
BACKGROUND

Jackfish Bay Area of Concern

May 14, 2011

Jackfish Bay, on the north shore of Lake Superior near the Town of Terrace Bay, is a remote area surrounded by boreal forest. A few cabins dot the rugged shoreline, and nearby there are remnants and memories of a tiny community called Jackfish that sprang up around a small commercial fishery in the late 1800s. The commercial fishery came to an end in the late 1940s when Lake Superior's native Lake Trout populations collapsed.

Environmental challenges

A pulp and paper mill began operating in the nearby community of Terrace Bay in 1948 and continues to operate today. The company has always discharged its wastewater effluent into Blackbird Creek, which flows into Jackfish Bay.

When the mill started, there were no environmental regulations, and no controls on pollution. Uncontrolled mill operations contaminated sediment and water in a 14 kilometre stretch of Blackbird Creek, two small connecting inland lakes, and Jackfish Bay with wood fibres, heavy metals, and toxic substances like dioxins and furans.

High levels of nutrients, such as phosphorus, from mill wastewater caused poor water quality. Fish and fish habitat were damaged or destroyed, along with populations of sediment-dwelling organisms. The contamination accumulated in fish in the area, resulting in sport fish consumption advisories.

Mill wastewater also produced brown, foamy water, and a strong odour which had a negative effect on the beauty of the area.

The pulp and paper mill is the source of most environmental problems in this area. Water pollution, over-fishing and the sea lamprey, an invasive species, have also contributed to a decline in Lake Trout populations in most of Lake Superior..

Taking action

In 1987, Jackfish Bay was designated as an Area of Concern (AOC) under the Canada-U.S. Great Lakes Water Quality Agreement. It was one of 43 AOCs identified across the Great Lakes basin in Canada and the United States.

The Jackfish Bay Area of Concern includes Jackfish, Moberly and Tunnel Bays, as well as a 14-kilometre stretch of Blackbird Creek and two small lakes.

Remedial Action Plan (RAP) partners

The Governments of Canada and Ontario, work with the local communities to create and implement remedial action plans to restore Canadian AOCs. At Jackfish Bay, our partners in the Remedial Action Plan include: Canada and Ontario are responsible for creating and implementing remedial action plans to restore and protect Canadian AOCs. Other partners in the Remedial Action Plan for Jackfish Bay include: EcoSuperior Environmental Programs, Lakehead University, the Public Advisory Committee, the Public Area in Recovery Review Committee (including residents of the communities of Jackfish, Rossport and Schreiber), the Town of Terrace Bay and the Town of Schreiber. Local industry was a partner in the earlier stages of the Remedial Action Plan.

Identifying environmental challenges

In 1991, the Remedial Action Plan partners released a report that identified the causes and extent of environmental problems in the area. The *Stage 1 Remedial Action Plan Report* identified eight environmental challenges:

- negative impacts on sediment-dwelling organisms
- negative impacts to fish and wildlife populations
- loss of fish and wildlife habitat
- aesthetic impacts (odour and foamy water)
- restrictions on fish and wildlife consumption
- bird or animal deformities
- fish tumours or other deformities.
- bird or animal deformities or reproductive problems

Controlling sources of industrial pollution

The first line of action in dealing with most environmental problems is to control the source of pollution. In 1993 Ontario's Municipal Industrial Strategy for Abatement (MISA) regulations came into effect under the Environmental Protection Act, to control pollution in Ontario's lakes and rivers. These regulations, combined with Canada's implementation of the Pulp and Paper Effluent Regulations in the mid-90s prevent companies and municipal sewage treatment plants from discharging acutely lethal contaminants into waterways.

The pulp and paper mill at Terrace Bay responded by changing mill processes, adding secondary treatment to its effluent and diverting mill effluent flow away from one of the small lakes.

Today, mill effluent must meet strict requirements and cannot be lethal to fish and aquatic insects. With the source of contamination controlled, the environment started to improve.

Planning and implementing remedial actions

In 1998, the Remedial Action Plan partners released the *Stage 2 Remedial Action Plan Report*. At the time, the mill at Terrace Bay was recognized for using the best available technology for industrial waste water treatment. Improvements in water and sediment health were expected to continue. The report recommended natural recovery as the best option for restoring the Area of Concern, and that the area be monitored for improvements.

Jackfish Bay is recovering

Scientific evidence over more than a decade shows the Jackfish Bay ecosystem is recovering. Water and sediment quality in Jackfish Bay has improved. Populations of Lake Trout are returning to most of Lake Superior, including Jackfish Bay, in response to sea lamprey controls, limits on sport and commercial fishing, and other measures.

Cleaner sediment from Blackbird Creek is gradually covering over historically contaminated sediment in Jackfish Bay. This will lead to improved conditions for aquatic life.

Although the quality of wastewater from the pulp mill has improved since the start of the Remedial Action Plan, conditions in Blackbird Creek have not improved to same extent as the bay. The Ontario Ministry of the Environment will ensure that the mill continues to meet all of its requirements for wastewater treatment and will work with Environment Canada to monitor conditions in the creek and the bay.

Current status and next steps

All priority remedial actions recommended for this Area of Concern are now complete. While the environment has made significant improvements, it needs more time to heal. The area can only be delisted once the environment has been restored.

Canada and Ontario will continue to monitor fish health and sediment quality over the long-term, and will continue to work with the U.S. to restore and protect Lake Superior through the Lake Superior Lakewide Management Plan (LaMP).

Canada and Ontario will continue to enforce regulations to ensure the pulp and paper mill complies with the federal and provincial regulatory requirements.

Environment Canada will continue to evaluate the effects of effluents on fish and fish habitat as part of its Environmental Effects Monitoring program, part of the Pulp and Paper Effluent Regulations. The information is used to determine if pollution prevention and control measures are effective, or if there is a need for additional controls.