

Communication Strategy for the Conservation of Atlantic Whitefish



Atlantic Whitefish
Pnopsques

Canada 

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1 Background

The Atlantic whitefish (AWF) is one of the most highly endangered and least understood fish in Canada. Listed as endangered under both Provincial and Federal legislation, very few individuals are believed to exist in the wild. Historically an anadromous species, Atlantic whitefish are now confined to three waterbodies within the Petite Rivière system in southern Nova Scotia, and dams prevent the fish from migrating to the ocean. Historical records also exist of Atlantic whitefish in the Tusket-Annis River system; however, no credible sightings or captures have been recorded in recent years and this population is now believed to be extirpated. It is not believed that they played a fundamental role in Mi'kmaw sustenance or livelihoods as they are not present in oral histories. Instead, they were likely grouped with migratory fish with similar physical characteristics such as the Gaspereau.

Fisheries and Oceans Canada, in conjunction with conservation partners, such as Coastal Action and Dalhousie University, have pursued activities with the intention of preserving existing Atlantic whitefish populations. These efforts have included live trapping for captive breeding at Dalhousie University, as well as invasive fish removals and habitat and water quality improvement endeavours. As multiple partners and stakeholders are involved with conservation efforts, this communications strategy will serve as a guideline for all future communication and outreach activities. By aligning the messaging and communications tools used, the positive impacts of each organization can be improved, and audiences expanded.

2 Key Messaging for the Atlantic Whitefish

The Atlantic Whitefish can be saved.

Despite their low populations and highly threatened status, optimistic results from Dalhousie's captive breeding program, as well as recent captures of adult organisms, show that there remains hope for saving Atlantic whitefish.

By addressing the threats to Atlantic Whitefish, we are also protecting our native biodiversity.

By removing invasive species, improving water quality conditions, and encouraging environmental stewardship, it will not only be Atlantic whitefish that stand to benefit. Other aquatic species like the native Atlantic salmon and brook trout will stand to benefit as well.

As one of only a few species found only in Canada, the Atlantic Whitefish should be a source of both Provincial and National Pride.

There exist very few species that are uniquely Canadian. Even iconic symbols of Canada such as polar bears, common loons, and beaver, are all found in other northern jurisdictions. By emphasizing the uniqueness of Atlantic whitefish as a true Canadian animal, a higher level of engagement can be expected.

3 Communication Objectives

1. To raise awareness about the Atlantic whitefish across the province and country.
2. To inspire engagement in the conservation process, to not only aid in the conservation of Atlantic whitefish but to protect our aquatic ecosystems and biodiversity.
3. To use the Atlantic whitefish as a uniquely Canadian symbol and highlight their rarity and unique story as a point of pride.

4 Communications Approach

Broad scope

When possible, concerted efforts should be made to broaden the geographic scope of Atlantic whitefish communications. Historically, knowledge of Atlantic whitefish has been primarily limited to those who reside near the Petite Rivière watershed, or members of academic or conservation communities. The general knowledge of most Nova Scotians outside of these communities has remained relatively low, even more so from other provinces. This lack of knowledge presents an opportunity to market Atlantic whitefish conservation to broader audiences, thereby increasing engagement.

Ecosystem Based

While significantly more interest is paid to species of commercial or recreational value by members of the public, similar threats are facing freshwater species across Nova Scotia and Canada. By focusing communications on the role that Atlantic whitefish play in a complex and interconnected ecosystem, people who do not live near the Petite Rivière watershed may still feel compelled to engage in their conversation.

Collaborative

Currently multiple individuals, organizations and agencies are working on Atlantic whitefish conservation. It is imperative that those engaged in Atlantic whitefish conservation continue to work in a synchronized manner, and whenever possible to collaborate directly. For this reason, communication is critical not just to the general public, but also between those who work in the field of conservation.

5 Public Environment

Despite their endangered status, public awareness of Atlantic whitefish remains low, both across the Province and nationally. While knowledge of the species has begun to increase in localized pockets, most members of the public continue to either have no, or limited, knowledge on the subject. Three brief spurts of media attention have focused on the Atlantic whitefish in recent years; first in 2013, then between 2015 and 2018. These increases in media attention were due to the closure of the

federal Mersey Biodiversity Facility and the three years over which no whitefish were observed in the wild. For stories regarding the Mersey Biodiversity Facility, most reports focused on the possible implications to future Atlantic whitefish viability. Apathy and pessimism regarding the future of Atlantic whitefish are considered major constraints in their long-term conservation.

As with other issues related to natural resources or environmental management, members of the public looking to engage with knowledgeable sources may often have preconceived notions regarding the subject. Some conservation practitioners have expressed that when engaging in outreach and education, a small but vocal percentage of the general populace have used events as platforms for opinions regarding commercial fisheries management, recreational fishing, pollution abatement, as well as a myriad of other topics frequently in the news. It may be difficult to attract audiences to communication events who are truly interested in the future of Atlantic whitefish.

6 Target Audiences

1. The general public
2. Residents, including seasonal cottagers, on or near Hebb, Milipsigate, and Minamkeak Lakes
3. Industry stakeholders
4. Conservation groups
5. Angling community
6. Schools and youth
7. Academic community

7 Previous Communications Examples

Examples of Previous Communications		
Activity	Coordinator	Comments
Oceans Days	DFO	More attention has been focused in recent years on AWF during world oceans day. Panels, seminars, and models of AWF are all used to convey the importance of this species to visitors to the Bedford Institute of Oceanography.
Discovery Centre Booth	Dalhousie University	Led by Professor Ibarra, biology students have undertaken outreach events at the Dalhousie campus as well as with a booth at the Discovery Centre. The focus of these initiatives has been to raise awareness regarding the unique biology of AWF as well as their immediate threats
Fish ID cards	Coastal Action in partnership with Inland Fisheries	Part of a larger communication initiative, the fish ID cards are available to the public and can help differentiate Atlantic from Lake Whitefish as well as other species like White Perch.
Hinterlands who's who	DFO in partnership with Coastal Action	A short video available on DVD which highlights the unique taxonomic history of Atlantic Whitefish as well as their vulnerability and decreasing populations.

Table continued...

Examples of Previous Communications		
Activity	Coordinator	Comments
Landowner and Recreational Outreach	Coastal Action	Coastal Action has directly engaged with land users and owners in Petite Rivière watershed to encourage sustainable land use and environmental practices. Various different print materials are available.
SAR fact sheets	MTRI	MTRI has published Species at Risk (SAR) fact sheets, as well as threats to their survival. SAR fact sheets have been shared with the general public and focus on invasive chain pickerel and smallmouth bass threats.

8 Communications Considerations

The following communication considerations broadly address hindrances noticed by members of government and employees of NGOs in their communications regarding AWF. Here, general solutions are suggested. However, for a full list of specific threats and strategies that relate to these categories please see Appendix A.

1a. Issue: Lack of awareness and knowledge

Despite being one of the most endangered fish in Canada, significantly more media attention has been paid to aquatic species like Brook Trout and Atlantic Salmon. While well known in scientific and conservation communities, anecdotal evidence suggests that the public remains largely unaware of these fish, or the conservation challenges they face.

1b. Potential Solutions

By synchronizing communication efforts and broadening audiences, the conservation community can help ensure that public awareness and knowledge regarding Atlantic whitefish will continue to expand. Furthermore, by increasing the effectiveness of individual communications initiatives using strategic planning, knowledge and awareness can be spread in a more efficient manner.

2a. A sense of defeat

Many members of the general public may have only learned of Atlantic whitefish through press releases regarding unsuccessful conservation initiatives. The closing of the Mersey Biodiversity Facility, as well as the lack of breeding individuals in Anderson Lake, have both been widely publicized, and many members of the public may now believe that the species is beyond saving.

2b. Potential Solutions

While press releases and communications that focus on negative outlooks may be beneficial in reaching broader audiences through higher viewership, they may not lead to higher future engagement. It is advisable instead to properly contextualize individual events and highlight pathways forward. While the communication of mistakes or setbacks is important, if communications

can highlight how previous errors have been surmounted, or how future efforts will be amended, individuals may be more likely to remain engaged.

3a. Issue: Perceived lack of commercial or recreational value

As a province that relies heavily on commercial fishing, and in which recreational fishing is widely practiced, there may be a general sense that funds and time could be better used to protect and conserve species of commercial and recreational importance.

3b. Potential Solutions

When confronted with objections to Atlantic whitefish conservation on the grounds of them being a low priority fish in terms of value, two approaches have been shown to be successful. The first is to broaden the scope of discussion to not only focus on Atlantic whitefish, but the ecosystems in which they reside. Instead of only highlighting the importance of the species, emphasis can be placed on healthy watersheds with fewer invasive species. Secondly, it may also be valuable to highlight the importance of the species using non-economic language. In these scenarios, the unique history of the Atlantic whitefish, as well as its ancestral relationship to anadromous species like the Atlantic salmon, can be stressed.

4a. Issue: Preconceived notions and an unwillingness to engage in discussion

Most individuals involved in Atlantic whitefish work, including those employed by Federal or Provincial governments, have a limited scope of responsibility. Individuals or organizations attempting outreach regarding Atlantic whitefish have expressed frequent misconceptions by members of the public as to their roles or powers.

4b. Potential Solutions

Leaders of an outreach event can help steer conversations towards useful directions and ensure that discussions remain on topic. Additionally, it is vital that any individual or group conducting an outreach event make it very clear what position they hold and what their goals are. For example, an NGO may choose to clearly delineate early on exactly what types of work they undertake and for what purposes. By doing so, they can help reduce the risk of a member of the public assuming that they hold broader authority than they do. Additionally, an early clarification of goals can help minimize the chance of antagonistic relationships that might hamper further discussions.

APPENDIX

APPENDIX A: ACTION PLAN

Action Plan	Key Audiences	Communication Goals	Communication Tools
1. Conserve, protect and manage the species and its habitat			
1a. Strengthen and enforce rules and regulations.	Anglers: Recreational anglers are the priority audience and likely the most at risk to transport invasive aquatic species.	Improve knowledge amongst anglers regarding existing regulations surrounding invasive species, especially in relation to live bait and fish transport.	1. Continued use and improvement upon the existing invasive species page in the anglers handbook. 2. Continued outreach events and community building within the angling community. 3. Advocating for signage near popular fishing spots. 4. Highlight cases in which regulations have been enforced and continue to spread these stories within the fishing community.
1b. Continue to review and manage licensed recreational angling fisheries to ensure that impact to Atlantic Whitefish are minimized or eliminated	Anglers: Most anglers, but especially bass anglers, have a high degree of interest in the current retention limits for aquatic invasive species.	Advocate for increased fishing for invasive species, and higher retention of Bass and Pickerel, especially outside of "trophy" fishing locations.	1. Outreach events and community building within the angling community. 2. Partner with existing AIS projects to find gaps in knowledge and potential intervention strategies for anglers. 3. Consider the expansion of invasive species section in the Angler's handbook.
1c. Engage all land users and landowners in the Petite Rivière watershed (e.g. forest harvest industries, public water supply utilities and other resource users)	1. Recreationists: Not limited to only anglers, as those who use the water for other recreational activities may have an impact on AWF. 2. Cottagers and other seasonal residents: While often only present for limited times in the year, these often coincide with peak activity from Atlantic Whitefish. 3. Foresters: Nearby cutting projects especially near the northern inflow streams on minamkeak lake may produce sedimentation. 4. Mining: While no current mineral extraction is taking place near the watershed easements do exist to allow for mineral exploration in a block of crown land to the east of the watershed. Potential impacts from new mining projects could include sedimentation and chemical leaching.	Improving knowledge of AWF in local community and highlighting their vulnerability to stressors.	1. Direct consultations and outreach: Recreationists and seasonal residents may not attend community meetings or other traditional outreach events, but can often be reached directly. 2. Eat Your Invasives Days: CARP is currently planning outreach events aimed at encouraging local residents to consume Chain Pickerel and Small Mouth Bass.

APPENDIX A: ACTION PLAN (CONTINUED)

2. Increase the number and range of viable populations			
	1. Residents: Residents and landowners who reside on or near candidate waterbodies can play a large role in the success or failure of a reintroductions 2. Anglers: Introducing AWF into a new waterbody will likely require significant public engagement.	Pursue the viability of new AWF introductions and facilitate community acceptance, engagement, and enthusiasm for such projects.	1. Youth Engagement: Presentations to school groups and general youth have been shown to be a strong methodology for raising awareness across the Province. Currently, Coastal Action and DFO undertake regular projects specifically designed for youth. These include school visits, interactive demonstrations, and interpretive videos. 2. Early Engagement: In two previous introduction efforts, follow up reports noted that a lack of early communication with stakeholders may have contributed to decreased buy in from stakeholders, as such direct and early engagement ought to be pursued prior to an introduction effort. 3. Incorporate local and Indigenous Knowledge: Some ecological community variables may not be available in published literature and should be fully explored prior to introductions.
3. Address knowledge gaps related to the species and its habitat.			
	1. Conservation workers: Employees and former employees from the private, NGO, or government sectors are key stakeholders regarding scientific information surrounding AWF. 2. Indigenous Communities: While early conversations suggest that AWF play a limited role in Mi'kmaw history and livelihoods, further investigation is still needed to determine this definitively. 3. General Public: Outside academia and the scientific community, many members of the public may also have an intimate knowledge of the history of AWF in their watershed, this is additionally relevant for the Tusket-	To improve upon our limited understanding of AWF, their lifecycles, histories, and relevant biological factors.	1. Structured Interviews: In person communications with selected individuals can allow for information sharing in a more formalized capacity. 2. Open Houses and Community Meetings: By allowing individuals to contribute in a guided setting, large groups can provide valuable anecdotal information in a guided setting. 3. Improved Horizontal Communication: Currently NGOs, private organizations, and Government do not fully share all data, especially if it is not aimed for publication. While some information will not be able to be shared due to data sharing policies, when possible relevant stakeholders should share current initiatives, as well as successes and failures.

THREAT: A sense of failure and pessimism

ACTIONS:

1. Improved communication regarding successful removal efforts

Feasibility**Impact****Agreement**

2. Encourage ethical fishing behaviour (keeping invasives and releasing natives)

Feasibility**Impact****Agreement**

3. Sharing continued research into rearing strategies

Feasibility**Impact****Agreement**

4. Continued studies/making sure all partners are informed and included

Feasibility**Impact****Agreement**

5. Promotional programs for angling native species

Feasibility**Impact****Agreement**

THREAT: Lack of trust in the conservation community for future projects

ACTIONS:

1. A proactive media approach (going to media with successes)

Feasibility**Impact****Agreement**

2. Provide avenues for future engagement and create sense of continuity with meaningful follow-up

Feasibility**Impact****Agreement**

3. Encourage longer media pieces that can explore the nuances of conservation

Feasibility**Impact****Agreement**

4. Seek community based "positive news" programs

Feasibility**Impact****Agreement**

5. Increase opportunities for students

Feasibility**Impact****Agreement**

6. Broaden the audience at outreach events to include the academic community

Feasibility**Impact****Agreement**

7. Broaden the scope of discussion (protecting biodiversity, aquatic ecosystems)

Feasibility**Impact****Agreement**

THREAT: A perceived lack of commercial and recreational value

ACTIONS:

1. Increase social media outreach

Feasibility



Impact



Agreement



2. Engage school groups (art projects, etc.)

Feasibility



Impact



Agreement



3. Avoid purely economic language. Highlight unique taxonomy and history of species instead

Feasibility



Impact



Agreement



4. Target younger audiences

Feasibility



Impact



Agreement



5. Engage older students with the evolutionary history of AWF

Feasibility



Impact



Agreement



THREAT: Lack of aquatic connectivity

ACTIONS:

1. Improve communication between conservation stakeholders and municipal planning authorities

Feasibility



Impact



Agreement



2. Outreach to landowners (seasonal and permanent)

Feasibility



Impact



Agreement



3. Communicate the dilemma of connectivity vs. isolation for and anadromous species

Feasibility



Impact



Agreement



4. Continued culvert assessments

Feasibility



THREAT: Impacts from recreation

ACTIONS:

1. Work collaboratively with ATV groups

Feasibility



Impact



Agreement



2. Tie in to larger Provincial strategies for off-road vehicle use

Feasibility



Impact



Agreement



3. Create a map of problem spots

Feasibility



Impact



Agreement



THREAT: Extremely limited range and population size due to historical factors

ACTIONS:

1. Highlight the breeding success at the Aquatron

Feasibility**Impact****Agreement**

2. Publicize ongoing efforts to find other extant populations

Feasibility**Impact****Agreement**

3. Communicate outside the municipality of Bridgewater, and target audiences across the Province

Feasibility**Impact****Agreement**

4. Messaging: Whitefish are unique! (Encourage pride in a uniquely Canadian species)

Feasibility**Impact****Agreement**

5. Broaden the issue: focus on biodiversity rather than just the species

Feasibility**Impact****Agreement**