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A CANCER HAZARD IS FOUND IN GULLS

Lake Ontario Study Hints at Pollutant Link to Fish

A group of cancer-causing pollutants has been found for the first time in wildlife—in herring gulls that live on Lake Ontario.

Because the gulls eat fish species that are also caught and consumed by humans, the scientists from the Canadian Wildlife Services who discovered the chemicals in the gulls are now studying Lake Ontario perch, alewives and coho salmon to see if they too carry the carcinogenic pollutants. Other researchers have already found the compounds in bottom sediments in the Great Lakes, which indicates that they are water borne.

The chemicals are polynuclear aromatic hydrocarbons, known as PAH's. They are released in the processing and use of petrochemicals and the burning of coal. Fourteen different types of these hydrocarbons were found in the fat of gulls caught last summer near Kingston, Ontario. The chief of the toxic chemicals section, of the Canadian Wildlife Service, Dr. David Peakall, says that at least five of the 14 are known to cause cancer in test animals, and may cause it in humans.

They include benz[a]pyrene, which is strongly carcinogenic, and the moderately active cancer-including agents benz[a] fluorine, 9-10-diphenyl-enthracene and 2-methyl-phenanphene. Benz-pyrenes from air pollution and cigarette smoking have already been implicated by medical researchers as causative factors in human lung cancer.

The data from the wildlife service are as yet unpublished. A brief account of the data appears in the January Audubon magazine.

Birth Defects Found

In a phone interview, Dr. Peakall said that no cancers had been found in the gulls. But several had birth defects —crossed beaks and splayed legs—that may have been induced by the hydrocarbons. Chemicals that cause cancer often also produce congenital anomalies.

The Lake Ontario gulls are more contaminated than herring gulls on the other Great Lakes. Besides the PAH's, they carry 25 different organochlorine compounds, including DDT and large amounts of dieldrin and polychlorinated biphenyl's. Their reproductive success, Dr. Peakall says "was only one-fifteenth the over-all production of the best Great Lakes colony" in 1975, which was on Lake Superior.

He attributes the reproductive failure to the organochlorines rather than the PAH's, which he says may be less significant for the gulls than they are for humans with whom they share an apparently polluted food source. He says of the PAH's:

"I don't think it's overly significant for wildlife. But I think that it's a major potential hazard for human health."

He adds:

"If [the PAH's] are found in the fish, then we have a carcinogen in potential human food."

Detection of these hydrocarbons required a different analytic method, called flame capture gas chromatography, than that which is routinely used to detect organochlorine pollutants. Dr. Peakall and his colleagues had deliberately set out to find out heretofore undiscovered pollutants in the gulls, which have been designated a pollution monitor species by the United States and Canadian International Joint Commission on the Great Lakes. The commission supports the gull studies.

The Wildlife Service plans to extend and broaden the gull studies in the 1976 breeding season.

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