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(MMPA)"**

BEFORE THE

COMMITTEE ON RESOURCES

SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS

U.S. HOUSE OF REPRESENTATIVES

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Mr. Chairman and Members of the Subcommittee, I am Dr. Brent Stewart, a Senior Research Biologist at Hubbs-SeaWorld Research Institute (HSWRI). Thank you for the invitation to testify before the Subcommittee today to provide some demographic and ecological context for the discussion on interactions between seals and sea lions (pinnipeds) and humans or human activities along the Pacific coast of North America. My comments below are based on 27 years of directed studies on the population biology, foraging ecology, and key marine and terrestrial habitats of California sea lions, harbor seals, and northern elephant seals in the eastern north Pacific Ocean. I will briefly describe the histories and current abundances of these populations, the marine resources that have evidently supported population growth, and their temporal and spatial patterns of geographic and vertical dispersion.

Population history:

The historic abundances of California sea lions, harbor seals, and northern elephant seals are unknown and, indeed, unknowable. Aborigines hunted them for several thousand years and likely reduced their populations substantially in many areas, especially at the Southern California Islands, and exterminated them at some locations. Whatever populations existed when European explorers, whalers, sealers and sea otter hunters arrived in California waters in the 18th and 19th Centuries were subsequently reduced even further until commercial harvests ended when populations had either been exterminated or reduced to levels too low to economically support further harvests.

California sea lions numbered only a few thousand by the mid-20th Century, breeding at two primary colonies at San Nicolas Island (a U.S. Navy outlying landing field and missile tracking and testing facility) and at San Miguel Island (part of the Channel Islands National Park since 1980) with limited public access. Reproduction has since increased rapidly and substantially at both colonies (with brief interruptions during El Niño years); over 40,000 pups were born in 2000 with slightly fewer in 2003 owing to biological effects associated with the mild 2002/03 El Niño.

Harbor seals were not common in California waters in the mid-20th Century, owing to a variety of causes including authorized bounties and indiscriminate shooting and poaching. Numbers increased steadily from the early 1970s onward through at least the late 1990s, though abundance may have

stabilized since at around 45,000 to 50,000 with around 9,000 in southern California, primarily at the southern California Channel Islands. There are three mainland colonies of harbor seals south of Point Conception; at Carpinteria (south of Santa Barbara), at Mugu Lagoon (Point Mugu Naval Air Station), and at La Jolla. Numbers at the latter site (aka 'Childrens Pool') have increased steadily from fewer than a dozen in the late 1970s to around 150-200 in 2003 with reproduction in the area occurring since the late 1980s.

Northern elephant seals were presumed extinct by the end of the 19th Century owing to long-term subsistence harvest by aborigines, commercial harvests by whalers and sealers in the early 1800s, and then scientific collections in the late 1800s.. A very small number did however survive in Baja California, from which the species began recovering and expanding its range in the early 1900s. The southern California Channel Islands were colonized in the mid-20th Century and island and mainland sites in central California soon after. In 2003 over two thousand pups were born on mainland beaches near San Simeon, which has developed into a substantial tourist attraction. Population growth and range expansion in the U.S. is continuing. The two primary colonies for the species at San Nicolas and San Miguel Islands accounted for over 20,000 births in 2003.

Seasonal geographic dispersion:

Breeding *California sea lions* occur in large numbers at and near colonies at the southern California Channel Islands (principally San Nicolas and San Miguel Islands) from late May through August. Those seen near the mainland coast in southern California then may be from the colony at the Coronado Islands in northern Baja California or perhaps colonies farther south. Non-breeding sea lions from U.S. colonies occur farther north along the California coast throughout summer and may remain there or move even farther north in autumn and winter. Lactating females forage mostly away from the mainland coast throughout the year, near areas of strong upwelling of nutrients where resident and migratory fish and squid prey concentrate and aggregate. During El Niño years, when upwelling systems decline in strength or fail, sea lions may spend more time in habitats nearer the mainland in search of more dispersed neritic or demersal prey. Adult and socially immature males leave the breeding colonies in late summer and migrate north to feed, and to haulout regularly, while molting, along the coasts of California, Oregon and Washington and as far north as British Columbia. Large aggregations occur at several well-known mainland sites where seasonal abundance has been increasing owing to sustained reproduction in southern California during the past several decades and evidently good survival of juveniles and adults in most years. Most California sea lions occur in nearshore habitats when north of Point Conception, but generally farther offshore in Southern California, though small numbers of sea lions clearly inhabit near-shore waters from San Diego to Santa Barbara in most seasons.

Harbor seals generally remain near island and mainland haulout sites year-round, though they may travel up to 20-50 miles away to forage for several days or weeks at some seasons. Numbers of seals ashore vary seasonally as seals spend more time hauled out during the winter/early spring breeding season and in late spring and summer when molting and less time hauled out when more actively foraging from late summer through winter. Foraging harbor seals are also attracted to various coastal areas where prey aggregate or become temporarily concentrated, like at the mouths of streams and rivers.

Northern elephant seals rarely occur near the mainland or island coasts except when quickly departing at the end of the breeding season, arriving to molt, departing after molting, or arriving to breed. Elephant seals otherwise spend most of the year (8 to 10 months) several hundred miles or more from the mainland coast while feeding.

Diet:

The diet of *California sea lions* varies seasonally and has been dynamic over the past several decades. Near San Nicolas Island, four or five species of fish and cephalopods generally dominate the diet during any year. In the 1980s the principal prey were northern anchovy, Pacific hake, jack mackerel, several species of rockfish, market squid, and Pacific mackerel. In the 1990s the principal prey were Pacific hake, two-spotted octopus, chilipepper rockfish, market squid and jack mackerel.

Near the southern California Channel Islands, *harbor seals* primarily eat rosy rockfish, chilipepper rockfish, spotted cusk-eel, plainfin midshipman, market squid and red octopus. Near La Jolla, their diet is dominated by jack mackerel, Pacific sandab, Pacific hake, and rosy rockfish.

Northern elephant seals prey mostly on deepwater, bioluminescent squid and, to a lesser extent, fish

Vertical Foraging habitats:

When in the Southern California Bight, *California sea lions* forage mostly at depths of 150 to 300 feet, primarily in offshore areas where upwelling of nutrients supports productive local resident and migratory fish and squid communities, though they may also forage occasionally on demersal prey in nearshore kelpbeds. Migrating sea lions, especially subadult and adult males, may forage closer to the mainland coast, often taking advantage of opportunities associated with recreational and commercial fishing operations that may provide easy meals with less foraging effort.

In southern California waters, *harbor seals* generally forage in demersal, nearshore habitats at depths of less than 300 feet.

Northern elephant seals principally forage in the water column at depths of 750 to 2,500 feet.

Conclusion:

The southern California Channel Islands and Southern California Bight support the most concentrated taxonomic diversity of seals of sea lions (pinnipeds) in the world. The populations of California sea lions, harbor seals, and northern elephant seals numbered between a few hundred to a few thousand in the early to mid 20th Century owing to long term subsistence hunting by aborigines and commercial harvests and indiscriminate killing in the early 1900s. Since the blanket prohibition on killing them in 1972, with the promulgation of the U.S. Marine Mammal Protection Act, ranges and populations have increased steadily to current levels that are several of orders of magnitude greater. Scientific research during the period of population growth has identified the marine and terrestrial habitats and prey that have been key in facilitating the increases. Several of those habitats are also used to various extent by humans for recreational or commercial purposes and some of fishes and cephalopods are exploited in common by pinnipeds and humans. These overlaps generally occur with small proportions of the pinniped populations in particular areas and seasons. The interactions between pinnipeds and humans have nonetheless been intensifying owing to the large absolute increases in populations and the periodic changes in distributions and foraging behaviors of pinnipeds during El Niño years when substantial declines in local abundance and distribution of normal prey occur. The most frequent interactions and conflicts are with California sea lions and harbor seals whose use of coastal habitats overlap most often with human activities. In contrast, interactions with humans and northern elephant seals are rare, owing to elephant seals' pelagic and deepwater foraging habitats and their brief seasonal presence at offshore islands. Exceptions are at recently colonized mainland beaches in central California, where human safety is the key issue. Though there are some indications that numbers of harbor seals may have

stabilized recently, there are no indications that growth rates of populations of California sea lions or elephant seals may soon decline naturally.

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