

Donner Lake Frequently Asked Questions

1) Q: Why was extensive testing of chemicals in fish done at Donner Lake?

A: A limited number of fish were tested for chemical contaminants in the Truckee River Watershed as part of statewide screening studies conducted by the State and Regional (Lahontan) Water Boards between 1978 and 2000. The data were used to determine whether water bodies in the Watershed should be placed on a list of impaired water bodies [the Clean Water Act “303(d) list”] maintained by the State and Regional Water Boards. Results showed that chemical levels in fish from Donner Lake, but not other nearby water bodies, repeatedly exceeded human health screening values for “priority organic” chemicals (polychlorinated biphenyls or PCBs, and chlordane). Therefore, Donner Lake is still on the Clean Water Act list of impaired water bodies.

In order to better characterize the condition and extent of water quality problems in Donner Lake, the Lahontan Regional Water Quality Control Board secured funding for a special study to collect and analyze a larger number and variety of fish that people catch and consume from the lake. The data were provided to the Office of Environmental Health Hazard Assessment (OEHHA) to develop consumption guidelines for people eating fish from this lake.

2) Q: Which fish were tested?

A: The fish species sampled were brown trout, lake trout, rainbow trout, and kokanee. They were collected by California Department of Fish and Game (DFG) personnel along Donner Creek, Summit Creek, and Donner Lake, in 2002, and 2005 to 2007.

3) Q: What chemicals were found in the fish tested?

A: The DFG Water Pollution Control Laboratory analyzed the fish and found mercury, PCBs, and the pesticides DDT (and metabolites DDE and DDD), dieldrin, chlordane and its constituents. The levels of mercury and PCBs in the fish were of potential health concern. While mercury was measured, it represents the methylmercury level in the fish, which comprises about 95 percent of total mercury.

Mercury is widely found in nature in rock and soil, and is washed into surface water during storms. Historic mining operations and the remaining tailings from abandoned mercury and gold mines have contributed to the release of large amounts of mercury into California's surface water. Mercury can also be released into the environment from industrial sources, including the burning of fossil fuels and solid wastes, and disposal of mercury-containing products. Once mercury gets into water, much of it settles to the bottom where bacteria in the mud or sand convert it to the organic form of

THE CALIFORNIA OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT (“OEHHA”)

methylmercury. Methylmercury is passed up the food chain from small aquatic organisms and builds up in larger and older fish; this is the form of health concern in fish.

PCBs are a group of man-made chemicals used in electrical transformers, plastics, and lubricating oils. They were banned for most uses in 1979 because they do not break down easily, stay in the environment for a long time, and are toxic to living organisms. Spills, leaks, and improper disposal are the main ways that PCBs enter the water.

4) Q: What are the health concerns from consuming fish with these chemicals?

A: Methylmercury is of health concern because it targets the central nervous system. At high exposure levels, people have shown loss of coordination, blurred vision or blindness, and hearing and speech impairment. Scientists also discovered that the developing nervous systems of fetuses are particularly sensitive to the toxic effects of methylmercury. In recent studies of children from high fish-eating populations exposed to low levels of methylmercury, some children whose mothers frequently ate seafood during pregnancy showed slight decreases in learning ability, language skills, attention and/or memory. Children may have increased susceptibility to the effects of methylmercury through adolescence, as the nervous system continues to develop during this time.

PCBs affect many body functions resulting in a variety of health problems. People exposed to very high levels of PCBs at work or from accidental poisoning showed harmful effects to their skin, eyes, and nervous system. Studies with animals showed PCBs affect the liver and digestive tract, as well as the immune, reproductive, nervous, and endocrine systems. Human studies suggest that PCBs might affect the I.Q. or memory of children. Some forms of PCBs have been found to cause cancer in animal studies.

The levels of mercury and PCBs in California fish vary with locations. OEHHA's consumption guidelines are designed to minimize exposure to these chemicals as a result of eating sport fish.

5) Q: How was the number of servings per week for each fish species in the advisory determined?

A: OEHHA evaluated the toxicity of the chemicals and developed Advisory Tissue Levels (ATLs) as a starting point in the advisory process to develop consumption advice. OEHHA's ATLs, as well as advisories and safe eating guidelines, balance the risks and benefits of fish consumption. Multiple ATLs are developed for each chemical corresponding to the number of servings of fish that can be eaten in a week.

6) Q: What are the recommendations for eating fish from Donner Lake?

A: People can continue to safely eat fish caught in Donner Lake by following the OEHHA safe eating guidelines. There is strong scientific evidence for many health benefits from eating fish. Fish contain proteins, vitamins, and omega-3 fatty acids. Omega-3 fatty acids are not only good for the heart, but also for brain development in babies and children.

Consumption advice should not be combined. Kokanee and rainbow trout are healthy choices. You can eat at least one serving of rainbow trout and kokanee each in the same week. However, if you eat brown trout or lake trout from the "1-serving-per-week" category, then you should not eat any more fish for the rest of the week.

OEHHA considered the concentration of mercury and PCBs in each fish species to develop consumption advice. OEHHA considers two sets of guidelines for fish with mercury. Because babies and children are most sensitive to possible health effects from mercury, OEHHA recommends women ages 18 – 45 and children 1 – 17 years eat fish less frequently than men over 17 years and women over 45 years. The recommendations below are based on the concentrations of both chemicals.

The recommendations for women 18 to 45 years of age, including pregnant and breastfeeding women, and children 1 to 17 years of age are:

- Eat no more than one serving a week of brown trout or lake trout, *or*
- Eat up to two servings a week of kokanee, *or*
- Eat up to four servings a week of rainbow trout

The recommendations for women over 45 years of age and men are:

- Eat no more than one serving a week of brown trout or lake trout, *or*
- Eat up to two servings a week of kokanee, *or*
- Eat up to seven servings a week of rainbow trout

7) Q: How do the chemical levels in fish at Donner Lake compare to other lakes in the state?

A: Mercury is found in fish in water bodies throughout California, the United States, and globally. Predatory fish tend to accumulate more mercury than non-predators. This is the case at Donner Lake where the more predatory brown and lake trout had somewhat higher mercury levels. Over all, the mercury levels in fish from Donner Lake are considered medium to low as shown in the safe eating guidelines.

PCBs are also found in fish throughout California. They tend to be higher in fish with high fat content and in fish from water bodies near urban and industrial areas. All of the fish tested from Donner Lake are fatty species, so the finding of PCBs was not surprising. PCB levels in fish from Donner Lake are also medium to low as shown in the guidelines.

8) Q: Were fish tested at other nearby lakes?

A: Yes, fish have also been tested from Boca, Prosser Creek, and Stampede reservoirs as part of Water Board screening studies. Since a low number and variety of fish were tested from these reservoirs, there was insufficient data for OEHHA to develop safe eating guidelines.

9) Q: Should I eat fish from nearby lakes or other water bodies without advisories?

A: Yes, you can continue to eat fish, but follow the advice below. The general advice can also be found at: <http://oehha.ca.gov/fish/general-health-advice-people-catching-and-eating-sport-fish-california>.

Fishing Practices:

Chemical levels can vary from place to place. Your overall exposure to chemicals is likely to be lower if you fish at a variety of places, rather than at one location that might have high contamination levels. Catching and releasing fish is also a good practice at contaminated water bodies; it allows you to relax and enjoy fishing and conserve natural resources, too.

Fish Species:

Some fish species have higher chemical levels than others do in the same location. If possible, eat smaller amounts of several different types of fish rather than a large amount of one type that may be high in contaminants.

Fish Size:

Smaller fish of a species will usually have lower chemical levels than larger ones in the same location because some chemicals become more concentrated in larger, older fish. It is advisable to eat smaller fish (of legal size) more often than larger fish.

Fish Preparation and Consumption:

Eat only the fillet portions. Do not eat the guts, liver, and skin because chemicals usually concentrate in those parts.

THE CALIFORNIA OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT (“OEHHA”)

Species that generally have higher levels of contaminants:

Predatory fish, in particular, accumulate more mercury. In freshwater, bass species (e.g., striped bass, largemouth bass, smallmouth bass, and spotted bass) are often the top predators. Women and children are more sensitive to the harmful effects of methylmercury and should not eat these species regularly.

Species that generally have lower levels of contaminants:

Rainbow trout and various sunfish (e.g., bluegill and redear sunfish) are often the least contaminated fish in water bodies. They are safer to eat.

10)Q: Where can I get more information on the guidelines for Donner Lake?

A: The OEHHA report “Health Advisory and Safe Eating Guidelines for Fish from Donner Lake (Nevada County, CA),” graphic consumption guidelines, and a fact sheet can be found at: http://www.oehha.ca.gov/fish/so_cal/donner.html

An Excel spreadsheet of data for fish from Donner Lake used in the OEHHA safe eating guidelines can be found on the Lahontan Regional Water Quality Control Board web site at:

http://www.waterboards.ca.gov/lahontan/water_issues/programs/tmdl/index.shtml
posted under “Donner Lake – Available Documents.”

Consumption guidelines for Donner Lake and other water bodies can also be found in the Fish and Game Freshwater and Oceans Regulation booklets at:

www.dfg.ca.gov/regulations and on the OEHHA web site at:
<http://www.oehha.ca.gov/fish>