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Effects of pollutants on fishes

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ABSTRACT

As human populations in the New York and New Jersey coastal areas have increased, there have been concomitant increases in the pollution of adjacent marine environments and in the stresses placed on local fish and shellfish populations. A variety of chemical pollutants has been found in elevated concentrations in organisms, sediments, and waters of the New York bight. These include toxic metals, chlorinated hydrocarbons, and petroleum and its components. Response to pollutants is species-specific, but early life history stages and gonadal tissues of adults are particularly sensitive. Contaminants of particular importance to fishes and shellfishes are mercury, cadmium, silver PCB's, DDT and its metabolites, and petroleum hydrocarbons.

Only in the most severely degraded waters of the Northeast are there localized disappearances of fish and shellfish. Catch statistics for commercially valuable species in the New York bight reveal few changes in abundance that are directly attributable to pollution. In part, this may reflect the difficulty of distinguishing between the effects of natural environmental variations, overfishing, and pollution. It would appear that effects on individual organisms and on localized population segments are more promising indicators of pollution-related environmental stress than effects on total populations. Since toxicants may have sever and varied effects on individual fish and shellfish, management alternatives to continued marine pollution should be explored.