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Version 3.0

Fisheries and Oceans Canada
Ontario Operational Statement

BEAVER DAM REMOVAL

Beaver dams need to be removed or breached periodically to protect, maintain or construct infrastructure or to avoid the flooding of private and public land. Removal is normally accomplished using hand tools, or equipment such as backhoes. Although beaver dams may provide fish habitat by creating upstream ponds, stabilizing flows and adding woody debris for cover, they may also present a barrier to fish movement, alter sediment transport regimes and increase water temperatures.

Removal of beaver dams can negatively affect fish and fish habitat by de-watering the upstream pond, stranding fish and releasing sediment and large volumes of water (that can be devoid of oxygen, particularly in winter) downstream. It is therefore important to exercise extreme caution when proceeding with dam removal due to the possibility of downstream flooding and damage and the re-entry of dam material into the water body. The breaching or removal of a beaver dam may not prevent future beaver activity in the area. Persistent breaching or removal of a beaver dam can increase the risk of negative impacts to fish habitat. In these instances, other beaver management techniques should be considered.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under the *Fisheries Act* no one may carry out a work or undertaking that will cause the harmful alteration, disruption or destruction (HADD) of fish habitat unless it has been authorized by DFO. By following the conditions and measures set out below you will be in compliance with subsection 35(1) of the *Fisheries Act*.

The purpose of this Operational Statement is to describe the conditions under which it is applicable to your project and the measures to incorporate into your project in order to avoid negative impacts to fish habitat. You may proceed with your beaver dam removal project without a DFO review when you meet the following conditions:

- removal of the dam will not adversely affect a fishery, or recreational

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property uses that depend on the dam's existence, both upstream and downstream,

- the removal activities are limited to removing or breaching the beaver dam itself and do not involve channel or shoreline modification downstream (e. g., widening, straightening, ditching, etc.),
- individual detonations of more than one kilogram of explosives will not be used to remove the dam (diesel fuel and fertilizer is not to be used as a type of explosive),
- the removal does not involve a beaver dam that is directly connected with a culvert or bridge (removal in these situations is addressed in Operational Statements for *Culvert Maintenance* and *Bridge Maintenance*), and
- you incorporate the *Measures to Protect Fish and Fish Habitat when Removing Beaver Dams* listed below in this Operational Statement.

If you cannot meet all of the conditions listed above and cannot incorporate all of the measures listed below then your project may result in a violation of subsection 35(1) of the *Fisheries Act* and you could be subject to enforcement action. In this case, you should contact your Conservation Authority, or the DFO office in your area (see Ontario DFO office list) or Parks Canada if the project is located within its jurisdiction, including the Trent-Severn Waterway and the Rideau Canal, if you wish to obtain an opinion on the possible options you should consider to avoid contravention of the *Fisheries Act*. For activities carried out under the *Crown Forest Sustainability Act*, the requirements of this Operational Statement are addressed through an existing agreement and the Ontario Ministry of Natural Resources is the first point of contact.

You are required to respect all municipal, provincial or federal legislation that applies to the work being carried out in relation to this Operational Statement. The activities undertaken in this Operational Statement must also comply with the *Species at Risk Act* (**www.sararegistry.gc.ca**). If you have questions regarding this Operational Statement, please contact one of the agencies listed above.

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Ontario Operational Statement notification form (**http://www.dfo-mpo.ca/regions/central/habitat/os-eo/prov-terr/on/os-eo20_e.htm**) to the DFO office in your area. This information is requested in order to evaluate the effectiveness of the work carried out in relation to this Operational Statement.

In addition, the Ontario Ministry of Environment should be notified if the dam removal is likely to result in discoloration of downstream water, so that they may respond to public inquiries.

Measures to Protect Fish and Fish Habitat when Removing Beaver Dams

1. Use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation.

2. While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to access and remove the beaver dam. This removal should be kept to a minimum.
3. Whenever possible, remove beaver dams by hand.
4. Beaver dam removal is preferably not done in the winter when the pond is frozen. This may result in losses of habitat for overwintering fish in the upstream pond and the discharge of water devoid of oxygen downstream.
5. For non-emergency beaver dam removal, time the removal to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the Ontario In-Water Construction Timing Windows). Any proposal to conduct non-emergency work under ice-covered conditions requires prior review by your local Conservation Authority, DFO, or Parks Canada office, as appropriate. It is preferable that removal is done during low flow conditions.
6. Emergency beaver dam removal can be carried out at any time during the year. Emergencies include situations where carrying out the project immediately is in the interest of preventing damage to property or the environment or is in the interest of public health or safety. Your local Conservation Authority, DFO, or Parks Canada office, as appropriate, is to be notified immediately. **You should follow all other measures to the greatest extent possible.**
7. Install effective sediment and erosion control measures before starting work to prevent the entry of sediment into the watercourse due to machinery operation or other activities that disturb the bank during the removal project. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
8. Operate machinery on land (from outside of the water) and in a manner that minimizes disturbance to the banks of the watercourse.

    8.1. Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.

    8.2. Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water.

    8.3. Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.

    8.4. Restore banks to original condition if any disturbance occurs.

9. Remove the dam gradually to allow the water to release slowly and prevent sediment at the bottom of the pond from being released downstream. As the water levels drop in the upstream pond, increase the size of the opening to drain the pond to the desired level. The width of the breach opening of the beaver dam should not exceed the width of the original stream channel to prevent bank erosion and flooding of adjacent properties. When a series of dams is to be removed, this should be done from downstream to upstream in order to avoid severe flooding and damage to fish habitat.
10. If blasting is required, individual detonations should be minimized (no more than one kilogram and preferably smaller). If larger charges are required, contact DFO prior to commencing the work.
11. Relocate any fish that become trapped in isolated pools or stranded in newly flooded areas to the main channel of the watercourse.
12. Stabilize any waste materials removed from the work site to prevent them from entering the watercourse (e.g., placing them above the ordinary high water mark (see definition below)). This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs.
13. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.

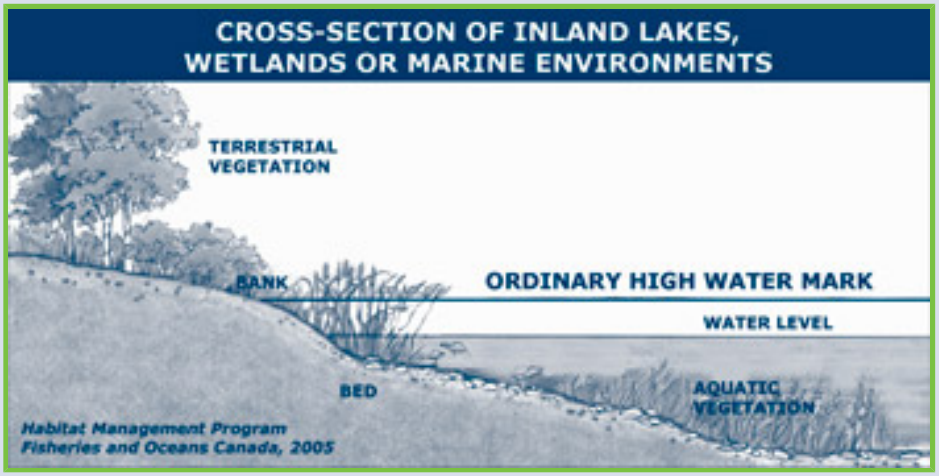
    13.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

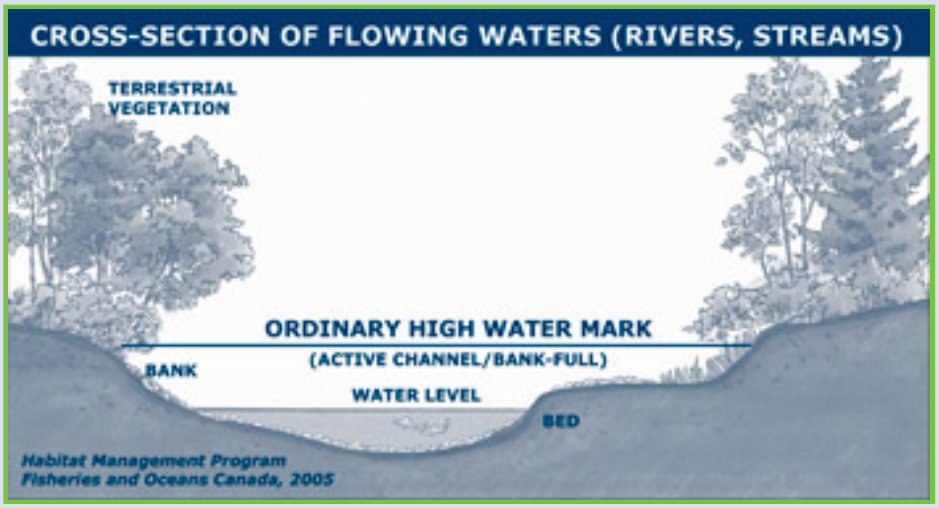
Definition:

Ordinary high water mark – The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the “active channel/bank-full level” which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments it refers to those parts of the water body bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (Full Supply Level).

For the Great Lakes this refers to the 80th percentile elevation above

chart datum as described in DFO's *Fish Habitat and Determining the High Water Mark on Lakes.*





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