



SYSTEM DIMENSIONS	CHEMICAL AND PHYSICAL	BIOLOGICAL COMPONENTS	HUMAN USES
Extent Pattern	Nutrients, Carbon, Oxygen Contaminants Physical	Plants and Animals Communities Ecological Productivity	Food, Fiber, and Water Recreation and Other Services

Unusual Marine Mortalities

What Is This Indicator, and Why Is It Important?

This indicator reports the occurrence of “unusual” mortalities of marine animals. Unusual mortality events (UME) are characterized by an abnormal number of dead animals or by the appearance of dead animals in locations or at times of the year that are not typical for that species. For larger animals like whales, dolphins, porpoises, seals, sea lions, sea otters, manatees, and sea turtles, where a small number of deaths is significant, the indicator will report the actual number of dead individuals. For smaller, more abundant, animals (seabirds, fish, and shellfish), the indicator will report the number of mortality events, rather than number of individual deaths.

Factors that may contribute to unusual mortalities include infectious diseases, toxic algae (see Harmful Algal Blooms, p. 78), and uncommon weather patterns. Trends in unusual mortalities are generally believed to reflect the integrity of an ecosystem.

Why Can't This Entire Indicator Be Reported at This Time?

National data on turtle, seabird, fish, and shellfish mortality events are not available. Further work is required to define the criteria for UMEs for seabirds, fish, and shellfish.

What Do the Data Show?

Over 2,500 California sea lions were involved in a UME in 1992—more than 10 times the total number of seals, sea lions, sea otters, and manatees lost in UMEs for any year since. The deaths of 150 manatees off the Florida coast during 1996 and 185 California sea lions in 1997 were the next largest events for this group. For whales, dolphins, and porpoises, perhaps the most striking finding is the peak in 1999; the 576 deaths in that year reflect the deaths of 215 harbor porpoises and 270 gray whales off the West Coast (unusual gray whale deaths continued over the next two years, during which some 400 more animals died).

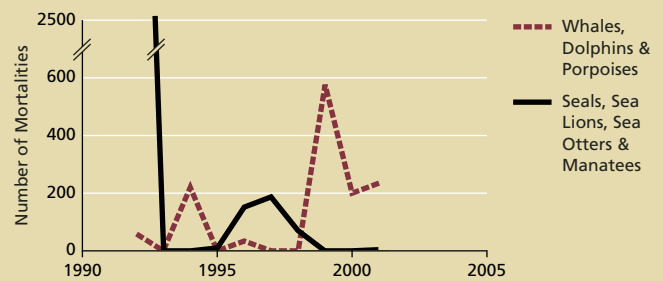
Discussion Instead of reporting all observed mortalities, this indicator reports unusual events. By restricting reporting in this way, the indicator focuses on events that raise more serious concern about the state of the marine environment than would more typical mortalities, which may be caused by old age or “normal” interactions with people, such as recreational boat strikes or entanglement in fishing nets.

The technical note for this indicator is on page 223.

Unusual Mortalities: Marine Mammals and Sea Turtles

Data Not Adequate for National Reporting on
■ Sea Turtles

Partial Indicator Data: Marine Mammals



Data Source: National Marine Fisheries Service and Dierauf and Gulland (2001). Coverage: all U.S. waters.

Unusual Mortalities: Seabirds, Fish and Shellfish

