Fisheries and Oceans Canada | Pêches et Océans Canada

PORTRAIT OF FISH HABITAT RESTORATION

Executive Summary

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Ce rapport est aussi disponible en français.

Canada

This public opinion research report presents the results of a qualitative study conducted by Leger Marketing Inc. for the Department of Fisheries and Oceans Canada (DFO). The qualitative study was conducted between December 8, 2023, and March 25, 2024.

Cette publication est également disponible en français sous le titre : ***Portrait relatif à la restauration des habitats du poisson***.

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Summary

Leger Marketing Inc. (Leger) is pleased to present to Fisheries and Oceans Canada (DFO) this report on the results of a qualitative study designed to provide a portrait of fish habitat restoration. This report was prepared by Leger Marketing Inc., which was contracted by the DFO (contract no. CW2329669 awarded September 7, 2023).

1.1 Background and Objectives

Several threats are contributing to the decline of freshwater and marine ecosystems in Canada. Habitat degradation and loss, including changes in flow and fish passage conditions, are often observed. Restoration provides an opportunity to mitigate these pressures on habitats and ecosystems. The Government of Canada recognizes the importance of restoration in improving ecosystem health, supporting climate change mitigation and adaptation strategies, preserving biodiversity and protecting species at risk. Fisheries and Oceans Canada (DFO) contributes to Canada's international commitments to ecological restoration, such as the Aichi Targets of the UN Convention on Biological Diversity and the UN Sustainable Development Goals for 2030.

The Fish and Fish Habitat Protection Program for the Quebec Region aims to implement communication activities whose primary purpose will be to provide a preliminary portrait of the restoration needs of Quebec's aquatic habitats. Restoration concerns and priorities (species, habitats and interventions) will then be identified.

Public opinion research (POR) will be conducted among a wide range of habitat restoration practitioners in Quebec to gather the relevant information needed to lay the foundations for this portrait.

Objectives

Consult with target stakeholders to obtain relevant information based on their knowledge and expertise in aquatic ecosystems. Specifically, to provide a general portrait of fish habitat in terms of restoration from a summary description by region based on, but not limited to, the following elements:

- Species, locations and ecosystem functions important to fish and fish habitat.
- Findings, knowledge, needs and issues related to aquatic habitats.
- Threats to fish habitat and restoration opportunities that address the root causes of degradation.
- Existing or potential restoration/rehabilitation opportunities.

1.2 Methodology

Qualitative research – In-depth interviews

Individual interviews were conducted with specialists and/or practitioners in aquatic habitat management, conservation and/or restoration.

The qualitative study provided an in-depth exploration of fish habitat needs, threats and restoration opportunities.

The study targeted seven areas identified by the DFO.

Area	Administrative region	Number of interviews conducted
1	Bas-Saint-Laurent (01)	8
1	Gaspésie–Îles-de-la-Madeleine (11)	
2	Saguenay–Lac-Saint-Jean (2)	3
2	Côte-Nord (09)	
2	Nord-du-Québec (10)	
3	Capitale-Nationale (03)	7
3	Mauricie (04)	
4	Outaouais (07)	6
4	Abitibi-Témiscamingue (08)	
4	Lanaudière (14)	
4	Laurentides (15)	
5	Estrie (05)	8
5	Chaudière-Appalaches (12)	
5	Centre-du-Québec (17)	
6	Montréal (06)	5
6	Laval (13)	
6	Montérégie (16)	
7	Provincial scope – across Quebec	8

Leger was responsible for recruiting participants and conducting interviews. The list of interviewees was provided by the DFO. The Department contacted the interviewees in advance to inform them of the upcoming communication from Leger and the reason for the interview. The study population was organized broadly into the following categories:

- NGOs whose mandates involve aquatic ecosystems (ZIP committees, watershed organizations, etc.)
- Researchers and experts

Thirty-eight interviews were conducted with NGOs. Seven were conducted with researchers.

The interviews were structured using a guide designed by Leger, based on an outline provided by the DFO.

Forty-five interviews were conducted by a senior Leger professional and took on average approximately 45 minutes to complete.

The interviews were conducted in the official language of the interviewees' choice (French or English).

A $150 incentive was provided to encourage participants to take part in the in-depth interviews.

All in-depth interview sessions were moderated and supervised by a senior Leger researcher assisted by a research analyst. The discussion guide (available in Appendix A.2) was semi-structured. It allowed the moderator to provide a framework for the discussion and ensured that an array of themes was covered while leaving sufficient room for participants to express themselves and provide a detailed account of their experiences, ideas, opinions and perceptions.

Qualitative research provides an overview of the opinions of a population or group, rather than a percentage measure of the opinions expressed, as would a quantitative study.

1.3 Notes on Interpretation of the Research Findings

The views and observations expressed in this document do not reflect those of the DFO. This report was compiled by Leger based on the research conducted specifically for this project. Qualitative research provides an overview of the opinions of a population or group, rather than a percentage measure of the opinions expressed, as would a quantitative study. The results of this type of research should be considered purely indicative. No conclusions about the general population can be inferred from the results of this type of research.

Some limitations of this research must also be highlighted:

- The importance of ecosystem function has received little attention due to the difficulty in obtaining this information.
- The profile of the participants interviewed and the location to which their knowledge applies meant that the results of the study focused more on freshwater than on marine environments.
- Due to the semi-structured nature of the discussions, some of the information shared by participants applied to aspects outside the DFO's mandate. Where relevant, this information has been included in the study results.
- The geographical scope of some participants' knowledge extended beyond the specific area for which they were approached, so information in one section may sometimes include elements relating to other areas.
- As participation in the interviews was voluntary, the number of participants differs from one area to another, influencing the scope of the information collected and the diversity of viewpoints across areas.

1.4 Overview of the Findings

State of knowledge

Study participants demonstrate a range of knowledge on the conservation and restoration of aquatic environments in Quebec, influenced by their professional, academic and experiential backgrounds. Their self-assessed knowledge level

varies from modest to excellent. When they describe their knowledge level as average, it is mainly due to the large size of certain regions, difficulty accessing them or to ecosystem complexity, rather than lack of experience or involvement in issues related to the region's aquatic habitats.

Although some participants may not have formal training in biology, close collaboration with specialists and significant involvement in their organization's activities give them advanced knowledge of the issues related to their area's aquatic habitats.

Habitat protection and threats

In addition to aquatic habitats already protected by regulation, several aquatic habitats were mentioned. The list included both large and small watercourses as well as a variety of water bodies. The importance of these habitats stemmed from their ecological value (crucial areas for biodiversity and the survival of threatened species), their economic value (fishing or tourism), their social role (drinking water supply) and their role as recreational areas.

The level of pressure and degradation of the listed aquatic habitats varies depending on their location and nature. Participants identified several forms of degradation and pressure presumed to result from human activities and environmental change. Dredging, coastal development and urbanization appear to be disrupting natural habitats, modifying currents and affecting aquatic wildlife and the migration of species such as salmon. Climate change appears to be affecting water temperature, acidification and hydrological regimes, and therefore threatening biodiversity. Agriculture and urbanization appear to be contributing to degradation of water quality through pollutant runoff, while shoreline erosion and the introduction of invasive species may be putting ecosystems out of balance. Habitat fragmentation by human infrastructure and industrial and domestic pollution appears to be aggravating these impacts. Such pressures are thought to be exacerbated by inappropriate water management practices, increased vessel traffic, chemical pollution and other factors.

It was also noted that, although some habitats benefit from regulatory protection, it is not systematically applied in many cases. As a result, some habitats may continue to suffer degradation due to a lack of sufficient controls to ensure compliance with the legislation.

General focus areas

The areas covered are the focus of major efforts to conserve aquatic habitats, including targeted conservation and restoration initiatives, awareness campaigns to educate the public about ecological issues and research and monitoring programs to assess the state of aquatic environments and species present.

Priority areas

Many participants identified priority areas for aquatic habitat restoration and conservation, including habitats impacted by industry, areas subject to erosion and sedimentation and areas affected by intensive agriculture. The need for urgent restoration work is highlighted, particularly to address the effects of pollution and degradation caused by nutriments and pesticides, and to improve stormwater management in urban areas. Specific efforts are also needed to extend protected areas and sustainably manage agricultural land to limit its impact on aquatic ecosystems. Conservation is urgently needed in areas where agriculture and residential development are exacerbating pollution and habitat fragmentation.

In relation to the identification of priority areas for restoration projects, stakeholders raised a number of considerations. One group favoured an approach focused on removing the causes of environmental degradation, rather than implementing restoration measures. These participants stressed that restoration efforts cannot be successful while the underlying threats or pressures persist. They also argued that eliminating the sources of degradation would give the environment the opportunity to return to its original natural state. Other participants suggested they did not have–or did not yet have–the necessary data to identify the level of habitat degradation in their areas in order to set priorities. Finally, a few other participants mentioned that different ecosystems are interlinked, making it difficult to prioritize one area over another.

Valued aquatic species

Many valued aquatic species were cited for their vital role in ecosystems, economic importance to fisheries and significance in conservation efforts. However, these species face multiple threats, such as degradation of their natural habitat due to coastal development, climate change, pollution and increased vessel traffic, which jeopardize their survival.

Completed restoration projects

In Quebec, a series of restoration initiatives were implemented to address ecological concerns related to aquatic habitats, including restoring aquatic connectivity and spawning grounds and controlling invasive species. Specific initiatives have also been carried out to restore natural habitats and increase resilience to extreme weather events, such as improved protection of riparian strips, beach nourishment and revegetation of eroded coastal areas.

Success factors

Restoration project key success factors include close collaboration and partnership between various players, such as government agencies, non-governmental organizations (NGOs), local communities and the private sector, which promote the effective sharing of resources and knowledge. Stable and sufficient funding is also crucial to launch and sustain initiatives over the long term. Active involvement of local communities and environmental awareness play a fundamental role in strengthening support and participation in restoration efforts. In addition, adaptive project planning and management, based on rigorous scientific monitoring and ongoing evaluation, are essential to adjust actions to changing conditions and maximize their effectiveness.

Challenges associated with carrying out projects

Restoration projects present several challenges, among which a lack of funding and resources stand out as a major obstacle, often limiting the scope and effectiveness of initiatives. Difficulties in collaboration and coordination between the various partners, caused by diverging interests or poor communication, can also jeopardize project implementation. Community or landowner resistance as well as regulatory and administrative constraints can delay or hamper restoration actions. Furthermore, a lack of monitoring or thorough evaluation makes it difficult to fully understand the effectiveness of interventions, limiting the ability to adjust strategies and learn from previous experiences.

Turnkey or easy-to-implement restoration projects

Although turnkey restoration projects are relatively rare due to requirements such as financing and environmental approvals, some more accessible restoration initiatives have been highlighted in this report. These include transplanting

eelgrass to rehabilitate marine habitats, revegetating watercourse banks to limit erosion and sediment accumulation, restoring watercourses following regulatory violations, shoreline cleaning to remove plastic, and so on.

Large-scale restoration projects

A number of potential large-scale restoration projects were cited in this report. These ambitious initiatives include, for example, restoring habitats along the St. Lawrence River and improving river connectivity by removing obsolete dams or improving conditions for fish passage, essential for the free movement of aquatic species.

1.5 Political Neutrality Statement and Contact Information

Leger certifies that the final deliverables fully comply with the Government of Canada's political neutrality requirements outlined in the *Policy on Communications and Federal Identity of the Government of Canada* and the *Directive on the Management of Communications*.

Specifically, the deliverables do not include information on electoral voting intentions, political party preferences, standings with the electorate or performance ratings of a political party or its leaders.

Signed:

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