



INFORMATION ABOUT EATING AMERICAN SHAD, CHINOOK (KING) SALMON, STEELHEAD TROUT, STRIPED BASS, AND WHITE STURGEON IN CALIFORNIA RIVERS, ESTUARIES, AND COASTAL WATERS

Office of Environmental Health Hazard Assessment (OEHHA)
California Environmental Protection Agency
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Why did OEHHA develop a statewide advisory for eating fish species that migrate between California rivers, estuaries, and coastal waters?

American Shad, Chinook (King) Salmon, Steelhead Trout, Striped Bass, and White Sturgeon are “anadromous” fish – meaning they live in and migrate between rivers, estuaries, and coastal waters. OEHHA developed uniform advice for these species because they are expected to have similar contaminant levels when caught from these waters. OEHHA updated the statewide advisory for [fish that migrate](#) because additional data became available and the metric upon which consumption advice is based was revised. This advisory supersedes the previous 2012 advisory and is part of an ongoing effort by OEHHA to provide safe-eating advice for fish from different California water bodies.

Where does this advisory apply?

- Follow this advice for California rivers and estuaries with access to the ocean, and coastal waters.
- This advisory does not apply to these species when caught in lakes or reservoirs. These species may have higher contaminant levels when they are landlocked in lakes and reservoirs.

What is OEHHA’s fish advisory program?

OEHHA is responsible for evaluating potential public health risks from chemical contamination of sport fish. This includes issuing fish consumption advisories, when appropriate. Fish advisories are guidelines that recommend how often you can safely eat fish caught from water bodies in California. OEHHA has issued more than 100 site-specific advisories for lakes, reservoirs, rivers, bays, and the coast.

Why should I eat fish?

- Low-contaminant fish are an important part of a healthy, well-balanced diet. The American Heart Association recommends eating at least two servings of fish each week.

- Fish are a good source of protein and vitamins, and are a primary dietary source of heart-healthy omega-3 fatty acids. Eating low-contaminant fish while pregnant may be beneficial to the baby's brain development.

Which contaminants are of concern for people eating these fish species that migrate between California rivers, estuaries, and coastal waters?

- Mercury
 - Mercury is a metal that comes from mining, air fallout from burning coal and other fuels, and from natural sources. It is the most commonly found contaminant of concern in fish.
 - Too much methylmercury, the form of mercury found in fish, can harm the brain, especially in fetuses, babies, and children. Mothers can pass methylmercury to their babies during pregnancy.
 - Because fetuses, babies, and children are especially sensitive to mercury, OEHHA has one set of advice for the amount of mercury-containing fish that women age 18–49 years and children should eat, and another set of advice for women 50 years and older and men 18 years and older.
- Polychlorinated Biphenyls (PCBs)
 - PCBs are industrial chemicals. While banned in the 1970s, they persist for many years in the environment and are still found in fish, sediment, and water from spills, leaks, and improper disposal.
 - PCBs can increase cancer risk. PCBs may also harm the developing fetus, which can include effects on growth and learning. Women can pass PCBs on to their babies during pregnancy and breastfeeding.
 - PCBs can build up to very high levels in the skin, fat, and some internal organs of fish. That is why OEHHA recommends eating only the skinless fillet (meat) of fish.

How did OEHHA determine the consumption guidelines for eating these fish species that migrate between California rivers, estuaries, and coastal waters?

- OEHHA compared contaminant levels in fish caught from rivers, estuaries, and coastal waters to levels that are considered safe for human consumption.
- OEHHA's consumption guidelines balance the health benefits of fish consumption and the risks from the contaminants.

What does OEHHA recommend for people who want to eat these fish species that migrate between California rivers, estuaries, and coastal waters?

- OEHHA recommends the types and amounts of fish that may be eaten each week as "servings." A serving is about the size and thickness of your hand for fish fillets. Give children smaller servings. For smaller fish species, several individual fish may be required to yield a serving.
- Women 18–49 years and children 1–17 years

- Should not eat Striped Bass or White Sturgeon
- May eat:
 - 2 total servings per week of American Shad, Chinook (King) Salmon, or Steelhead Trout.
- Women 50 years and older and men 18 years and older
 - May eat:
 - 1 total serving per week of Striped Bass or White Sturgeon, or
 - 5 total servings per week of Chinook (King) Salmon or Steelhead Trout, or
 - 7 total servings per week of American Shad.

How long is the advisory in effect?

This advisory is effective starting November 2022 and does not expire. Chemical contaminant levels in fish do not change much over time; the advisory remains in effect until an update is issued.

What else can I do to protect my health and the health of my family?

- Eat a variety of fish.
- Eat smaller (younger) fish of legal size.
- Eat only the skinless fillet or meat portion of fish.
- Thoroughly cook the fish and allow the juice to drain away.
- Learn about OEHHA's guidelines for eating sport fish in California:
 - Visit <https://oehha.ca.gov/fish/advisories>, or call OEHHA at (916) 324-7572 or (510) 622-3170
 - Check the Freshwater or Ocean Sport Fishing Regulations booklets from the California Department of Fish and Wildlife, or visit <https://www.wildlife.ca.gov/Regulations>



Women
(18 – 49 Years)

Children
(1 – 17 Years)

2 TOTAL
SERVINGS
A WEEK

OR

2 TOTAL
SERVINGS
A WEEK

0 DO NOT
EAT

Serving Size

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

For Adults



For Children



Women
(50+ Years)

Men
(18+ Years)

7 TOTAL
SERVINGS
A WEEK

OR

5 TOTAL
SERVINGS
A WEEK

OR

1 TOTAL
SERVING
A WEEK

A GUIDE TO EATING FISH THAT MIGRATE

IN CALIFORNIA RIVERS, ESTUARIES, AND COASTAL WATERS

Eat the Good Fish

Eating fish that are low in chemicals may provide health benefits to children and adults.



Avoid the Bad Fish

Eating fish with higher levels of chemicals like mercury or PCBs may cause health problems in children and adults.



Choose the Right Fish

Chemicals may be more harmful to unborn babies and children.



American Shad
♥ high in omega-3s



Chinook (King) Salmon
♥ high in omega-3s



Steelhead Trout
♥ high in omega-3s



Striped Bass



White Sturgeon



California Office of Environmental Health Hazard Assessment

web www.oehha.ca.gov/fish
email fish@oehha.ca.gov
phone (916) 324-7572

Eat only the skinless fillet



Some chemicals are higher in the skin, fat, and guts.

Eat only the meat



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