

Drainage Management FACTSHEET



BRITISH
COLUMBIA

Ministry of Agriculture, Food and Fisheries

Drainage Management Guide – No. 1 in Series

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FEDERAL FISHERIES ACT and Watercourse Maintenance

Introduction

Agriculture is an integral component of British Columbia's economy. Many agricultural areas provide habitat for fish that are also integral to BC's economy. The agencies responsible for the management of these economic components have partnered to provide advice on undertaking watercourse maintenance activities in as sensitive a manner as possible to prevent harm to fisheries resources while ensuring that agricultural drainage and other maintenance needs are met.

Fisheries Act

Under the federal *Fisheries Act*, Fisheries and Oceans Canada (DFO) is responsible for the management and protection of fish and fish habitat. Fish habitat is inclusive of areas that provide physical habitat as well as food and nutrient sources to downstream habitats. The *Act* applies to fish and fish habitat associated with freshwater rivers, streams, creeks and ditches as well as seasonally wetted habitat such as flood plains and intermittent streams. It also includes all marine coastal habitats and estuaries.

The *Fisheries Act* prohibits any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat (HADD), unless this HADD has been authorized by the Minister of DFO. It also prohibits the deposit of deleterious (harmful) substances.

DFO has a Policy for the Management of Fish Habitat that guides administration of the habitat protection provisions of the *Act*. Protection and conservation of fish habitat is achieved through a number of complimentary strategies, including planning, protection and compliance, cooperative action, and public information. The guiding principle of no net loss is fundamental to this habitat conservation goal. DFO has procedures to apply the no net loss principle, which include planning, notification by the proponent, consultation, project review and decision. A hierarchy

of preferences is used in the policy embedded in the project review procedures, including maintaining natural productivity through avoiding and minimizing impacts wherever possible.

The purpose of this fact sheet is to provide general information on the *Fisheries Act*, DFO's policy and potential impacts to fish habitat that may result from agricultural maintenance works undertaken within or adjacent to watercourses. It also provides general contact information for further advice and information.



Impacts

While some maintenance activities may benefit fish and fish habitat, other maintenance activities can have significant negative impacts to fisheries resources, particularly if Best Management Practices are not followed. Benefits of maintenance activities may include removal of blockages to fish migration and the provision of increased channel area for salmonid rearing. Negative impacts to fish and fish habitat depend on the type of works being undertaken.

Some of the more common impacts from maintenance activities can include:

- The dredging of fish, or aquatic insects on which fish feed, right out of the watercourse!
- Sedimentation of the watercourse, which can clog fish gills causing death (suffocation) or injury or can impair their ability to forage for food. Large amounts of sediment can infill usable habitat, such as pools and riffles, upon which fish depend.

- Heavy machinery may be a problem if fuel or oil leaks as these are deleterious (toxic) to fish.
- Removal of streamside and in-stream vegetation can effectively remove the ‘supermarket’ for fish since they rely upon vegetation as a food source of terrestrial and aquatic invertebrates. Vegetation acts to provide shade, which regulates water temperatures, and provides cover from predators – its removal affects their ability to survive seasonal temperature changes and predation.
- Removal of shrubs and trees can remove the source for insect drop and large woody debris, an important feature of fish habitat for in-stream protection from predators as well as a channel-shaping and habitat forming component.
- Channel structure changes, such as straightening or widening a watercourse, alters important habitat components such as pools and riffles as well as edge habitats that provide food and shelter. It also alters water flow velocities which can cause erosion or create high-flow conditions that may decrease salmonid survival.



The good news is that the adverse effects of ditch maintenance can be avoided or minimized by modifying the way maintenance work is done. Use of Best Management Practices, conducting fish salvages prior to undertaking works, conducting works during fisheries timing windows and using site-specific mitigation measures to avoid negative impacts to fish habitat are some ways that impacts can be minimized.

Summary

The Environmental Farm Plan (EFP) *Drainage Management Guide* and Factsheet series is designed to provide guidance on agricultural maintenance activities, while protecting fish and fish habitat. The Factsheets provide guidance on agency contact requirements and information regarding works that may cause the harmful alteration, disruption or destruction of fish habitat (HADD) as well as how to complete works in an environmentally sensitive manner. Best management practices and other specific techniques that will avoid or minimize impacts to fish and fish habit are outlined.

The Factsheets that pertain to the type of work you are proposing is likely to require DFO (or other agency) approval. If the work does not require approval, review the appropriate factsheets before conducting works in or about fish habitat.

Note

If you are unsure if the work or undertaking will impact fish habitat, contact the DFO Habitat Management representative in your area for more information and consultation.

See Factsheet No 19 in this series: *Agency Contacts for Environmental Issues*

Reference

Fisheries Act Information and Procedural Guidelines under the *DFO Fish Habitat Management Policy*.

Under the *Fisheries Act*, you have to make sure that works conducted in or about a watercourse do not:

- **harmfully alter, disrupt or destroy fish habitat (section 35);**
- **deposit or permit the deposit of a deleterious substance (e.g., sediment, manure) into waters frequented by fish (that fish use) or place the where the substance may enter any such water (section 36);**
- **harm or kill fish (section 32);**
- **block fish passage (e.g., with dams or improperly installed culverts) (section 20); or**
- **block flows to fish-bearing habitat downstream from the work site.**

 **Freshwater Intake End-of-Pipe Fish Screen Guideline**, DFO