

The Danger Beneath

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Hidden danger

In recent years, scientists have collected alarming data:

- Anywhere from 5,000 to 40,000 tons of at least 65 pollutants enter the rivers and Bay yearly, mainly from legal dumping. Many of the chemicals can cause cancer and birth defects.
- Pollutants are widespread in the estuary, yet reach the highest concentrations in harbors, marinas, at points of storm runoff and at discharge pipes from 65 factories and 50 sewage treatment plants.
- The southern reaches of the Bay are the most polluted, primarily with silver, copper and cadmium, all of concern in the estuary. Below the Dumbarton Bridge, the water is the most contaminated when sewage discharge is high and fresh water flow is low. Other chemicals that worry scientists are chromium, mercury, selenium and tributyl tin.
- Waste chemicals are leaking to the Bay from abandoned and present industrial sites along the shoreline, from landfills, mines and underground fuel-storage tanks.

Pollutants find their way to the animals and plants. Oysters, clams and other crustaceans filter food on the Bay bottom; snails and worms ingest pollutants as they graze on organic matter in the same sediments.

The pollutants get eaten by the predators in the food web. The birds, marine mammals and humans concentrate pollutants in their tissues at the greatest levels. For instance, nursing mothers in the Great Lakes region show higher PCBs in their milk than cows or their contaminated feed.

The now banned PCBs, or polychlorinated biphenyls, once widely used as insulators in transformers and other equipment, are persistent in the Bay.

In the eastern part of the central Bay, studies show that starry flounders have absorbed toxic PCBs in their fatty tissue at levels high enough to limit reproduction.

The presence of PCBs and the break-down chemical of DDT -DDE - in the eggs of black-crowned night heron has been found to correlate with smaller embryos and thinner eggshells....

The first polluters

The first big human pollution of the Bay was probably the dumping of 3,500 tons of mercury, a poison used to extract gold from rock during the mining period of 1853 to 1884, the [State of the Estuary] report notes. The mercury flowed down the rivers to the Bay, contaminating plants and animals.

By 1900, the Bay reeked of untreated human and factory waste. Bilge pumping and flushing of storage tanks left oily slicks. Tankers deposited oil on the shoreline in Marin and San Mateo counties.

A 1925 study showed car repair shops in Berkeley and Oakland sent some 3,000 gallons of waste oil a day down drains to the Bay.

Over the decades, much of the biological and chemical filth that used to float on the Bay has been cleaned up. ... Factories have cleaned up dramatically since the 1960s. The biggest polluters, the oil refineries from Point Richmond to San Pablo Bay, in 1961 discharged about 2 tons of chromium and zinc every day to the Bay. Twenty-five years later, daily discharge was about 25 pounds.

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