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## **Is it safe to eat Connecticut River fish?**

By Andrea Donlon

You may already know that for the past several years the four states in our watershed have had health advisories limiting the consumption of fish from the Connecticut River. A new study released by the U.S. Environmental Protection Agency (EPA) in October has confirmed those warnings: mercury, pesticides, PCBs, and dioxin may pose a risk to people and animals that eat a lot of fish from the river.

The EPA and state agencies collected fish samples in eight segments of the Connecticut River in 2000. Contaminants in smallmouth bass, yellow perch, and white suckers were analyzed in a laboratory, and the results were compared against safe consumption levels for people and animals. EPA's Connecticut River Fish Tissue Contaminant Study is the first river-long study using consistent sampling and analysis methods across state lines. Only the lowest 22 miles of river, which are brackish- and saltwater, were left unsampled. (Saltwater fish might pick up contaminants from areas well outside the Connecticut River watershed.) The report presents conclusions according to river reach, type of fish, type of contaminant, and impact on wildlife that depend on fish for survival, people who subsist on fish from the river, and recreational anglers.

Here are the study's main conclusions:

- In general, the study found that mercury, PCBs, and dioxin each pose a risk to anglers and wildlife that depend on fish. DDT and its breakdown products pose a risk only to those who eat a lot of fish and to fish-eating birds.
- Mercury concentrations tended to be higher in smallmouth bass than in yellow perch and white suckers.
- There were no significant results for the cold, uppermost part of the river from the Connecticut Lakes to the mouth of the Nulhegan River. Bass and perch are warm-water fish, and only two white suckers were collected in this stretch.
- The highest mercury concentrations were found from the Canaan VT dam to the Moore dam in Littleton NH, followed by the section downstream of Moore dam. The river between the Vernon dam (VT) and Turners Falls dam (MA) tended to have higher mercury concentrations than downstream reaches.
- Pesticide and PCB concentrations were generally highest in the two lowest reaches south of Holyoke. Dioxins were measured in only four of the eight reaches because analysis is very expensive. Dioxin trends were, therefore, more difficult to determine.
- Those who depend on Connecticut-river fish for subsistence may run risks to their health. We need additional study and community involvement to learn how many people depend on fish for subsistence and to which cultural groups they belong.

### **Where do these toxins come from?**

**1. Mercury** is primarily deposited from the atmosphere as emissions blown from coal-fired power plants and incinerators in the Northeast and Midwest and returns to earth in rain drops and dust, settling into river sediments. Animals at the top of the food chain, like eagles, loons, and people are at the highest risk of getting mercury poisoning. Mercury is a neurotoxin that can impair motor and cognitive skills, especially in infants.

**2. Dioxins** are byproducts of incineration and combustion processes, and wind up in fish much the same way as mercury.

**3. PCBs**, now banned, were used for many years in a variety of products ranging from inks to light fixtures because of their non-conductive and fire-resistant qualities. PCBs in the Connecticut River derive from old industrial discharges.

**4. DDT** is a pesticide credited with eliminating malaria in the U.S. It entered the river historically via stormwater runoff and then became biologically concentrated up the food chain. DDT has been banned from the US since 1972 because of harmful effects to wildlife, especially birds.

### **What to do?**

- Limit the amount of Connecticut River fish you eat. We can do little to eliminate PCBs and DDT, which are no longer used in industrial processes. They are so widespread, often in such small concentrations, that it becomes economically and ecologically unfeasible to dig up and dispose of it.

- Conserve energy. Using electricity, heat, and your car less reduces the amount of mercury and dioxin emitted.

- Don't burn your trash. Studies have shown that one household burning trash can create as much dioxin as an entire trash-to-energy plant. Backyard burning is illegal in any case. If you use a wood stove, operate it at moderately high temperatures to avoid smoldering.

Now that we have a screening level assessment of fish tissue concentrations on the Connecticut River, CRWC hopes EPA can monitor again in 2010 and beyond, so that trends can be determined. Unfortunately, the EPA budget has experienced a \$1 billion reduction in funding since 2004, forcing states to assume the costs of monitoring. Our legislators need to hear from people who value clean water and healthy ecosystems.

The EPA fish tissue study, along with a fact sheet and all the technical data, are online at <http://www.epa.gov/region1/lab/reportsdocuments/ctriverftr2000/index.html> For more information on fish advisories in the watershed states, go to our web site at [www.ctriver.org](http://www.ctriver.org) and click on "River News."

[Editor's note: Andrea did her graduate school research on trace mercury levels in forest streams and soil water on Mount Mansfield in Vermont.]