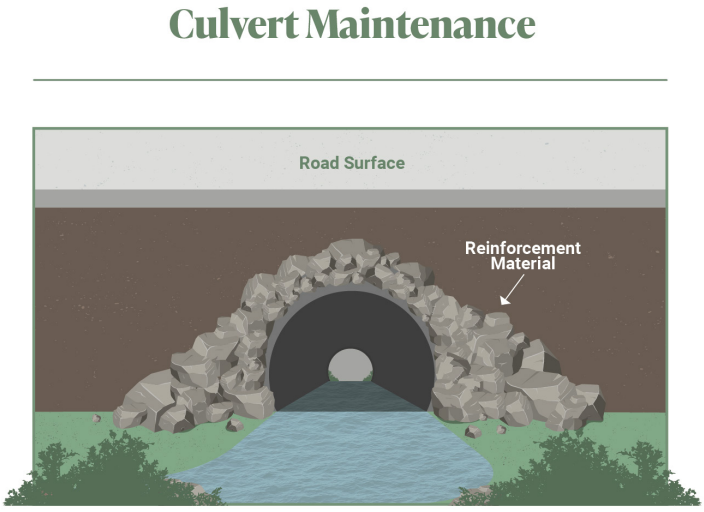
## 1.0 About this code of practice

This code of practice outlines Fisheries and Oceans Canada's (DFO) national best practices for the maintenance of existing culverts.

A culvert is a closed conduit or tunnel used to channel water under a road or railroad. Culvert maintenance is often necessary to extend the life of the structure and ensure it is functioning as designed. When a culvert no longer functions as designed, there is a risk that fish passage, natural flows and channel integrity will be compromised. It is good practice to ensure that culverts are maintained in good condition so these impacts do not occur.

This code of practice applies to culvert maintenance including:

- clearing of ice build-up, debris, garbage and accumulated sediment from the area within the culvert and immediately upstream and downstream
- repairing roadway surfaces
- reinforcement of eroding inlets and outlets




You can protect fish and fish habitat when maintaining culverts by following the measures listed below. When implemented correctly, these measures can manage the risk of harmful impacts associated with maintenance activities, which can include:

- disturbance of watercourse or water body bed and banks
- release of sediments or other deleterious substances
- changes in flow regime

The purpose of this code of practice is to describe the conditions under which it can be applied to your project and the measures you are required to implement in order to prevent harmful impacts to fish and fish habitat and comply with the Fisheries Act and the Species at Risk Act. If you cannot meet all the conditions and implement all the applicable measures listed below, your project may result in a violation of the *Fisheries Act* and the *Species at Risk Act* and you could be subject to enforcement action.

DFO is responsible for the conservation and protection of fish and fish habitat across Canada. Under the *Fisheries Act*, no one may carry out works, undertakings and activities in or near water that result in the harmful alternation, disruption or destruction of fish habitat, or the death of fish, unless it has been authorized by DFO. Prohibitions in the Aquatic Invasive Species Regulations must also be followed unless authorized under federal or provincial law. DFO's approval under the *Species at Risk Act* is also required if an activity affects an aquatic species at risk, any part of its critical habitat or the residences of its individuals.

If you are uncertain about whether this code of practice is applicable to your project, consult a qualified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environmental professional. You may need to use other codes of practice or submit a request for project review. For any remaining questions, please contact the Fish and Fish Habitat Protection Program office in your area. It is your responsibility to comply with the *Fisheries Act* and the *Species at Risk Act*.

It is your duty to notify DFO if you have caused, or are about to cause, the unauthorized death of fish by means other than fishing, or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to the Fish and Fish Habitat Protection Program office found in your area.

This code of practice does not remove nor replace the obligation to comply with the requirements of any other federal, territorial, provincial or municipal regulatory agency including guidance about species and habitats managed by these jurisdictions.

**We strongly recommend that you notify Indigenous communities that may be affected by the project prior to starting the project.**

A project review by DFO is not needed when the:

- project activities meet the description in section 1 and the conditions in section 2
- measures to protect fish and fish habitat set out in section 3 of this code of practice are applied

Request a project review if your project does not meet all of these requirements.

## 2.0 Conditions

The following conditions describe when this code of practice can be applied:

- you determine if there are aquatic species at risk within the affected area by consulting our aquatic species at risk map, and you confirm that the work will not take place within the:
  - entire distribution area, including critical habitat or residences, of any molluscs listed under schedule 1 of the *Species at Risk Act*
  - critical habitat or residences of any other aquatic species at risk
- the work does not include:
  - installing a culvert liner or support struts, installing trash racks, replacing damaged or destroyed bevel ends nor extending, replacing or removing the existing culvert
  - realigning the watercourse
  - the use of explosives
- if your project requires the removal of a beaver dam, consult the code of practice for beaver dam breaching and removal
- there is no permanent increase to the original design footprint below the ordinary high water mark
- you implement the measures in section 3 to protect fish and fish habitat when carrying out the works, undertakings and activities

As a condition of this code of practice, please submit a notification 10 working days before starting work.

Notifications will inform the continuous improvement of the codes of practice over time.

**Submit a notification**

You can also submit using this PDF version of the form (50 KB). In the event you need to use the PDF form instead, you must:

1. download it to your computer
2. use PDF software to open it (such as, Adobe Reader or Foxit PDF)
3. fill out and save the form
4. email the completed form to your regional DFO office

For more information: How to download and open a PDF form.

## 3.0 Measures to protect fish and fish habitat

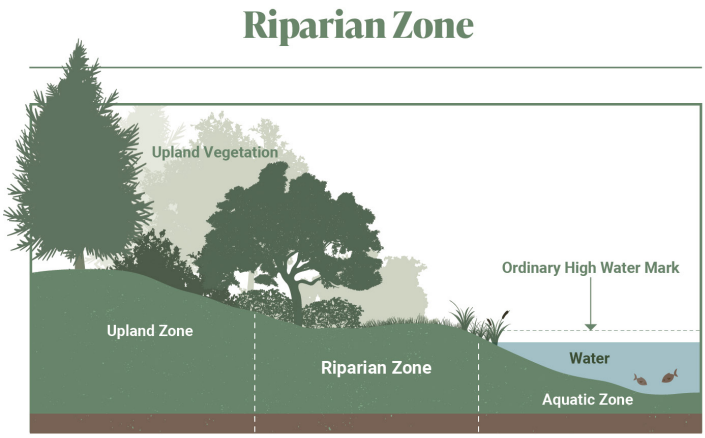
### 3.1 Protection of fish

- Carry out the project in accordance with timing windows.
  - Limit the duration of in-water works, undertakings and activities.

### 3.2 Protection of fish passage

- Ensure that reinforcement rock placed at the inlet and outlet does not interfere with fish passage or constrict the channel width.
- Restore streambed elevation to ensure water levels are maintained within the culvert.

### 3.3 Protection of the riparian zone




- Limit vegetation removal, pruning and grubbing to the area required for accessing the project site.
- Reinstate stream banks and slopes of the affected riparian zone.
- Re-vegetate the affected riparian zone with native species suitable for the project site.

### 3.4 Protection of aquatic habitat

- Ensure that equipment and machinery are clean and free of aquatic invasive species prior to arriving on the project site.
- Limit disturbance of fish habitat features (for example, aquatic plants, rocks, woody material) to the area required to carry out the project.

- Operate machinery on land, from barges or on ice during all phases of the project.
- Limit operation of vehicles and machinery to the area required to carry out the project.
- Do not obtain reinforcement rock from below the ordinary high water mark of any watercourse or water body.

### 3.5 Protection of fish and fish habitat from sediment

- Manage sediment laden water flowing onto or through the site during all phases of the project.
  - Install erosion and sediment controls prior to beginning the project.
    - Develop and implement an erosion and sediment control plan for all phases of the project.
      - Regularly observe the watercourse or water body for signs of suspended sediment during all phases of the project and take corrective action when and where required.
      - Inspect the erosion and sediment controls regularly during all phases of the project.
        - Repair the sediment controls during all phases of the project.
      - Operate machinery on land in stable areas.
      - Use biodegradable erosion and sediment control materials whenever possible.
      - Remove all non-biodegradable erosion and sediment controls once the site has been stabilized.
      - Dispose of, and stabilize, all materials on land in a designated area away from the ordinary high water mark of any water body.
      - Use only clean materials.
      - Conduct in-water works, undertakings and activities during periods of low flow.
      - Remove accumulated materials and debris from the culvert area slowly to allow water to pass.
  - Keep the erosion and sediment control measures in place until all disturbed ground has been stabilized and suspended sediments have settled.
  - If replacement rock reinforcement is required to stabilize eroding inlets and outlets:
    - Place appropriately-sized, clean rocks into the eroding area (meaning, only allow footprint to area of original design specifications).
    - Install rock at a similar slope to maintain a uniform stream bank and natural stream alignment.

### 3.6 Protection of fish and fish habitat from other deleterious substances

#### 3.6.1 Develop a prevention plan

- Develop a plan to prevent deleterious substances from entering a watercourse or water body.
  - Maintain all machinery on site in a clean condition and free of fluid leaks.
  - Wash, refuel and service machinery in such a way as to prevent any deleterious substances from entering a watercourse or a water body.

- Store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering a watercourse or water body.
- Dispose of all waste materials on land in a designated area away from the ordinary high water mark of any watercourse or water body.
- Ensure that acid generating rock is not used where it doesn't exist already.

### 3.6.2 Implement a response plan

- Implement a response plan immediately in the event of a spill of a deleterious substance (including sediment).
  - Stop all works, undertakings and activities.
  - Report spill immediately when a deleterious substance enters a watercourse or water body.
  - Contain water with deleterious substances.
  - Clean up and dispose of water contaminated with deleterious substances.
    - Use an emergency spill kit.

## 4.0 Glossary

**Acid generating rock**: A type of rock that, when exposed to air and water, creates a chemical reaction which releases acid into the environment (for example, pyrite (fool's gold), and other rocks containing sulphide minerals).

**Affected area**: The area within which all of the proposed project impacts are likely to occur, either directly (meaning, project footprint) or indirectly (for example, downstream or other surrounding areas).

**Aquatic invasive species**: Fish, invertebrate or plant species that have been introduced into a new aquatic environment, outside of their natural range.

**Aquatic species at risk**: Any aquatic species listed under schedule 1 of the *Species at Risk Act* as endangered, threatened, or extirpated.

**Deleterious substance**: Any substance that, if added to water, would degrade, alter, or form part of a process of degradation/alteration to the quality of that water so that it is rendered or possibly rendered deleterious to fish, fish habitat, or to the human use of fish that frequent that water. For example, fuel, lubricants, paint, primers, rust, solvents, degreasers, antifreeze, uncured concrete, foam, creosote, chlorinated water, herbicides, etc.

**Harmful alteration, disruption or destruction of fish habitat – Policy Interpretation**: Any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.

**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 to change the characteristics of the land. In flowing waters (for example, rivers and 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 leaving a mark on the land. It's where the natural vegetation changes from mostly aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal

high operating levels (meaning, full supply level)..

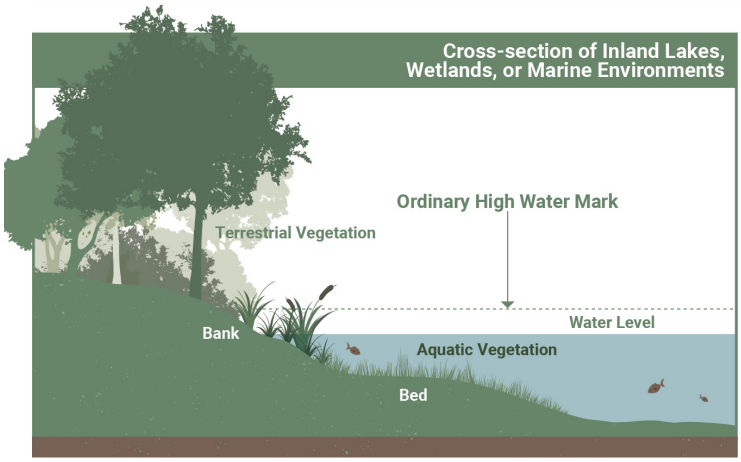
**Qualified environmental professional** : A person experienced in identifying and analyzing risks to fish and fish habitat generated from various works, undertakings or activities conducted in or near water, and implementing management measures to avoid and mitigate those risks. They possess a post-secondary degree or diploma in biological, geophysical or environmental sciences and are referred to as:

- applied scientists
- aquatic biologists
- environmental consultants
- fisheries biologists
- fisheries technicians
- fluvial geomorphologists
- natural resource consultants

**Riparian vegetation**: Occurs adjacent to the water body and directly contributes to fish habitat by providing shade, cover and areas for spawning and food production.

**Riparian zone**: Area located between a watercourse or water body's ordinary high water mark and upland area. The width of the riparian zone may be further defined by provincial, territorial or municipal regulations or guidelines.

## Ordinary High Water Mark




## Ordinary High Water Mark