NORTHERN ELEPHANT SEAL
(*Mirounga angustirostris*)

DESCRIPTION

Northern elephant seals are the second largest pinniped in the world, outsized only by its southern hemisphere counterpart, the southern elephant seal. Male elephant seals are much larger than females and develop an inflatable nose (or proboscis) resembling a trunk that hangs down below their mouth. The species name comes from both its nose and its size. Their 'winged feet' or flippers are a defining feature of all pinnipeds (seals, sea lions, and walruses). Being true seals (phocids), they do not have external ear flaps, nor can they 'walk' on land using all four flippers, unlike fur seals and sea lions. (otariids). Northern elephant seal adults are dark brown or grey in color, but pups are black when they are born.

OVERVIEW

- **Oregon Conservation Strategy Species**
- **Federal Listing Status:** Protected by the Marine Mammal Protection Act
- **Length:** Males usually 13-16 feet; females usually 10 to 13 feet
- **Weight:** Males usually 3,300 - 5,100 pounds; females usually 880-1,300 pounds
- **Lifespan:** Males about 13-14 years; females about 19-20 years
- **Primary Strategy Habitats:** Nearshore
- **Similar Species:** Harbor seal, California sea lion, Steller sea lion, and northern fur seal

FUN FACTS

- **Favorite Food:** Fish and squid
- Northern elephant seals were hunted for their blubber in the 1800s that was used for lamp oil. The species was considered extinct before the turn of the century.
- Northern elephant seals make a double migration to their foraging areas each year, traveling thousands of miles back and forth to where they haul out to breed and molt.
- They spend about 90% of their time at sea underwater, making sequential deep dives up to 5,000 feet or more.
- Females make longer and deeper dives than males.
- To conserve energy when ashore, northern elephant seals can hold their breath for up to 25 minutes while sleeping.

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RANGE AND DISTRIBUTION

In Oregon: A small number of elephant seals can be seen on the sandy beaches on Shell Island or around Cape Arago State Park near Coos Bay. A much greater number come to the waters off Oregon to feed but don't generally come ashore here. Occasionally some juveniles do come ashore on Oregon beaches to molt.

Everywhere Else: Found in the north and central Pacific Ocean, and along the coast from the Aleutian Islands and the Gulf of Alaska south to Baja California, Mexico. The primary areas that they come ashore are sandy beaches on islands and at some coastal locations in California and Baja. The largest colonies in the U.S. are found on the Channel Islands off southern California.

LIFE HISTORY AND ECOLOGY

Northern elephant seals forage when at sea and fast when they are ashore. They spend over 8 months out of every year in the ocean. They are rarely seen out at sea because they spend 90% of their time underwater, only coming up briefly to breathe before undertaking deep dives to search for deep-sea prey. Between migrations to foraging areas, northern elephant seals spend two extended periods ashore during the year, one for breeding and one for molting. Northern elephant seals are one of only a few pinniped species that loose not only their fur when they molt but also an outer layer of skin as well; this is energetically taxing and is referred to as a 'catastrophic molt'. This event takes place every year between April and August. Reports of sick seals on Oregon beaches during this time sometimes turn out to be molting elephant seals. Although these animals may look to be in terrible shape because they shed an outer layer of skin along with their fur, this is a normal process for elephant seals and they should be left alone during this time.

Males arrive at the breeding grounds first and begin fighting to establish dominance. Dominant males ("beach masters") establish the best territories where groups of females called "harems" gather in large groups for protection from aggressive males. Males defend their territories ferociously from other males and successful, dominant males will mate with multiple females, thus passing on their genes. Although a small number of dominant males are responsible for over 90% of the mating, some "sneaker" males found at the peripheries of these territories do succeed in mating upon occasion by operating under the radar. Males fast during the mating season, losing up to 36% of their body weight in the process. Both mating and birthing occurs in Baja California, the Channel Islands of California, and at Año Nuevo in central California from December to March. Males start growing their trunk-like noses at sexual maturity (about 4 years old), but it does not become fully grown until they around about 8 years old. Males reach their peak fitness and prime breeding years at 9 to 12 years old and can live up to 14 years.

Females arrive for birthing and breeding from December to January. They give birth to a single pup within a week of coming ashore. Females first give birth between 3 and 6 years of age and continue to give birth almost every year until they die at a maximum age of about 20 years. Females fast during the entire time they are ashore during the pupping and breeding season, making the energy gained while

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foraging prior to this extremely important for survival of mother and pup. Pups are nursed for about a month. The pup can grow from around 75lb at birth to up to 350 lbs while nursing. The mother will then breed again during the last several days of nursing. Then she returns to sea leaving her pup on its own. These pups (called “weaners”) stay near rookery beaches for the next 2 months, practicing their swimming and hunting skills. But before entering the water they first molt the black fur they are born with after being weaned and grow a new light silver coat.

Northern elephant seals undergo one of the longest annual migrations of any mammal, at up to 13,000 miles. They actually make two round trips a year. After the breeding season both sexes go to sea to forage, then most come back to the same beaches to molt. As with the breeding season, both sexes fast while ashore for molting. They then return to sea to feed before returning to California and Baja California for the breeding season. The annual cycle of foraging at sea and fasting while ashore is a key part of the ecology of this species.

Predators of northern elephant seals include large sharks and killer whales. Historically, man was a major predator of this species, and total global numbers were reduced to just over 100 individuals in 1910; all living elephant seals today are descended from these individuals.

DIET AND FORAGING

Northern elephant seals feed mostly on fish and squid, but also eat the occasional ray or shark. Much of what has been learned about their foraging ecology comes from tagging studies that use tags that provide both location and diving information. Males travel offshore to feeding areas along the continental shelf break, anywhere from off the Oregon, Washington, and Canadian coast to the Aleutian Islands, where they dive to extreme depths in order to feed near the bottom. There is also evidence that these animals will sleep at the bottom of the ocean. Individual males tend to return to the same areas to feed. Females range more widely into deeper waters further from the coast than males. Their feeding areas extend from off the coast of Oregon and out past the international date line, to as far north as the Gulf of Alaska. Females forage mostly in the deeper waters at mid-depths in the water column and appear to focus on prey in the deep scattering layer rather than focusing on prey near the bottom at the shelf break like males. Females make deeper dives than males with dives over 5,00 feet recorded, and average dive depths in the 1,300-1,600 foot range. No males were recorded to make dives over 3,300 feet and average dive depths were also shallower.

HABITAT CHARACTERISTICS

Northern elephant seals spend up to 9 months every year in the open ocean. They require sandy beaches during the mating season and for molting. They prefer offshore islands but also do use some mainland beaches. A small number of northern elephant seals can be seen on the beaches near Cape Arago, and occasionally make their way on to other Oregon beaches to rest and molt, but most utilize beaches further south in California and Mexico.

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CONSERVATION AND MANAGEMENT

Threats: Entanglement in fishing gear, collisions with ships.

Historic conservation trends: In the 1800s, overhunting brought northern elephant seal populations in the U.S. and Mexico to the brink of extinction, in fact they were actually declared extinct three times before the turn of the century. When nine individuals were found alive in 1892 at Isla de Guadalupe, off Baja, Mexico, seven were killed for the Smithsonian's museum collection. The recovery of northern elephant seals is attributed to the small remnant population breeding on that island. The population did not begin to increase until the early 1900s. Although the species experienced a genetic bottleneck with an effective breeding population of less than 20 or 30 individuals, the population has now grown and expanded with breeding colonies on islands and beaches in Mexico and the U.S. The recovery of this species is a conservation success story due to protections provided by both countries in the 20th century.

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