

1.0 INTRODUCTION

1.1 OBJECTIVE

One of the mandates of the New Brunswick Department of Environment and Local Government (DELG) is to promote environmental protection measures for activities potentially impacting watercourses and wetlands to sustain them and protect their aquatic habitats.

The purpose of this manual is to provide practical information focused on environmental protection throughout all stages of a watercourse alteration. These stages include, but are not limited to, planning, construction, installation, stabilization, and maintenance.

The goals of the Watercourse Alteration Certification Program are to:

- Improve the level of compliance with the [Watercourse and Wetland Alteration Regulation – Clean Water Act](#)
- Provide a better understanding of the importance of environmental protection and the requirements under the Federal [Fisheries Act](#)
- Improve the process for obtaining a watercourse and wetland alteration permit

1.2 DISCLAIMER

The manual and course materials outline the alterations types and their applicability that are permissible under the Watercourse Alteration Certification Program. Information is also provided to help navigate through the watercourse and wetland alteration permit application process.

The guidelines and technical information contained in this manual are intended to provide guiding principles for planning a watercourse or wetland alteration. None of the information contained should be considered as a code for the design or construction of any type of watercourse or wetland alteration.

It should be noted that other professionals may be required for the submission of a watercourse and wetland alteration permit. For certain alterations, a biologist capable of identifying wetlands may be required. In other cases, a professional engineer, a registered professional forester, or environmental consultant may be required.

Responsibility for any action arising from any watercourse or wetland alteration must be borne by the Permittee and no liability shall be incurred by the Minister or the Department of Environment and Local Government. Any permit issued under the [Watercourse and Wetland Alteration Regulation](#) does not exempt or exclude the Permittee from the provisions of any Act of the Legislature of New Brunswick or of Canada to serve as legal defense to any action commenced by landowners who are adversely affected by the alteration.

1.3 REGULATIONS

The following sections explain the current regulating system, permitting agency, and approval process associated with watercourse and wetland alterations.

1.3.1 Permitting Agency

The New Brunswick Department of Environment and Local Government (DELG) is responsible for processing and issuing watercourse and wetland alteration permits as outlined in the [Watercourse and Wetland Alteration Regulation](#) (90-80) under the authority of New Brunswick's [Clean Water Act](#), C-6.1.

1.3.2 Legal Definitions

The following definitions are included in New Brunswick's [Clean Water Act](#), C-6.1, making them legally binding.

- A **watercourse** is the full width and length, including the bed, banks, sides and shoreline, or any part, of a river, creek, stream, spring, brook, lake, pond, reservoir, canal, ditch or other natural or artificial channel open to the atmosphere, the primary function of which is the conveyance or containment of water whether the flow be continuous or not.
- A **wetland** is land that, either periodically or permanently, has a water table at, near or above the land's surface or that is saturated with water and sustains aquatic processes as indicated by the presence of hydric soils, hydrophytic vegetation and biological activities adapted to wet conditions.
- An **alteration** is any temporary or permanent change made at, near, or to a watercourse or wetland or the water flow in a watercourse or wetland and includes:
 - any change made to existing structures in a watercourse or wetland including repairs, modifications or removal, whether the water flow in the watercourse or wetland is altered or not
 - the operation of machinery on the bed of a watercourse other than at a recognized fording place
 - the operation of machinery in or on a wetland
 - any deposit or removal of sand, gravel, rock, topsoil, organic matter, or other material into or from a watercourse or wetland or within 30 metres (100 ft) of a wetland or the bank of a watercourse
 - any disturbance of the ground within 30 metres (100 ft) of a wetland or the bank of a watercourse, except grazing by animals, the tilling, plowing, seeding and harrowing of land, the harvesting of vegetables, flowers, grains and ornamental shrubs and any other agricultural activity prescribed by regulation, that occurs more than 5 metres (16.4 ft) from a wetland or the bank of a watercourse
 - any removal of vegetation from the bed or bank of a watercourse
 - any removal of trees from within 30 metres (100 ft) of the bank of a watercourse
 - any removal of vegetation from a wetland or from within 30 metres (100 ft) of a wetland except the harvesting of vegetables, flowers, grains and ornamental

shrubs and any other agricultural activity prescribed by regulation, that occur more than 5 metres (16.4 ft) from a wetland

1.3.3 **Working Definition of a Watercourse**

The legal definition of a watercourse is very broad and all-encompassing, making it impractical from a permitting point of view. As such, DELG has adapted a working definition for a watercourse, which reads:

A feature for which its primary function is the conveyance or containment of water is described as being:

- a) the bed, banks and sides of any watercourse that is depicted on the New Brunswick Hydrographic Network (NBHN) (available on [GeoNB Map Viewer](#))
- b) the bed, banks and sides of any incised channel greater than 0.5 metre (1.6 ft) in width that displays a rock or soil (mineral or organic) bed, that is not depicted on the New Brunswick Hydrographic Network (NBHN) (available on [GeoNB Map Viewer](#)); water/flow does not have to be continuous and may be absent during any time of year, or
- c) a natural or human-made basin (*i.e.* lakes and ponds)

For permitting purposes:

- A permit is not required to modify an existing basin that is not depicted on the New Brunswick Hydrographic Network (NBHN), provided it is located 30 metres (100 ft) or more from a wetland or the shoulder of the bank of a watercourse, and it is not connected to or does not discharge directly to a watercourse or wetland. Examples include ponds created by mining operations, retention ponds, and artificially created impoundments.
- A permit is not required to construct an inline pond in a channel less than 0.5 metre (1.6 ft) in width.
- A permit is not required to create a pond at a seep or spring provided the near side of the pond is 30 metres (100 ft) or more from a wetland or the shoulder of the banks of a watercourse.

The working definition of a watercourse does not supersede the exemptions listed in the [Watercourse and Wetland Alteration Regulation](#). These exemptions are treated the same as always and a permit is not required for the following:

- Any alteration of or to those parts of a watercourse named in the first column of Schedule A that are on the seaward or downstream side of the line joining the associated location described in the second and third columns of Schedule A (as listed in the [Watercourse and Wetland Alteration Regulation](#))
- The maintenance of a roadway, railway or agricultural drainage ditch if (i) the ditch does not break the bank of a watercourse, (ii) no change is made to the alignment of

the ditch, (iii) there is no deposit of any material in a wetland, and (iv) there is no danger of pollution as a result of the maintenance.

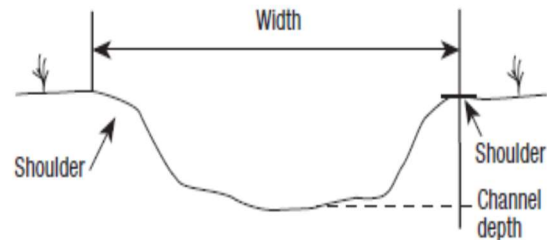
1.3.4 Tips on Identifying Watercourses

The following can assist in identifying watercourses:

- If a watercourse is depicted on the New Brunswick Hydrographic Network (NBHN) (available on [GeoNB Map Viewer](#)), it is considered a watercourse by DELG.
- If aerial photos less than 40 years old show evidence of a watercourse, then it may be a watercourse. Evidence would include visible water, visible stream channel (riffles, eroded areas, bars, rapids, pools, etc.), and vegetation.
- Visit the site. Look for a clearly defined stream channel. If the channel is greater than 0.5 metre (1.6 ft) (bankfull width) and two or more of the characteristics described below are present, then it is a watercourse, unless otherwise determined by DELG.

Things to look for during a site visit:

- The channel has a mineral, organic, or soil bed.
- There is sand, gravel, and/or cobbles present in a continuous pattern over a continuous length, with little to no vegetation.
- There is an indication that water has flowed in a path or channel for a length of time and at a rate sufficient to erode a channel or pathway.
- There is presence of flowing water.
- The channel contains pools, riffles, rapids, and/or runs.
- There are aquatic animals, insects, fish, and/or aquatic plants.



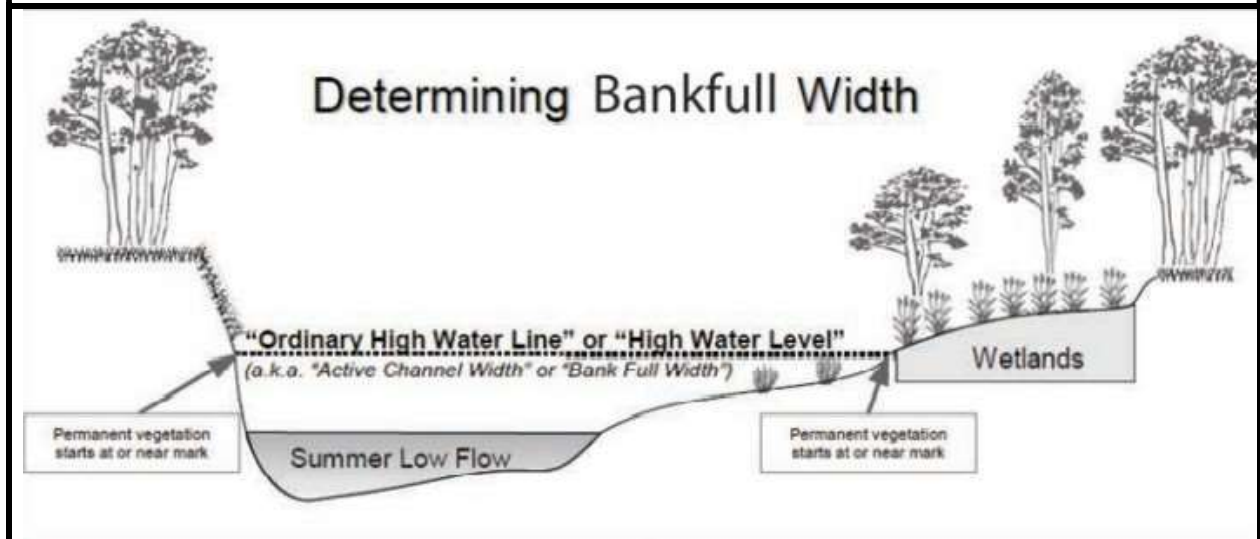
JUST A REMINDER

*Environmental protection measures apply to all watercourses regardless of size.
All watercourses are treated equally.*

See *Appendix G: Watercourse Identification Data Sheet* for an example of notes that can be taken during the field determination of identifying a watercourse.

1.3.5 Determining Channel Width

As a minimum, five measurements should be taken at least 5 metres (16.4 ft) apart upstream of the location of the proposed alteration, from the top of both stream banks (the shoulder of the banks), also known as bankfull width. See Figure 1-1.

Figure 1-1 Determining bankfull width

If this is not possible, then measurements should be taken immediately downstream of the proposed alteration site.

Be aware that a watercourse can disappear underground for a certain distance and reappear elsewhere. Some small streams may course through or connect to a wetland. You will need to walk some distance upstream and downstream to view conditions as part of your determination and not confine to evidence at a single location.

Keep in mind that watercourse channels can be modified during past developments. For example, lakes and ponds have been created or enhanced as artificial impoundments. If a watercourse was altered by ditching, dredging, or other types of development, such as a stream diversion or straightening of the channel, it is still a watercourse. If a channel was diverted and the original channel is dried up or was backfilled, the current diverted channel is now considered the watercourse.

1.3.6 Presence of Fish Habitat

The following is not considered as fish habitat:

- Artificial waterbodies that are not connected to a watercourse that contains fish at any time during any given year, such as:
 - private/artificial ponds
 - roadside drainage ditches
 - quarries and aggregate pits
 - irrigation ponds or channels
 - stormwater management ponds
 - agricultural drains and drainage ditches
 - commercial ponds like golf course ponds or stocked fishing ponds

- Any other waterbody that:
 - Does not contain fish at any time during any given year
 - Is not connected to a watercourse that contains fish at any time during any given year

It should be assumed that fish and fish habitat is present in all other circumstances.

1.3.7 Regulating Precepts

The watercourse and wetland alteration permitting system is regulated by the [Watercourse and Wetland Alteration Regulation](#) (90-80), under the authority of New Brunswick's [Clean Water Act](#). Watercourse and wetland alterations must also comply with the habitat provisions of the federal [Fisheries Act](#). Fish habitat is defined in the [Fisheries Act](#) as "water frequented by fish and any other areas on which fish depend directly or indirectly in order to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas". Section 35.1 of the [Fisheries Act](#) states that the Minister of Fisheries and Oceans Canada may issue a permit to carry on any work, undertaking or activity which the Minister considers likely to result in the death of fish or the harmful alteration, disruption or destruction of fish habitat. Also, Section 36 (3) of the [Fisheries Act](#) states that "no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water".

Certified individuals are responsible for ensuring that there are no species listed under the [Species at Risk Act](#) (see the [Species at Risk Public Registry](#)) or critical habitat or residences of endangered or threatened aquatic species present in the work zone or the vicinity of the works, undertakings and activities. The [aquatic species at risk maps](#) should be consulted to determine where at-risk populations occur and where critical habitats are located.

Other constraints placed on projects through legislation are those relating to the design, construction, or the carrying out of a watercourse/wetland alteration by specific clauses in various Acts and Regulations of the Legislature of New Brunswick and the Parliament of Canada. See Table 1-1.

Table 1-1 Provincial and Federal Acts and Regulations applicable to the Source and Surface Water Management Branch. **Note:** It is the applicant's responsibility to ensure compliance with the Acts listed in this table and any other applicable Acts of the Legislature of New Brunswick and the Parliament of Canada.

PROVINCIAL

Clean Environment Act	Water Quality Regulation (82-126) Environmental Impact Assessment Regulation (87-83) Petroleum Product Storage and Handling Regulation (87-97)
Clean Water Act	Watercourse and Wetland Alteration Regulation (90-80) Wellfield Protected Area Designation Order (2000-47) Watershed Protected Area Designation Order (2001-83)
Crown Lands and Forests Act	Timber Regulation (86-160) Lands Administration Regulation (2009-62)
Heritage Conservation Act	General (H-4-05)
Protected Natural Areas Act	Establishment of Protected Natural Areas Regulation (2003-8) General Regulation (2004-57)
Species at Risk Act	List of Species at Risk Regulation (2013-38) Prohibitions Regulation (2013-39)
Fish and Wildlife Act	Wildlife Refuges and Wildlife Management Areas Regulation (94-43)
<u>FEDERAL</u>	
Impact Assessment Act	Purposes (Sec. 6) Prohibitions (Sec. 7)
Canadian Environmental Protection Act	Objectives, Guidelines and Codes of Practice (Sec. 54)
Fisheries Act	Purposes (Sec 2.1) Fish and Fish Habitat Protection and Pollution Prevention (Sec. 34 - 42) Regulations (Sec. 43)
Species at Risk Act	Purposes (Sec. 6) General Prohibitions (Sec. 32) Protection of Critical Habitat (Sec. 56)
Canadian Navigation Waters Act	General (Sec. 5, 6, 15, 16, 21, 22, 23)

1.3.8 Permitting System

An application for a watercourse and wetland alteration permit must be completed and submitted to DELG for all alterations proposed within 30 metres (100 ft) of a watercourse or wetland. No watercourse or wetland alteration may begin until a permit is granted or that DELG has confirmed that a permit is not required.

The permitting system consists of the following types of permit:

- Standard: issued for a single alteration
- Multiple: issued for multiple alterations with a common factor
- Provisional: issued for alterations that potentially have little to no detrimental impact on a watercourse/wetland
- Renewal: issued for alterations not commenced or completed in the period the original permit is valid for
- Revision: issued for modifications of the original project design, requiring further review and revision to a current permit

1.3.9 Working on Crown Lands

All activities on Crown Lands require approval from the New Brunswick Department of Natural Resources and Energy Development. The following applies to Crown Land:

- For licensees (and sub-licensees) working in or within 30 metres (100 ft) of a wetland: If the alteration complies with the *Forest Management Agreements* under the authority of the [Crown Lands and Forests Act](#), a WAWA (Watercourse and Wetland Alteration) permit from DELG is not required.
- For licensees (and sub-licensees) working in or within 30 metres (100 ft) of a watercourse that drains an area of 600 hectares, or less, at the site of the alteration: If the alteration complies with the *Forest Management Agreements* under the authority of the [Crown Lands and Forests Act](#), a WAWA permit from DELG is not required.
- For licensees (and sub-licensees) working in or within 30 metres (100 ft) of a watercourse that drains an area greater than 600 ha at the site of the alteration: A WAWA permit from DELG is required.
- For all non-licensees working in or within 30 metres (100 ft) of a watercourse/wetland, regardless of size*: A WAWA permit from DELG is required and landowner consent (from Crown Lands) is also required.

***Note:** Wetlands that are less than one hectare in area, and not contiguous to a watercourse are exempt in the [Watercourse and Wetland Alteration Regulation](#) and therefore do not require a WAWA permit.

1.4 COMPLETION OF TRAINING PROGRAM

Individuals successfully completing this training program will be granted a Watercourse Alteration Certificate. Certified individuals are then able to apply for permits for specific types of alterations performed during certain periods of the year.

1.4.1 Activities Permitted Under Certification

The permits issued under the Watercourse Alteration Certification Program include the following alterations:

- Installation and replacement of culverts:
 - closed-bottom: minimum diameter of 600 millimetres (24 in) or equivalent end area; maximum diameter/end area is the equivalent capacity for a drainage area of 20 km² (8 Mi²)
 - open-bottom: minimum span of 1.2 metres (4 ft); maximum span is the equivalent capacity for a drainage area of 20 km² (8 Mi²)
 - new culverts: maximum length of 25 metres (82 ft)
 - replacements: maximum length of 30 metres (100 ft)
- Maintenance and removal (decommissioning) of culverts
- Installation, replacement, maintenance, and removal (decommissioning) of single-span bridges (permanent)
- Construction of approaches to a watercourse crossing
- Vegetation clearing for watercourse crossing installation/replacement
- Stabilization measures for watercourse crossings, roads, and ditches
- Installation/construction of temporary bridges
- Beaver dam removal/management
- Placement of erosion protection works
 - Biotechnical (*i.e.* vegetation) products
 - Rip-rap/armor stone
- Water withdrawal (temporary or maintenance/replacement of permanent intake structure)
- Timber harvesting

1.4.2 Responsibilities of Certified Individuals

The responsibilities of certified individuals include, but are not limited to, the following:

- Know, understand, comply with all relevant acts, regulations, standards, guidelines, permit conditions, requirements of the application process, and policies of DELG.
- Ensure consideration of best practices for environmental protection for all watercourse alteration sites.
- Plan watercourse crossing sites in accordance with all training related to the Watercourse Alteration Certification Program. Efforts should include planning of the entire road system or project and not just individual sites.

- Select types and sizes of watercourse crossing structures in accordance with the Watercourse Alteration Certification Program.
- On-site supervision of each alteration to ensure compliance of all conditions listed on the WAWA permit. This can also be delegated to a Recognized Installer (an individual that has taken the New Brunswick Watercourse Alteration Recognized Installers Course).
- Ensure watercourse crossings are installed as per the designs and that fish passage is provided. This can also be delegated to a Recognized Installer.
- Provide information to DELG in a timely manner when requested related to projects in which you are or were involved.
- The activities of any individual working on the project. This can also be delegated to a Recognized Installer.
- The activities of any individual delegated as supervisor of the project. This can also be delegated to a Recognized Installer.
- Execution of the project in an environmentally responsible and diligent manner. This can also be delegated to a Recognized Installer.
- The reporting of any spills or environmental mishaps to the appropriate authority throughout the duration of the project. This can also be delegated to a Recognized Installer

1.5 AUDITING WATERCOURSE AND WETLAND ALTERATIONS

All watercourse and wetland alterations are subject to audit at any time. Audits can be carried out by inspectors with DELG, the New Brunswick Department of Natural Resources and Energy Development, the New Brunswick Department of Justice and Public Safety, and staff from Fisheries and Oceans Canada.

Inspectors will be looking at all aspects of the alteration, including, but not limited to, installation, construction, stabilization, and follow-up maintenance.

Failure to comply with the requirements of the Watercourse Alteration Certification Program and/or any associated permit conditions may result in an investigation that may result in an Order to remediate any damage and/or possible prosecution. DELG also reserves the right to revoke an individual's certification should the requirements of the Watercourse Alteration Certification Program not be adhered to. See Section 1.4.2 *Responsibilities of a Certified Individual*.