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Ban urged on toxic chemical found in Great Lakes, Pepin

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A group of toxic industrial chemicals called PCBs has reached such a concentration in the Great Lakes that an interstate task force wants them banned nationally.

Recent research has established that the chemicals can cause birth defects or prevent reproduction in fish, birds and mammals, and there is some evidence they may have similar effects on humans.

IT ALSO IS suspected that PCBs — short for polychlorinated biphenyls — may cause cancer.

Although much of the research has been done in other states, PCBs have been found recently in Minnesota, notably in fish taken from Lake Pepin and Lake Superior.

The Lake Michigan Toxic Substances Committee, with representatives from Wisconsin, Illinois, Indiana, Michigan and the federal government, has recommended to the U.S. Environmental Protection Agency that PCBs be limited to "essential uses."

The committee chairman, Donald Mount, chief of the National Water Quality Laboratory at Duluth, said he made the recommendation verbally to Francis Mayo, the agency's regional director, at a meeting in Chicago in late May.

MAYO CONFIRMED the conversation, but said he has not yet received a written report from the committee calling for a ban. He added that he is not sure the agency has the authority to impose such a ban.

Mount said PCB levels in Lake Michigan trout range up to 40 parts per million or more. The U.S. Food and Drug Administration standard for human consumption is five parts per million.

"There are no signs it's getting any better," Mount

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said. "Voluntary controls apparently have not resulted in any reduction over the last few years. There apparently aren't any major individual sources that can be identified and eliminated — just a lot of little sources.

"The committee felt the only solution was to recommend that PCBs be restricted to essential uses — which amounts to a near-total ban."

PCBs are a group of chemical compounds used in many industrial processes as a hydraulic fluid, heat transfer fluid, and electrical insulator. It also is found in such products as hand soaps. Monsanto Chamical Co. is the sole U.S. producer.

The Michigan Department of Natural Resources says the PCB levels in Lake Michigan are "alarming" and says it also will push for a ban on PCB use.

The Michigan report says PCB levels have actually increased in the past three years, while DDT and mercury levels have declined rapidly. It blames PCBs for reproductive failure in northern pike, Lake Michigan salmon and herring gulls.

Canadian researchers have found reproductive failure among fish-eating birds on Lake Michigan and Lake Ontario, along with such birth defects as bills that will not close and toes growing out of knees.

Deformities among Puget Sound seals in Washington state also have been blamed on PCBs.

In Minnesota, Lake Pepin carp have been found with PCB levels up to 40 parts per million, and Lake Superior trout samples have contained up to almost 13 parts per million. The state Health Department has cautioned Minnesotans not to eat more than one meal a week of Lake Pepin fish.

The most extensive research on the effect of PCBs on mammals has been done by Dr. James Allen, a University of Wisconsin pathologist.

ALLEN SAYS LITTLE was known of PCB effects until 1966, when a Swedish scientist noticed that seabirds were dying or having difficulty hatching their young.

In 1968, about 1,000 persons in Japan ate rice oil contaminated with PCBs. Many became acutely ill and were hospitalized with skin lesions and pustules.

The menstrual cycle of some women was altered, some men lost their sex drive, and there were several stillbirths among women who were pregnant when exposed to the chemicals.

Some children born alive were small and had a brownish-gray color, Allen says.

About five years ago, Allen began experiments with rhesus monkeys, primates similar to man.

In the initial experiment, the monkeys were fed a diet containing 300 PCB parts per million. They developed severe skin lesions and pustules, suffered severe swelling of the face and eyes, and lost their body and facial hair. In less than three months, all the animals were dead.

The results were similar when a second group of monkeys was fed a diet of 100 parts per million. Animals fed 25 parts per million were obviously ill in two months and one died even after being taken off the PCB diet, Allen says.

Offspring of the surviving animals were only ¾ normal size, and had absorbed PCBs from the mothers before birth. The mothers' milk also contained PCBs.

ALLEN'S NEXT experiment involved feeding monkeys diets of 5 and 2.5 PCB parts per million — amounts within the Food and Drug Administration standards for human consumption.

In the group fed 5 parts per million, six of eight females conceived but only one infant was born, and it was extremely small. The menstrual cycles of the animals were irregular or nonexistent, and they showed great difficulty in maintaining pregnancy. Two of the adult animals died.

Among the monkeys fed 2.5 parts per million, PCB-induced illness was not so obvious, and five of eight females were able to give birth.

Allen said aerene oxide isolated from the monkeys' urine may cause genetic mutation and potentially could cause cancer. "We don't know its carcinogenic (cancer-causing) effect yet," Allen said.

"**BUT THE REALLY** alarming thing about PCBs is that they may not affect us today or tomorrow. It may be 10 or 20 years before we really see effects in humans.

"Man may not consume high levels of PCBs on a regular basis, but it's possible that he may get high exposure from time to time, and the PCBs could be retained in his system and reach a toxic lavel.

"We're not exactly sure yet what a safe exposure level is, but I wouldn't want to eat fish on a continuous basis at 5 parts per million."

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