

## FARM PRACTICES

## DRAINAGE

### Description

In some parts of British Columbia, high levels of precipitation and seasonal runoff can cause saturation of agricultural soils. Most agricultural crops are adversely affected by ponded water on the soil surface and/or prolonged soil saturation in the root zone. Chronic flooding limits the range of crops that can be grown on certain parcels of land, reduces crop yields and in some cases causes disease. Good drainage allows farmers a wider selection of crops and a longer growing season, resulting in land that is more productive and crops that are more profitable and easier to market.

Proper drainage can be achieved by using a combination of surface and subsurface drainage techniques.

Drainage is defined as the practice of providing channels such as open ditches to remove excess water from the surface of the land. Drain tile is defined as subsurface pipe that is used to remove excess water from the soil profile. Subsurface drainage can also be used to control erosion and salinity.

### Activities and Operations

#### Blind Inlets

Blind inlets may be installed to permit surface water to percolate into a subsurface drainage system. A blind inlet is constructed by backfilling a drainage trench with various sizes of granular material such as gravel. Decomposable materials such as hog fuel cannot be used as blinding materials as they create leachates that can kill fish and contaminate water sources.

#### Ditch Cleaning

Farmers often have to maintain ditches and other watercourses on their farm. The “Agriculture Watercourse Maintenance Policy Guidelines” provides direction on procedures, timing windows and guidelines that should be followed for maintenance work on constructed ditches. If unsure of the watercourse classification farmers should verify the status with DFO. DFO should always be contact prior to doing maintenance works on channelized and natural streams.

See Farm Practice: [Habitat Management](#)

#### Drainage Outlet

Farm drainage systems require outlets in order to function properly. Drainage water can flow by gravity to a ditch or be pumped from a sump. No permit is required to install a subsurface drainage outlet that feeds into a ditch or watercourse. Care must be taken at the time of construction to disturb the banks along the watercourse as little as possible.

See Farm Practice: [Habitat Management](#)

## **Fill Placement for Flood Protection**

Unless otherwise prohibited by local government by-law, the construction and maintenance, for the purpose of drainage or irrigation or to combat the threat of flooding, of (i) dikes and related pumphouse, and (ii) ancillary works including access roads and facilities is a permitted use for land in the ALR. As part of this use and where necessary soil removal and the placement of fill is allowed. The regulation, however, does not allow wide-spread or area-wide filling to create a uniform elevation above the flood plain. As a policy the Commission allows the placement of fill for perimeter or sectional flood control or irrigation measures and structures such as dikes or ditches.

## **Surface and Subsurface Drainage**

A combination of surface and subsurface drainage systems may be used to obtain adequate drainage on a farm. The *Drainage, Ditch and Dike Act* regulates and authorizes the construction of municipal ditches and dikes. Ditch and drainage systems should be designed as outlined in the B.C. Agricultural Drainage Manual.

## **Related Farm Practices**

Other farm practices that pertain to drainage practices include, but are not limited to, the following:

### **Habitat Management**

Drainage system installation and maintenance must be done in a manner to protect riparian areas and fish habitat.

## **Legislation**

Information on federal and provincial legislation can be found in Appendices B and C. Acts, regulations and bylaws that regulate or may affect drainage include, but are not limited to, the following:

### **Federal**

*Fisheries Act* – protects fish and fish habitat

### **Provincial**

*Drainage, Ditch and Dike Act* – regulates and authorizes the construction of municipal ditches and dikes

## **Publications**

Publications that provide further information on drainage include, but are not limited to, the following (refer to Appendix D for details):

*Agricultural Watercourse Maintenance Guide – Lower Mainland and Vancouver Island*

*B.C. Agricultural Drainage Manual*

*Watershed Stewardship: A Guide for Agriculture*