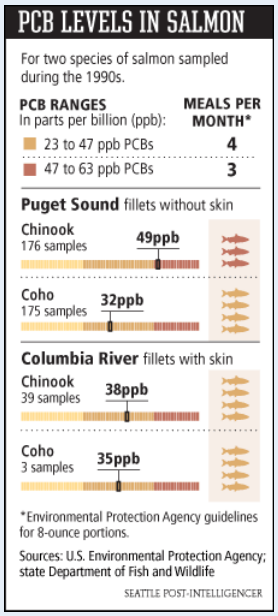
Sound's Salmon Carry High PCB Levels
But State Says Health Benefits of Eating the Fish Outweigh Risks

By Robert McClure & Lisa Stiffler, *Seattle Post-Intelligencer,* January 15, 2004

Note: This article is about wild—not farmed—salmon, which also contain PCBs; in this case, higher levels than farmed, but still a fraction of the FDA tolerance level of 2,000 ppb. It is presented because it contains some interesting information about the issue of wild vs. farmed and PCBs in other foods.

Puget Sound's wild chinook salmon carry long-lived industrial chemicals at levels as high as those spotlighted by last week's landmark scientific report on farm-raised salmon, tests show. In a few cases, the local fish were even more polluted.



But state health officials, after studying Puget Sound salmon contamination levels for about a year, say they probably won't issue advice on how often the region's signature fish should be eaten.

The reason: They believe the heart-healthy benefits of eating salmon outweigh the risks posed by PCBs, or polychlorinated biphenyls, stored in the fish.

The state Health Department is planning to advise limiting consumption of rockfish and English sole—two varieties of bottom-fish—which are more polluted than salmon, officials said this week. That would represent the first Soundwide guidance on reducing fish consumption.

The backdrop for these decisions is an emerging debate among public health officials, nutrition experts and others about how best to inform the public about pollution in fish.

Some argue that telling consumers to limit consumption of one kind of fish will cause some people to yank fish off the menu—switching instead to meats that don't provide the same benefits to coronary health.

A leading Northwest tribal fisheries official called the PCB levels in Sound chinook "alarming" and said it may spur a new look at salmon-heavy Native American diets.

"One of the big questions is: Do we want to put people off fish?" said Rob Duff, acting director of the Health Department's Office of Environmental Health Assessments, the unit making decisions about how to advise the public.

Duff said his toxicologists do not view the readings in Sound salmon as alarming. He said the Health Department will give consumers general advice, such as to eat a variety of fish, cook them so the fat drips off, and avoid eating the skin. Contaminants tend to concentrate in skin and fat.

"Just because you're not telling them a specific meal limit doesn't mean you're not providing advice," Duff said. "The levels aren't that high, but we know these things are in fish. ... Why not give people advice so they can eat fish, but not hit the high end" on contaminants?

David Carpenter, a researcher at the University at Albany, N.Y., and co-author of the study that appeared last week in the journal Science, called the Health Department's position "total nonsense."

"That's just totally irresponsible—totally irresponsible," Carpenter said. "It's the responsibility of state health departments—and I worked for the one here in New York—to prevent disease or at least provide people with information so they can make judgments about whether they want to take an elevated risk of disease."

Carpenter's study of more than two tons of salmon from Europe and the Americas was the first large investigation of its kind. It suggests, based on U.S. Environmental Protection Agency guidelines, that people shouldn't eat farm-raised salmon more than once a month in most cases because of contamination from PCBs, dioxins and pesticides.

But the study was immediately attacked by Duff and other government health officials, as well as some university food researchers. Critics said it failed to take into account the many benefits of eating fish—some of which, they argued, may offset damage from the toxins.

The Puget Sound results suggest that this area, a hot spot for PCBs, harbors some of the most polluted salmon in the world. The Sound readings were from fillets that did not contain the skin, where much of the contamination is found.

Yet they were similar to or higher than some readings in Carpenter's study for farmed fish—which were analyzed with skin on. The methods of analysis were not identical but are comparable, scientists said.

The news is likely to cause a stir. Terry Williams, commissioner of fisheries and natural resources for the Tulalip Tribes, called it "kind of alarming."

"That would be a real concern. We need to take a look at that," said Williams, who serves on the Northwest Indian Fisheries Commission.

Many tribes have advised members to increase their traditional diet of seafood to fight high rates of cancer,

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diabetes and heart disease thought to be linked to the modern American diet, Williams said.

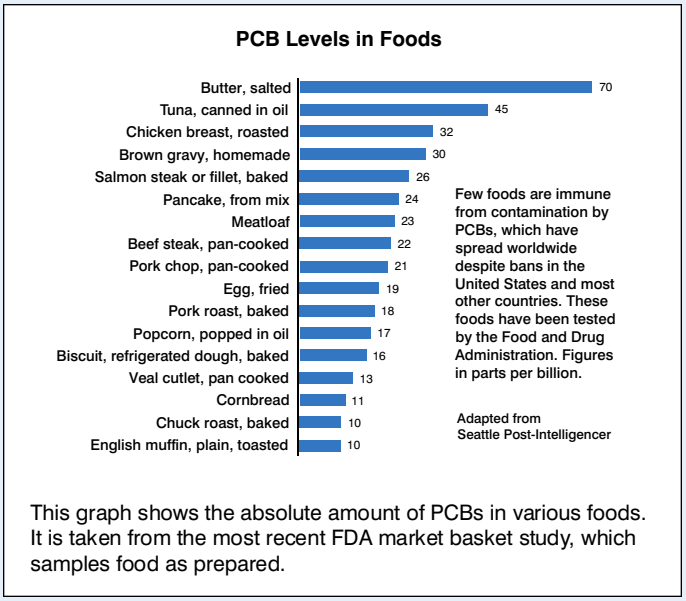
"It sounds like now it's reached the point where we're going to have to take this (contamination) into serious consideration," Williams said.

Duff said the Health Department, once it finishes writing up its advice on fish consumption, will consult with tribal officials and local health departments about how best to get the word out.

Contamination varies around the Sound and between salmon species.

Coho from south and central areas of the Sound seem to have higher levels of PCBs than salmon from northern waters, according to the state Department of Fish and Wildlife. (The agency's tests over the past decade or so detected levels of mercury and the banned pesticide DDT that did not trouble health officials.)

Chinook tends to be more contaminated than coho. Chum and pink salmon generally have the least contamination. That's due in part to diet. Chinook eat small fish, while chum and pink salmon dine lower on the food chain, eating food such as jellyfish and plankton.



This graph shows the absolute amount of PCBs in various foods. It is taken from the most recent FDA market basket study, which samples food as prepared.

Outside Indian tribes, Puget Sound sees almost no commercial fishing for chinook or coho. However, recreational angling for salmon is popular, including for "blackmouth" chinook specially raised by the state to stay in the Sound rather than migrating to the ocean.

The source of the PCBs remains a puzzle. Used as a lubricants and coolants, PCBs were banned in the United States in the late 1970s. But the compounds stick around in the environment, cycling from the mud into worms that are eaten by fish that in turn are eaten by mammals such as orcas. Fish and mammals can pass the PCBs on to their offspring. When dead, they are consumed by scavengers and the cycle continues. PCBs still lie in the mud of Puget Sound, and scientists suspect the long-lived pollutant is also carried in the air from other countries where PCBs are unsafely disposed of or still being used.

The Health Department has issued PCB-driven warnings to limit or avoid the eating of shellfish and bottomfish from select sites around the Sound, including Commencement Bay, Manchester State Park and the Duwamish River.

It was the declaration of the Duwamish River as a Superfund site in 2001 that set off a chain reaction that led to the Health Department's current look at Puget Sound salmon. The agency's toxicologists have been hashing out the results with Fish and Wildlife scientists for about a year.

For Puget Sound salmon, "most of the PCBs are going to be accumulated in the marine waters, and since most of their time is spent in the North Pacific, that's where the majority of them are getting picked up," said Sandie O'Neill, a Fish and Wildlife biologist who studies fish contamination. But some pollutants are being eaten when salmon feed in the Sound, traveling to and from the ocean and their native stream, she said.

Salmon from the Columbia River have PCB levels similar to those found in Puget Sound salmon, according to an EPAstudy conducted in the late '90s. The research found that Native Americans eating large amounts of Columbia River fish—including salmon—had higher cancer risks because of PCBs, dioxins and other contaminants in the fish.

For all her research on fish contamination, does O'Neill still eat salmon from the Sound?

"Most definitely," she said. The problems posed by the PCBs are "minor when you consider the health benefits of eating salmon."

Health officials around the country are struggling with how to advise the public about PCB contamination in fish and health risks.

In California, there are numerous advisories to curtail consumption of fish in coastal areas and bays. More than a decade ago, health officials decided to issue warnings for fish with PCBs at 100 parts per billion. That guideline is being updated.

The news troubles Denis Pistoresi, a Seattle retiree and sport fisherman. He caught hundreds of pounds of fish out in the Sound last year—about 100 meals'worth, he figures.

"There's a lot of us who fish out there," he said. Many of the fishermen he knows are "retired and they use the fish to subsidize their diet."

David Siscovick, a University of Washington medical researcher, emphasized that while the benefits are well-documented, the downsides have not been proved in studies on humans.

His bottom line: "I would not recommend to my patients or the public to stop eating fish because of this. That, I think, would be going beyond the data at this time."