

February 2009

Why has OEHHA developed “Safe Eating Guidelines” for fish from San Pablo Reservoir?

Studies of mercury, dieldrin, and PCB levels in fish from San Pablo Reservoir have shown that some fish from this reservoir contain one or more of these chemicals at levels that call for recommendations or “safe eating guidelines” to protect health. Trout and black crappie contain very low chemical levels and can be eaten frequently as part of a healthy diet. These findings are the result of studies conducted by California Department of Fish and Game and East Bay Municipal Utility District (EBMUD). The data from these studies support the fish consumption recommendations in this fact sheet. A prior interim public health notification was issued for San Pablo Reservoir by Contra Costa County, in consultation with OEHHA, in 2000 and, again, in 2004. That interim notification is being replaced by this current advisory.

The Office of Environmental Health Hazard Assessment (OEHHA) is responsible for providing fish consumption guidelines for sport fish in California. OEHHA used the studies above to evaluate the health effects of eating fish from this reservoir.

“Safe eating guidelines” provide information to fish consumers to help them choose the safest fish to eat. The guidelines also recommend how often these fish can be eaten for the greatest health benefits and minimum risk to health. OEHHA recommends that you choose *low-contaminant* fish to eat, and *avoid* eating fish that are *high* in contaminants. One set of safe eating guidelines applies to women ages 18-45 and children ages 1-17, to protect fetuses and children whose developing brains are particularly sensitive to methylmercury (the most prevalent form of mercury in fish). A second set of guidelines applies to women over 45 years and men, who are generally less sensitive to methylmercury.

Why are contaminant levels higher in some fish than in others?

Fish vary in their contaminant levels based largely on their species, location, diet, and age (length). Mercury is the most common contaminant in northern California sport fish. Some of the major sources of mercury in the environment are volcanoes and coal-burning power plants, which discharge mercury into the air. Mercury in air can be carried worldwide before being deposited into oceans, lakes, and other water bodies. In California, however, runoff from old mercury mines or gold mining regions (where mercury was used in the gold recovery process) is a significant source of mercury in fish. Fish from regions that are more contaminated with mercury often have higher mercury levels than fish from other locations. Also, fish that eat mostly other fish, such as bass, tend to have the highest mercury levels. In San Pablo Reservoir, for example, black bass (including largemouth, smallmouth, and spotted bass) were found to have higher levels of mercury than other fish species. Larger, older fish of a species usually accumulate higher levels of mercury than smaller fish from the same species and water body. For this reason, it is better to eat smaller fish of a species, provided they are legal size.

It is not known why significant dieldrin levels were found in two fish species in San Pablo Reservoir. Dieldrin, an insecticide banned in 1989, was used principally on corn and cotton crops, as well as on termites. PCBs, on the other hand, were used as coolants and lubricants in electrical equipment and are commonly found in fish in urban water bodies. PCBs were banned in 1979. Dieldrin and PCBs tend to concentrate in fish that are higher in fat and may be partially removed by

cleaning and cooking in ways that remove fat, including removing the skin. Concentrations of both chemicals are declining in California sport fish.

Why should fish be eaten if they might contain mercury or other chemical contaminants?

Fish are a nutritious source of protein and heart-healthy “omega-3” fatty acids. That is why the American Heart Association recommends that healthy adults eat at least two 3-ounce cooked servings of fish each week. Eating fish may also prevent other diseases and improve how the brain develops in the fetus and children. To benefit most from fish consumption and avoid health risks from contaminated fish, it is important to eat fish that are low in contaminants and high in the unique “omega-3” fatty acids found in fish. The safe eating guidelines also show which fish have high levels of “omega-3s” that have been shown to benefit the heart, brain, and eyes.

“Omega-3s” are beneficial nutrients found in fish that are good for the heart, and also support brain development.

What are the human health effects from eating fish with methylmercury, PCBs or dieldrin?

Methylmercury can affect your health if you are exposed to excessive amounts over time. Developing fetuses and children are especially sensitive to methylmercury while the brain is growing. Pregnant women can pass methylmercury to their babies through the placenta. Too much methylmercury can affect the nervous system in children, leading to subtle decreases in learning ability, language skills, attention, or memory. These effects may occur through adolescence as the nervous system continues to develop. For these reasons, a more conservative set of fish consumption guidelines applies to women ages 18-45 and children 1-17 years.

Women ages 18-45 years, including pregnant and breastfeeding women, and children ages 1-17 should carefully follow guidelines for eating fish.

In years past, some people were exposed to very high levels of PCBs at work or from accidental poisoning. These people showed harmful health effects to their skin, eyes, and nerves. Studies with animals showed that high levels of PCBs could harm the liver, digestive tract, and nerves; and could affect development, reproduction, and the immune system. New studies suggest lower levels of PCBs might affect how children learn.

PCBs and dieldrin have also been found to cause cancer in some animal studies. As a result, the state of California and the United States Environmental Protection Agency say that PCBs and dieldrin probably can cause cancer in humans.

Do commercial fish available from stores and in restaurants contain methylmercury, PCBs or dieldrin?

Most ocean and freshwater fish contain some level of mercury, so consider your total fish consumption when making choices about how much and which types of fish to eat. The federal government advises women of childbearing age (ages 18 to 45) and children not to eat shark, swordfish, king mackerel, or tilefish, because these ocean species tend to have very high mercury levels. They also say that women of childbearing age and children can safely eat up to two average servings (12 ounces cooked fish a week) of a variety of other commercial fish. Low-mercury fish from stores or restaurants that are high in “omega-3s” are salmon, trout, herring, and sardines. Women ages 18-45 and children should not eat fish bought in a store or restaurant in the same week that they eat fish caught by family and friends, unless they choose very low-mercury fish.

A variety of foods, including many freshwater and commercial fish, may contain low levels of PCBs and dieldrin.

What about fish caught from other nearby locations?

Safe eating guidelines have also been issued for numerous other water bodies in northern California, including the San Joaquin River and Southern Delta, Sacramento River and Northern Delta, the lower Cosumnes, lower Mokelumne, lower Feather, and lower American rivers, Lake Natoma, Folsom Lake, Trinity Lake, Lake Berryessa, Clear Lake, and several lakes in the Sierra foothills. You can use OEHHA's contact information and website provided in this fact sheet to get more information.

Where can I get more information?

For information on mercury and other contaminants in sport fish in California, or to submit any comments on this health advisory, contact:

Office of Environmental Health Hazard Assessment (OEHHA)

Pesticide and Environmental Toxicology Branch

P.O. Box 4010

Sacramento, California 95812-4010

Phone: (916) 323-9667

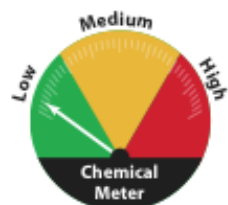
Fax: (916) 327-7320

Or visit the OEHHA Web site at: <http://www.oehha.ca.gov> (Click on "Fish")

A guide to eating fish caught in San Pablo Reservoir

Women 18 - 45, especially those who are pregnant or breastfeeding, and children 1 - 17

Men over 17 and women over 45 can safely eat more fish



Trout ♥



Crappie

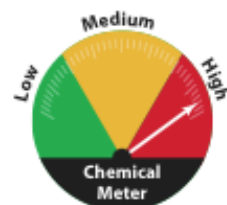
♥ = High in Omega-3s

Safe to eat

Trout – 5 servings per week OR
Crappie – 2 servings per week



There are no fish with medium levels of chemicals



Largemouth, smallmouth, or spotted bass



Carp



Catfish

Do not eat

- **Safe to eat 5 servings per week** — trout or crappie
- There are no fish with medium levels of chemicals
- **Safe to eat 1 serving per week** — largemouth, smallmouth, spotted bass
- **DO NOT EAT** catfish or carp

Fish buying guidelines for women 18 – 45 and children 1 – 17

Do not eat fish caught by family or friends in the same week that you eat fish bought in a store or restaurant. For fish you buy:

- **Safe to eat 2 servings per week** of low mercury fish such as salmon ♥, pollock, catfish, tilapia, shrimp, anchovies ♥, sardines ♥, trout ♥, and canned chunk-light tuna



OR

- **Safe to eat 1 serving per week** of medium-mercury fish such as canned albacore (white) tuna ♥

- **Do not eat** shark, swordfish, tilefish, or king mackerel



♥ Why eat fish?

Eating fish is good for your health. Fish have Omega-3s that can reduce your risk for heart disease and improve how the brain develops in unborn babies and children.

What is the concern?

Some fish have high levels of mercury, PCBs, and dieldrin. Mercury can negatively affect how the brain develops in unborn babies and children. PCBs and dieldrin might cause cancer.

What is a serving?



For Adults For Children

The recommended serving of fish is about the size and thickness of your hand. Give children smaller servings.

California Office of Environmental Health Hazard Assessment

www.oehha.ca.gov/fish.html
(916) 327-7319 or (510) 622-3170