

Sea Otters – Health and Recovery

The southern sea otter (*Enhydra lutris nereis*) is found only off the coast of California. It is listed as “threatened” under the Federal Endangered Species Act and is a “fully protected species” under Fish and Game Code. Despite years of protection, and the decline or elimination of most conflicting fisheries, the sea otter population has failed to recover. The adjusted fall 2010 southern sea otter population count figure was 2710, only a few hundred more otters than counted in 1994, 16 years ago, when the previously steady population recovery ceased.

The scientific community is in agreement on the primary problem at the population level. Otherwise healthy adult sea otters are dying faster than they can be replaced. Pups are being produced and weaning at traditional levels. However, mortality of prime age adults, particularly females, is the basis of the problem. Fifty to 60 percent of southern sea otter deaths are the result of diseases, parasites and toxicants. Many of these have land-sea connections and can be seen as forms of, or the result of, pollution.

Specific pollution related diseases include Toxoplasmosis and Sarcocystosis, protozoal parasitic diseases resulting from land to sea transport of infective oocysts (eggs) from cats and opossum (respectively) and their concentration in filter feeding bivalves. Otters eating filter feeding invertebrates in more densely populated areas of the coast are at 12 to 27 times greater risk of contracting these diseases than if they fed on abalone. Fecal bacteria of humans and animals also cause some sea otter deaths. Persistent organic pollutants and many other compounds are found in tissues of dead, and blood of live, southern sea otters at levels 50 to 100 times higher than seen in pristine northern (Alaskan) otter populations. Toxins produced by algal blooms, which are fostered by excessive phosphates and nitrogenous compounds, also kill significant numbers of sea otters in some years. In particular, the discovery that toxins, called microcystins, produced by cyanobacteria (blue green algae) are causing many sea otter deaths and that the cyanobacteria blooms have a clear relationship to fertilizer enrichment of nearshore watercourses, made headline news in late summer of 2010.

The specific causes of sea otter mortality have links to terrestrial sources and are forms of pollution and habitat degradation. Most are the result of non-point source pollution, but some point sources are being discovered. Some of these may fall under California Department of Fish and Game (DFG) and State Water Board regulation. Many of the causes of sea otter mortality also have negative human and companion animal health consequences.

All sea otters that die in California are examined at the DFG Marine Wildlife Center in Santa Cruz, a DFG Office of Spill Prevention and Response facility. This work is supported variously by Sea Otter Tax check off, Coastal Conservancy, U.S. Fish and Wildlife Service, and other funding sources.