Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

CHEMICALS IN FISH FROM SAN PABLO RESERVOIR
FACT SHEET
FEBRUARY 2000

The Contra Costa County Health Services Department has issued an interim advisory that recommends a limit of one meal a month for the consumption of largemouth bass from San Pablo Reservoir. Elevated levels of mercury have been found in largemouth bass, and pesticides, polychlorinated biphenyls (PCBs), dioxins/furans, and mercury have been found in channel catfish and other species of fish in San Pablo Reservoir. These chemicals can accumulate in the fish but are not present in the water at significant levels and, when detected, are well below state-established drinking water standards. The advisory is based on a study of fish from the reservoir conducted by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA). This fact sheet contains important information about the presence of chemicals in the fish.

What chemicals in the fish are of potential concern?
Mercury, PCBs, dioxins/furans and several pesticides were found in the fish. The pesticides are chlordane, dieldrin, DDT, heptachlor epoxide, and toxaphene. These pesticides are no longer sold but can persist for years in soil and sediment. PCBs, which had many industrial uses, are no longer produced and also break down slowly in the environment. Dioxins and furans are formed during combustion (including industrial processes and the use of motor vehicles) and also persist in the environment. Mercury is naturally occurring in California's Coast Ranges, is released during combustion of coal, and has other industrial uses. It can also be released naturally, through mining activities or in wastes, and typically enters water bodies from stormwater runoff and the atmosphere (i.e. rain and dust).

Is water from San Pablo Reservoir safe to drink?
Yes. Treated water supplied from San Pablo Reservoir is safe for drinking and other domestic uses. The East Bay Municipal Utility District (EBMUD) and the California Department of Health Services (DHS) monitor the quality of drinking water from the reservoir. Chemical contaminants found in this study do not concentrate in the water as they do in fish. These chemicals accumulate over long periods of time in the sediment and enter organisms eaten by fish that live in or on the sediment. The chemicals build up in fish that eat other fish because they have little ability to eliminate these chemicals from their body. The chemicals are not found in the water at significant levels.

Which fish were tested and what was found?
Species of fish that are commonly caught and eaten have been analyzed, including largemouth bass, channel catfish, carp, rainbow trout and crappie. Largemouth bass were sampled more extensively due to their known tendency to accumulate mercury. Rainbow trout and channel catfish are stocked annually in San Pablo Reservoir, but some may live for more than one season and could therefore accumulate chemicals through the

food chain in the lake. Largemouth bass were found to have higher levels of mercury than the other fish species. Channel catfish had higher levels of the pesticides, PCBs and dioxins/furans than the other species. All species analyzed contained detectable levels of chemicals, but additional sampling of channel catfish, carp, crappie and rainbow trout is needed to ascertain whether the levels are high enough to support additional advisories.

What are the concerns from eating sport fish from San Pablo Reservoir?
The level of chemicals found in the fish in San Pablo Reservoir will not make you sick if you eat them occasionally. However, frequent consumption of the fish over time may increase the risk of long-term health problems, especially in the case of pregnant women and children. Methylmercury (the major form of mercury in fish) can harm the development of fetuses and children, and affect the nervous systems of adults. The other chemicals could increase the long-term risk of cancer or damage body functions.

Are fish from San Pablo Reservoir worse than from other water bodies?
Although fish in many water bodies in California have not been tested, similar and higher mercury levels have been found in largemouth bass in other lakes in the Coast Ranges. Similar levels of pesticides, PCBs and dioxins/furans have been found in fish in San Francisco Bay.

Is the study of fish in San Pablo Reservoir completed?
No. While information is fairly complete for largemouth bass, there currently are only limited data on channel catfish and the other fish species. The East Bay Municipal Utility District plans to collect additional samples of carp, channel catfish, crappie and rainbow trout by July 2000 that will be analyzed through the San Francisco Bay Regional Water Quality Control Board Toxic Substances Monitoring Program. The resulting data will be evaluated and are anticipated to provide more complete information on the levels of chemicals in those species and enable OEHHA to determine the amounts of the fish that can be eaten safely.

What should sport fishers do?
For the time being, restrict your consumption of largemouth bass to one meal a month. It is especially important that pregnant women and children observe this limit. If you wish to be especially cautious, you may consider limiting your consumption of channel catfish to one meal a month until further data is obtained for that species.

For further information on the safe preparation of fish and on the San Pablo Reservoir fish study, contact Dr. Robert Brodberg of OEHHA at 916-323-4763, or visit OEHHA's web site at www.oehha.ca.gov.

For further information on water quality in San Pablo Reservoir, contact Charles Hardy of the East Bay Municipal Utility District at 510-287-0141.

For further information on the interim fish advisory, contact Dr. Wendel Brunner of the Contra Costa County Health Services Department at 925-313-6712.