Wildlife may protect humans from mercury

Although recent reports on mercury have focused on the dangers to humans, some researchers feel that public health could be better protected if standards were enforced that protect wildlife. Gary Heinz, a research biologist with the U.S. Geological Survey (USGS) at the Patuxent Wildlife Research Center in Laurel, Md., has found that some bird species are much more sensitive than humans to mercury.

"To a large extent, researchers in human toxicology ignore the work that is being done in wildlife toxicology," he says. "The reverse is also unfortunately true."

Human dietary guidelines for mercury range from a high of 1.0 ppm in the United States to a low of 0.4 ppm in Japan. However, birds can show ill effects at much lower dietary concentrations than humans. Mallard ducks, for instance,

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It might make more sense to set mercury standards to protect sensitive birds, such as this white ibis, than to worry about higher levels that affect human health.

experience harmful influences to eggs when fed as little as 0.1 ppm of methylmercury, and ring-necked pheasant show effects at 0.2 ppm. Yet, only four species of birds have been well studied, because captive breeding experiments with wild animals are both daunting and expensive, say USGS researchers.

Heinz has used direct injection of methylmercury into eggs as a quick and effective means to test chick mortality in 20 bird species. While mallards have increased chick mortality at 0.8–1.0 ppm, the most sensitive species is the white ibis, whose chicks begin dying at methylmercury concentrations of only 0.1 ppm. He also notes that these are mercury levels that birds are likely to encounter in the wild.

"Wildlife toxicologists should never pretend to be experts, but my feeling is that if we protect bird species, we protect humans," he says.

Kevin Kenow, also a research biologist with the USGS, agrees that this strategy might not be a bad idea, especially since wild animals are more likely than humans to consume mercury in their diets. "The ingestion rate of fish by the common loon is an order of magnitude higher than any human population feeding on fish," he says.

—PAUL D. THACKER