



SAFE EATING GUIDELINES

for fish and shellfish from the Lower Cosumnes and Lower Mokelumne Rivers

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Why has OEHHHA developed a health advisory for fish from the Lower Cosumnes and Lower Mokelumne Rivers?

Studies by the State Water Resources Control Board, the CALFED Mercury Project, and the University of California – Davis have indicated that some species of fish in the Lower Cosumnes and Lower Mokelumne Rivers contain elevated levels of mercury and could pose a health risk to people who eat them frequently. The Office of Environmental Health Hazard Assessment (OEHHHA) evaluated the health effects of eating fish from these rivers and issued a draft report and health advisory with “safe eating guidelines” for the consumption of fish from these water bodies. For the purpose of this advisory, the Lower Cosumnes River is defined as the entirety of the river within Sacramento County while the Lower Mokelumne River is defined as both forks of the Mokelumne River downstream of Camanche Reservoir to the confluence of the San Joaquin River. The guidelines are now being updated to add fish species that move between the ocean, estuaries, rivers, and streams, and can be caught in the Lower Cosumnes and Lower Mokelumne Rivers.

The safe eating guidelines identify, if available, fish containing low levels of mercury that can be eaten two or more times a week. The guidelines also include fish whose consumption should be limited to one serving a week and fish whose consumption is not recommended. One set of guidelines applies to women of childbearing age (18–45 years) and children ages 1–17, who are particularly sensitive to methylmercury (the most prevalent and toxic form of mercury in fish). A second set applies to women over 45 years and men.

Because methylmercury affects neurological development, women 18–45 years and children ages 1–17 should carefully follow guidelines for eating these fish.

Does the water in the lake or creek pose a hazard?

No. As explained below, mercury tends to accumulate in fish, but not in the water itself. Physical contact with the water is safe.

Why is mercury found in fish from this region?

Mercury contamination of fish is a global problem. Emissions from coal-burning power plants and volcanoes release mercury into the air where it can be carried worldwide before being deposited in oceans, lakes, and rivers. In northern California water bodies, however, mercury is also a legacy of gold and mercury mining activities that began during the Gold Rush. Gold miners used mercury to extract gold from mined materials and discharged the waste into nearby water bodies, such as the Cosumnes and Mokelumne Rivers, where the mercury accumulated in the sediment.

Once mercury accumulates in bottom sediments in lakes or other water bodies, bacteria convert it into a more toxic form, known as methylmercury, which fish take in from their diet. Methylmercury can build up in fish to concentrations many thousands of times greater than mercury levels in the surrounding water. Because methylmercury accumulates in fish slowly over time, larger fish of a species usually have higher concentrations of methylmercury than smaller fish from the same water body. Predatory fish, such as bass, generally contain more methylmercury than non-predatory fish, such as trout.

What are the human health effects of methylmercury found in these fish?

Developing fetuses and children are especially sensitive to methylmercury. Pregnant women and nursing mothers can pass on methylmercury to their fetuses or infants through the placenta and through breast milk. Excessive exposure to methylmercury can affect the nervous system in children, leading to subtle decreases in learning ability, language skills, attention, and memory. These effects may occur following exposure through adolescence as the nervous system continues to develop during this time. For this reason, a more conservative set of guidelines applies to women 18–45 years and children 1–17 years.

In adults, the most subtle symptoms of methylmercury toxicity are numbness and tingling sensations in the hands and feet or around the mouth. The levels of methylmercury found in fish from these lakes and rivers should not result in the health effects described above if the proposed guidelines are followed.

Should I stop eating all fish from these water bodies?

Women 18–45 years and children 1–17 years are recommended to avoid consuming black bass, catfish, crappie, striped bass, and sturgeon from the Lower Cosumnes River. This population group, however, can safely eat one serving a week of either carp, crayfish, sunfish, or sucker. Better choices are American shad, Chinook (king) salmon, or steelhead trout, because they are high in beneficial fats called “omega-3s.” Women 18–45 years and children 1–17 years can eat two to three servings a week of these fish, or up to five servings a week of clams.

Women of 18–45 years and children 1–17 years are also recommended to avoid eating black bass, pikeminnow, striped bass, and sturgeon from the Lower Mokelumne River. This population group can safely eat one serving a week of either crayfish, catfish, or sunfish from the lower Mokelumne River. Again, better choices are fish species with high omega-3s, American shad, Chinook (king) salmon, or steelhead trout. Women 18–45 years and children can eat two to three servings a week of these fish, or seven servings a week of clams.

There are more options for women over 45 years and men. The safe eating guidelines allow for this population group to eat as many as seven servings a week of American shad, Chinook (king) salmon, steelhead trout, or clams from the Lower Cosumnes or Lower Mokelumne Rivers. Alternatively, they can safely eat up to two servings a week of carp, crayfish, sunfish, sucker, or striped bass, or one serving a week of black bass, catfish, or white sturgeon from the Lower Cosumnes River. OEHHA recommends no consumption of crappie from the Lower Cosumnes River. In the Lower Mokelumne River, instead of the low mercury fish listed above that can be eaten seven times a week, women over 45 years and men have the option of eating two servings a week of sunfish, catfish, crayfish, or striped bass, or one serving a week of black bass, pikeminnow, or sturgeon from the Lower Mokelumne River, provided no other fish are eaten that week.

Because almost all ocean and freshwater fish contain some level of methylmercury, consider your total fish consumption when making choices about how much and which types of fish to eat. For example, the federal government advises women of childbearing age and children not to eat shark, swordfish, king mackerel, or tilefish, because these ocean species tend to have high mercury levels. Women of childbearing age and children can safely eat up to two meals a week of a variety of commercial fish, but only if they do not eat sport fish from local water bodies in the same time period. If you eat fish caught from other water bodies in California, check whether OEHHA has issued an advisory for that location. Fish caught from places without an advisory should be eaten in limited amounts.

Where can I get more information?

For information on mercury and other contaminants in sport fish in California, contact:

Office of Environmental Health Hazard Assessment
Pesticide and Environmental Toxicology Branch
P.O. Box 4010, MS 12B, Sacramento, CA 95812-4010

(916) 327-7319 or <http://www.oehha.ca.gov> (Click on “Fish”)

For information on mercury in commercial fish, contact:

U. S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
1 (888) SAFEFOOD

Or visit the U.S. EPA website at
http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice_index.cf