

June 2009

## **Why has OEHHA developed “Safe Eating Guidelines” for fish from Ventura Harbor to San Mateo Point?**

Previous studies have found high levels of PCBs and DDTs in some fish from coastal waters of Los Angeles and Orange counties. Advisories have been in place to warn fishers to avoid or limit consumption of certain fish species in this area since 1985. Recently, a large study was conducted by the Montrose Settlements Restoration Program and the U.S. Environmental Protection Agency (MSRP/EPA) to collect current data that could be used to update the existing advisory. A total of 1,373 fish from 22 species or species groups were collected along the coastal waters of southern California from Ventura Harbor in Ventura County to San Mateo Point in Orange County. Fish were analyzed for PCBs, DDTs, mercury, chlordane, and dieldrin. Results of the study show that some fish species from these areas contain PCBs, DDTs and/or mercury at levels that are of concern for fish consumers. Others species contain very low levels of chemicals and can be eaten frequently as part of a healthy diet.

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

“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.

## **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 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. Fish that eat mostly other fish, such as barracuda and bass, tend to have the highest mercury levels. 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 of legal size.

PCBs and DDTs are man-made chemicals that were discharged into the southern California sewer system until their use was banned in the 1970s. A large volume of these chemicals was deposited on the ocean floor of the Palos Verdes Shelf, off the Palos Verdes Peninsula. Because they do not break down easily in the environment, PCBs and DDTs remain in some areas and can be taken up by fish. Fish that eat from the ocean bottom, contain high levels of fat, or eat other fish can accumulate high levels of these contaminants when they are present.

Based on the current study, DDTs were relatively low in most species caught along the southern California coast from Ventura Harbor to San Mateo Point. However, DDT concentrations were still high in white croaker caught in an area near the Palos Verdes Peninsula. Compared to DDTs, PCB

concentrations were elevated to levels of health concern in more species across a wider area. Because of these differences, OEHHA divided the advisory and safe eating guidelines into three regions: 1) Ventura Harbor to Santa Monica Pier, 2) Santa Monica Beach south of Santa Monica Pier to Seal Beach Pier, and 3) South of Seal Beach Pier to San Mateo Point. Mercury levels in fish varied only by species and not by region. Contaminant levels were very similar in the first (northern) and third (southern) regions and, thus, the consumption advice provided for these two areas is identical. In species and regions where PCB levels were low relative to mercury, the consumption advice for women 18-45 years and children 1-17 years is more restrictive than for women over 45 years and men because the fetus and children are more sensitive to the form of mercury found in fish (methylmercury).

PCBs and DDTs often 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. This study found that PCB levels in some fish caught in this area were far higher in skin-on fillets than in fillets where the skin had been removed. Consumption advice is based on contaminant levels in skin-off fillets. OEHHA strongly advises fishers to eat only the safest part of fish, skin-off fillets. Methylmercury cannot be removed from fish by any known method.

### **Why should fish be eaten if they might contain 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.

**“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 DDTs?**

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 the 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.

PCB levels in fish are much lower than levels that may have made people sick in the past from work or accidental poisonings. PCB levels in fish also are much lower than levels given to laboratory animals. Some studies suggest that low levels of PCBs, like those found in some fish, might cause small decreases in children’s I.Q. or affect their memory, especially if exposures occur during pregnancy. Other studies have not confirmed these effects.

Exposure to high levels of DDTs in the workplace or in accidental poisonings has been shown to affect the nervous system. Studies in animals confirm these effects. Like methylmercury and PCBs, lower levels of DDTs may affect the development of the nervous system in the fetus or children. DDTs may also affect reproduction.

PCBs and DDTs 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 DDTs probably can cause cancer in humans.

### **Do commercial fish available from stores and in restaurants contain methylmercury, PCBs or DDTs?**

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 DDTs. Higher levels of PCBs and DDTs have been found in white croaker from some markets in the Los Angeles – Orange County area in the past.

### **What about fish caught from other nearby locations?**

Safe eating guidelines have also been issued for numerous other water bodies in California, although the majority of these are in northern California where mercury levels are higher because of historic mining activities. 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 from Ventura Harbor to San Mateo Point

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

	Yellow Zone (see map)	Red Zone (see map)
 Jacksmelt	Safe to eat 4 servings per week	Safe to eat 4 servings per week
Corbina  Pacific chub mackerel  Yellowfin croaker  Queenfish  Surfperches  Opaleye 	— OR — 2 servings per week	— OR — 2 servings per week
 California halibut Sargo  California scorpionfish (Sculpin)  Rockfishes  Sardines  Kelp bass (Calico bass)  Shovelnose guitarfish 	— OR — 1 serving per week	— OR — 1 serving per week
Topsmelt 	— OR — 2 servings per week	<b>DO NOT EAT</b>
Barred sand bass  White croaker (Kingfish or Tomcod) 	— OR — 1 serving per week	<b>DO NOT EAT</b>
Barracuda  Black croaker 	<b>DO NOT EAT</b>	<b>DO NOT EAT</b>

**For example:** If you eat 1 serving of Kelp bass, do not eat any more fish until the next week.

Office of Environmental Health Hazard Assessment  
[www.oehha.ca.gov/fish.html](http://www.oehha.ca.gov/fish.html)

# A guide to eating fish caught from Ventura Harbor to San Mateo Point

Women over 45 years and men over 17 years

	Yellow Zone (see map)	Red Zone (see map)
 Jacksmelt	Safe to eat 7 servings per week	Safe to eat 7 servings per week
 Pacific chub mackerel	4 servings per week	4 servings per week
 Queenfish	2 servings per week	2 servings per week
 Opaleye		
 Rockfishes		
 California halibut		
 Surfperches		
 Corbina	OR	OR
 Yellowfin croaker	1 serving per week	1 serving per week
 Shovelnose guitarfish		
 Sardines	OR	DO NOT EAT
 Barracuda		
 Black croaker	2 servings per week	DO NOT EAT
 California scorpionfish (Sculpin)		
 Sargo	2 servings per week	DO NOT EAT
 Kelp bass (Calico bass)		
 Barred sand bass	2 servings per week	DO NOT EAT
 Topsmelt		
 White croaker (Kingfish or Tomcod)		

**For example:** If you eat 1 serving of Kelp bass, do not eat any more fish until the next week.

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## Map of yellow and red zones for fish caught from Ventura Harbor to San Mateo Point



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