

# **Cornwall and Area Watershed Group**

## **Beaver Management Plan for North River and Hyde Creek Watersheds**

### **1. Background Context**

#### **The Hyde Creek and North River Watershed**

In total, the Cornwall and Area Watershed Group (CAWG) encompasses 10,207 hectares and 52.5 km of freshwater streams. The Hyde Creek Watershed has a drainage area of approximately 2,009 hectares with 5.9 km of freshwater streams (Figure X). The North River Watershed has a drainage area of approximately 9,695 hectares with 53.7 km of freshwater streams (Figure X). However, the CAWG does not oversee management of Ellen's Creek within the City of Charlottetown, this portion is managed by the Ellen's Creek Watershed Group. Therefore, this paper's management plan only includes the area within our boundary lines, highlighted in orange (Figure X) for a total of 8,198 hectares and 46.6 km of freshwater streams. Many communities are partly or wholly included in the Hyde Creek and North River Watershed, including: Cornwall, North Milton, Milton, Milton Station, Winsloe, Highfield, West Royalty, North River, East Wiltshire, Springvale, and Hampshire.

#### **The Status of Beavers on Prince Edward Island**

The North River and Hyde Creek watersheds support a small number of individual beavers and/or family units in any given year. Previous literature questioned the status of the American Beaver (*Castor canadensis*) on Prince Edward Island (PEI), with Sobey (2007) concluding that no strong evidence existed to indicate the animal's presence on the Island before European settlement.

Since then, an in-depth review of postglacial and archaeological records by Curley et al. (2019) found strong evidence to support the presence of beavers on PEI before French settlement. Using radiocarbon dating, evidence of a land bridge that coincides with the age of collected specimens, and analysis of the capabilities of beaver which would allow the animal to cross the waters of the Northumberland Strait, this paper concluded that beaver populations on PEI, although originating from reintroductions from New Brunswick, meet International Union for the Conservation of Nature guidelines as a reintroduction, defined as "the intentional movement and release of an organism inside its indigenous range from which it has disappeared" (IUCN/SSC, 2013). Due to the native status of the beaver, their impacts should not be classified as anthropogenic (Curley et al., 2019).

## **Beaver Management**

Beaver management on PEI is a controversial topic involving a diverse group of stakeholders. The presence of beavers can be beneficial, but they can also present numerous environmental, social, and economic challenges.

### **Figure X**

The Department of Environment, Energy, and Forestry's Beaver Management Policy (2011) outlines the importance of and issues associated with beavers.

#### ***IMPORTANCE OF BEAVERS and BEAVER DAMS***

- Provide significant wetland habitat for a variety of birds, aquatic mammals, fish, amphibians and countless invertebrates and plants.
- Increase in both economic value and recreational value to hunters, trappers, anglers and non consumptive users from the impounded waters and the resulting increase in numbers and diversity of wildlife.
- Create nursery areas for trout.
- Provide natural water purification, which includes but is not limited to filtering out silt and uptake of nitrogen from water column.
- Official emblem of Canada and symbol of the sovereignty of Canada (1975).

#### ***ISSUES CREATED BY BEAVERS and BEAVER DAMS***

- Block culverts which may result in damage to highways and other infrastructure.
- Flooding and cutting trees can cause property damage.
- Dams can block fish passage and alter fish habitat in the area flooded (sedimentation).
- Some impounded water can warm to temperatures detrimental to fish.
- Limited social tolerance for dams and associated flooding.

## **Beavers and Atlantic Salmon**

The Cree First Nations describe beavers as 'Nature's engineer' (loosely translated) because of their dam-building habits. The Wildlife Conservation Act protects beavers from overexploitation. Ecologists suggest that they are a mutualist species because they modify existing habitats, thereby influencing their suitability for other community members (Soulé et al. 2003). On the Island, they substantially impact the proportion of slow-moving (lentic) relative to free-flowing (lotic) water in our naturally cold-water streams. Where they impound water behind dams, the surrounding riparian habitat becomes flooded, and the lowland area changes from forested or pastoral to wetland habitat over several years. Depending on the surface area of the impounded section of stream, the water can become much warmer and lower in dissolved oxygen, making it less suitable for native salmonids. Beaver activity in a watershed can increase the amount of wetland habitat for wildlife. However, it is often at the expense of native coldwater streams and Acadian riparian forest habitat. Despite this, with careful and attentive management, beavers and salmonids can coexist, and the detrimental changes in riparian habitats can be mitigated (Guignion et al., 2019).

## **A Renewed Conservation Strategy for Atlantic Salmon in Prince Edward Island**

A Conservation Strategy for Atlantic Salmon in Prince Edward Island identified The North River as a class III river, which are rivers in which Atlantic salmon are on the verge of disappearing. The strategy recommended keeping the North River and all tributaries as beaver-free zones (Guignion, 2009). The initial Guignion report caused controversy among scholars who debated the scientific validity of the claims about beavers and questioned the morality of beaver-free zones (Brown, 2009). A Renewed Conservation Strategy for Atlantic Salmon in Prince Edward Island has since been published. It identifies agriculture, development, and the cold water temperatures of the river as areas of concern that limit the recovery of the salmon population (Guignion et al., 2019). The renewed document does not suggest beaver-free zones. The strategy recommends seasonal assessment of beaver dams with particular attention paid to migration and spawning periods.

## **2. Statement of Intent**

In recognition of both the beneficial and adverse ecological effects of beaver activity, the CAWG proposes to manage a balanced and integrated approach to beaver management. The CAWG will proactively evaluate impacts by monitoring beaver activity and populations, by encouraging active collaboration between community residents, staff, and other stakeholders, and by evaluating water quality and ecosystem health to establish an information base for informed decision-making on management. In some cases, preventative measures may be necessary to protect vulnerable areas and infrastructure.

## **3. Plan Actions**

- All tributaries in the watershed will be monitored for the presence of beavers. The CAWG will rely heavily on seasonal staff and community residents in this regard.
- Where a beaver dam is found associated with a culvert at a public road crossing, the CAWG will alert the Department of Transportation and Infrastructure Renewal (DTIR) to any potential issues of infrastructure integrity and/or public safety. If DTIR does not have a trapper contracted at the time, the CAWG will request the removal of beavers by a local licensed trapper at the cost of the DTIR. The removal of the dam itself will then be left to DTIR, where liability associated with work inside a culvert is an issue.
- Where a beaver dam is found associated with a culvert at a private road crossing, the CAWG will seek landowner permission to trap the animals and remove the dam as quickly as possible, to avoid a potential blow-out of the stream banks and associated sedimentation downstream.

- Where a beaver dam is found above the head-of-tide away from road infrastructure, the CAWG will seek landowner permission to trap the animals using a local licensed trapper as soon as possible. The dam removal will be left to the normal permitted in-stream season (June 1 – Sep 30) unless there is a serious risk of downstream damage from a blow-out. If the latter, a special permit will be sought for removal.
- Dams will be removed over a period of several days to limit the transport of sediment downstream. Initial dismantling will involve notching the top to promote the gradual release of impounded water. Removed dam materials will be piled in the buffer zone to decay naturally.
- Areas cleared of dams will be monitored monthly for 6 – 12 months to ensure they remain free of beaver activity.
- The CAWG recognizes the native status of the beaver on Prince Edward Island and values the importance of the beaver to the wider resource community and beyond. The CAWG also acknowledges the diverse challenges of beaver management and values the input of all affected stakeholders. Any beaver removal must first be approved by the CAWG's board of directors, who will review the case following The Department of Environment, Energy and Forestry's Beaver Management Policy (2011) to ensure cooperation with their outlined management goals.
- Should an outside party seek the removal of a beaver and/or beaver dam that the CAWG would not have removed otherwise, the outside party, and not the CAWG, must provide necessary funding for the removal.

#### **4. Licensed Trappers (as of January 2022)**

Jordan Condon, De Sable (675-3026)

Matt McIver, Warren Grove (393-0037)

## 5. References Cited

- Brown, S. (2009). Atlantic Salmon/Beaver Dam Controversy Can a Flawed Report Harm Beavers in Canada and Scotland? *Beaversprite*, 4-13 <https://www.beaverinstitute.org/wp-content/uploads/2017/08/AtlanticSalmonAndBeavers-BWW.pdf>
- Curley, R., Keenlyside, D. L., Kristmanson, H. E., & Dibblee, R. L. (2019). A review of the historical and current status of American Beaver (*Castor canadensis*) on Prince Edward Island, Canada. *The Canadian Field-Naturalist*, 133(4), 332–342. <https://doi.org/10.22621/cfn.v133i4.2145>
- Department of Environment, Energy, and Forestry. (2011, January 25). *Beaver management policy - Prince Edward Island*. Government of Prince Edward Island. [https://www.princeedwardisland.ca/sites/default/files/publications/2011\\_beaver\\_policy.pdf](https://www.princeedwardisland.ca/sites/default/files/publications/2011_beaver_policy.pdf)
- Guignion, D. (2009). A conservation strategy for Atlantic salmon in Prince Edward Island. *Prince Edward Island Council of the Atlantic Salmon Federation, Charlottetown*. <http://www.salmonconservation.ca/wp-content/uploads/2018/11/PEI-Atlantic-Salmon-Strategy-Report-2009.pdf>
- Guignion, D., Gaudet, C., & MacFarlane, R (2019). Renewed conservation strategy for Atlantic salmon in Prince Edward Island. *Prince Edward Island Council of the Atlantic Salmon Federation, Charlottetown*. <https://www.salmonconservation.ca/wp-content/uploads/2019/04/Atlantic-Salmon-Strategy-April-2019.pdf>
- IUCN/SSC. (2013). Guidelines for reintroductions and other conservation translocations. Version 1.0. <https://portals.iucn.org/library/efiles/documents/2013-009.pdf>.

Sobey, D. G. (2007). An analysis of the historical records for the native mammalian fauna of Prince Edward Island. *The Canadian Field-Naturalist*, 121(4), 384–396. <https://doi.org/10.22621/cfn.v121i4.510>

Soulé, M. E., Estes, J. A., Berger, J., & del Rio, C. M. (2003). Ecological Effectiveness: Conservation Goals for Interactive Species. *Conservation Biology*, 17(5), 1238–1250. <http://www.jstor.org/stable/3588949>.