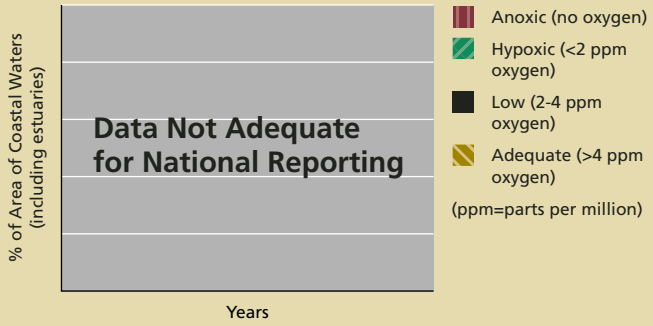
⊖ Areas with Depleted Oxygen

What Is This Indicator, and Why Is It Important? This indicator will report the percentage of area of estuaries and coastal waters out to 25 miles whose lowest oxygen levels fall within one of several concentration ranges for at least 1 month. These ranges are: anoxic (no oxygen present), hypoxic (up to 2 parts per million, or ppm), low (between 2 and 4 ppm), and adequate (more than 4 ppm). In addition, for each region the percentage of coastal and estuarine waters that are hypoxic for at least 1 month will be reported.

Most animals that live in the water need oxygen, and, except for air-breathing animals like turtles and whales, most use oxygen dissolved in the water. Natural processes and human pollution can cause serious reductions in dissolved oxygen. Both anoxia (no oxygen) and hypoxia (very low oxygen) are harmful to fish, shellfish and other marine animals. These conditions can result in mass mortalities (see p. 77) and increases in predation, reduce the area of suitable habitat, and form barriers through which migratory species such as striped bass and salmon cannot pass, keeping them from their spawning grounds.

Oxygen Levels—Nationally



Hypoxic Waters—By Region

Why Can't This Indicator Be Reported at This Time? Too few estuaries and waters of the U.S. coastal ocean are sampled frequently or thoroughly enough to report on this indicator at a regional or national scale.

Discussion High algae growth, often fueled by nutrients from runoff, sewage treatment plants, or deposition of airborne pollutants, can lead to increased bacterial activity (as bacteria decompose the algae); this increased activity can deplete available oxygen. Low oxygen levels generally affect bottom waters first and most severely. See the chlorophyll indicator, p. 80, and the national nitrogen indicator, p. 46.

The technical note for this indicator is on page 220.