



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

⊖ Selected Contaminants in Fish and Shellfish

What Is This Indicator, and Why Is It Important?

This indicator measures the concentration of PCBs, mercury, and DDT in the edible tissue of seafood from U.S. coastal waters. For comparison, the graphs would also include information on the levels at which the Environmental Protection Agency (EPA) and Food and Drug Administration (FDA) recommend that action (such as consumption advisories) be taken.

These compounds can reach concentrations that are harmful to humans, especially in larger fish. Many coastal environments are contaminated with synthetic toxic substances like DDT and PCBs, and mercury is ubiquitous in the marine environment. Bottom-dwelling organisms that ingest these contaminants are eaten by fish that are in turn eaten by larger fish—a process called bioaccumulation. Elevated concentrations of both PCBs and DDT are a concern both in bottom-feeding fish and shellfish and in predators such as tunas, swordfish, and some sharks, while mercury is concentrated primarily in predators.

While the manufacture and distribution of PCBs and DDT has been banned in the United States since the 1970s, historical deposits in coastal watersheds and sediments continue to provide an active source of contamination. Mercury can come from industrial releases, abandoned mines, the burning of fossil fuels for electric power generation, and the weathering of rock. Human health risk assessments have shown that consumption of certain species of fish in certain locations produces a measurable risk of cancer from one or more of these contaminants. These risk assessments are the basis of consumption advisories that suggest limiting the intake of particular species, especially for groups at higher risk, such as children, pregnant women, and nursing mothers.

Why Can't This Indicator Be Reported at This Time? While the FDA, EPA, and state governments have a variety of monitoring and reporting programs in place, these programs do not provide the basis for national reporting on contaminant concentrations.

The technical note for this indicator is on page 228.

