WATERPOWER CANADA
HYDROÉLECTRICITÉ CANADA

Electricity Canada | Électricité Canada

April 15, 2024

The Honourable Diane Lebouthillier, M.P.
Minister of Fisheries, Oceans and the Coast Guard
200 Kent Street
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Re: WaterPower Canada / Electricity Canada Comments on the potential listing of American eel under the Species at Risk Act

Dear Minister Lebouthillier,

Together, WaterPower Canada (WPC) and Electricity Canada (EC) represent Canada's electricity industry. We understand that you will advise your colleague, the Honourable Steven Guilbeault, Minister of Environment and Climate Change, on a recommendation to the federal Cabinet regarding the potential listing of the American eel under the *Species at Risk Act* (SARA). To that end, your department is conducting an update on the 2015-2016 consultations with potentially affected Canadians.

Please accept this letter as our submission on this matter.

On March 17, 2016, we submitted a joint letter to your predecessor, the Honourable Hunter Tootoo, outlining our position that the American eel should not be listed. In the same letter, we affirmed our industry's commitment to continue to work with your department to minimize the impacts of its electricity generation facilities on the eel.

Through this letter, we confirm that we continue to strongly oppose the addition of American eel to Schedule 1 of the Species at Risk Act and that we remain committed to working towards further minimizing the impacts of our industry on American eel.

The listing of American eel under SARA would provide only limited benefits to the species, would add considerable economic and permitting burden to hydropower generators and their customers and would be inconsistent with the Government of Canada's goal of reducing greenhouse gas (GHG) emissions.

The benefits to eel would be limited for the following reasons:

a) The *Fisheries Act* and provincial regulations such as the *Ontario Endangered Species Act* already provide robust regulatory tools for protecting the eel, and

b) The wide distribution of the species in many countries of the West Atlantic and lack of strict homing behaviour makes any additional protection measure which is not coordinated at the international level less effective. More specifically, in 2015, the United States decided not the list the American eel under the Endangered Species Act

Hydropower represents 60 percent of electricity generation in Canada. In eastern Canada, it represents 27 percent of Ontario's supply, 95 percent in Quebec, 27 percent in New Brunswick, 10 percent in Nova Scotia, and 98 percent in Newfoundland and Labrador[1]. The importance of hydropower in these grids is even more critical than these numbers might suggest because hydro contributes to the stability and reliability of these grids and provides long-term energy storage. In these eastern provinces, many hydropower facilities are in the American eel distribution zone and would be negatively affected by a listing. Both nuclear and fossil-fuel fired thermal power plants with open-loop cooling systems could also be affected.

If the eel were listed, the prohibitions against harm to individuals or residences and the provisions protecting critical habitat would apply. It would be illegal to kill an eel even incidentally. Permits, authorizations, or conservation agreements would be subject to the very stringent conditions of s.73 and s.74 of the Act. Our industry has experienced the fact that obtaining such a permit or equivalent is highly time-consuming, can require very expensive mitigation measures, and is sometimes impossible.

The impacts of listing the American eel on the hydropower sector of Eastern Canada would be severe. They would include:

a) Considerable expenses and time in terms of studies and monitoring to determine how to avoid, mitigate or offset impacts and secure the S.73 or S.74 permits, agreements or equivalent *Fisheries Act* authorizations at existing hydropower plants,

[1] Statistics Canada, Electric power, annual generation by class of producer, year 2022, Table: 25-10-0020-01 retrieved on April 3, 2024

b) The investment and operating cost of implementing agreed-upon measures. There would also be a loss of electricity production at sites where the only proven mitigation measure to ensure the safe downstream passage of adult eels is to shut down turbines and spill water during the migration period, or in reservoirs where the winter drawdown regime would have to be modified to protect burrowed eels,

c) Further delays in getting approvals for repair or refurbishment projects,

d) Lingering uncertainty regarding the compliance of the operation of many existing hydropower plants, opening the door to challenges by third parties,

e) A disincentive to invest in any new hydropower facility in all areas frequented by the eel.

In total, these impacts would represent considerable investments and operating expenses for the hydropower industry, which ultimately would be borne by electricity customers.

Such constraints on hydropower production would make the emissions reduction targets of the government of Canada, namely a net-zero electricity grid by 2035 and a net-zero economy by 2050, considerably more challenging to achieve.

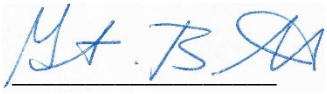
For example, OPG has estimated that if the eel was listed, the additional thermal generation that would be required to compensate for the losses of production from hydropower facilities would result in a 9% increase in GHG emissions from the electricity sector of Ontario. By making electricity more expensive in Eastern Canada, the listing of the eel could also slow down the electrification of the economy and the reduction of emissions at the economy-wide level.

Our opposition to listing the American eel under SARA should not be misconstrued as a lack of commitment to protecting this critical species.

Our commitment is demonstrated by the many actions that our members are taking to reduce or offset the impacts of their facilities and the research initiatives they are involved in, as further detailed in the appendix.

Thank you for the opportunity for us to provide updated input on the status of the American eel.

Yours sincerely,



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Appendix

Examples of American Eel Stewardship in the Hydropower Industry

Numerous hydroelectric companies have played stewardship and protection roles for American eel for decades in Canada. Early stewardship examples include the operation of eel ladders allowing for the upstream passage of young migrating eels around barriers[2]. Since these early eel ladders were installed, others have been built at hydroelectric generating stations on the St. Lawrence River and Maritime region of Canada. In addition to ladders facilitating upstream movement HQ has transferred upstream migrating eels captured at its Beauharnois station to the Ottawa River above its Carillon Generating Station since 2014.

To prevent entrainment of mature American eel at generating stations, hydroelectric companies have installed narrow mesh screens[3]. However, screening is not feasible on rivers with large flows such as the St. Lawrence River, so trap and transfer programs have been implemented to capture mature or maturing American eel. Examples of trap and transfer include the OPG's program where eels are captured from the upper St. Lawrence River and Lake Ontario then transported downstream below 2 generating stations. This effort was started in 2008 and HQ plans to begin a similar program starting in 2024.

Research into technologies and methods to guide fish for capture or bypass of hydroelectric generating stations has been developed by HQ and OPG in a collaborative research program. Since 2013, HQ and OPG have provided $13.6M to address the challenge of safe downstream passage of American eels at hydropower projects on large rivers without generation losses. This effort builds upon previous research conducted on the St. Lawrence River by individual companies. In addition to the funders, the research program has a technical committee made up of regulators including:

- Fisheries and Oceans Canada (DFO)
- the U.S. Fish and Wildlife Service
- the Ministère de l'Environnement, de la Lutte contre les Changements Climatiques, de la Faune et des Parcs of Québec
- the Ontario Ministry of Natural Resources and Forestry
- the Ontario Ministry of Environment, Conservation
- Parks N.Y.
- the Department of Environmental and Conservation of the state of New York
- the New York Power Authority.

[2] eel ladders at Ontario Power Generation (OPG) Saunders generating station in 1974 and Hydro-Québec (HQ) at Chambly and Beauharnois generating stations in 1998 and 2002 respectively.
[3] examples include New Brunswick Power's (NBP) Tobique Narrows generating station and Energy Ottawa's Chaudière station

The culmination of the research to date was a light array prototype on the St. Lawrence R., the light array effectiveness was tested using migrating telemetered eels. Results from the research activities funded by HQ and OPG are publicly available. In 2024, the participants in the research program are planning to develop and agree upon a new five-year research plan.

Other firms are conducting research activities and collaborating with First Nations on fish passage; examples include NBP with its facilities and activities within the Saint John River watershed.

OPG and HQ investigated experimental stocking of elvers (very young eels) to determine if 'conservation stocking' can be used to supplement recruitment of young eels to the upper St. Lawrence River. From 2006 to 2010, an estimated 6 million elvers were obtained from elver fisheries in the Maritimes and stocked into Lake Champlain, upper St. Lawrence River, and Lake Ontario. These stocked eels have grown and starting in 2014, large female eels from the stocking program have been observed in the Quebec silver eel fishery migrating to spawn in the Sargasso Sea.

Stewardship activity also include monitoring programs. For example, since the early 2000 Hydro-Québec monitors the upstream migration of young eels at Beauharnois and at Chambly. The data which is collected is shared with federal and provincial authorities. This extended time series of migration information is very valuable in the assessment of the evolution of the populations of eel. During the last two years, Hydro-Québec has also conducted additional research to better understand the behaviour of adult eels migrating downstream at Beauharnois and the behaviour of young eels at Carillon.

Other eel stewardship activities are conducted at Nova-Scotia Power (NSP) and NB Power.

- Since 2022, NSP implements seasonal overnight turbine shutdowns at multiple powerplants under certain conditions on several systems to facilitate downstream eel migration.
- NSP is working with local stakeholders to test solutions to facilitate elver upstream movements.
- NSP has developed a 5-year hydro capital improvement plan which includes the installation of elver ladders.
- NSP is conducting multiple tagging studies to assess adult eel movements and behaviour in the vicinity of hydro facilities.
- All hydro refurbishment and capital works take eel passage/eel mortality into consideration.

NB Power (NBP) supports the goal of working to restore American eel abundance and works collaboratively with DFO and First Nations rights holders to determine mitigation and offsetting opportunities to improve fish abundance, habitat, and fish passage.

NBP has a formal relationship or Protocol Agreement with DFO specifically focussed on fish and fish habitat improvements within the Saint John River watershed, where NBP has several hydroelectric generating stations (i.e., Grand Falls GS; Mactaquac GS; Beechwood GS; Tobique Narrows GS).

Recent NBP activities that support mitigation and offsetting with respect to fish passage, including American eel consist of:

- Mactaquac Life Achievement Project (MLAP) – major proposed upgrade to the Mactaquac GS is currently undergoing a provincial Environmental Impact Assessment (EIA). Fish passage is one of the key impacts being assessed as part of the EIA review. It will include fish passage enhancements for a variety of fish species including the American eel,

- Ongoing Mactaquac Aquatic Ecosystem Study (MAES) in partnership with the Canadian Rivers Institute (CRI) to determine baseline conditions, population estimates, etc.,

- Working collaboratively with DFO and First Nation partners on an adaptive fish passage plan for the Saint John River Watershed (involves operational adjustments to NBP stations on the Saint John River), with the objective of optimizing fish passage,

- Participating on a committee with DFO and First Nations to modernize/upgrade the Mactaquac Biodiversity facility operated by DFO,

- Completed installation of downstream fish passage at the Tobique Narrows Generating Station, and

- Decommissioning of the Milltown GS (St. Croix River) currently underway to restore full volitional fish passage – anticipated to be completed in 2024/5.

As documented above many proponents are actively participating and funding projects addressing upstream and downstream passage for American eel which is one of the greatest challenges for the species at hydroelectric facilities due to their catadromous life history.