

Studies show state fish have low levels of contaminants

By **HAL SPENCE**

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Alaska's world-famous seafood continues to live up to claims that it is hauled from some of the cleanest waters in the nation and is free from contamination levels anywhere near numbers that should raise public health concerns, according to test results from state and private fish monitoring programs.

That is an important finding for a state trying to market its wild fish to domestic and international markets and compete with farmed fish.

Eating fish hooked in waterways in many parts of the country could mean consuming contaminants, including the neurotoxin methyl mercury, which can lead to brain and nervous system damage in developing fetuses, according to the U.S. Department of Health and Social Services Centers for Disease Control.

Other heavy metals found in fish across the nation, often in levels considered unsafe for humans, include lead and cadmium. Persistent organic pollutants, or POPs, a grouping of contaminants that includes polychlorinated biphenyls (PCBs) and pesticides, also appear in the tissues of fish.

National concerns have generated ongoing studies in Alaska to determine the risks of eating fish caught here. So far, those studies are showing contamination levels far below those deemed dangerous to humans by the CDC, the EPA and the World Health Organization (WHO), according to the Alaska Division of Environmental Health.

Using funding from the Environmental Protection Agency and the National Oceanic and Atmospheric Administration, division researchers are analyzing samples of all five species of Alaska salmon, as well as halibut, pacific cod, sablefish, black rockfish, sheefish, lingcod and pollock searching for traces of heavy metals, such as methyl mercury, lead and cadmium. Other tests are done to detect dioxins and furans, pesticides, PCB congeners, inorganic arsenic and chromium VI.

Samples are or have been collected primarily in marine waters throughout the state, with some northern pike from lakes in the Koyukuk, Kuskokwim, Yukon and Susitna River drainages, according to a description of the state fish monitoring program found on the division's Web site.

Pollutants are appearing everywhere, including in Alaska. The presumption is that most are migrating here from other locations by wind and ocean currents, according to state officials. The limited sampling of Alaska fish done so far, however, has revealed no levels of concern that would warrant consumption warnings.



Cara Mazurek picks red salmon from a commercial setnet in Cook Inlet near Nikiski last year.

Clarion file photo

With half the seafood processed in the United States coming from Alaska waters, state officials are keenly interested in demonstrating to contaminant-wary markets that Alaska's commercially caught fish are safe. The same goes for sport-caught and subsistence-use fish.

Nationwide, the concern is rising over contamination accumulating in fish tissues and transferring to people through their diets.

According to the nonprofit organization Waterkeeper Alliance, which recently launched a major initiative to combat mercury contamination of the world's waterways, almost all U.S. states and most Canadian provinces have issued fish consumption advisories because of the increasing levels of mercury in North America's waterways. Those advisories cover 30 percent of U.S. lakes (12 million acres) and 453,000 miles of America's rivers where fish have been found too contaminated with mercury for safe consumption by significant portions of the population.

Some 27 states issued such advisories in 1993. By 2002, that number had risen to 45. According to a recent CDC report cited by Waterkeeper, 12 percent of U.S. women of childbearing age and up to 630,000 children born each year suffer from unsafe levels of mercury in their bodies.

Scott Edwards, legal director for the alliance, noted the ongoing studies being conducted in Alaska through the Alaska Department of Environmental Conservation.

"Preliminary test result show levels (of mercury) within acceptable guidelines," but further testing is needed, he said.

Studies have demonstrated that Alaska and Arctic Canada have become gathering grounds for pollutants, Edwards said.

"A lot of airborne contaminants make their way here," he said. "The fact that Alaska is removed from immediate sources doesn't mean it should not be on you radar."

The air transportation of mercury is not well modeled, he said, but it is known that mercury and other pollutants from coal-fired power plants in Ohio end up far from their sources.

"It circles the globe," Edwards said. "If you accept that position, Alaska is not immune."

Many of those pollutants bio-accumulate -- that is, they become ever more concentrated as they move up the food chain.

According to the DEC, Alaskans, especially those in rural areas, eat much more wild food (including fish) than people in other parts of the United States, "and for Native Alaskans, harvesting local food is an integral part of their culture."

That pollutants can find their way into Alaska's ecosystem and into its food supply has been demonstrated.

According to an interagency paper published in 2000 by among others, the U.S. Department of the Interior, the DEC and HSS, EPA, NOAA, the University of Alaska Institute for Circumpolar Health Studies, the Alaska Federation of Natives and the North Slope Borough, chemicals rarely used in the Arctic are appearing in Alaska's air, water, fish, plants and wildlife.

Included in the list of contaminants were POPs, including DDT, PCBs, dioxins and heavy metals such as mercury, cadmium, selenium, arsenic and lead. Some of the heavy metals are occurring at levels that cannot be explained by natural releases, the paper said.

"Globally, this unanticipated concentration of pollutants may be sending an important message about how contaminants travel and accumulate far from the original source," it reads.

The Alaska Federation of Natives has called for action to prevent the spread of PCBs and other pollutants from military bases in the state. For instance, in a 2000 AFN resolution, the organization noted that many Alaska Native communities were impacted by contamination associated with former and present military activities and sites, including PCBs, pesticides and nuclear-radioactive materials.

Nevertheless, initial results from the continuing state monitoring program appear to show contaminant levels well below concentrations listed as "levels of concern" by the World Health Organization.

In 2002, the Alaska Division of Public Health began testing samples of hair from volunteering pregnant women in an attempt to determine their level of exposure to mercury. The element can be detected in hair.

A division bulletin issued July 30, 2003, said 125 hair samples from 19 Alaska communities from Diomede to Dutch Harbor to Ketchikan, including Seward, showed low concentrations -- a mean of .58 parts per million (ppm). The WHO level of concern is 10 ppm, nearly 18 times higher.

An Alaska Native Tribal Health Consortium study is testing for mercury exposure in the blood of mothers and infants from the Bethel and Barrow areas. According to that study, 52 mothers in Bethel showed blood mercury at 4.65 parts per billion (ppb) and 29 mothers from Barrow had a median blood level of 1.1 ppb. That is well below the WHO's concern level of 56 ppb.

"These hair and blood biomonitoring results provide strong evidence supporting the current state consensus dietary recommendations that all Alaskans, including pregnant women, women who are breast-feeding, women of childbearing age and young children continue unrestricted consumption of fish from Alaska waters," the bulletin said.

Despite the encouraging results, the division called for further testing.

The state has tested tissue samples from fish taken from coastal regions in 2001 and 2002. Those fish showed low mercury levels in the most frequently consumed Alaska species. Mercury levels in salmon were among the lowest found in any tested.

Halibut samples produced the highest concentrations -- an average of about .2 ppm. The U.S. Food and Drug Administration lists its "level of concern" is 1 ppm -- five times higher.

However, that level marks what can and cannot be sold commercially to consumers and includes a safety factor. According to the FDA, the 1-ppm level was set "considerably lower than levels of methyl mercury in fish that have caused illness."

Dr. Bob Gerlach, the state veterinarian, said the fish tested so far amounts to a pilot project. The program will expand, he said. Currently, lab work testing for heavy metals in 2003's catch is wrapping up and samples are on their way to another lab for organic analysis. Those results should be published in the spring.

"We would expect to see data consistent with the pilot studies," Gerlach said. "It should give us more confidence in our unrestricted consumption recommendations."

Gerlach said current sampling is concentrating on areas where a majority of the state's commercial fishing is done. The state is building a baseline against which it might measure future trends. Once that is established, the state will expand its coverage to include recreational and subsistence fishing, including freshwater species, he said.

The biggest challenge is the state's sheer size, he noted.

In a March bulletin, the FDA and the EPA issued a general advisory for pregnant women noting the health benefits of fish and shellfish in a good diet. Those foods contain protein and other essential nutrients and are low in saturated fat.

"A well-balanced diet that includes a variety of fish and shellfish can contribute to heart health and children's proper growth and development," the bulletin said.

But it went on to warn, "nearly all fish and shellfish contain traces of mercury." The risk to consumers depends on the amount eaten and also on the species consumed.

The agencies said pregnant women, women who may become pregnant and young children should avoid eating shark, swordfish, king mackerel or tilefish. Eating up to 12 ounces (two average meals) per week of species low in mercury was fine. They recommended shrimp, canned light tuna, salmon, pollock and catfish, though it suggested reduced amounts of albacore tuna.

The agencies recommended checking area advisories concerning fish caught in local lakes, rivers and coastal areas. Alaska does not issue regular advisories.

The FDA-EPA notice was directed generally at the nation as a whole, but the state has not recommended any change in regular dietary practices.

Bob Shavelson, head of Cook Inlet Keeper, said EPA has raised questions regarding testing protocols used by the state concerning whether samples were truly representative of the fish people consume. Nevertheless, he praised the state's efforts.

"We applaud the state for enhancing its fish-monitoring efforts," he said. "Whether its water quality, fish tissue or sediment, they have to have a plan to establish a baseline condition so they can see trends that later ensue."