN FOUND	
4/22/81	4/23/81	HARBOR SEAL	ESGS 3&4	75LBS; DEAD. REMOVED FROM SCREENWELL, SENT TO LANDFILL	
6/24/83	7/8/83	HARBOR SEAL	ESGS 3&4	RELEASED TO SPCA. SENT MARINELAND, NO INJURIES	SCE83-11
7/31/85	7/31/85	GRN SEA TURTLE	ESGS 3&4	MINOR ABRASIONS, TRANSFERRED TO MARINELAND	SCE85-T1
9/28/95	9/28/95	LOGGERHEAD	ESGS 3&4	GOOD HEALTH; RELEASED REDONDO BEACH BY HARBOR PATROL	SCE95-T1
5/7/96	5/7/96	CA SEA LION	ESGS 3&4	LONG DEAD; LANDFILL: 60": 200 LBS;	SCE96-22
6/13/97	6/13/97	CA SEA LION	ESGS 3&4	DEAD; 72": 400 LBS; LANDFILL	SCE97-21
10/15/97	10/15/97	CA SEA LION	ESGS 3&4	DEAD; 70": 180 LBS	SCE97-33