

# Where have all the lake eels gone? Queen's prof asks

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A Queen's University environmental scientist will head a new international study to determine whether American eels – the slimy, snake-like fish considered worldwide to be a food delicacy – are dying from chemical pollution in Lake Ontario.

Biology professor Peter Hodson and his team of toxicologists and chemists have received \$536,450 from the Natural Sciences and Engineering Research Council (NSERC) to solve the mystery of Lake Ontario's disappearing eel population.

Declared a “species of concern” under Canada's new Species at Risk Act, American eels have until recently supported a multi-million-dollar historic fishery in Ontario and an even larger industry in Quebec. But with rapidly decreasing numbers of eels, the Ontario fishery has been closed and the Quebec fishery is in serious decline.

“A prime suspect in the case of the missing fish is the accumulation of toxic chemicals by the parent eels as they feed, grow, and mature in polluted freshwater lakes and streams,” says Dr. Hodson. “Our task will be to determine whether female eels transfer sufficient chemicals to their offspring to cause their death before reaching Lake Ontario.”

The team hopes to learn whether chemicals have played a role in the decline of the eel, whether some lakes and rivers are better than others for re-stocking with juvenile eels, which chemicals are the “bad actors” and whether eels pose a hazard to human consumers.

American eels begin their lives as eggs hatching in the Sargasso Sea near Bermuda. They take years to reach freshwater streams where they mature to a length of up to a metre before returning to their birth waters to spawn and die. However, since the mid 1980s there has been a spectacular drop in the numbers of juvenile eels migrating to Lake Ontario from the Sargasso Sea, and a corresponding decline in the numbers of adults.

“The loss of eels is significant from an economic, cultural, and ecological perspective,” says Dr. Hodson, adding that the impact on other fish species in Lake Ontario of removing a top predator has yet to be recognized.

Most of the harvest of American eels is exported to a global market, particularly to Western Europe and Asia where they are smoked, jellied, marinated, and even served raw as sushi. They are so highly prized that prices are rising as supplies dwindle.

The Queen’s-led research team will study eels from both clean and polluted habitats, as well as those stored frozen since the 1980s. They will compare the concentrations and toxicity of chemicals in the tissues of eel among different habitats and provide a perspective on past contamination.

Source: Queen's University

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