



**RE: "Ontario's Sustainable Bait Management Strategy"**  
**ERO number 019-0518**

Wednesday, November 13<sup>th</sup>, 2019

**ATTN: Scott Gibson**

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Dear Mr. Gibson,

Thank you for the opportunity to provide comments on Ontario's Ministry of Natural Resources and Forestry (MNRF) Sustainable Bait Management Strategy. We are submitting comments in our capacity as scientists at Wildlife Conservation Society (WCS) Canada: a national conservation organization. Our research and conservation priorities in Ontario are focused primarily on the far north region in Ontario.

WCS Canada was part of the Bait Review Advisory Group (BRAG) through the presence of Dr. Mohammed Alshamli in 2014-2015. Our participation in BRAG, as well as our experience in freshwater science research, provides us an understanding of the challenges of live bait use and harvest, and its impacts on freshwater fish communities and habitats in Ontario. WCS Canada has provided commentary on previous MNRF proposals on bait management including:

- Strategic Policy for Bait Management in Ontario (2017, EBR No. 012-9791)
- Provincial Bait Policy Review - Commercial Sale and Transport, Allocation and Reporting of Baitfish and Leeches in Ontario (2015, EBR No. 012-4222)
- Provincial Bait Policy Review- Angler Use and Movement of Baitfish in Ontario (2014, EBR No. 012-2836)
- Provincial Bait Policy Review: Bait Use and Commercial Harvest in Provincial Park and Conservation Reserves (2014, EBR No. 012-2835)

We are appreciative that this draft is taking steps forward in terms of addressing the challenges and concerns of Sustainable Bait Management in Ontario. However, we feel that there is room for improvement in how bait is managed provincially. As such, we suggest eight recommendations below, separated by sections based on the current Sustainable Bait Management Strategy Draft proposed by MNRF.

## 1.0 Introduction

### ***Recommendation 1. MNRF should consider the ecological value and significance of baitfish species to freshwater systems as equal to their economic value in Ontario.***

We recognize one of the challenges of the Sustainable Bait Management Strategy is that there are many, diverse components related to policy and regulation of baitfish – whether it be the use of bait by harvesters, commercial operators, anglers, or the jurisdictional challenges of enforcing baitfish use regulations. We commend MNRF for trying to address these challenges. However, the current draft continues to frame baitfish mainly for their economic value rather than their ecological value. As such, the proper management of bait has consequences beyond economic effect, including lasting cultural and ecological impacts, and this should be reflected throughout the Sustainable Bait Management Strategy, not just in the introductory sentences.

“Bait” includes freshwater fishes, insects, and amphibians that play a significant role in the ecological functioning of freshwater and terrestrial ecosystems (Kerr 2012) and the provisioning of ecosystem services beyond economic (commercial and recreational) value. In addition, First Nations communities hold rights to fisheries and healthy aquatic environments, and these rights are affected by bait species conservation and management.

### ***Recommendation 2. Misidentification of bait species should be added as a way in which non-target species and disease may be introduced to aquatic ecosystems.***

We agree with the three pathways in which non-target species may be introduced through harvest or use of bait (p.1, 1. Illegal dumping of bait-buckets, 2. Escape of incidentally captured non-target species from holding containers, 3. Transport of non-bait species in holding water or on harvesting gear). However, we feel that the misidentification of bait species should be added as a fourth way in which non-target species and disease are introduced into aquatic ecosystems.

It is common for anglers to misidentify non-native species as native species in Ontario. As stated, Ontario anglers “experience great difficulty distinguishing legal baitfish species from illegal species” (section 3.0, p. 4). This leads to the unintentional spread of aquatic invasive species. For example, Drake and Mandrak (2014) found that 40% of anglers surveyed identified Herring (*Coregonus* spp.), a native non-baitfish species, as a baitfish. Furthermore, 35% of anglers identified Goldfish (*Carassius auratus*), an invasive species in Ontario, as a legal baitfish. The misidentification of baitfish can lead to the spread of invasive species across the province and facilitate the spread of diseases like Viral Hemorrhagic Septicemia (VHS) (Drake and Mandrak 2014, VHSV Expert Panel and Working Group 2010). Misidentification should be presented as one of the main ways in which non-target species and disease may be introduced to aquatic ecosystems in Ontario in this draft. A potential mitigation/prevention solution could be to introduce angler awareness campaigns that teach anglers to correctly identify bait species. These campaigns could also teach anglers to use the precautionary principle when identifying bait: if they are unsure if an individual animal is a legal bait species, they should treat it as a non-native or at-risk species.

## 2.0 Permitted Baitfish Species and Possession Limits

### ***Recommendation 3. We recommend the complete ban of live bait in Ontario.***

In keeping with our previous comments, WCS Canada respectfully maintains the need for a complete ban on live bait in Ontario. Live bait use presents a myriad of ecological risks, and nationally, Ontario remains one of the only jurisdictions in Canada to still allow live bait. Live bait has been banned in British Columbia (1940), Alberta (1963) and more recently Quebec (2013). Despite the environmental risks associated with live bait, this MNRF Sustainable Bait Management Strategy document makes no mention of banning or the eventual transition to banning live bait in Ontario. We recommend MNRF ban live bait in Ontario for the sustainability of provincial freshwater communities.

Unfortunately the practice of bait-dumping, either within the same water body or watershed as an angler fishes, is common (Litvak and Mandrak 1993). Though bait dumping is now illegal (Kerr et al. 2000), this common angler practice accelerated the spread of aquatic invasive species (Vander Zanden and Olden 2008). A study by Ward et al. (2011) found that 51% of anglers re-released unwanted baitfish and that 34% of anglers did so into a waterbody other than where the bait was harvested. Storing and dumping bait facilitates the spread of invasive species, diseases and pathogens, which threatens the health of many aquatic ecosystems in Ontario (Kerr et al. 2000, Drake and Mandrak 2014). Aquatic invasive species can have catastrophic impacts on fish communities by affecting predation and competition rates. For example, invasive Rainbow smelt (*Osmerus mordax*) eat the eggs and juvenile of native species, disrupting their life cycle (Evans and Loftus 1987). We recommend the complete ban of live bait in Ontario maintain ecological function and processes in Ontario's rivers, lakes, and aquatic biota, and to avoid the risk associated with bait-dumping.

### ***Recommendation 4. Reduce the number of permitted baitfish and investigate the misidentification of baitfish in Ontario by commercial harvesters, bait shops, and anglers ("2.1 Permitted Baitfish Species").***

Though there has been some research showing that anglers frequently misidentify baitfish in Ontario (e.g. Drake and Mandrak 2014), relatively speaking, little is known about the ability of Ontario commercial bait operators, bait shop operators, and anglers to correctly distinguish between legal baitfish species and illegal invasive species and species at risk. Until this is known, reducing the number of species on the list may help simplify education and communication by the MNRF, and will reduce the unintentional spread of non-native species, or the unintentional harvest of species at risk. However, more research by the MNRF needs to be done to test this hypothesis.

Providing a shortened or limited list of baitfish does not mean that misidentification will be eliminated. Only an outright ban on live bait in Ontario eliminates the possibility of anglers misidentifying and harvesting species at risk and non-native species as legal baitfish species in Ontario. This is particularly of concern for smaller Cyprinidae or like-species. Provincial species at risk that could be misidentified as legal baitfish include: Silver Chub (threatened), Silver Shiner (threatened), Redside Dace (endangered), River Darter (endangered), and the Pugnose Shiner (threatened). Another example is the River Shiner (*Notropis blennioides*), a non-native species now found in Ontario (Holm et al. 2010): which appear similar to other native and at-risk "shiner" species, and thus could potentially be misidentified as a baitfish species.

The draft strategy makes no mention of how the current list of bait species reduces or mitigates the ecological risks associated with invasive species, diseases, pathogens, and risk of harvest to species at risk. In addition to further reducing the number of species on the Permitted Species list, we recommend that the Strategy address and take action to meet obligations of protection from these risks of bait fish under Ontario's *Endangered Species Act* and *Invasive Species Act*.

***Recommendation 5. Provide scientific evidence that commercial bait operators do not require any possession limits ("2.2 Possession Limits")***

We do not support the lack of possession limits for commercial operators. As is, the draft only justifies commercial bait licence holder's lack of possession limits with the reasoning that operators will have "flexibility [which] allows operators to possess enough bait to supply their customers needs and to effectively run and operate their businesses." and that "harvesters are responsible for the sustainable management of the bait in their BHAs" (p.4). We find it unacceptable that there is no scientific basis for this decision, and MNRF enables commercial harvesters to determine what the level of "sustainable management" of bait harvest is: again with no evidence to support this decision. We suggest that a thorough review of bait harvest statistics, including possession, is necessary to determine how commercial operators impact bait fisheries and aquatic environments.

### **3.0 Movement of Bait**

***Recommendation 6. Conform Bait Management Zone (BMZs) to follow watershed boundaries more closely ("3.1 Bait Management Zones").***

We support the use of BMZs as an approach to managing bait movement in Ontario. However, we feel that the borders of the BMZs should better reflect known watershed boundaries to enable management of bait at a relevant watershed scale. In order to reduce the spread of invasive species and disease, bait management decisions should be based on watershed boundaries since they define the aquatic connectivity between different parts of Ontario. Though we understand that using the current Fisheries Management Zones (FMZs) to form BMZs is easier because they are "already established in regulations and are familiar to anglers" (p. 6), we reiterate that using watershed boundaries is a better approach as it is crucial for effective management and conservation of fish and aquatic species.

At present, except for in a few instances, BMZs do not follow the boundaries of tertiary and secondary watersheds (Fig. 1).

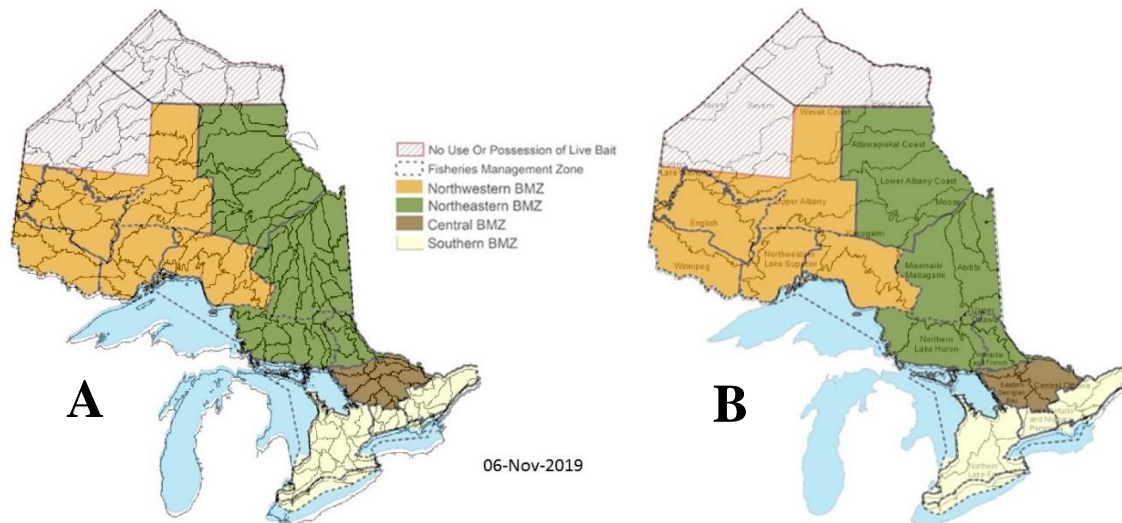


Figure 1. Currently proposed BMZ borders (OMNRF 2019) overlapped with tertiary (A) and secondary (B) watershed boundaries of Ontario. This image shows that in some instances BMZ borders do follow watershed boundaries, but on the whole do not. Image created 06-Nov-2019, WCS Canada.

***Recommendation 7. Restrict the movement and use of bait throughout the far north in Ontario (“3.2 Exceptions to the Movement of Bait”)***

WCS Canada’s work in Ontario primarily focuses on the far north. The far north in Ontario is currently an area with few aquatic invasive species, if any in most areas (Far North Advisory Panel Report 2010: 104). It is remote meaning it has limited road access for anglers, and limited industrial land use. The far north provides important, healthy habitat for fish and aquatic species in Ontario and is an important source of brook trout and First Nations fisheries (Marshall and Jones 2011). However, the fish assemblages in the far north have low species richness and high vulnerability to stress and/or threats like invasive species and disease (Browne 2007). The transporting invasive and native species to different water bodies erodes the genetic diversity of wild populations and leads to homogenization (Olden et al. 2004, McDermid et al. 2015) (i.e. small populations with few number of species). This leaves wildlife with less ability to adapt to stressors like climate change (Olden et al. 2004). The far north is, and will continue to experience the effects of climate change at an accelerated rate and intensity compared to more southern regions (e.g., McDermid et al. 2015) leaving freshwater systems vulnerable to additional stressors such as fishing, invasive species, and pollution (e.g., Chetkiewicz et al. 2017). As such, we and Ontario’s MNR should strive to protect aquatic environments in the far north of Ontario.

Restricting the movement of bait between southern areas of Ontario, which are more affected by invasive species, and the far north in Ontario is one way to ensure far north freshwater systems maintain a high degree of ecological integrity. This would prevent and reduce the likelihood of disease, pathogens, and invasive species entering the pristine watersheds of the far north. An instance where this could be implemented is banning any live bait within the primary arctic watershed boundary, given the delineation between the Great Lakes and northern systems as defined in the current draft strategy. This would ensure that water bodies that flow into and/or are contained within the far north in Ontario are less exposed to the risks associated with live baitfish use, like invasive species.

Aquatic invasive species can have delayed effects on ecosystems; years or decades after their introduction (Pelicice and Agostinho 2009, Downing et al. 2013). We recommend a precautionary

approach in areas that do not have invasive species. Implementing more restrictions on the use of bait in the far north where there are few, if any invasive species, decreases the risk of introduction of invasive species and disease in these relatively intact watersheds.

We appreciate that the draft strategy has designated areas of the far north as “No Use of Possession of Live Bait” (Fig. 1). MNR should consider extending this in the far north by adding that no commercial bait harvest or storage occurs in this area (i.e. to the primary arctic watershed boundary) especially in existing protected areas. Specifically, no commercial live bait should be harvested in these areas, as it is likely that some harvesters may be incidentally harvesting species at risk due to misidentification (See recommendation 4, above). In the current draft there is no explanation for why some areas do not permit live bait (see Fig. 1). The reasoning for a ban on live baitfish in these areas, and other areas should be clear, and stated outright in this and future sustainable bait management strategies.

Banning live bait in the far north in Ontario and the sustainable management of live bait in Ontario is a complicated, multifaceted recommendation. We recognize that recreational and First Nations fisheries are important in the far north; Marshall and Jones (2011) suggest that there are approximately 190 tourist facilities for fishing operating in the far north in Ontario meaning that there are consequences to changes in management of baitfish. As we mentioned in Recommendation 1 (above), it is unclear how or if First Nations communities, particularly those in the far north, have been engaged or consulted about the implementation of and changes to bait management strategies in Ontario.

First Nations have rights to harvest fish for subsistence. Therefore, First Nations have the right to be meaningfully engaged and involved with bait management decisions that affect their rights. It is the responsibility of Ontario’s government and the MNR to ensure that the engagements and consultations occur. The risks associated with live bait use in Ontario, particularly invasive species introduction, poses a threat to First Nations fisheries. Lastly, the potential effects bait management strategies in Ontario on First Nations fisheries, both subsistence and recreational, should be considered when developing sustainable bait management strategies. We recommend that engagements with First Nations about bait management, if they are not being done already, should occur and should continue to occur to ensure that First Nations fisheries are protected.

#### **4.0 Use of Bait in Native Brook Trout Lakes**

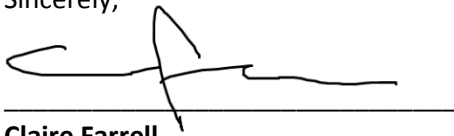
##### ***Recommendation 8. Prohibit the use and storage of bait in rivers and streams with Brook Trout in addition to lakes.***

We support the prohibition on the use and storage of bait in lakes with Brook Trout (*Salvelinus fontinalis*) in Ontario. However, the ban should be extended to include rivers and streams with Brook Trout. Brook Trout, unless they are coaster Brook Trout which spend almost their entire lifecycle in deep water and coastal areas (i.e. Lake Superior), move upstream to spawn in cold water rivers and streams (Holm et al. 2010). Furthermore, some Brook Trout in Ontario spend their entire life cycle in small tributary streams (Robillard et al. 2011). To protect Brook Trout from invasive species, the prohibition on bait use and storage should be extended to all Brook Trout habitat: including these rivers and streams, which are critical habitat for this species.

In conclusion, we support some of the initiatives proposed in the draft Sustainable Bait Management Strategy. Specifically, we support the requirement of receipts and documentation for anglers using bait, and the emphasis placed on education and training for industrial and recreational harvesters involved in the bait industry in Ontario. However, there is room for improvement if we are to move in the right direction for reducing the ecological risk that the bait industry poses to freshwater systems in Ontario.

We are grateful for the opportunity to provide our recommendations and always available to engage in any discussion regarding these recommendations and comments. You may contact Claire Farrell at 807-285-9125 or [cfarrell@wcs.org](mailto:cfarrell@wcs.org) or Cheryl Chetkiewicz at 780-860-5130 or [cchetkiewicz@wcs.org](mailto:cchetkiewicz@wcs.org) to do so. Thank you for this opportunity to provide feedback and improve the protection of aquatic ecosystems in Ontario.

Sincerely,



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