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Silver eel

## Evaluating the Elusive Eel



Silver eel

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### Partnering with First Nations to learn more

Legend says that on moonless nights in the spring, elvers – juvenile American Eels – migrate upstream. So, in the hours of darkness before high tide, Parks Canada scientists and Aboriginal community members from Fort Folly First Nation dip their nets into Fundy's estuaries, hoping to catch and count this elusive species at risk.

Their work is just one component of a broader initiative entitled "*Involving Canadians to Recover the American Eel*". Its purpose is to gather baseline population data about the American Eel in Atlantic Canada. Although the juvenile eels are proving slippery to catch, the project has allowed Parks Canada to forge successful citizen-science partnerships with Aboriginal communities in Fundy, Kouchibouguac, and Cape Breton Highlands National Parks.



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The eel-sampling program has only just begun. But a lot of success has already been achieved in having Aboriginal people involved at the water's edge to collect the scientific data with Parks staff. "*The relationship-building piece has been fabulous*," says Dr. Deborah Austin, Species at Risk Coordinator for Parks Canada's Atlantic Service Centre. In coming years, the partnership program will expand to four more national parks: Prince Edward Island, Terra Nova, Gros Morne and Kejimikujik.



Unama'ki technician checking habitat trap

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## Eels on a slippery decline

Many mysteries still surround the American Eel. But we do know that all American Eels are born in a common spawning ground in the Sargasso Sea, an area of the Atlantic Ocean east of Bermuda. As they mature, the eels disperse into river estuaries from Venezuela to Greenland, and migrate upriver. They spend most of their adult lives in fresh water. At the end of their 25-year lifespan, they return to the Sargasso Sea to spawn and die.

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Elver and glass eel

Since the 1970s, the number of eels in Ontario's Great Lakes has plummeted by an estimated 99%. Hydroelectric dams are the primary threat to the American Eel, as they prevent many young eels from entering the Great Lakes, and turbines may kill adult eels as they migrate back to their spawning grounds. This dramatic decline prompted the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to identify the American Eel as a species of Special Concern in 2006. And the concern reached well beyond Ontario's borders.

Scientists and fishermen on the East Coast wondered whether the declines observed in the Great Lakes could be influencing eel numbers in Atlantic Canada. Here, the eel is found in seven national parks, and is of great cultural value to Aboriginal communities. In addition to its own efforts, Parks Canada is actively supporting First Nations in their gathering of Aboriginal Traditional Knowledge about the population, location, and habits of this fascinating fish.

## Wisdom of the elders

Since ancient times, the American Eel has been a source of food and a figure of legend for the Aboriginal people of Canada's East Coast. In the lean winter months, holes were cut in the river ice and eels were speared where they lay hidden in the mud. Eel skin has the ability to stretch without breaking. It was used as a binding material for sleds, spears and moccasins and as a brace for sprains. The eel also figures as a spiritual being in many Mi'kmaq legends. Today, a commercial fishery exists for the elvers, and many people continue to fish for adult eels.

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Yellow eel



Fyke net



Atlantic National Parks of Canada

In 2009, Parks Canada in the Atlantic region decided to support and fund the formation of the Atlantic Aboriginal Protection of Species Committee. This committee consists of representatives from the Mi'kmaq, Maliseet, Innu, Inuit, Passamaquoddy and Métis First Nations. They have undertaken an unprecedented task: to develop a systematic method for collecting Aboriginal Traditional Knowledge about the American Eel.



Partners working together

Has the timing of eel migrations changed? Are people seeing more eels than in the past or fewer? Are they found in the same places, or different ones? By developing a questionnaire and training Aboriginal people in First Nations communities to conduct interviews, the committee will gather and synthesize this knowledge.

This knowledge could help to develop management plans for the eel. Even more significantly, the method for gathering Aboriginal Traditional Knowledge could find a broader application. The partnerships forged between Parks Canada and First Nations over the unassuming American Eel could serve as a model, allowing Aboriginal communities across Canada to become more involved in studying and protecting species at risk.

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