Testimony of
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Before the
Subcommittee on Fisheries, Wildlife, and Oceans

Committee on Natural Resources
U.S. House of Representatives

Hearing on
H.R. 3639, The Southern Sea Otter Recovery and Research Act

Chairwoman Bordallo, Ranking Member Brown, and distinguished members of the Subcommittee; thank you for the opportunity to appear before you today to discuss the management and conservation of sea otters and coastal oceans in California.

My name is James Estes. I am recently retired as a research scientist with the Biological Resources Division of the US Geological Survey and currently a Professor of Ecology and Evolutionary Biology at the University of California at Santa Cruz. I have spent much of the past 38 years designing and conducting research on sea otters and coastal marine ecosystems.

In an effort to bring the key issues underlying this bill into focus, my testimony is organized around what I see as the central questions you ought to be asking yourselves.

Let's begin with the question of relevance and context. Our world is home to some 5-10 million species of plants and animals, many of which are threatened with extinction

because of the large and growing human footprint on the global ecosystem. You might thus ask, **Why are California sea otters of particular interest? Shouldn't we be directing our attention and resources to the broader problem?** I believe there are at least three compelling reasons why California sea otters deserve this attention. The first is that sea otters are what ecologists have recently come to recognize as keystone species. Through a complex suite of interactions with other species, sea otters exert enormous influence on the structure, diversity, and ecosystem services of near-shore marine communities; their loss will result in the unraveling of California's coastal kelp forest ecosystems. The second is that sea otters are bellwethers of ecosystem health. As sea otters go, so go many other species in the coastal oceans of central California. And finally, like pandas and snow leopards, the sea otter is iconic. More than most other species, the mere existence of sea otters and the opportunity to observe them in nature bring pleasure and richness to the lives of many people. This pleasure and richness is an important drawing point in central California's tourism industry.

That said, **Is there a problem with California sea otters, and if so what is it?** Until just several hundred years ago, sea otters abounded across the rim of the North Pacific Ocean. The original population contained a million or so animals, some 16,000 of which occurred in California. These animals were hunted to the brink of extinction during the Pacific maritime fur trade. By the early 1900s only a few small remnant colonies survived, including about 50 individuals in the then-remote Big Sur coastline of central California. With protection, most of these colonies rapidly recovered. For example, in southwest Alaska's Aleutian archipelago, sea otter numbers grew from a hundred or so

individuals at the beginning of the 20th century to nearly a hundred thousand by the 1980s. That same recovery did not occur in California. Sea otter range and numbers in California increased through the 1960s but only very slowly. Numbers declined sharply during the late 1970s and early 1980s from incidental losses in a developing coastal gill net fishery. Following the identification and mitigation of this problem, the population resumed its sluggish growth through the mid 1990s. Since then, however, it has remained roughly stagnant, with periods of modest increase and decline but no overall change. My concern is that the forces that are preventing population recovery will worsen with California's growing human population and the resulting impacts on our coastal oceans. I wonder—will the California sea otter recover, or is it on the cusp of turning toward a gradual decline to extinction?

What do we know of the precise reasons for the California sea otter's failure to recover?

- We know with certainty that the general cause is elevated mortality.
- We know that body condition has declined and mortality has increased during the past several decades.
- We know that sea otters die from a host of causes, including disease, starvation, entanglement or entrapment in fishing gear, shark predation, biotoxins, shooting, and boat strikes.
- We know that roughly 40% of the stranded carcasses have died from parasites and infectious disease. However, we also have reasonably strong evidence

- We do not know whether the seemingly high rate of mortality from disease is more the result of an unhealthy environment or an epiphenomenon of food limitation.
- We do not know if the stranding records are representative of the many other deaths than go undetected, or whether these animals might be dying for fundamentally different reasons.
- In short, we have no clear sense of the management actions that are required to preserve and recover the California sea otter. Further information is needed to inform management and mitigation.

How can we obtain this information? We will almost certainly never understand sea otter mortality in enough detail and with a sufficient level of confidence to institute well informed management and conservation actions by simply continuing to monitor the number of living animals and the number and cause of death in the stranded carcasses. Such information is necessary for proper conservation and management, but it is not sufficient. What is needed, in addition, is a clearer and more representative view of mortality. And that can only be obtained by more detailed study of the wild population.

Can an understanding of sea otter mortality be obtained with reasonable certainty, at a reasonable cost, and within a reasonable length of time? The answer is yes. We already have the technological capabilities of capturing, tagging, and closely following

tagged animals in the field. Furthermore, tagging and tracking technology is improving rapidly, so the ease with which this information can be obtained, and the quality of the data, will only improve. The financial resources needed to conduct this work, while not trivial, are also not prohibitive. The proposed research funding under H.R. 3639, when added to existing resources, is sufficient to maintain the monitoring program and expand the field research, as I have briefly described above. A five year commitment will provide a greatly clarified view of why California sea otters are dying at elevated rates. This information, in turn, is essential to mitigating the problem and recovering the population.

In concluding this testimony, I want to return to the importance of the California sea otter problem to wildlife conservation and management. The challenge faced by natural resource managers and conservation scientists is preserving biodiversity in the face of the growing needs and numbers of people. While human population growth has slowed or ceased in many parts of the first world, it is still increasing along the western seaboard of the United States. The 20th century witnessed more than a 25 fold increase in California's human population; that trend is projected to continue for the foreseeable future; and the great majority of these people will continue living along or very near the coast. We must therefore ask--Can the functional integrity of California's coastal marine ecosystems be preserved in the face of this increase? More to the point of this hearing and the proposed legislation, can we save and recover the California sea otter? While the question might seem to be of only localized interest and relevance, it is in fact one of national and even global significance. Coastal oceans throughout the world are threatened by pollution, overuse, and habitat degradation. Large predatory mammals and their ecological roles

have been disproportionately lost or are in jeopardy of being lost throughout the world. Sea otters and the coastal ocean of central California are a line in the sand, a testing ground and an exemplar for the preservation and restoration of these valued and valuable resources everywhere. If we cannot save a species like the sea otter in a place like central California, what hope is there for imperiled wildlife anywhere?