



## 1.0 About this code of practice

This code of practice outlines Fisheries and Oceans Canada (DFO)'s national best practices for the maintenance of existing culverts. A culvert is a closed conduit or tunnel used to convey water under a road or railroad. Culvert maintenance is often necessary to extend the life of the structure and ensuring 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 such that these impacts do not occur.

For the purposes of this code of practice, culvert maintenance includes:

- 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 (including [aquatic species at risk](#), their critical habitat and residences) when proceeding with culvert maintenance by following the measures listed below. When implemented correctly, this can mitigate risks to fish and fish habitat associated with culvert maintenance, which can include:

- disturbance of watercourse beds and banks
- release of sediments or other [deleterious substances](#)
- changes in flow regime

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 that result in the [harmful alteration, disruption or destruction \(HADD\)](#) of fish habitat, or the death of fish, unless it has been authorized by DFO. 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.

The purpose of this code of practice is to describe the conditions under which the code 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 avoid contravention of the [Fisheries Act](#) and the [Species at Risk Act](#). If you cannot meet all of the conditions and implement all of 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.

If you are uncertain about whether this code of practice is applicable to your project, it is recommended that you consult our [website](#) or a [qualified environmental professional](#) to determine if other codes of practice should also be implemented, or if further review by DFO may be necessary. For any remaining questions, please contact the [Fish and Fish Habitat Protection Program office](#) located in your area. It remains your responsibility to comply with the [Fisheries Act](#) and the [Species at Risk Act](#).

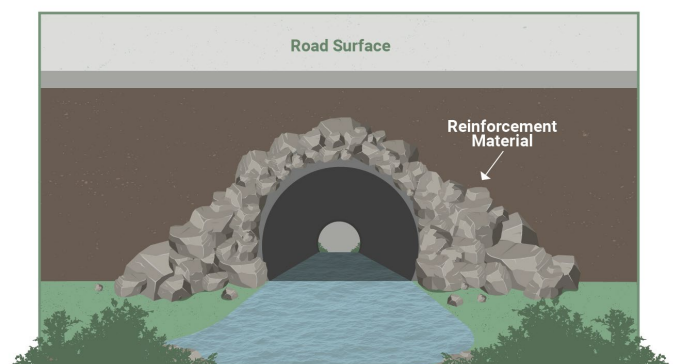
It is your [duty to notify](#) DFO if you have caused, or are about to cause, the unauthorized death of fish by means other than fishing/harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to the [Fish and Fish Habitat Protection Program office](#) located 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 regarding species and habitats managed by these jurisdictions.

**It is good practice to notify nearby Indigenous communities of the works, undertakings and activities.**

A project review by DFO is not required when the project activities meet the description in [section 1](#) and the conditions in [section 2](#), and when the 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.

## Culvert Maintenance





## 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 distribution area of molluscs listed under schedule 1 of the *Species at Risk Act*
  - the 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/removing the existing culvert
  - realigning the watercourse, dredging, excavating or placing fill, (e.g., filling scour pools) in the channel upstream or downstream of the culvert
  - the use of explosives
- If your project requires the removal of a beaver dam, consult the [DFO Code of practice for beaver dam breaching and removal](#).
- There is no permanent increase in the existing 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 form](#) (PDF, 50 KB) to [your regional DFO office](#) 10 working days before starting work. Notification forms will inform the continuous improvement of the codes of practice over time.

You must download and save this PDF form to your computer before filling it out. [How to download and open a PDF form](#).

## 3.0 Measures to protect fish and fish habitat

### 3.1 Protection of fish

- Plan in-water works, undertakings and activities to respect fish protection [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.

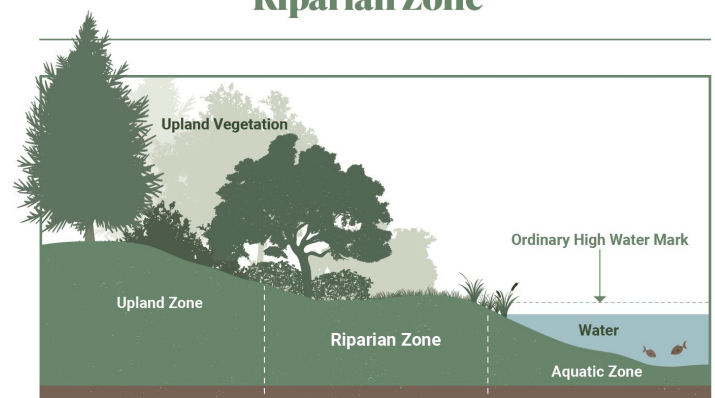
### 3.3 Protection of the [riparian zone](#)

- Limit impacts on riparian vegetation to the area required to carry out the works, undertakings and activities.
- Restore the banks and [riparian vegetation](#) affected by the works, undertakings and activities.
  - Re-vegetate the disturbed areas with native species suitable for the site.

### 3.4 Protection of aquatic habitat

- Do not obtain reinforcement rock from below the ordinary high water mark of any water body.
- Operate vehicles and machinery in a manner that minimizes disturbance to the watercourse bed and banks.

## Riparian Zone





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

- Operate machinery on land in stable dry areas.
- Conduct in water works, undertakings and activities during periods of low flow.
- Install erosion and sediment control measures prior to the beginning of the works, undertakings and activities.
  - Develop and implement an erosion and sediment control plan to prevent the introduction of sediment into any water body during all phases of the works, undertakings and activities.
  - Inspect the erosion and sediment control measures and structures regularly during all phases of the works, undertakings and activities.
  - Maintain the erosion and sediment control measures and structures during all phases of the works, undertakings and activities.
  - Monitor the watercourse regularly for signs of sedimentation during all phases of the works, undertakings and activities and take corrective action if required.
  - Use biodegradable erosion and sediment control materials whenever possible.
  - Keep the erosion and sediment control measures in place until all disturbed ground has been stabilized.
  - Remove accumulated materials and debris from the culvert area slowly to allow clean water to pass, to prevent downstream flooding, and to reduce the amount of sediment-laden water going downstream.
  - Remove all erosion and sediment control materials (unless biodegradable) once 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.
- If replacement rock reinforcement is required to stabilize eroding inlets and outlets:
  - place appropriately-sized, clean rocks into the eroding area
  - 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

- Do not allow the deposit of deleterious substances in any water body.
  - Develop a plan to prevent deleterious substances from entering a 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 water body.
  - Store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering a water body.
  - Dispose of all waste materials on land in a designated area away from the ordinary high water mark of any 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 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

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

**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 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, creosote, chlorinated water, herbicides, etc.

**Harmful alteration, disruption or destruction (HADD):** 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 (e.g., 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 (i.e., full supply level).

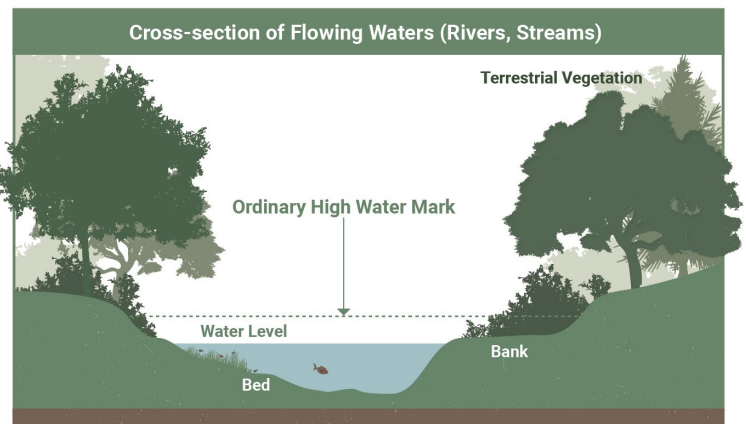
**Riparian vegetation:** Occurs adjacent to the water body and directly contributes to fish habitat by providing shade, cover and areas for spawning and food production.

**Riparian zone:** Area located between a water body's ordinary high water mark and upland area.

**Qualified Environmental Professional (QEP):** A person who is experienced in identifying and assessing potential impacts 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 them. QEPs possess a post-secondary degree or diploma in biological, geophysical or environmental sciences and are often referred to as:

- aquatic biologist
- fisheries biologist
- fluvial geomorphologist
- applied scientist
- fisheries technician
- environmental consultant or
- natural resource consultant

### Ordinary High Water Mark



### Ordinary High Water Mark

