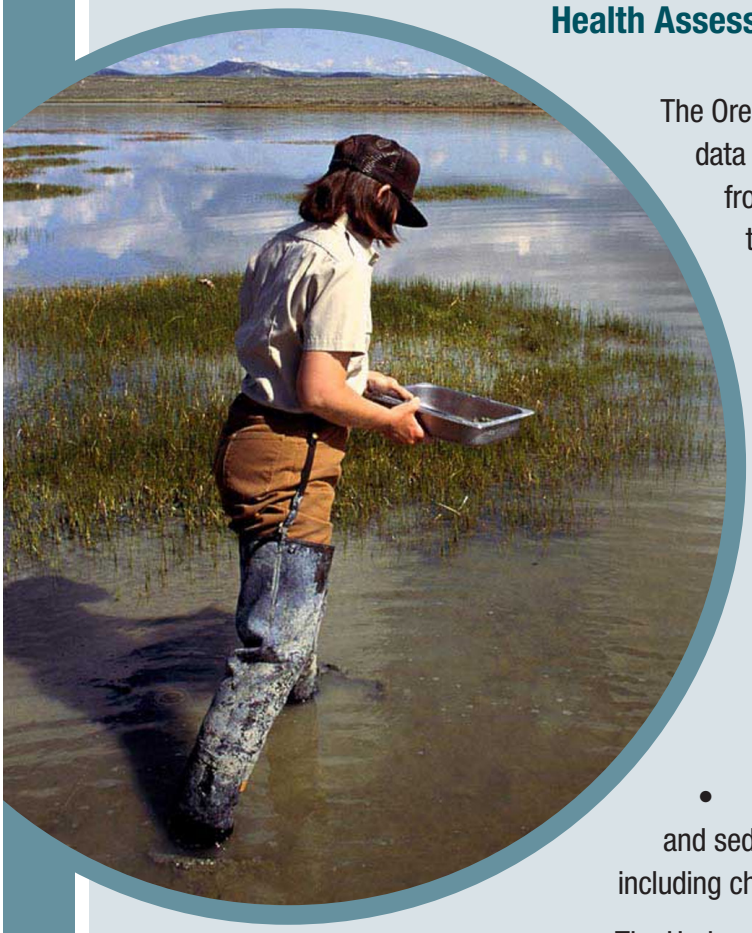
Portland Harbor Superfund Site



Health Assessment Summary

The Oregon Public Health Division independently reviewed data from hundreds of environmental samples collected from water, fish, soil and river bottom sediment in the Portland Harbor Superfund Site study area. This health assessment was conducted to characterize health risks for people who recreate in the Portland Harbor area.

- The health assessment found that the main threats to human health continue to come from eating resident fish that live year-round in the Harbor, not from recreational use of the area.

What are the findings?

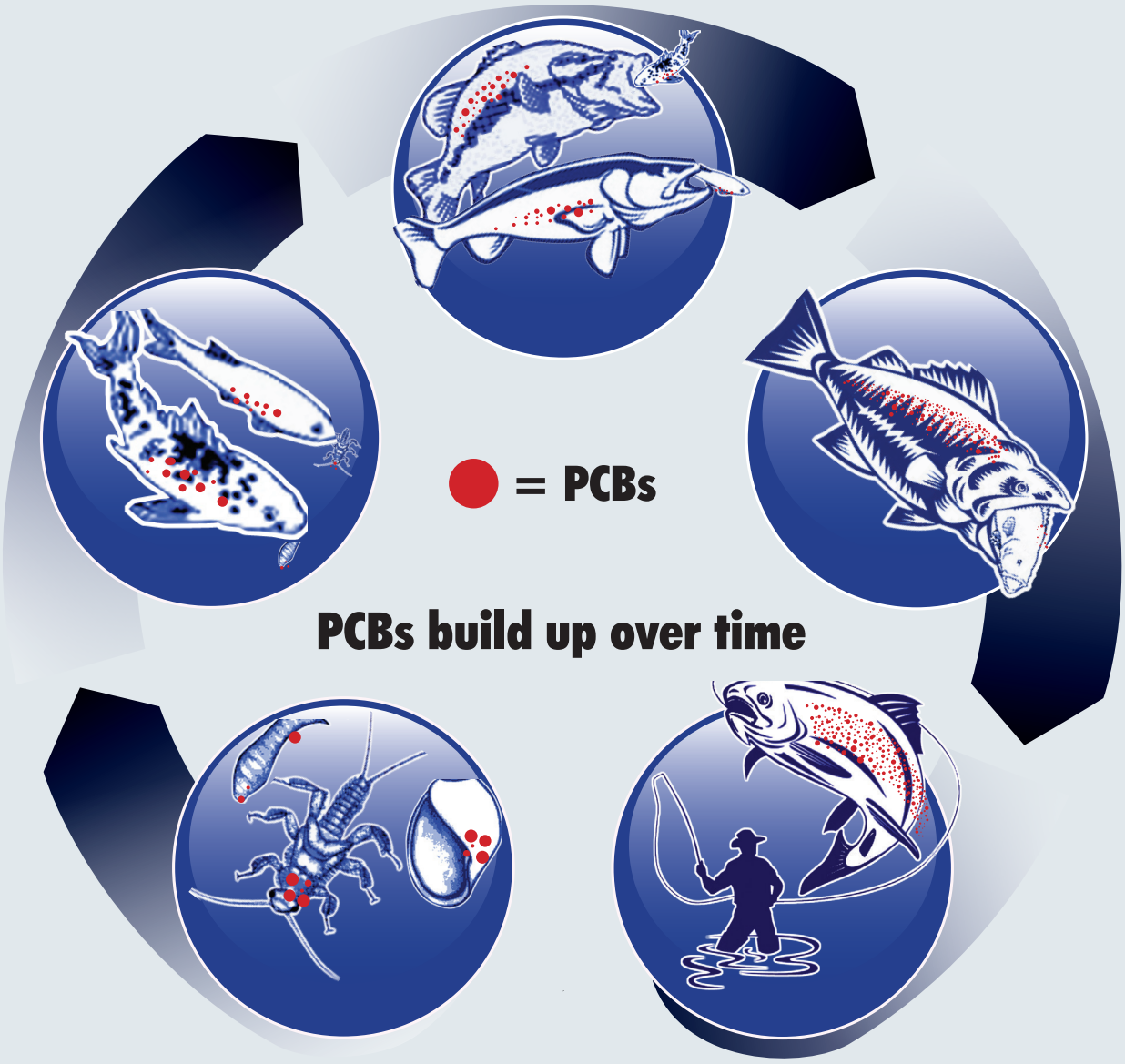
- The levels of chemicals found in the water, dirt and sediment do not pose a health risk for recreational users, including children.
- The Harbor area of the river is heavily industrialized, and has been for a long time. People who choose to swim or dive from boats could contact potentially dangerous objects lying underwater. Diving or swimming near such objects could result in physical injury. Many areas of the Harbor are fenced off and not accessed by recreational users.
- Eating resident fish from the Harbor continues to be the main health hazard from this site. “Resident fish” are those that live their entire lives in the Harbor and do not migrate out to the ocean or other waters. Resident fish include bass, carp and catfish but not salmon, steelhead or lamprey.
- Bacterial contamination in the river could potentially cause bacteria-related illnesses, especially if swimming near a combined sewage overflow area (CSO) after heavy rainfall.

If fish are contaminated with chemicals, won't the same thing happen to people?

The river water and sediment does contain some contamination, but not at high enough levels to pose a health threat for recreational users. Fish become contaminated over time in a process called "biomagnification," which works like this:

Small water and sediment dwelling creatures, such as snails, crayfish, worms and other bugs, are contaminated from eating small bits of food in the sediment. Little fish eat a lot of the small sediment-dwelling creatures over the course of their lives, and greater amounts of chemical contamination build up in their bodies. Bigger fish eat the little fish, and they build up even more contamination. This continues on up the food chain, so that the fish at the very top of the food chain have the most contamination of all.

The simplified image below shows this process:



Biomagnification can "magnify" chemical contamination by many times its original concentration over time, which is what has happened in the Portland Harbor.

What chemicals are contaminating the fish?

The main chemicals found in the Harbor that accumulate over time in fish tissue are polychlorinated biphenyls (PCBs), which last a long time in the river sediment. Unfortunately, this is the case in many of the world's waterways that flow through industrialized areas. Resident fish that are at the top of the food chain have 3.5 million times the amount of PCBs in their tissue than is in the water. This is why big resident fish should be avoided.

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

We recommend:

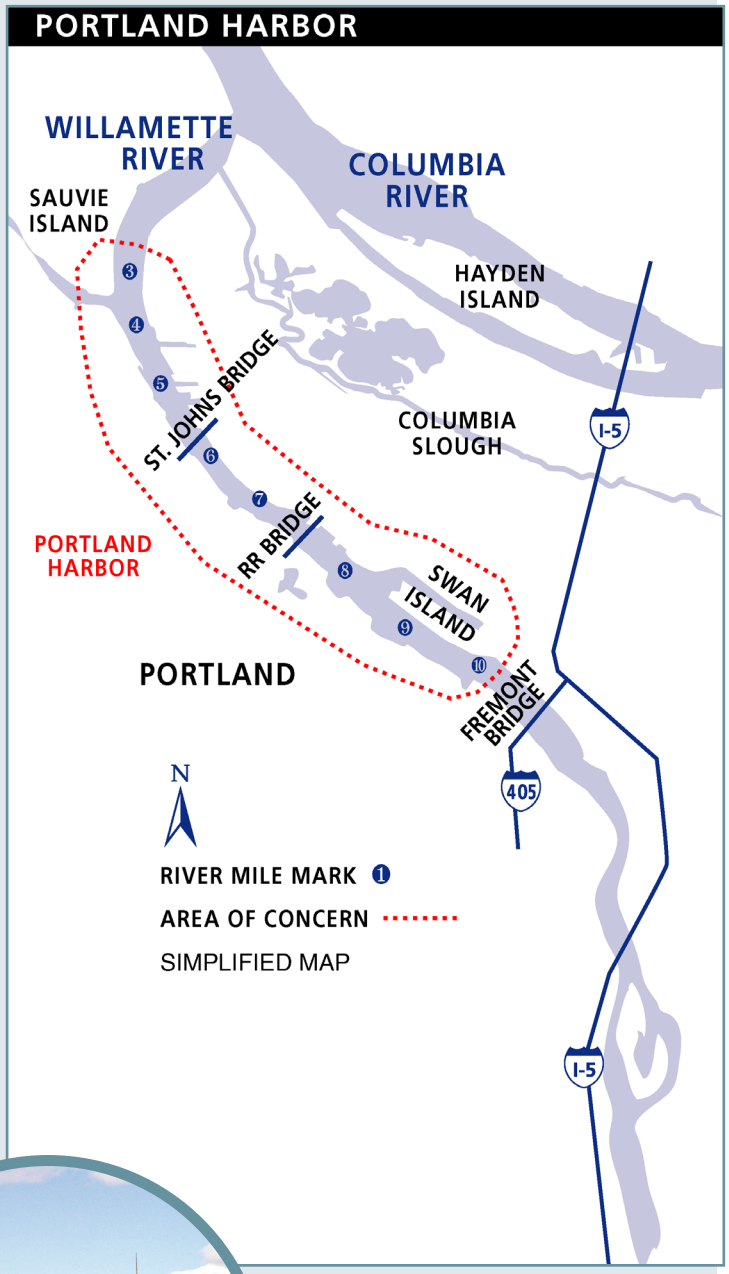
- Washing with soap and water after having contact with the river water. Recreational equipment like oars and paddles should also be washed.
- Choosing smaller, younger fish in general and migratory species like salmon and steelhead. Smaller fish haven't lived long enough to accumulate large amounts of contamination in their bodies and migratory fish spend most of their lives outside of the Harbor.
- Preparing and cooking fish in a way that gets rid of PCBs. Because PCBs accumulate in fatty tissue, cut off the skin and fatty parts, throw away the head and guts, and cook the fish so that fat drips off the meat. Stay informed by following fish advisories: www.healthoregon.org/fishadv.
- Choosing and eating a variety of fish and seafood because of the proven nutritional benefits of omega-3 fatty acids.

It is especially important for women, children, the elderly and people with compromised immune systems to follow the above recommendations. The unborn, nursing infants and young children are especially sensitive to the health effects of PCBs. It is important for everyone to avoid PCBs, but especially so for females.

What's next?

Controlling sewage overflow is an important part of Portland's efforts to improve Willamette River water quality. The city of Portland has been working on this effort since 1991. Since 2011, sewage will only overflow into the Willamette on average four times a year instead of every time it rains.

The U.S. Environmental Protection Agency (EPA), Oregon Department of Environmental Quality (DEQ), and several responsible parties are working together on how to control sources of contamination to the Harbor. EPA completed the draft Feasibility Study Report in 2012. This report analyzes several cleanup alternatives and will be followed by a proposed plan, a public comment opportunity, and a final cleanup decision for the site. Once contaminated sediments are removed, the PCB concentrations in fish will gradually decrease over time.



To read the full report go to the **Environmental Health Assessment Program** (EHAP) website: www.healthoregon.org/ehap

CONTACT

EHAP
Phone: 1-877-290-6767
Email: ehap.info@state.or.us

Oregon Health Authority
PUBLIC HEALTH DIVISION

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