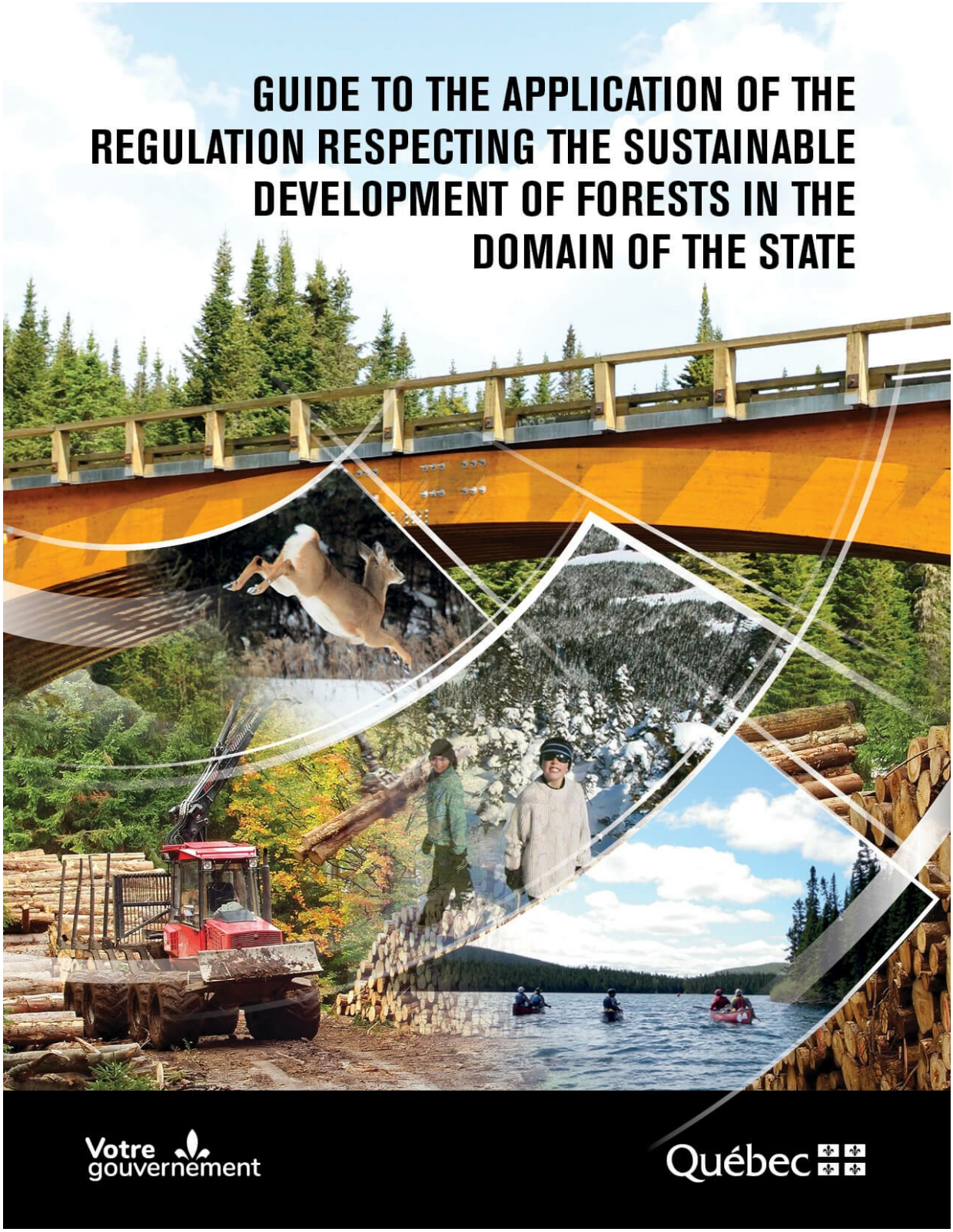

GUIDE TO THE APPLICATION OF THE REGULATION RESPECTING THE SUSTAINABLE DEVELOPMENT OF FORESTS IN THE DOMAIN OF THE STATE
Votre gouvernement
Québec

Note to the reader

The content of the On-line Guide to the application of the regulation respecting the sustainable development of forest in the domain of the State will evolve to incorporate technical and scientific details of certain sections or information necessary for their application. Updates will be listed on the page entitled Register of Amendments.

It is the user's responsibility to use the updated printed document from the online publication available at mffp.gouv.qc.ca/RADF/guide/?lang=en.

Production

Ministère des Forêts, de la Faune et des Parcs
Direction de la protection des forêts
5700, 4e Avenue Ouest
Québec (Québec) G1H 6R1
Courriel : webmestre-radf@mffp.gouv.qc.ca

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The Règlement sur l'aménagement durable des forêts du domaine de l'État came into force on April 1, 2018. This Règlement replaces the Regulation respecting standards of forest management in the domain of the state.

The guide is designed to facilitate an understanding of the new regulatory requirements and provide access to the training necessary for the application of the regulation. The guide is primarily intended for ministère des Forêts, de la Faune et des Parcs personnel as well as those of the other ministries involved, academic institutions, and businesses and organizations working in crown forests.

The guide explains the Règlement sur l'aménagement durable des forêts du domaine de l'État. Its structure comprises regulation chapters and appendices, presented so that the reader can quickly and easily locate specific information. It also presents information on possible exceptions to forest standards under the Sustainable Forest Development Act and provides access to training on the regulations.

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The Règlement sur l'aménagement durable des forêts du domaine de l'État can be consulted on the Légis Québec website or in the Gazette officielle du Québec on May 24, 2017, No. 21.

Introduction to the Guide

Purpose of the Guide

In Québec, every person who engages in forest development activities must comply with current legislation and regulations. As from April 1, 2018, the new Regulation respecting the sustainable development of forests in the domain of the State will replace the Regulation respecting standards of forest management for forests in the domain of the State. This Guide has been designed to help understand and apply the new Regulation. It is intended mainly for the personnel of the Ministère des Forêts, de la Faune et des Parcs (MFFP), and for people from the other Government departments concerned, educational institutions and companies or organizations working in the public forests.

Content of the Guide and Instructions

Since the Guide was designed to explain the Regulation respecting the sustainable development of forests in the domain of the State, its structure follows the Regulation's chapters and schedules, so that readers can find the information they need, easily and quickly. It also contains information on possible exceptions to the forest development standards set out in the Sustainable Forest Development Act, and provides access to the training session on the Regulation. In addition, its Frequently asked questions section answers the most common questions about the Regulation. The entire text of the Regulation is reproduced in Guide's chapters and schedules, and the sections have been subdivided into regulatory rules, each of which is represented by a blue flag (⚑) on which readers may click to access additional information in a box. The objectives of each provision are shown. Where necessary, explanations are also given, along with additional information and diagrams to clarify and help with the application of the various rules. Sometimes, where no explanation, additional information or diagram is needed, the box contains only the objectives. Boxes can be enlarged simply by clicking. In some cases, additional documentation can be accessed via a hyperlink. Chapters VIII to X can be consulted, but in these cases no additional information is provided on the text of the Regulation. The Guide is a dynamic tool, and its content will be changed over time to include technical and scientific clarifications of certain sections, or additional information to help with their application. Updates will be listed on the page entitled Register of Amendments. The Guide may be consulted online, in a format adapted to the screens of different types of tools, including micro-computers and mobile devices (tablets, smartphones, etc.). The Guide offers a print function that can be accessed by clicking on the button « » at the bottom of each page to download any of its sections as needed.

Warning

The Guide was designed to explain the provisions of the Regulation respecting the sustainable development of forests in the domain of the State and does not, in any circumstances, constitute a replacement of the current legislation or regulations. Where there are differences between the text of the Guide and the regulatory and legislative texts, the only ones that have force of law are those available on the Légis Québec website or published in the Gazette officielle du Québec on May 24, 2017, No. 21. Although this Guide presents a variety of information and numerous diagrams to help understand and apply the Regulation respecting the sustainable development of forests in the domain of the State, it is by no means exhaustive. Readers should consult the personnel of the MFFP's regional directorates for additional information. The diagrams are intended to provide as accurate an illustration as possible of the regulatory requirement concerned. However, elements such as tree density or territorial scale may not be entirely consistent with reality. The content of the Guide may be copied, printed and distributed, provided a note is included to the effect that the document was reproduced from the online publication available at mffp.gouv.qc.ca/RADF/guide/?lang=en. Lastly, it is impossible to overemphasize the importance of reading the Regulation respecting the sustainable development of forests in the domain of the State in its entirety, to ensure that it is applied properly. Many of the Regulation's sections are connected or complement one another. A partial reading may lead to incorrect application of its provisions. An individual or company that fails to comply with the legal and regulatory requirements when carrying out development activities in the public forest is guilty of an offence and may be subject to legal proceedings.

Recommended citation

Ministère des Forêts, de la Faune et des Parcs. Application Guide: Regulation respecting the sustainable development of forests in the domain of the State [online], Gouvernement du Québec [mffp.gouv.qc.ca/RADF/guide/?lang=en].

CHAPTER I - Scope and interpretation

Section I - Scope

- Section 1. Area to which the Regulation respecting the sustainable development of forests in the domain of the State applies.

Section II - Interpretation

- Section 2. Regulatory definitions.

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Chapter I - Scope and interpretation
Division I - Scope

Section 1

This Regulation applies to forests in the domain of the State up to the northern limit of the forest tundra.

That territory is shown on the map "Vegetation areas and bioclimatic domains of Québec" reproduced in Schedule 1. The map is available on the website of the Department (in French only).

1

Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State.

Explanations

All forest development activities performed in the area of forest indicated in this section are subject to the Regulation respecting the sustainable development of forests in the domain of the State.

Chapter I – Scope and interpretation
Division II - Interpretation

Section 2

a b c d e f g h i j k l m n o p q r s t u v w x y z

In this Regulation,

“**abutment**” means the end support of a bridge that holds the approach fill. Abutments are made of reinforced concrete, wood or steel caissons or a combination of stakes crowned by a portal cap beam; (culée)

“**accommodation centre**” means a group of commercial buildings laid out on an area in a single block and having an accommodation capacity of at least 15 persons per day; (établissement d’hébergement)

“**aggregated cut block**” means a territory situated in a management unit in which total cutting areas with or without recent natural disturbance zones are concentrated. The aggregated cut blocks must vary in shape and have an area less than or equal to 150 km^2. Despite the foregoing, they may be larger in the case of plans for the protection of woodland caribou, woodland ecotype; (agglomération de coupes)

“**archaeological sector**” means a place where archaeological sites are concentrated and the surrounding grounds whose geographical characteristics and situation offer an archaeological potential; (secteur archéologique)

“**archaeological site**” means any site indicating prehistoric or historic human occupation and registered in the Register of the domain of the State referred to in section 26 of the Act respecting the lands in the domain of the State (chapter T-8.1); (site archéologique)

“**bank**” or “**shore**” means the lateral part of variable steepness of the bed of a watercourse or lake that may be submerged without the water overflowing. The upper limit of the bank is located at the top of the angle of repose located at the lower limit of emerged grass or, if there is no such grass, at the low limit of shrubs. In the absence of emerged grass and shrubs, the top of the angle of repose corresponds to the level of the bankfull discharge; (berge)

1

Explanations

How is the upper limit of the bank of a lake or watercourse identified?

The upper limit of the bank is located at the top of the angle of repose of a lake or watercourse bed, located at the low limit of emerged grass or, if there is no such grass, at the low limit of shrubs. In the absence of emerged grass and shrubs, the top of the angle of repose corresponds to the level of the bankfull discharge.

The level of the bankfull discharge is usually determined from physical indicators, the best of which is the beginning of the flood-risk area (or plain) – in other words, the beginning of the relatively flat stretch of land that is submerged when the watercourse or lake overflows from its bed. Overflow occurs in spring but can also occur during heavy rain. There is often an abrupt change in the slope between the bank and the flood-risk plain. It is important not to confuse this abrupt change with the one found at the mean water or low flow level. Other indicators can also be used to determine the level of the bankfull discharge, including the top of a bank eaten away by erosion, vegetation, a change in slope substrate particle size, and so on.

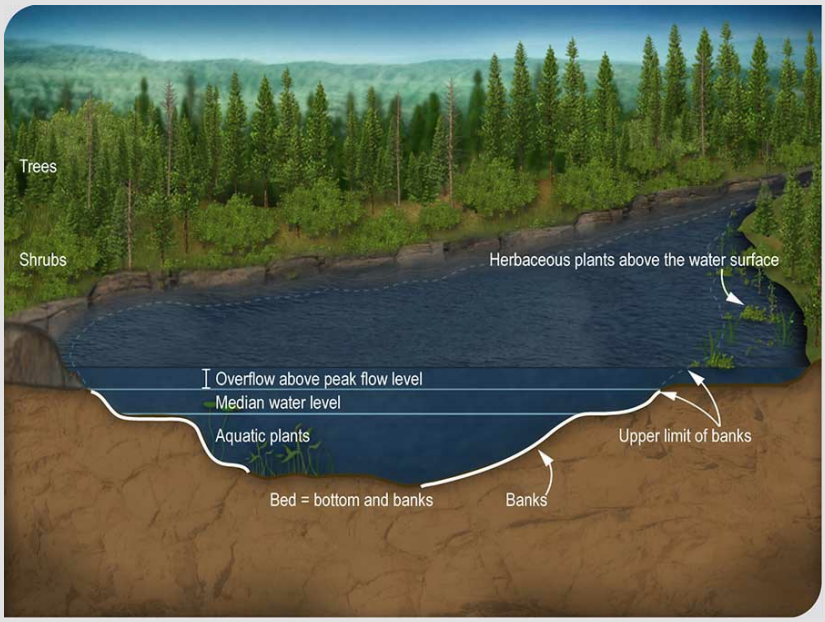


Figure 2A Upper limit of the bank and overflow above the level of the bankfull discharge

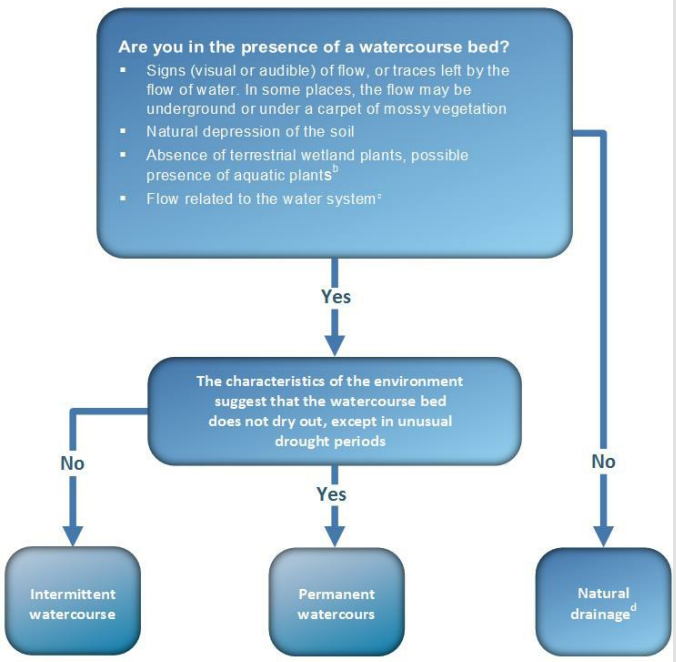
“**bear den**” means a site where bears hibernate. The bear dens that are to be protected are those indicated in the numeric information layers used for forest planning; (tanière d’ours)

“**bed of a watercourse**” means a natural depression in the ground occupied by a permanent or intermittent watercourse, comprising the bottom and the banks. The bed of the watercourse is free of vegetation other than aquatic plants, if any. It shows signs or traces of waterflow, whether underground or not; (lit d’un cours d’eau)

2

Additional information
The waterflow characterization key is used to differentiate waterflow in the watercourse bed from waterflow due to natural drainage.

Water Flow Characterization Key[a]



a. This key cannot be used to characterize water flow in winter or when there is snow on the ground.
b. See the table below.
c . Water system: All the lakes, permanent or intermittent watercourses, peat bogs with ponds, riparian swamps and riparian marshland.
d. Natural drainage: The soil's ability to allow for natural evacuation (by runoff or infiltration into the soil) of water deposited by precipitation or the spring thaw.

Categories of Aquatic and Terrestrial Plants[a] for the Purposes of the Regulation

Aquatic plants[b]			Terrestrial wetland plants[c]		
			Riparian ecotone		Forest
Submerged leaves	Floating leaves	Emergent plants	Emerged plants	Shrub plants	Arborescent plants
Plants that are completely submerged throughout the year	Plants that may or may not have roots, whose foliage floats to the surface of the water	Plants that are rooted in the water for most of the vegetation season	Plants that grow in the riparian plain	Plants that grow in the riparian scrub	Plants that grow in the riparian forest
Common species					
Eelgrass and pondweed	Water lilies and water-shield	Bull rush, bur reed, arrowhead, pickerel weed, wild rice, cattail, water parsnip, flowering rush, common spike-rush, water calla	Reedgrass, phalaris, loosestrife, rush, bugleweed, yellow loosestrife, skullcap, jewelweed	Alder, willow and bog myrtle	Silver maple, American elm and black ash

a. Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, 2015. *Guide d'interprétation, Politique de protection des rives, du littoral et des plaines inondables*, Gouvernement du Québec, Direction des politiques de l'eau, 131 p.; Fleurbec, 1987. *Plantes sauvages des lacs, rivières et tourbières — Guide d'identification* Fleurbec, Saint-Augustin, Québec, 400 p.
b. Mosses are not aquatic plants.
c. Terrestrial wetland plants are located in flood plains, which start at the upper limit of the bank.

"**block cutting**" means an area of total cutting or a group of areas of total cutting carried out in a given territory so as to preserve, within the limits of the block cutting harvest site, a residual forest having the characteristics set out in section 139; (coupe en mosaïque)

"**block cutting harvest site**" means a territory delimited by all the cutting areas for block cutting, with a distance of less than 2 km between the areas, and by a strip of land 2 km wide surrounding the whole site; (chantier de récolte en mosaïque)

3



Figure 2B Diagram showing a block cutting harvest site

"**boat access route to trapping grounds**" means a route that comprises rivers, lakes and portage trails leading to trapping grounds and recognized by a Native community that includes members who use it every year. The boat access routes to trapping grounds that are to be protected are those indicated in the numeric information layers used for forest planning; (parcours d'accès en embarcation aux terrains de piégeage)

"**bridge**" means a structure not built under embankments including abutments, sometimes piers, a deck and stabilizing materials and that allows a road to cross an obstacle, such as a watercourse; (pont)

"**burial site**" means a place where the body of a deceased person is interred. The burial sites that are to be protected are those indicated in the numeric information layers used for forest planning; (site de sépulture)

"**canoe-kayak-camping course**" means a marked route to go down watercourses in a canoe or kayak that includes rivers and lakes along the banks and shores of which a number of wilderness campgrounds are located, and often portage trails that are developed and maintained by a government body, a municipality, the Fédération québécoise du canot et du kayak or a club affiliated with that federation. The canoe-kayak-camping courses that are to be protected are those indicated in the numeric information layers used for forest planning; (parcours de canot-kayak-camping)

"**caribou calving area north of the 52nd parallel**" means a caribou calving area north of the 52nd parallel within the meaning of section 1 of the Regulation respecting wildlife habitats; (aire de mise bas du caribou au nord du 52e parallele)

"**cliff inhabited by a colony of birds**" means a cliff inhabited by a colony of birds within the meaning of section 1 of the Regulation respecting wildlife habitats; (falaise habitée par une colonie d'oiseaux)

"**commercial species**" means a tree species referred to in Part A or Part B of Schedule 2; (essence commerciale)

"**complementary vacation site**" means a site comprising at least 3 vacation lots, at the rate of at least 1 lot per 0.8 ha. Complementary vacation sites are developed to complete the development of vacation sites on the shores of a lake where the biophysical characteristics of the environment no longer make it possible to comply with the installation criteria for a grouped vacation site; (site de villégiature complémentaire)

4

Explanations

Complementary vacation sites are developed to complete the development of vacation sites on the shores of a lake where the biophysical characteristics of the environment no longer make it possible to comply with the installation criteria for a grouped vacation site. The area of a complementary vacation site must comprise at least three vacation lots, and there must be at least one lot per 0.8 ha. The area of a complementary vacation site with only three vacation lots must therefore be no more than 2.4 ha, to meet the minimum density requirement of one lot per 0.8 ha.

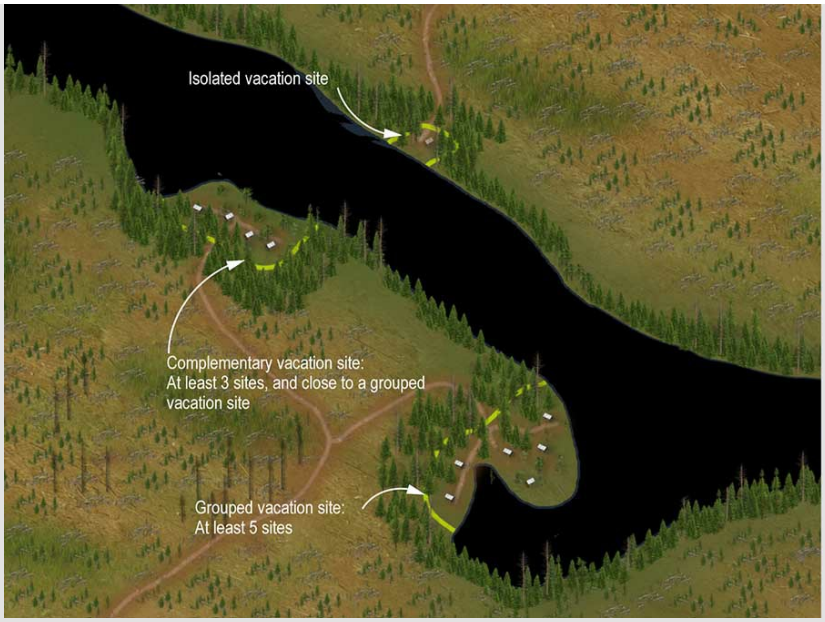


Figure 2C Diagram showing a complementary vacation site, an isolated vacation site and a grouped vacation site

"**concentrated network of hiking trails**" means a site criss-crossed by hiking trails developed for recreational purposes, except trails intended for motorized all-terrain vehicles, at a density equal to or greater than 2.5 km per square kilometer; (réseau dense de sentiers de randonnée)

5

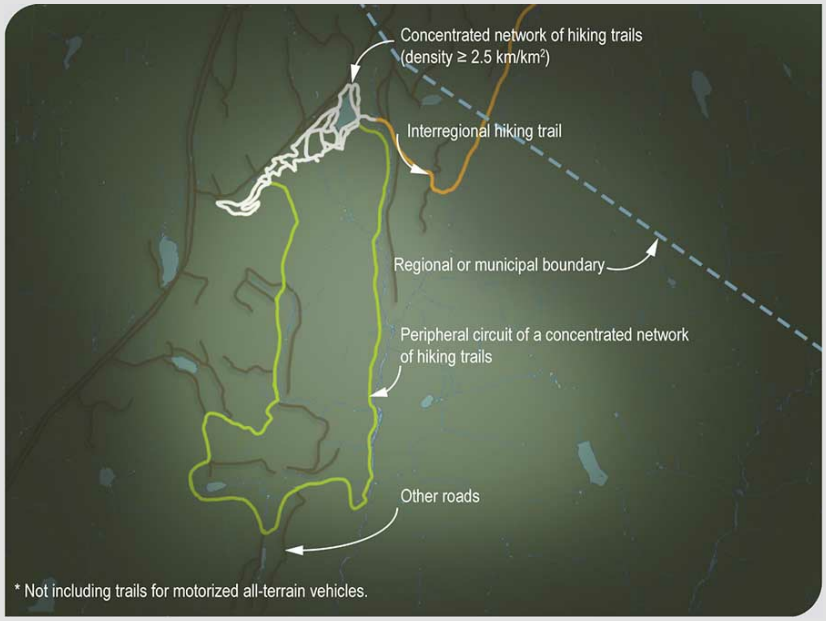


Figure 2D Peripheral circuit of a concentrated network of hiking trails, an interregional hiking trail and a concentrated network of hiking trails

"**continuous forest cover**" means a forest cover with a density of at least 25%, characterized by a relatively uniform space between its stems and not having any patch greater than the size of the dominant trees forming it; (couvert forestier continu)

6

Additional information

The stems used to calculate continuous forest cover density must be 3 metres or more in height.

"**culvert**" means a structure built under embankments including an arch or at least a conduit and stabilizing materials and that allows a road to cross an obstacle, such as a watercourse; (ponceau)

"**cutting area**" means an area in a single block where a single type of cut is used, during a single harvest year, comprised in a development unit or in another forest of the domain of the State; (aire de coupe)

7

Additional information

To be considered in a single block, the entire area, included in a management unit or another forest unit in the domain of the State, must be the same type of cut, during the same harvest year.

Thus, a forest strip of 30 m or more, crossing the area mentioned above, has the effect of dividing the latter into two separate harvested areas, i.e. two cutting areas. It can be the result of a forest strip, subject or not to a partial harvest, kept on each side of a landscaped path or a path identified as a road corridor, for example. A wooded edge of 20 m (therefore 40 m in total when there is a harvest on both sides of the watercourse) kept along a permanent watercourse does not have the effect of dividing a cutting area into two separate areas.

However, a path that crosses such an area does not have this effect. The area remains in one piece and is therefore considered to be a single cutting area.

"**developed campground**" means a site developed for the sojourn of campers, accessible by road and having service areas such as shelters, toilets and parking lots. Each camping site or group of sites including no more than 20 camping site is supplied with running water or electric power by a private or public distribution network offered by the lessor of camping space; (camping aménagé)

"**developed trail**" means a trail, other than a trail intended for motorized all-terrain vehicles, for which amounts were invested by the managers of an outfitting operation, a controlled zone or a wildlife sanctuary, with a view to offering services to all the users of those territories; (sentier aménagé)

8

Explanations

A developed trail is a trail for which amounts were invested to perform work (e.g. subsidized work or work authorized by a forestry permit) with a view to offering services to the users of an outfitting operation, a controlled zone or a wildlife sanctuary. The services may involve hiking, horse riding, cross-country skiing, snowshoeing, dog sledding, small game hunting and portage, as well as access to a managed body of water or another service offered in the area concerned. In this Regulation, a trail intended for motorized all-terrain vehicles is not considered to be a developed trail.

"**dock site with a boat ramp**" means a public site with the facilities required to facilitate the coming alongside and the launching of pleasure boats, as well as its service areas, such as shelters, toilets and parking lots; (site de quai avec rampe de mise à l'eau)

"**downhill skiing station**" means a site developed for the practice of downhill skiing and its service areas, such as shelters, toilets and parking lots; (station de ski alpin)

"**dwelling**" means any building intended for occupancy by human beings and provided with a water supply system and a waste water disposal system connected to the ground; (habitation)

"**ecological or nature interpretation centre**" means a site consisting of trails developed for educational purposes in connection with ecology or for purposes of discovering nature and service areas such as shelters, toilets and parking lots; (centre d'écologie ou de découverte de la nature)

"**fish habitat**" means a fish habitat within the meaning of section 1 of the Regulation respecting wildlife habitats;

"**fish hatchery**" means a site comprising the facilities and equipment required for the raising and breeding of fish with a view to seeding the lakes and watercourses of a region; (station piscicole)

"**forest camp**" means a place where dwellings and facilities are grouped mainly for the use of workers assigned to forest development activities authorized under a forest development plan; (camp forestier)

9

Additional information

Where the workers who perform forest development work live in a camp, the camp may, at the same time, host people practising other activities (e.g. hunting, fishing).

"**forest cover density**" means the relative ground cover by the projection of all the living branches of trees 7 m tall or higher; (densité du couvert forestier)

"**forest development activity**" means a forest development activity within the meaning of paragraph 1 of section 4 of the Sustainable Forest Development Act (chapter A-18.1); however, for the purposes of sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59, it does not include the repair, maintenance and closure of forest roads or the control of fires, insect epidemics and cryptogamic diseases; (activité d'aménagement forestier)

10

Explanations

Subsection 1 of section 4 of the Sustainable Forest Development Act defines the term "forest development activity" as follows:

> *an activity related to timber felling and harvesting, the operation of a sugar bush, the construction, improvement, repair, maintenance or closure of infrastructures, the carrying out of sylvicultural treatments, including reforestation and the use of fire, fire protection, the suppression of insect epidemics, cryptogamic diseases and competing vegetation, and all similar activities that tangibly affect forest resources.*

However, the definition of "forest development activity" in section 2 of this Regulation means that the standards set out in sections 3, 5, 19 à 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance and decommissioning of roads in the forest, fire protection or the suppression of insect epidemics and cryptogamic diseases.

Additional information

The activities that precede commercial or non-commercial sylvicultural treatments are forest development activities. These can include surveys to identify land in need of sylviculture work, delimiting cut blocks, and carrying out intervention inventories and timber marking.

"**forest operations zone**" means a maximum area of 250 ha, not necessarily in a single block, that is the subject of a single sylvicultural treatment during a single harvest year, comprised in a single

development unit or other forest in the domain of the State; (secteur d'intervention)

"**forest stand**" means a forest area of a single block of at least 30 km^2, of which a minimum of 70% of the productive forest area is constituted of timber stands 7 m or higher; (massif forestier)

"**geotextile membrane**" means a permeable textile, needle punched and nonwoven, having a minimum tensile strength of 1,000 newtons and interstices smaller than 150 micrometres; (membrane géotextile)

"**grouped vacation site**" means a site comprising at least 5 vacation lots, at the rate of at least 1 lot per 0.8 ha; (site de villégiature regroupé)

11

Explanations

The area of a grouped vacation site must comprise at least five vacation lots, at the rate of at least one lot per 0.8 ha.

The area of a grouped vacation site with only five vacation lots must therefore be no more than 4 ha. to achieve the minimum required density of one lot per 0.8 ha.

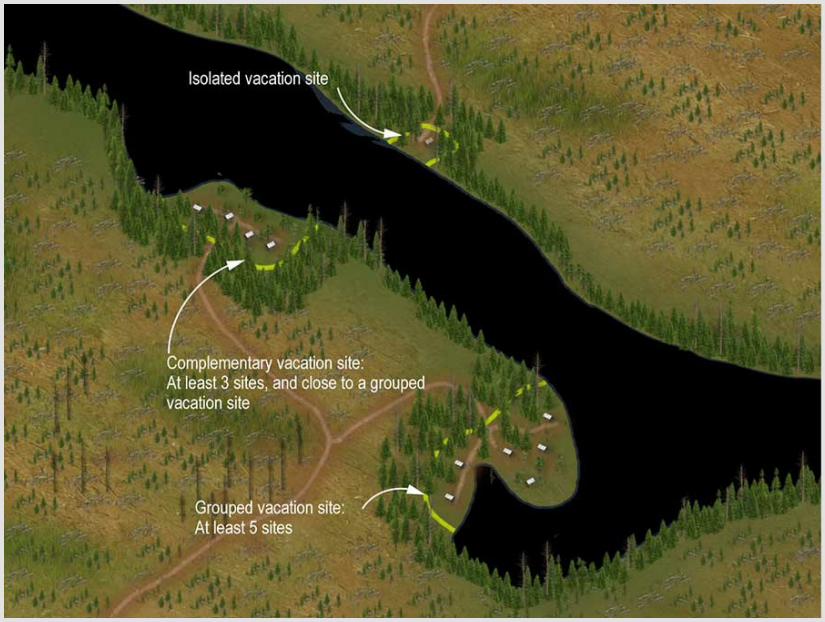


Figure 2C Diagram showing a complementary vacation site, an isolated vacation site and a grouped vacation site

"**harvest year**" means the period comprised between 1 April of a year and 31 March of the following year; (année de récolte)

"**heritage cultural landscape**" means a land area recognized by a community for its remarkable landscape features, which are the result of the interaction of natural and human factors and are worth preserving and, if applicable, enhancing because of their historical or emblematic interest, or their value as a source of identity, within the meaning of section 2 of the Cultural Heritage Act (chapter P-9.002); (paysage culturel patrimonial)

"**heritage site**" means a place, a group of immovables or, in the case of a heritage site referred to in section 58 of the Cultural Heritage Act (chapter P-9.002), a land area that is of interest for its archaeological, architectural, artistic, emblematic, ethnological, historical, identity, landscape, scientific, urbanistic or technological value, within the meaning of section 2 of that Act; (site patrimonial)

"**heronry**" means a heronry within the meaning of section 1 of the Regulation respecting wildlife habitats; (héronnière)

"**holder of a forestry permit**" means the holder of a forestry permit referred to in section 73 of the Sustainable Forest Development Act (chapter A-18.1) or the third person to whom the permit holder entrusted the performance of the work authorized by the permit; (titulaire d'un permis d'intervention)

"**improvement work on a road, bridge or culvert**" means work performed to improve a road or road segment, including the bridges and culverts, in relation to the condition it was in at the time of its construction or latest improvement, as the case may be. In the case of a road, the work includes the following, among other things: operations to upgrade a road's class, particularly by making it wider; course correction; the reduction of slopes and the addition of safety devices such as safety slides. In the case of a bridge or culvert, the work includes, among other things: the replacement of the structure by a different structure, such as replacing a culvert with a conduit by a culvert with an arch, and alterations to the structure of a bridge to improve its bearing capacity; (travaux d'amélioration d'un chemin, d'un pont ou d'un ponceau)

12

Additional information

As indicated in the work type definitions, the condition of the road prior to the work is the reference for determining the type of work being performed.

In addition to the work mentioned in the definition, the following work is also considered to improve roads, and is subject to authorization:

- the replacement of a culvert comprising a conduit with two conduits in parallel (or vice versa);
- the graveling of a path that was not at the time of its construction;
- the asphalting, placing of recycled asphalt, concreting of a road that was not paved at the time of its construction or the final removal of asphalt or concrete from the road surface;
- the correction of a curve or road section;
- the addition of safety slides or the placement of speed bumps or median strips.

In cases where the work is to upgrade the road class, it must have the effect of upgrading the road characteristics, such as width and shoulders, to those of the higher class of road. If the work ensures that the road's width and shoulders remain in the same class as before the work, it is considered repair or maintenance work. It should be noted that the improvements are not exclusively aimed at increasing the width of the road.

A road may be subjected to repair work on a section and include certain access structures used to cross a watercourse to be subjected to road improvement work. This is the case, for example, if you have to replace a culvert already in place with a circular conduit by a culvert with a spillway or an arch because of the obligation to ensure the free passage of fish.

Modifications to the structure of a bridge to increase its bearing capacity from what it was when it was built or after the most recent improvement work are considered improvement work.

Section 41 of the Sustainable Forest Development Act states that a person who intends to carry out work for the construction, improvement or decommissioning of a multi-purpose road must be authorized by the Minister on the conditions determined by the Minister. When issuing the authorization, the Minister will stipulate which forest development activities are authorized and will set the conditions that must be met when performing them.

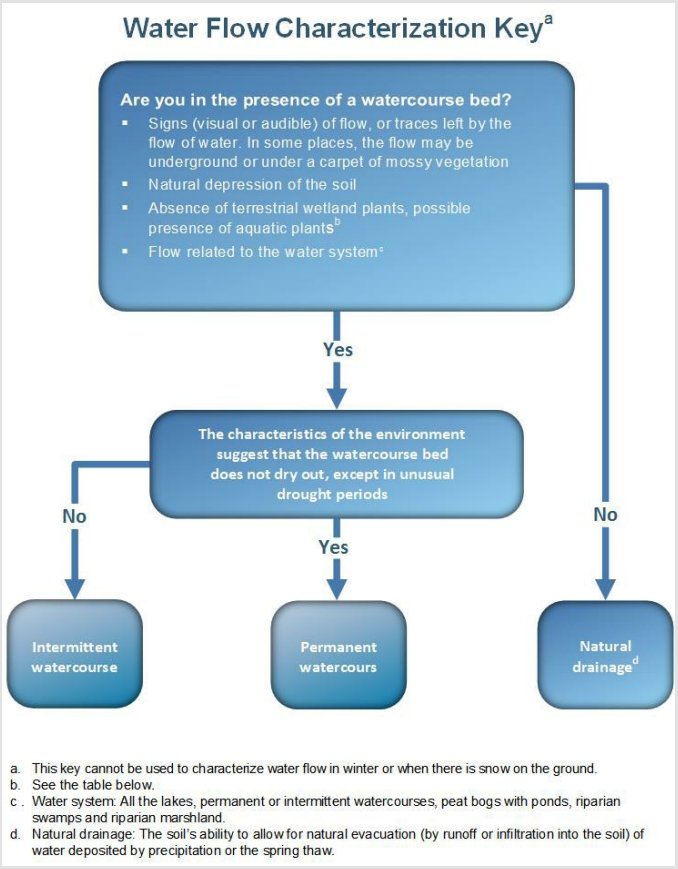
"**integrated forest development plan**" means a tactical plan or an operational plan referred to in section 54 of the Sustainable Forest Development Act (chapter A-18.1); (plan d'aménagement forestier intégré)

"**intermittent watercourse**" means a watercourse whose flow is intermittent and whose bed consequently dries up during certain times of year; (cours d'eau intermittent)

13

Additional information

The waterflow characterization key is used to differentiate an intermittent watercourse from a permanent watercourse or waterflow due to natural drainage.



a. This key cannot be used to characterize water flow in winter or when there is snow on the ground.
b. See the table below.
c . Water system: All the lakes, permanent or intermittent watercourses, peat bogs with ponds, riparian swamps and riparian marshland.
d. Natural drainage: The soil's ability to allow for natural evacuation (by runoff or infiltration into the soil) of water deposited by precipitation or the spring thaw.

Categories of Aquatic and Terrestrial Plants[a] for the Purposes of the Regulation

Aquatic plants[b]			Terrestrial wetland plants[c]		
			Riparian ecotone		Forest
Submerged leaves	Floating leaves	Emergent plants	Emerged plants	Shrub plants	Arborescent plants
Plants that are completely submerged throughout the year	Plants that may or may not have roots, whose foliage floats to the surface of the water	Plants that are rooted in the water for most of the vegetation season	Plants that grow in the riparian plain	Plants that grow in the riparian scrub	Plants that grow in the riparian forest
Common species					
Eelgrass and pondweed	Water lilies and water-shield	Bull rush, bur reed, arrowhead, pickerel weed, wild rice, cattail, water parsnip, flowering rush, common spike-rush, water calla	Reedgrass, phalaris, loosestrife, rush, bugleweed, yellow loosestrife, skullcap, jewelweed	Alder, willow and bog myrtle	Silver maple, American elm and black ash

a. Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, 2015. *Guide d'interprétation, Politique de protection des rives, du littoral et des plaines inondables*, Gouvernement du Québec, Direction des politiques de l'eau, 131 p.; Fleurbec, 1987. *Plantes sauvages des lacs, rivières et tourbières — Guide d'identification Fleurbec*, Saint-Augustin, Québec, 400 p.
b. Mosses are not aquatic plants.
c. Terrestrial wetland plants are located in flood plains, which start at the upper limit of the bank.

"**interregional trail**" means a hiking trail developed for recreational purposes, linking 2 municipalities or 2 regions, excluding trails intended for motorized allterrain vehicles; (parcours interrégional de randonnées)

14

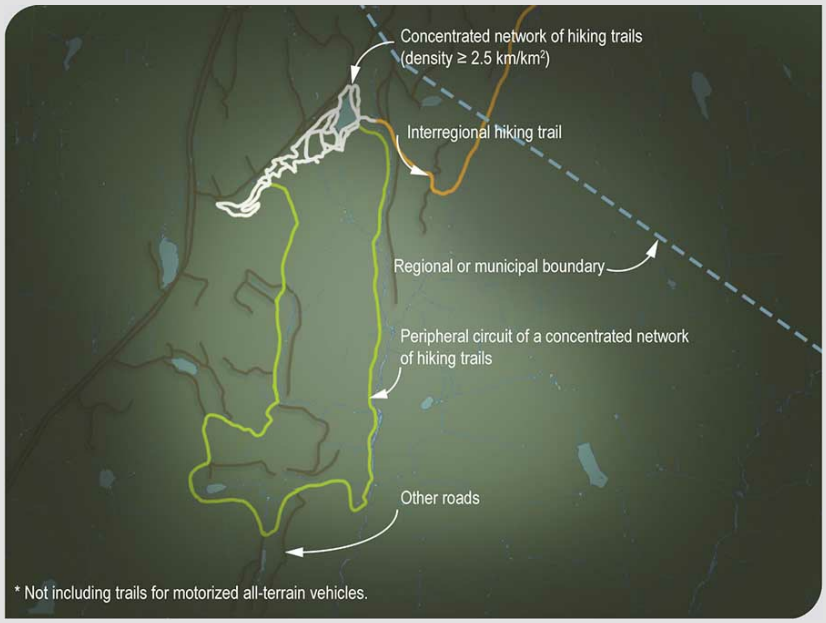


Figure 2D Peripheral circuit of a concentrated network of hiking trails, an interregional hiking trail and a concentrated network of hiking trails

"**island or peninsula inhabited by a colony of birds**" means an island or a peninsula inhabited by a colony of birds within the meaning of section 1 of the Regulation respecting wildlife habitats; (île ou presqu'île habitée par une colonie d'oiseaux)

"**isolated vacation site**" means land leased under section 47 of the Act respecting the lands in the domain of the State (chapter T-8.1) and intended for vacation, excluding land intended for the construction of a shelter; (site de villégiature isolé)

15

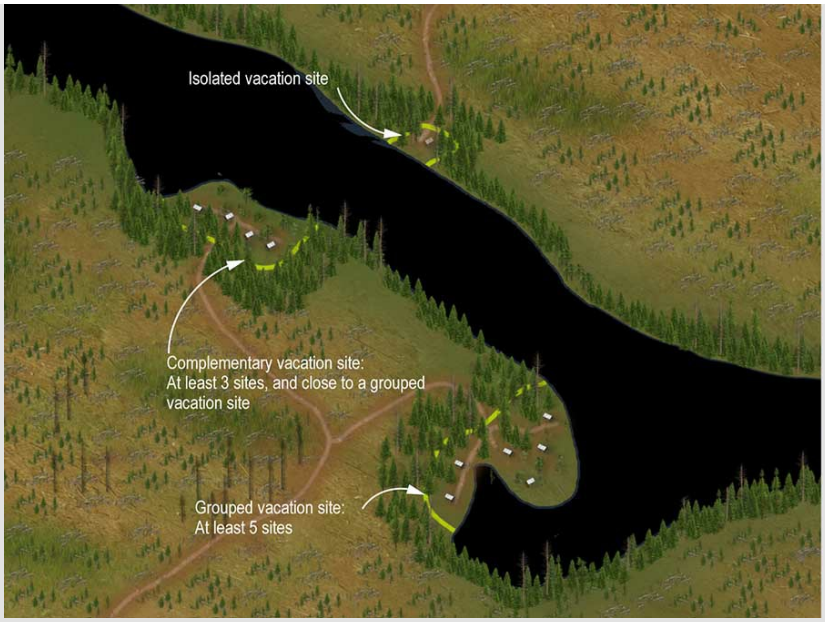


Figure 2C Diagram showing a complementary vacation site, an isolated vacation site and a grouped vacation site

"**landfill**" means a landfill within the meaning of the Regulation respecting the landfilling and incineration of residual materials (chapter Q-2, r. 19); (lieu d'enfouissement de matières résiduelles)

"**logging machine**" means a machine, motorized or not, mobile or stationary, including machines pulled by a motor vehicle, used to carry out one or more forest development activities; (engin forestier)

16

Additional information

A logging machine is used for a variety of purposes, such as cutting trees, processing stems, hauling wood and restoring logged areas to production. For example, a motorized all-terrain vehicle used to transport plants for reforestation is a logging machine.

"**maintenance work on a road, bridge or culvert**" means work performed to prevent the degradation of a road or road segment, including the bridges and culverts, so that it remains in the condition it was in at the time of its construction or latest improvement, as the case may be. In the case of a road, the work includes, among other things: the leveling and resurfacing of the roadway provided that it does not entail the road's reclassification; cleaning and digging ditches, the installation or replacement of drainage channels; the repair and stabilization of embankments; clearing the right-of-way of bushes to ensure visibility; spreading dust suppressants and spreading abrasives on roads during wintertime. In the case of a bridge or culvert, the work includes, among other things: clearing a culvert's entrance and repairing the roadway surface and kerbs of a bridge; (travaux d'entretien d'un chemin, d'un pont ou d'un ponceau)

17

Additional information

As indicated in the work type definitions, the condition of the road prior to the work is the reference for determining the type of work being performed. Road maintenance work is the routine work performed on a road to keep it in a useable condition or to prevent road degradation. In addition to those described in the definition, the following work is considered maintenance work:

- the maintenance of road signs and the replacement of damaged or missing signs;
- the repair of safety devices such as safety slides;
- the cleaning of a bridge's roadway surface;
- the clearing of snow from a road;
- the surfacing of a trail during winter;
- the installation of drainage channels or the correction of the drainage of a road or trail;
- the removal of trees or parts of trees that fell within a right-of-way and that pose a safety risk or impede user traffic;
- the clearing of a road's right-of-way outside of the roadway surface. This maintenance does not require an authorization unless commercial diameter timber is harvested.

Repairs to the roadway surface and kerbs of a bridge constitute maintenance work even if they have the effect of increasing its bearing capacity.

Maintenance or repair work on a road, bridge or culvert is not included in the work (construction, improvement of decommissioning of a multi-purpose road) that must be authorized under the Sustainable Forest Development Act.

"**marsh**" means land flooded permanently or temporarily, and dominated by grass growing on a mineral or organic soil. Shrubs and trees, if any, cover less than 25% of the swamp's area. A swamp is usually riparian, that is, adjacent to a lake or watercourse, or isolated; (marais)

"**Minister**" and "**department**" means the Minister responsible for the administration of the Sustainable Forest Development Act (chapter A-18.1) and the department within which the Minister discharges duties; (ministre and ministère)

"**muskrat habitat**" means a muskrat habitat within the meaning of section 1 of the Regulation respecting wildlife habitats; (habitat du rat musqué)

"**Native gathering or sojourn area**" means an area regularly frequented by Natives and located along a boat access route to trapping grounds or at the meeting point of a portage trail and a river or

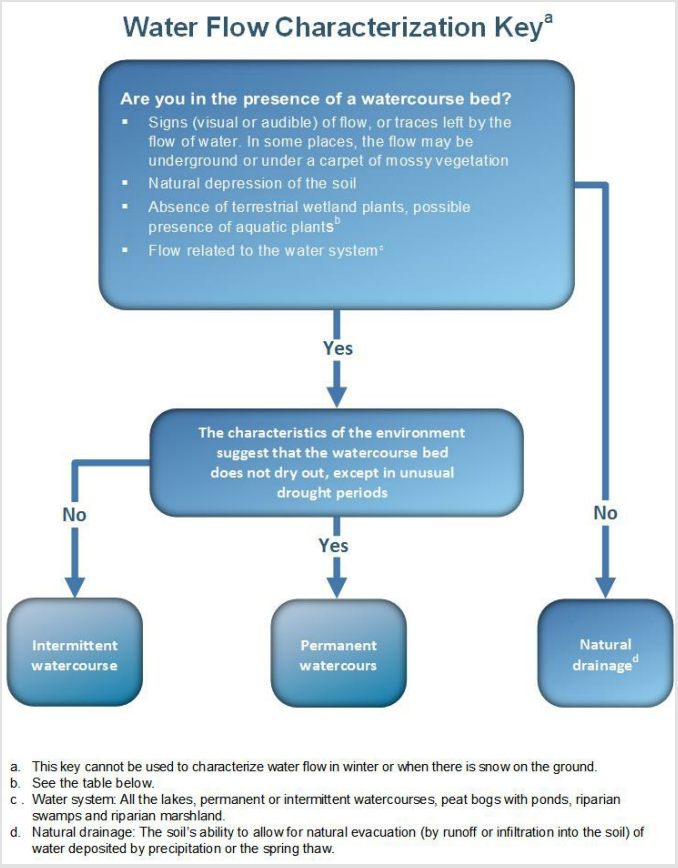
lake, identified by a Native community and indicated in the numeric information layers used for forest planning; (aire de rassemblement ou de séjour autochtone)

"**natural drainage**" means a soil's capacity to naturally discharge, by runoff or by infiltration into the soil, the waters brought by precipitations and the melting of snow; (drainage naturel)

18

Additional information

The waterflow characterization key is used to differentiate an intermittent watercourse from a permanent watercourse or waterflow due to natural drainage.



a. This key cannot be used to characterize water flow in winter or when there is snow on the ground.
b. See the table below.
c. Water system: All the lakes, permanent or intermittent watercourses, peat bogs with ponds, riparian swamps and riparian marshland.
d. Natural drainage: The soil's ability to allow for natural evacuation (by runoff or infiltration into the soil) of water deposited by precipitation or the spring thaw.

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Common species					
Eelgrass and pondweed	Water lilies and water-shield	Bull rush, bur reed, arrowhead, pickerel weed, wild rice, cattail, water parsnip, flowering rush, common spike-rush, water calla	Reedgrass, phalaris, loosestrife, rush, bugleweed, yellow loosestrife, skullcap, jewelweed	Alder, willow and bog myrtle	Silver maple, American elm and black ash

a. Sources: Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, 2015. *Guide d'interprétation, Politique de protection des rives, du littoral et des plaines inondables*, Gouvernement du Québec, Direction des politiques de l'eau, 131 p.; Fleurbec, 1987. *Plantes sauvages des lacs, rivières et tourbières — Guide d'identification Fleurbec*, Saint-Augustin, Québec, 400 p.
b. Mosses are not aquatic plants.
c. Terrestrial wetland plants are located in flood plains, which start at the upper limit of the bank.

“**numeric information layers**” means the most up-to-date numeric information layers used in the process of forest planning for the cartographic localization of places and territories in respect of which normative provisions are applicable; (couches d’informations numériques)

“**observatory**” means a site comprising facilities intended for astronomical observation and its service areas, such as shelters, toilets and parking lots; (observatoire)

“**outdoor recreation centre**” means a site developed to practise outdoor activities and its service areas, such as shelters, toilets and parking lots; (base de plein air)

“**outlying circuit of a concentrated network of hiking trails**” means a hiking trail developed for recreational purposes, connected to a concentrated network of hiking trails, except for trails intended for motorized all-terrain vehicles; (circuit périphérique d’un réseau dense de sentiers de randonnée)

19

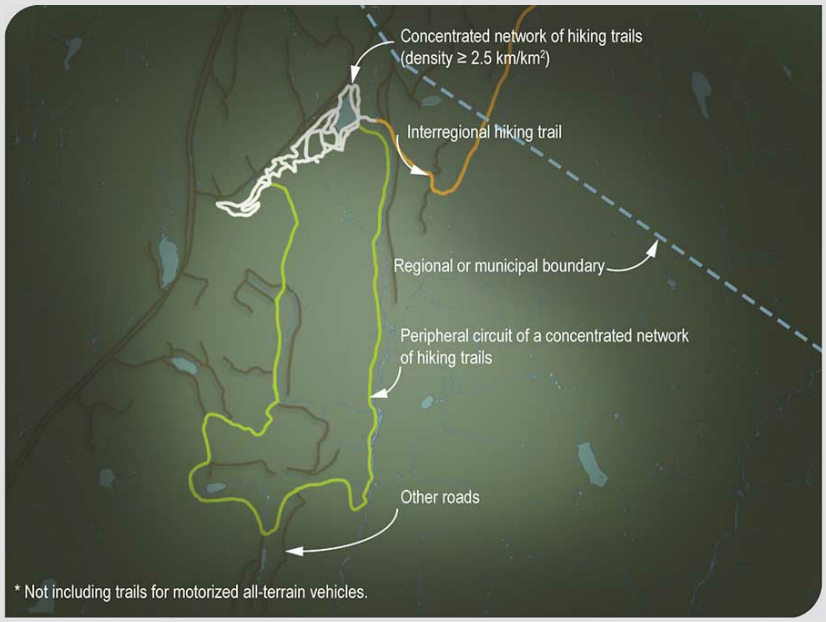


Figure 2D Peripheral circuit of a concentrated network of hiking trails, an interregional hiking trail and a concentrated network of hiking trails

“**partial cutting**” means a forest cutting that takes less than 50% of the basal area of a stand at each passage and that ensures at all times the maintenance of a forest cover at least 7 m high in commercial species; (coupe partielle)

“**peat bog**” means a piece of land covered with moss, resulting from the accumulation of partially decomposed organic matter. The organic matter is at least 30 cm thick. The water table is usually at the same level as the soil or close to its surface. A peat bog may be open (unwooded) or wooded; in the latter case, the trees are more than 4 m high with a cover equal to or greater than 25%. A peat bog with a pond is composed of one or more isolated bodies of water forming one or more ponds of various shapes; (tourbière)

20

Additional information

To be considered as such, a peat bog with a pond must include one or more bodies of water covering a total area of at least 0.5 ha.

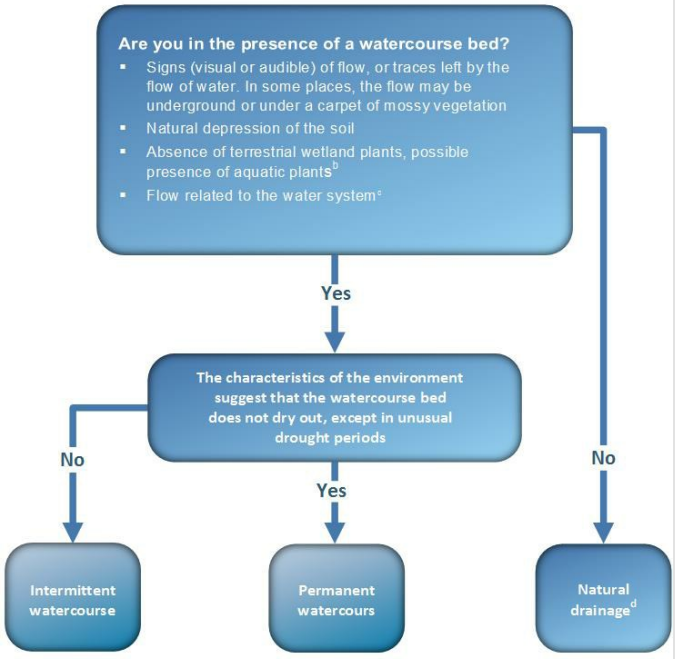
“**permanent watercourse**” means a continuous watercourse whose flow is permanent and whose bed consequently does not dry up, except during exceptional periods of drought; (cours d’eau permanent)

21

Additional information

The waterflow characterization key is used to differentiate an intermittent watercourse from a permanent watercourse or waterflow due to natural drainage.

Water Flow Characterization Key[a]



a. This key cannot be used to characterize water flow in winter or when there is snow on the ground.
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b. Mosses are not aquatic plants.
c. Terrestrial wetland plants are located in flood plains, which start at the upper limit of the bank.

"**pier**" means an intermediate support of a bridge's deck installed in the bed of a watercourse. Piers are made of reinforced concrete, wood or steel caissons or a combination of stakes crowned by a portal cap beam; (pile)

"**piling area**" means a site used to pile timber, bark, wood shavings or forest biomass, where lopping and sawing activities may take place; (aire d'empilement)

"**public beach**" means a site comprising a beach, a strip of land extending 300 m inland from the shoreline and the facilities necessary for swimming and relaxation; (plage publique)

22

Additional information

The shoreline of a body of water is measured by the high water level, i.e. the highest level reached by the water during its annual fluctuations. It is important not to confuse the high water level with the high water mark as defined in section 2.1 of the Protection Policy for Lakeshores, Riverbanks, Littoral Zones and Floodplains.

“**reception station**” means a place where the principal building is located, used to register, inform and supervise users and visitors who want to have access to an outfitting operation with exclusive rights, a controlled zone or a wildlife sanctuary; (poste d’accueil)

“**removable structure**” means a structure that is installed on a temporary basis to cross a watercourse; (ouvrage amovible)

“**repair work on a road, bridge or culvert**” means work carried out to put a degraded road or road segment, including the bridges and culverts, back in the condition it was in at the time of its construction or latest improvement, as the case may be. In the case of a bridge or culvert, the work includes, among other things: replacing the conduit of a culvert by a new one of the same type, altering the structure of a bridge to increase its bearing capacity such as the repair or replacement of the deck, of a part of the structure or of a part or all of the abutments; (travaux de réfection d’un chemin, d’un pont ou d’un ponceau)

23

Additional information

As indicated in the work type definitions, the condition of the road prior to the work is the reference for determining the type of work being performed. A segment of road is considered degraded when the required maintenance work has not been completed or can no longer be sufficient to maintain it in condition and ensure its safe use at a normal speed for the road class. Typical elements of a degraded road include:

- Trees that have grown on the road or the shoulders;
- A section of road that was washed away by water due to an uncorrected water management problem;
- A road that became only accessible by foot or ATV;
- A culvert pipe that was displaced by a flood (loss of fill, presence of chimneys, etc.) needs to be repaired (could be considered an improvement if a change in the structure type is required).

Work carried out to maintain the bearing capacity of a bridge at the level it was at the time of its construction or latest improvement constitutes repair work. It includes the repair or replacement of the deck, of a part of the structure or of all or part of the abutments.

In some cases, the purpose of the work may be to increase the bearing capacity of a bridge that has deteriorated over time, but not to the level it was at the time of its construction or latest improvement. This type of work also constitutes repair work. For example, replacement of the deck and girders is considered to be repair work even if the bearing capacity of the bridge increases from 10 tons before the work to 60 tons after the work, but does not reach the original level of 100 tons.

A road may be subjected to repair work on a section and include certain access structures used to cross a watercourse to be subjected to road improvement work. This is the case, for example, if you have to replace a culvert already in place with a circular conduit by a culvert with a spillway or an arch because of the obligation to ensure the free passage of fish.

Repair or maintenance work on a road, bridge or culvert is not included in the work (construction, improvement or decommissioning of a multi-purpose road) that must be authorized under the Sustainable Forest Development Act.

“**residual forest**” means a portion of forest that remains in place following a natural disturbance, such as fire, windfall and insect epidemics, or following a man-made disturbance; (forêt résiduelle)

“**rest area**” means a site developed along a road corridor for rest purposes or for picnicking and its service areas such as shelters, toilets and parking lots; (halte routière)

“**restaurant or accommodation site**” means a site that includes a dwelling offering restaurant or accommodation services on a commercial basis, or an area where an establishment has been constructed offering lodging for hunting and fishing activities on a commercial basis; (site de restauration ou d’hébergement)

“**right-of-way of a road**” means the surface occupied by the roadway, shoulders, ditches and embankments of a road, as well as the deforested strip of land on each side of the roadway. The roadway is generally located at the centre of the right-of-way; (emprise d’un chemin)

24

Additional information

Although generally located at the centre of the right-of-way, the roadway may, in some cases, be off-centre from the road axis, among other things due to operational constraints or safety considerations. In this example, the deforested strip of land on either side of the roadway will be wider on one side than on the other.

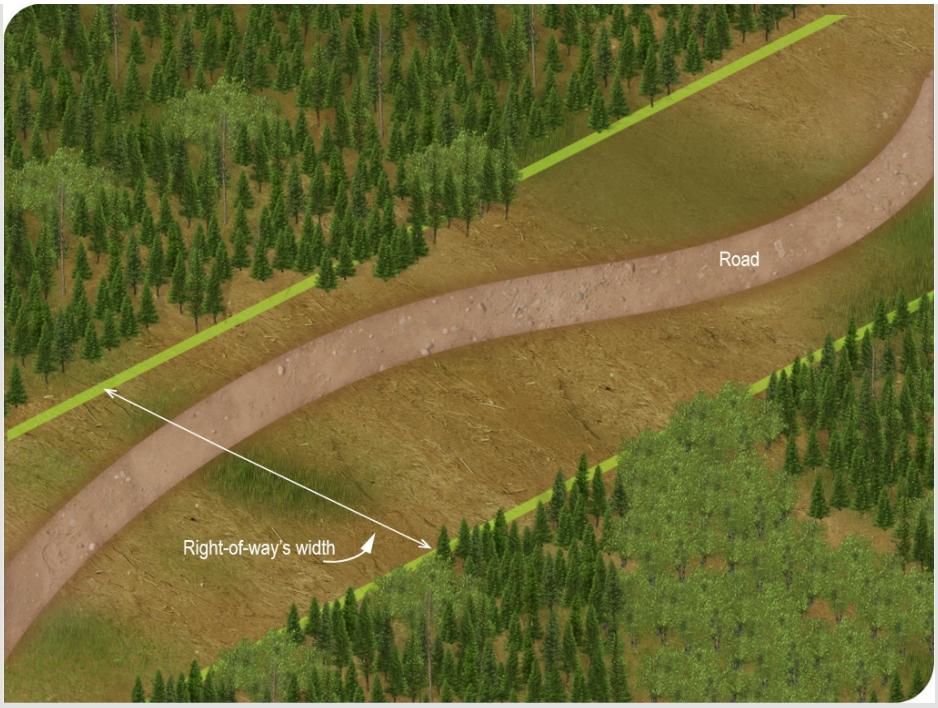


Figure 2E Right-of-way deforestation

"**riparian ecotone**" means the transitional zone between the water environment and the forest, characterized by the muscinal, herbaceous or shrubby vegetation of wetlands and sometimes including a few scattered trees; (écotone riverain)

"**road corridor**" means a numbered public road appearing on the official map of the Ministère des Transports and located in the bioclimatic domains of the maple or fir forest referred to in Schedule 1, or such a road located in the bioclimatic domain of the spruce-moss forest referred to in that Schedule that links 2 local municipalities or that covers a distance of no more than 50 km from the urban perimeter of a local municipality. That map is the map accessible on the website of the Ministère des Transports. A unnumbered public road giving access to an Indian reserve, to the settlements of Kitcisakik, Hunter's Point, Pakuashipi, Oujé-Bougoumou and Winneway, to an accommodation centre or a welcome centre in an outfitting operation, a controlled zone or a wildlife sanctuary within the meaning of sections 86, 104 and 111 of the Act respecting the conservation and development of wildlife (chapter C-61.1) is also considered a road corridor; (corridor routier)

25

Explanations

A road corridor is a numbered public road, located in one of the following bioclimatic domains referred to in Schedule 1 to the Regulation:

- the bioclimatic domains of the maple forest;
- the bioclimatic domains of the fir forest;
- the bioclimatic domain of the spruce-moss forest. In this bioclimatic domain, the road must connect two local municipalities or cover a distance of no more than 50 km from the urban perimeter of a local municipality.

These roads are shown on the official road map of Québec.

An unnumbered public road giving access to:

- an Indian reserve;
- the settlements of Kitcisakik, Hunter's Point, Pakuashipi, Oujé-Bougoumou and Winneway;
- an accommodation centre or a welcome centre to an outfitting operation, a constroled zone or a wildlife sanctuary within the meaning of sections 86, 104 and 111 of the Act respecting the conservation and development of wildlife(chapter C-61.1) ;

is also considered to be a road corridor.

"**salt lick**" means a salt lick within the meaning of section 1 of the Regulation respecting wildlife habitats; (vasière)

"**sandpit**" means an open-air site where unconsolidated substances such as sand, gravel and soil are extracted. Any site to extract unconsolidated substances transported by truck is deemed to be a sandpit for the purposes of this Regulation; (sablière)

26

Additional information

A site to extract unconsolidated substances that is located in whole or in part outside the right-of-way of a road, is considered to be a sandpit for the purposes of the Regulation.

"**scenic outlook**" means a site developed for the observation of nature; (belvédère)

“**swamp**” means land subject to seasonal floods or characterized by a soil permanently or temporarily saturated with water and dominated by a ligneous, shrub or arborescent vegetation growing on a mineral soil. The ligneous vegetal covers more than 25% of the marsh’s area. A marsh may either be riparian, that is, adjacent to a lake or watercourse, or isolated; (marécage)

“**territorial reference unit**” means a development unit or other forest in the domain of the State or a subdivision thereof, forming a single block, measuring less than 100 km^2 in the bioclimatic domains of the maple forest, less than 300 km^2 in the bioclimatic domains of the fir forest and less than 500 km^2 in the bioclimatic domain of the spruce-moss forest. Those bioclimatic domains are shown in Schedule 1. A territorial reference unit overlapping 2 bioclimatic domains is deemed to be part of the bioclimatic domain in which most of the area is found; (unité territoriale de référence)

“**thalweg**” means the line connecting the deepest points of the bed of a watercourse; (thalweg)

27

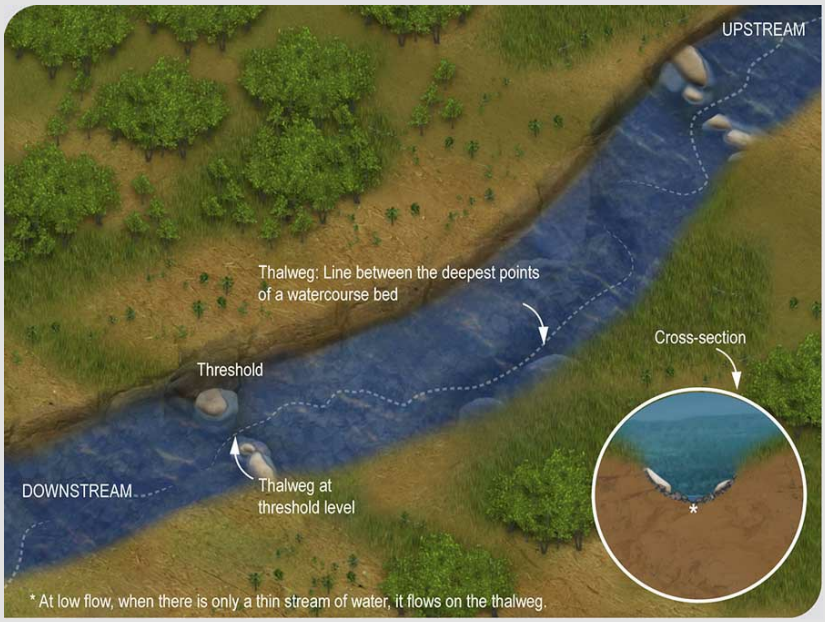


Figure 2F Thalweg

“**total cutting**” means a forest cutting carried out during one or more operations, spread over 10 years or less, that takes once all interventions are carried out more than 80% of the basal area of the species and diameters specified in the sylvicultural prescription of the stand; (coupe totale)

“**tourist circuits or roads**” means a road corridor recognized as a main interregional access road or as an itinerary proposed on one of the maps in the tourist guides published jointly by the Gouvernement du Québec and the regional tourist associations; (circuits ou routes touristiques)

“**trail intended for motorized all-terrain vehicles**” means a trail developed and maintained for users of motorized all-terrain vehicles, including snowmobile trails. The trails intended for motorized all-terrain vehicles that are to be protected are those used year after year and indicated in the numeric information layers used for forest planning; (sentier destiné aux véhicules tout terrain motorisés)

“**ungroomed road**” means a road free of stumps and free in whole or in part of vegetal cover, that has undergone no earth-moving operation besides what is required to fl atten its surface, and whose use is reserved for the harvest and transportation of timber in winter time; (chemin sans mise en forme)

“**visual setting**” means a part of the landscape visible from a site of interest over 360 degrees at a height of 1.5 m from the ground and whose limits are given by the surrounding topography; (encadrement visuel)

28

Additional information

The visible landscape must be identified from topography alone, without considering vegetation. The visual screen created by vegetation is not permanent: any change to the screen, as a result of windfall for example, would change the boundaries of the visible area. The use of topography to identify the visible landscape ensures that the entire landscape to be protected is included in the visual setting of a given site of interest.

“**water fowl gathering area**” means a water fowl gathering area within the meaning of section 1 of the Regulation respecting wildlife habitats (chapter C-61.1, r. 18); (aire de concentration d’oiseaux aquatiques)

“**water intake**” means a site subject to the Regulation respecting the quality of drinking water (chapter Q-2, r. 40) that includes a structure to draw water from a watercourse, lake, reservoir or spring and the 60 m strip of woodland surrounding it; (prise d’eau)

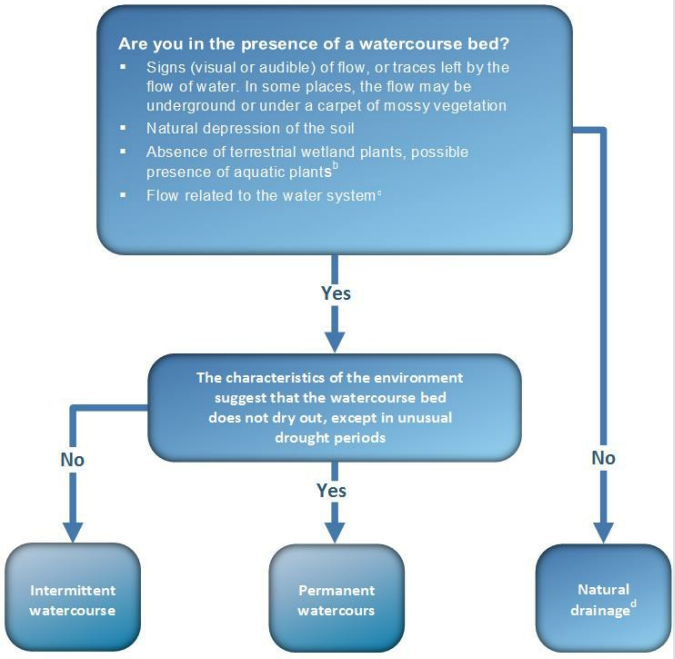
“**watercourse**” means any permanent or intermittent watercourse of a hydrographic system flowing in a bed, excluding the water discharged by the natural draining of the soil; (cours d’eau)

29

Additional information

The waterflow characterization key is used to differentiate an intermittent watercourse from a permanent watercourse or waterflow due to natural drainage.

Water Flow Characterization Key[a]



a. This key cannot be used to characterize water flow in winter or when there is snow on the ground.
b. See the table below.
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b. Mosses are not aquatic plants.
c. Terrestrial wetland plants are located in flood plains, which start at the upper limit of the bank.

"**white-tailed deer yard**" means a white-tailed deer yard within the meaning of section 1 of the Regulation respecting wildlife habitats; (aire de confinement du cerf de Virginie)

"**wilderness campground**" means a site established for the sojourn of campers, not supplied with running water or electric power by a private or public distribution network, and offering a lower quantity and quality of the other services; (camping rustique)

"**winter road**" means a temporary road summarily groomed and developed mainly for harvesting wood in winter; (chemin d'hiver)

Additional information

Winter roads are created mainly to harvest wood and transport it out of the forest in winter. However, they may also be created to allow for other activities, such as snowmobiling.

Winter road construction is fairly rudimentary. The road may or may not be groomed. Grooming may be continuous. The route can be cleared of stumps, partially or fully stripped of its vegetation cover, and levelled without any other earthwork, or simply created from mixing organic and non-organic material with snow. Winter roads are unditched, and only support heavy hauling (for example, of timber or forestry machines) during the winter months. Outside that period, they do not have the carrying capacity for heavy loads. The ad hoc removal of materials from the right-of-way is not considered a ditch as it does not manage the waters from the road within the right-of-way.

Winter roads can be used in other seasons, provided the soil's carrying capacity is sufficient to allow vehicle traffic without causing ruts. For example, they can be used for forest development activities such as intervention inventories or sylvicultural treatments, or for mineral exploration.

It is forbidden to build a bridge or a culvert on a winter road. Therefore, a roadway built in winter that includes bridges or culverts is not considered a winter road and must be usable during the summer. The road must be usable for all kinds of vehicles likely to take the class of road to which the road belongs.

"**wooden culvert**" means a culvert with a wooden arch; (ponceau de bois)

"**work to build a road, bridge or culvert**" means work performed to build a road or road segment at a new place, including work to build bridges and culverts on that road; (travaux de construction d'un chemin, d'un pont ou d'un ponceau)

31

Additional information

As indicated in the work type definitions, the condition of the road prior to the work is the reference for determining the type of work being performed. Road building work is all types of work required to build a road at a location where no road existed, including building structures to cross watercourses. Occasionally, the term "reconstruction" of a bridge or culvert is used. This type of work, as defined by the Regulation, is considered repair or improvement work on a road, depending on the condition of the structure before and after the work.

Section 41 of the Sustainable Forest Development Act states that a person who intends to carry out work for the construction, improvement or decommissioning of a multi-purpose road must be authorized by the Minister on the conditions determined by the Minister. When issuing the authorization, the Minister states which forest development activities are permitted and sets the conditions to be met when they are carried out.

"**work to close a road**" means work to prevent access to a road or road segment on a permanent or temporary basis. (travaux de fermeture d'un chemin)

32

Additional information

The Sustainable Forest Development Act states that a person who intends to carry out work for the construction, improvement or decommissioning of a multi-purpose road must be authorized by the Minister on the conditions determined by the Minister. When issuing the authorization, the Minister states which forest development activities are permitted and sets the conditions to be met when they are carried out.

For the purposes of this Regulation, an outdoor recreation centre, a scenic outlook, a developed campground, a wilderness campground, an ecological or nature interpretation centre, a cottage that offers lodging and operated on a commercial basis by the manager of an outfitting operation, a controlled zone or a wildlife sanctuary, an outlying circuit of a concentrated network of hiking trails, an accommodation centre, a rest area, a landfill, an observatory, an interregional trail, a public beach, a reception station, a water intake, a concentrated network of hiking trails, a trail intended for motorized all-terrain vehicles, a dock site with a boat ramp, a restaurant or accommodation site, a vacation site, a downhill skiing station and a fish hatchery are those for which a right has been granted under a law or regulation of the Government.

33

Additional information

These particular places and territories are usually shown in the Public Land Use Plan or are the subject of a lease or right of occupation under the Act respecting the lands in the domain of the State.

Chapter II - Protection of particular places and territories

Division I - General

§1. Prohibited forest development activities

- Section 3. Particular places and territories
- Section 4. Archaeological sectors
- Section 5. Trapping camps
- Section 6. Exceptions applicable to the holders of certain permits

§2. Strips of woodland

- Section 7. Strips of woodland of at least 60 m
- Section 8. Strips of woodland of at least 30 m
- Section 9. Partial harvesting
- Section 10. Deforestation and spacing between felling and hauling trails or other roads
- Section 11. Exceptions applicable to the holders of certain permits

§3. Visual setting

- Section 12. Visual setting of 1.5 km
- Section 13. Visual setting of 3 km
- Section 14. Activités d'aménagement forestier

§4. Maintenance of an area of stands on islands, in outfitting operations with exclusive rights, controlled zones and wildlife sanctuaries

- Section 15. Islands of 250 ha to 500 ha
- Section 16. Outfitting operations with exclusive rights, controlled zones and wildlife sanctuaries

§5. Protection of certain trails

- Section 17. Prohibition of hauling and trucking
- Section 18. Preservation and restoration

Division II - Special provisions applicable to Native portage trails, Native campgrounds and Native gathering or sojourn areas

- Section 19. Native portage trails
- Section 20. Native campground established pursuant to the Act respecting hunting and fishing rights in the James Bay and New Québec territories or used to trap in a beaver reserve
- Section 21. Native campground or group of Native campgrounds not referred to in the second paragraph of section 20 on the territory of a beaver reserve
- Section 22. Native gathering or sojourn area
- Section 23. Exceptions applicable to the holders of certain permits
- Section 24. Limitation on the application of protective provisions

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Chapter II – Protection of particular places and territories
Division I - General
§1 - Prohibited forest development activities

Section 3

No forest development activity may be carried out in the following places and territories:

1. a protected area, proposed or permanent, of Category I, II or III of the International Union for Conservation of Nature, constituted in accordance with the Natural Heritage Conservation Act (chapter C-61.01) or the Parks Act (chapter P-9) and entered in the (in French only) register of protected areas, unless the carrying out of the activity is authorized under one of those Acts or pursuant to them;
2. an outdoor recreation centre;
3. a scenic outlook;
4. a developed campground;
5. a wilderness campground;
6. an accommodation centre;
7. a rest area;
8. an island whose area is less than 250 ha;
9. an observatory;
10. a public beach;
11. a water intake;
12. an archeological site;
13. a dock site with a boat ramp;
14. a restaurant or accommodation site;
15. a burial site;
16. a complementary vacation site;
17. an isolated vacation site or other land leased under section 47 of the Act respecting the lands in the domain of the State (chapter T-8.1);
18. a grouped vacation site;
19. a projected site or place, referred to in subparagraphs 2 to 4, 6, 10, 13, 14, 16, 18 and 20, and indicated in a (French website only) regional plan for the development of the public territory – recreation and tourism sector - or in a regional plan for integrated land and resource development;
20. a downhill skiing station;
21. a fish hatchery.

1

Objective

- To preserve the integrity of a particular place or territory.

Explanations

A number of places and territories where forest development activities are prohibited are defined in section 2 of the Regulation.

In spite of this, section 6 allows the holders of certain types of forestry permits to carry out forest development activities in a variety of places and territories. The Minister responsible for enforcing the Sustainable Forest Development Act lists the authorized forest development activities in the forestry permits and sets the conditions that must be met when carrying out the activities.

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

The Minister of Energy and Natural Resources oversees the management of lands in the domain of the State (in French only). The Minister may lease or sell land, or grant other rights of use, for example for land that is leased under section 47 of the Act respecting the lands in the domain of the State (chapter T 8.1), as mentioned in paragraph 17 of this section.

The regional plan for public land development (in French only) is intended to establish, in conjunction with regional stakeholders, where, when and how land rights may be issued in order to ensure harmonization of public land use.

The first paragraph does not apply to archeological sites where the Minister has allowed, under the Sustainable Forest Development Act (chapter A-18.1), forest development activities to be carried out. The person carrying out the activities must however leave the soil intact. Furthermore, that person must harvest trees when the ground is frozen at a depth of at least 35 cm.

Before allowing forest development activities to be carried out on an archaeological site other than a site located in a classified or declared heritage site entered in the (in French only) cultural heritage register referred to in section 5 of the Cultural Heritage Act (chapter P-9.002), the Minister consults the Minister responsible for the administration of that Act to obtain his or her opinion on the cultural interest of the site.

2

Objectives

- To allow certain forest development activities in or near a particular place
- To reconcile forest development activities with the protection of the cultural heritage

Explanations

A person wishing to carry out forest development activities on an archeological site that is not a classified or declared heritage site must obtain authorization from the Minister responsible for applying the Sustainable Forest Development Act. Before authorizing the activities, the Minister must consult the Minister responsible for applying the Cultural Heritage Act to obtain his or her opinion of the site’s cultural interest. In light of that opinion, the Minister responsible for applying the Sustainable Forest Development Act may grant authorization, stating which forest development activities are permitted and setting the conditions that must be met when they are carried out.

The carrying out of forest development activities on a classified or declared heritage site requires the authorizations provided for in the Cultural Heritage Act.

3

Objectives

- To allow certain forest development activities in or near a particular place
- To reconcile forest development activities with the protection of the cultural heritage

Explanations

Two authorizations are needed to carry out forest development activities on a classified or declared heritage site. The person wishing to carry out the activities must obtain authorization from the Minister responsible for applying the Cultural Heritage Act and from the Minister responsible for applying the Sustainable Forest Development Act. The latter, when giving authorization, may specify which forest development activities are permitted and set the conditions to be met when they are carried out.

Additional information

Classified heritage sites are listed in the Répertoire du patrimoine culturel du Québec (Directory of Cultural Heritage) (in French only).

Chapter II – Protection of particular places and territories Section I - General §1 - Prohibited forest development activities

Section 4

A person who carries out forest development activities in an archaeological sector must leave the soil intact. Furthermore, the person must harvest trees when the ground is frozen at a depth of at least 35 cm.



Objectives

- To preserve the integrity of a particular place or territory
- To allow certain forest development activities in or near a particular place

This section does not apply to archeological sites where the Minister has allowed, under the Sustainable Forest Development Act (chapter A-18.1), forest development activities to be carried out on conditions different from those provided for in the first paragraph. Before allowing forest development activities to be carried out on an archaeological site on conditions different from those provided for in the first paragraph, the Minister consults the Minister responsible for the administration of the Cultural Heritage Act (chapter P-9.002) to obtain his or her opinion on the cultural interest of the sector.



Objectives

- To allow certain forest development activities in or near a particular place
- To reconcile forest development activities with the protection of the cultural heritage

Explanations

The Minister responsible for applying the Sustainable Forest Development Act may allow a person to carry out forest development activities in an archeological sector outside the period when the ground is frozen at a depth of at least 35 cm, or to disturb the soil when doing so. The Minister responsible for applying the Sustainable Forest Development Act must first consult the Minister responsible for applying the Cultural Heritage Act to obtain his or her opinion of the sector's cultural interest. The Minister responsible for applying the Sustainable Forest Development Act may, when giving authorization, specify which forest development activities are permitted and set the conditions to be met when they are carried out.

Chapter II – Protection of particular places and territories
Division I - General
§1 - Prohibited forest development activities

Section 5

Where a trapping camp erected under section 88 of the Act respecting the conservation and development of wildlife (chapter C-61.1) is permanently installed in a development unit or other forest in the domain of the State, no forest development activity may be carried out over an area of 4,000 m2, including the camp area.

The camp must be indicated in the numeric information layers used for forest planning.

1

Objectives

- To preserve the integrity of a particular place or territory
- To reconcile the various activities that take place in the forest
- To provide protection for a known place or territory in the public forest

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

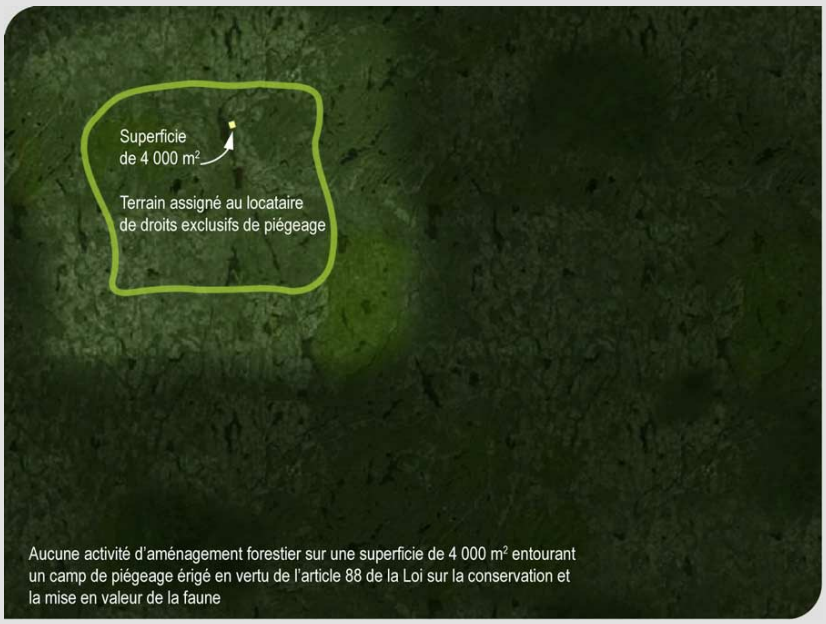


Figure 5 Forest development activities that are prohibited around a trapping camp

This section does not apply to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects or issued for public utility works, nor to the holder of a forestry permit issued for forest development activities carried out by the holder of mining rights for the purposes of exercising his or her rights, unless the mining activities are to extract surface mineral substances, or when the area affected by the forest development activities occupies more than 10% of the area referred to in the first paragraph.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person may carry out forest development activities over an area of 4,000 m² around a trapping camp erected under section 88 of the Act respecting the conservation and development of wildlife (chapter C-61.1), provided a forestry permit is obtained. However, only the following forest development activities will be permitted in that area:

- activities required for wildlife, recreational or agricultural development projects;
- activities required for public utility works;
- activities carried out by the holder of mining rights for the purpose of exercising those rights, unless the mining activities are to extract surface mineral substances. In addition, the area affected by the forest development activities must not exceed 400 m², or 10 % of the area referred to in the first paragraph of this section.

The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows

the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter II – Protection of particular places and territories Division 1- General §1 - Prohibited forest development activities

Section 6

Subparagraphs 2 to 10 and 13 to 21 of the first paragraph of section 3 do not apply to the holder of a forestry permit issued for forest development activities carried out by the holder of mining rights for the purposes of exercising his or her rights, unless the mining activities are to extract surface mineral substances, nor to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects. Subparagraphs 2 to 11 and 13 to 21 of the first paragraph of section 3 do not apply to a holder of a forestry permit issued for public utility works.

1

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit may carry out the forest development activities required for wildlife, recreational or agricultural development projects at the places and in the territories specified in subparagraphs 2 to 10 and 13 to 21 of the first paragraph of section 3. A holder of mining rights who also holds a forestry permit may also carry out forest development activities at those places and in those territories, unless the mining activities are to extract surface mineral substances. The places and territories in question are:

Place or territory	Place or territory
(2) an outdoor recreation centre;	(13) a dock site with a boat ramp;
(3) a scenic outlook;	(14) a restaurant or accommodation site;
(4) a developed campground;	(15) a burial site;
(5) a wilderness campground;	(16) a complementary vacation site;
(6) an accommodation centre;	(17) an isolated vacation site or other land leased under section 47 of the Act respecting the lands in the domain of the State (chapter T-8.1);
(7) a rest area;	(18) a grouped vacation site;
(8) an island whose area is less than 250 ha;	(19) a projected site or place, referred to in subparagraphs 2 to 4, 6, 10, 13, 14, 16, 18 and 20, and indicated in a regional plan for the development of the public territory – recreation and tourism sector - or in a regional plan for integrated land and resource development;
(9) an observatory;	(20) a downhill skiing station;
(10) a public beach;	(21) a fish hatchery.

In addition, a person who holds a forestry permit may carry out the forest development activities required for public utility works at the places and in the territories specified in subparagraphs 2 to 11 and 13 to 21 of the first paragraph of section 3. The places and territories in question are:

Place or territory	Place or territory
(2) an outdoor recreation centre;	(13) a dock site with a boat ramp;
(3) a scenic outlook;	(14) a restaurant or accommodation site;
(4) a developed campground;	(15) a burial site;
(5) a wilderness campground;	(16) a complementary vacation site;
(6) an accommodation centre;	(17) an isolated vacation site or other land leased under section 47 of the Act respecting the lands in the domain of the State (chapter T-8.1);
(7) a rest area;	(18) a grouped vacation site;
(8) an island whose area is less than 250 ha;	(19) a projected site or place, referred to in subparagraphs 2 to 4, 6, 10, 13, 14, 16, 18 and 20, and indicated in a regional plan for the development of the public territory – recreation and tourism sector - or in a regional plan for integrated land and resource development;
(9) an observatory;	(20) a downhill skiing station;
(10) a public beach;	(21) a fish hatchery.

The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter II – Protection of particular places and territories Division I - General §2 - Strips of woodland

Section 7

A strip of woodland at least 60 m in width must be preserved around the following places and territories:

1. an ecological reserve established under the Natural Heritage Conservation Act (chapter C-61.01), a proposed ecological reserve provided for in that Act or a national park established under the Parks Act (chapter P-9), except where the limit of the area is a road;
2. an outdoor recreation centre;
3. a scenic outlook;
4. a developed campground;
5. a wilderness campground;
6. a cottage that offers lodging and operated on a commercial basis by the manager of an outfitting operation, a controlled zone or a wildlife sanctuary;
7. an accommodation centre;
8. a rest area;
9. the facilities in place in an ecological or nature interpretation centre or a concentrated network of hiking trails;
10. an observatory;
11. a reception station;
12. a refuge erected on land in respect of which a right has been issued under the Act respecting the lands in the domain of the State (chapter T-8.1) or under sections 88 and 118 of the Act respecting the conservation and development of wildlife (chapter C-61.1) and used as a shelter by users of an outlying circuit of a concentrated network of hiking trails, an interregional trail, a concentrated network of hiking trails and users of a trail intended for motorized all-terrain vehicles;
13. a dock site with a boat ramp;
14. a restaurant or accommodation site;
15. a complementary vacation site;
16. an isolated vacation site;
17. a grouped vacation site;
18. a classified heritage site entered in the (French website only) register of cultural heritage referred to in section 5 of the Cultural Heritage Act (chapter P-9.002).

1

Objectives

- To preserve the integrity of a particular place or territory
- To maintain landscape quality
- To contribute to the quality of the experience in the forest
- To reconcile forest development activities with protection of the cultural heritage

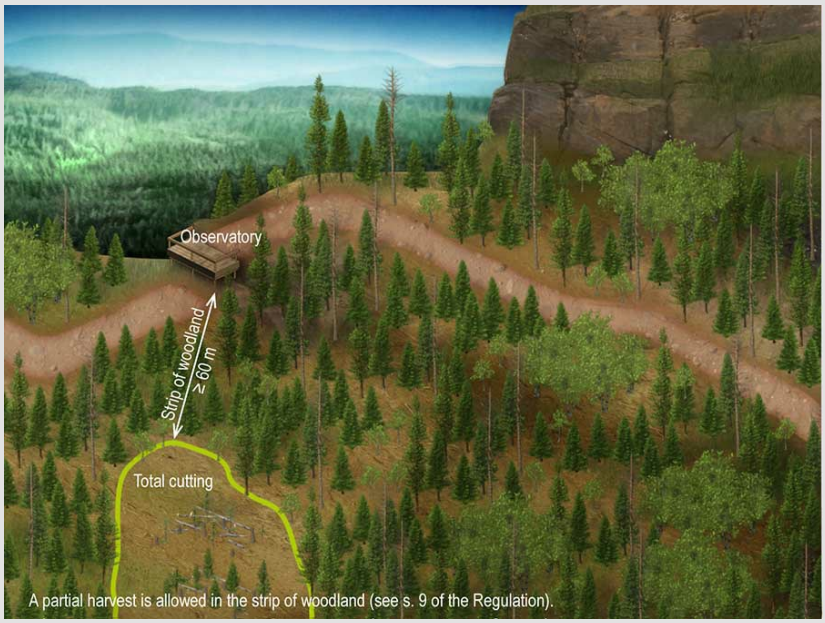


Figure 7A Strip of woodland around an observatory



Figure 7B Strip of woodland around a reception station



Figure 7C Strip of woodland around a shelter for users of hiking trails

Chapter II – Protection of particular places and territories Section I - General §2 - Strips of woodland

Section 8

A strip of woodland at least 30 m wide must be preserved around the following places and territories:

1. a sugar bush;
2. a landfill;
3. a burial site.

1

Objectives

- To preserve the integrity of a particular place or territory
- To reconcile the various activities that take place in the forest
- To protect the investments made in a particular place or territory
- To allow certain forest development activities in or near a particular place

Additional information

A sugar bush operated for acericultural purposes (subparagraph 1 of the first paragraph) is governed by a sugar bush management permit for acericultural purposes issued pursuant to the Sustainable Forest Development Act .

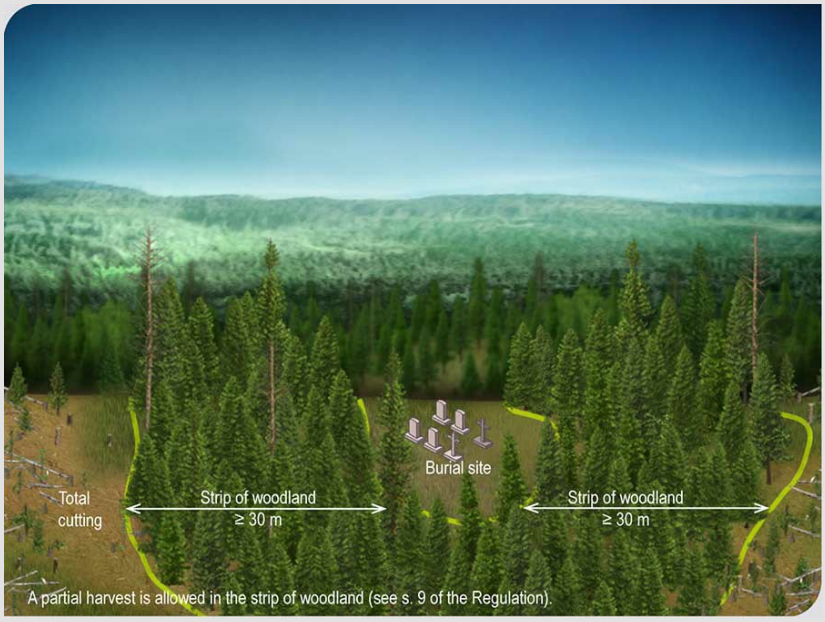


Figure 8A Strip of woodland around a burial site

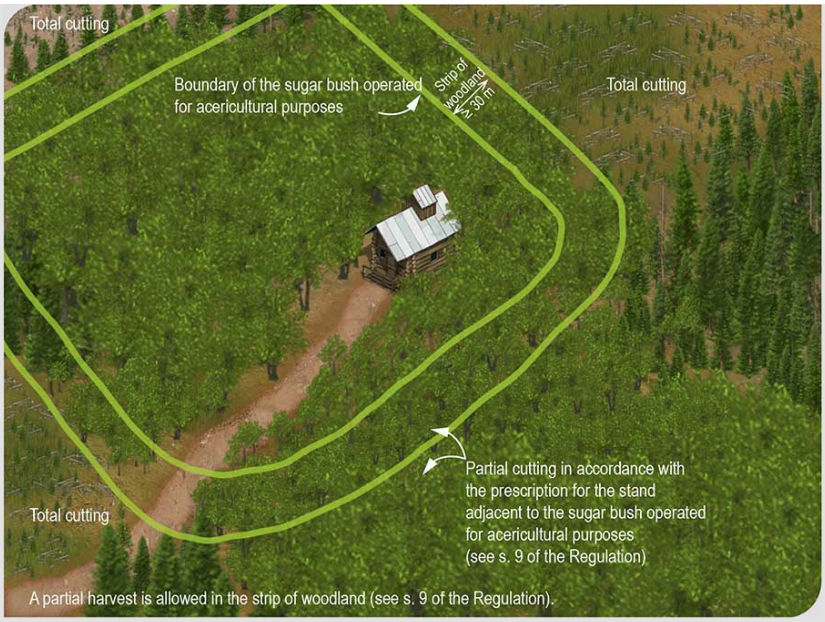


Figure 8B Strip of woodland around a sugar bush operated for acericultural purposes

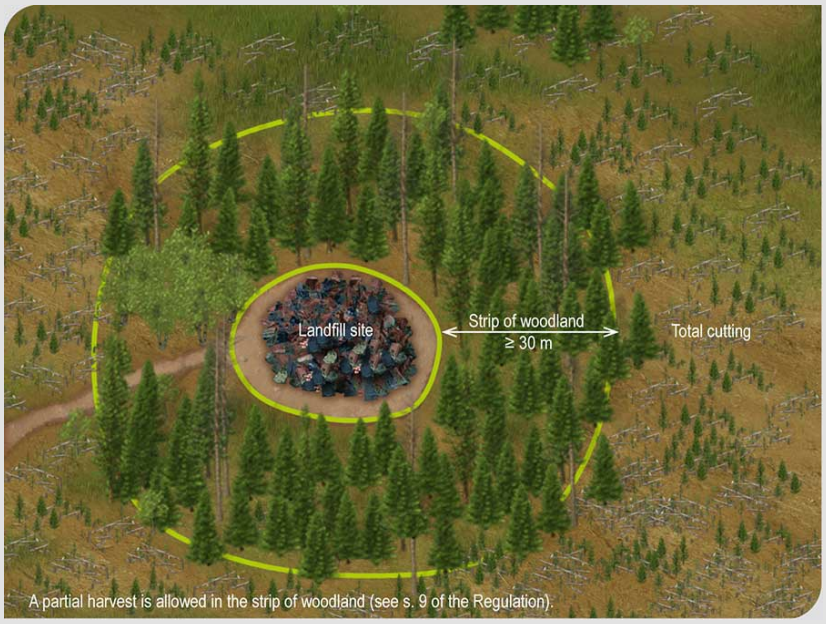


Figure 8C Strip of woodland around a landfill

A strip of woodland at least 30 m in width must also be kept on each side of the following roads and trails:

1. a road identified as a road corridor, unless the sylvicultural treatment carried out where the road is located is total cutting carried out according to the conditions of block cutting, or partial cutting;
2. a hiking trail forming part of an ecological or nature interpretation centre or a concentrated network of hiking trails;
3. an access trail to a scenic outlook, an outlying circuit of a concentrated network of hiking trails or an interregional trail, specifically deforested for those purposes;
4. a portage trail included in a canoe-kayak-camping course, specifically deforested for those purposes;
5. a developed trail.

2

Objectives

- To preserve the integrity of a particular place or territory
- To reconcile the various activities that take place in the forest
- To allow certain forest development activities in or near a particular place
- To contribute to the quality of the experience in the forest

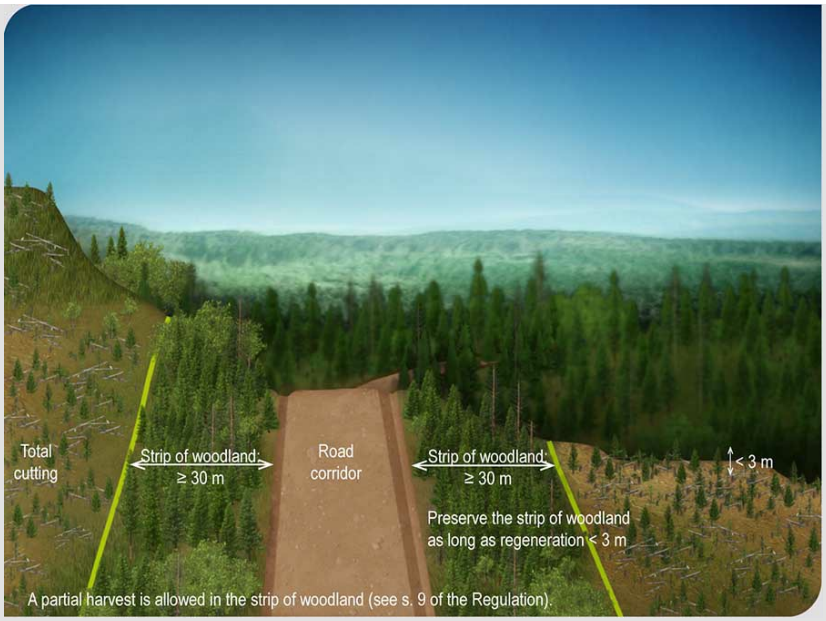


Figure 8D Total cutting of the strip of woodland is prohibited along a road corridor as long as regeneration in the adjacent cutting area is < 3 m



Figure 8E Block cutting and partial cutting along a road corridor

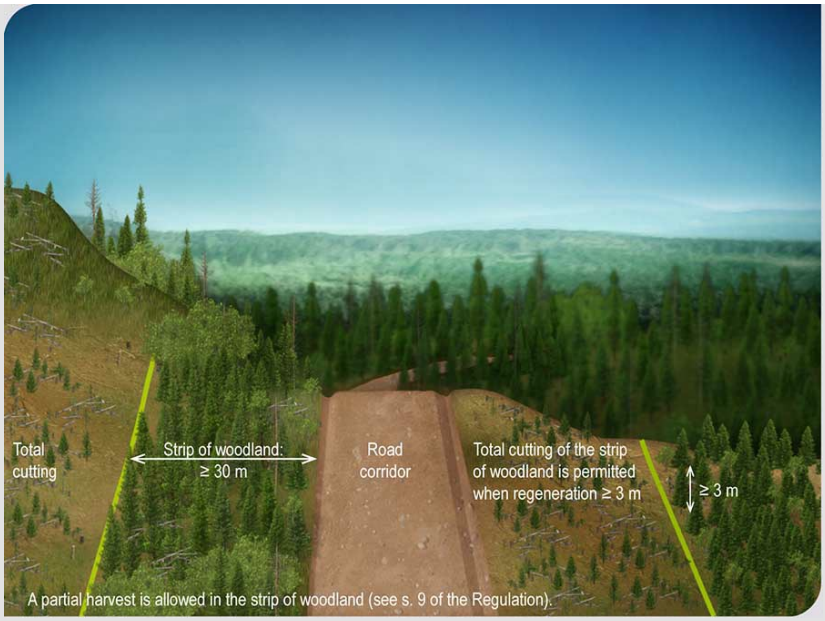


Figure 8F Total cutting of the strip of woodland is permitted along a road corridor when regeneration in the adjacent cutting area is ≥ 3 m



Figure 8G Strip of woodland preserved on each side of a trail

The strip of woodland of a road identified as a road corridor must be maintained until regeneration is established in the cutting area adjacent to that strip of woodland and has reached an average height of 3 m.

3

Objectives

- To reconcile the various activities that take place in the forest
- To allow certain forest development activities in or near a particular place
- To contribute to the quality of the experience in the forest

Chapter II – Protection of particular places and territories Division I - General §2 - Strips of woodland

Section 9

A partial harvest not exceeding 40% of the merchantable stems, in the case of stands of species referred to in Part A of Schedule 2, or 40% of the basal area in the case of stands of species referred to in Part B of that Schedule, is however allowed in the strip of woodland when forest operations are carried out on the adjacent land. However, the density of the stand may never be reduced to less than 700 merchantable stems/ha, in the case of stands of species referred to in Part A of Schedule 2, or the basal area may not be reduced to less than 16 m2/ha, in the case of stand of species referred to in Part B of that Schedule. Despite the first and second paragraphs, where the sylvicultural prescription provides for partial cutting in the stand adjacent to the strip of woodland referred to in sections 7 and 8, the harvest level indicated in the sylvicultural prescription of the adjacent stand then applies to that strip of woodland.

1

Objectives

- To allow certain forest development activities in or near a particular place
- To allow for the harvesting of wood
- To ensure the renewal of trees in the strip of woodland

Explanations

Some of the trees in the strip of woodland alongside the places and territories mentioned in sections 7 and 8 may be cut if forestry operations are carried out on the adjacent site. The permitted intensity of harvesting varies by stand type. In the case of a stand composed of the species referred to in Part A of Schedule 2, up to 40% of the merchantable stems may be harvested, provided the density of the stand is not reduced to less than 700 merchantable stands/ha. In the case of a stand composed of species referred to in Part B of that Schedule, up to 40% of the basal area may be harvested, provided the density of the stand is not reduced to less than 16 m²/ha. However, where partial cutting takes place in the stand adjacent to the strip of woodland on either side of the places and territories listed in sections 7 and 8, the harvest level in the strip of woodland must comply with the specifications set out in the sylvicultural prescription of the adjacent stand..

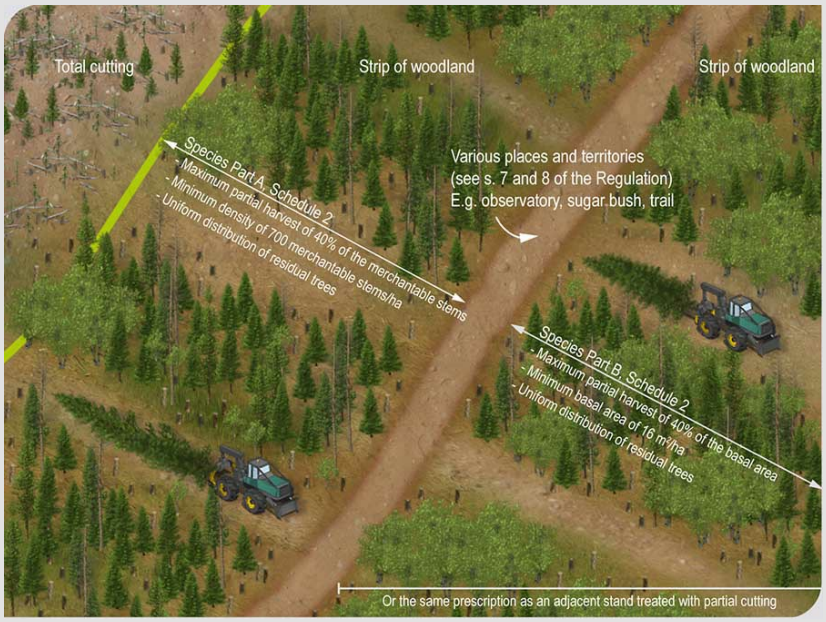


Figure 9 Partial cutting in the strip of woodland alongside various places and territories

Residual trees in the strip of woodland must be spread uniformly so as to constitute a visual screen and contribute to maintain the forest ambiance and the function of the place or territory concerned.

2

Objective

- To contribute to the quality of the experience in the forest

Total cutting is prohibited in the strip of woodland.

3

Objective

- To contribute to the quality of the experience in the forest

Chapter II – Protection of particular places and territories Division I - General §2 - Strips of woodland

Section 10

In a strip of woodland kept along a road identified as a road corridor, an outlying circuit of a concentrated network of hiking trails, an interregional trail or a portage trail included in a canoe-kayak-camping course, a felling and hauling trail or other road may be constructed only at a distance of more than 250 m from another felling and hauling trail or another road. Deforestation for that purpose may not exceed the width of the felling and hauling trail or the width of the road, including the roadway, embankments and ditches.

1

Objectives

- To contribute to the quality of the experience in the forest
- To reconcile the various activities that take place in the forest
- To allow certain forest development activities in or near a particular place

Additional information

Roadway width by road class is shown in Schedule 4.

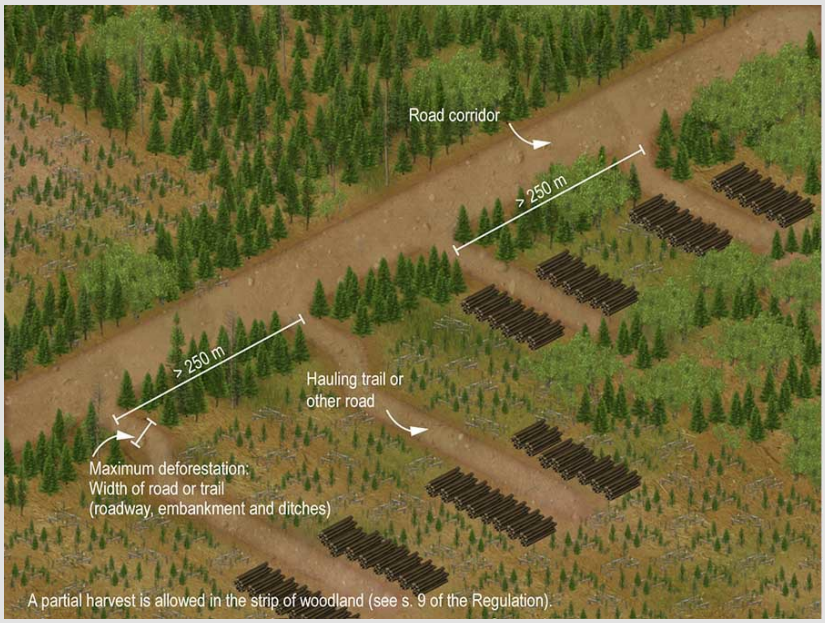


Figure 10 Spacing of hauling trails in the strip of woodland along a road corridor

Division I - General §2 - Strips of woodland

Section 11

Sections 7 to 10 do not apply to the holder of a forestry permit issued for public utility works.

1

Objective

- To reconcile the various activities that take place in the forest

Explanations

A person who holds a forestry permit may carry out the forest development activities required for public utility works in the strip of woodland surrounding the places and territories mentioned in sections 7 to 10 without applying the standards prescribed by those sections. The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter II – Protection of particular places and territories Division I - General §3 - Visual setting

Section 12

A visual setting of 1.5 km must be preserved along tourist circuits or routes and around the following places and territories:

1. a rest area;
2. a public beach;
3. a dock site with a boat ramp when it includes in its service areas restaurant and accommodation facilities;
4. a proposed site or place, referred to in paragraphs 2 and 3 and indicated in the regional plan for the (French website only) development of the public territory - recreation and tourism sector - or in a regional plan for integrated land and resource development;
5. a heritage site declared by the Government under the Cultural Heritage Act (chapter P-9.002).

1

Objectives

- To maintain landscape quality
- To reconcile the various activities that take place in the forest
- To contribute to the quality of the experience in the forest
- To reconcile forest development activities with the protection of the cultural heritage

Additional information

The regional plan for public land development is intended to establish, in conjunction with regional stakeholders, where, when and how land rights may be issued in order to ensure harmonization of public land use. Heritage sites are listed in the (French website only) Répertoire du patrimoine culturel du Québec (Directory of Cultural Heritage). The following guide (in French only) contains details of good landscape quality maintenance practices: Stratégie d'aménagement pour l'intégration visuelle des coupes dans les paysages

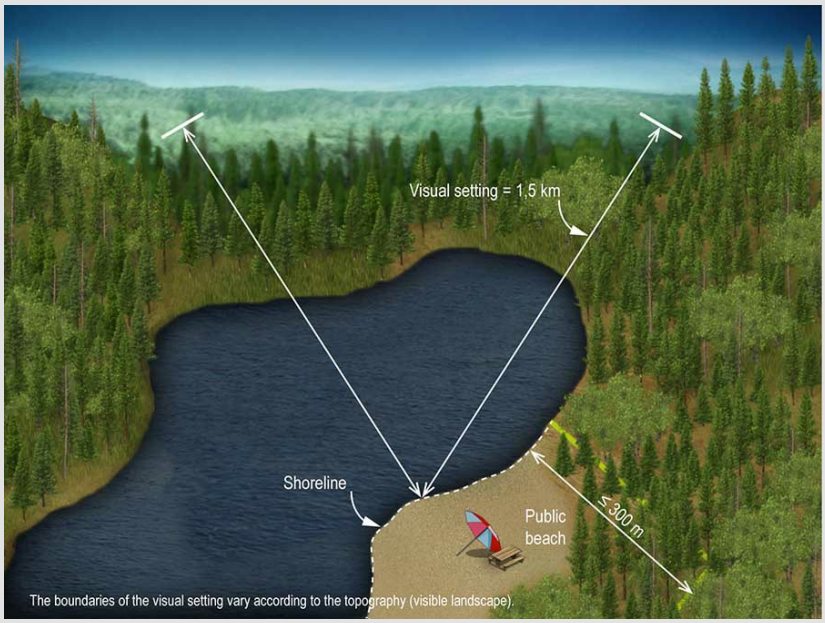


Figure 12A Visual setting around a public beach

Chapter II – Protection of particular places and territories
Division I - General
§3 - Visual setting

Section 13

A visual setting of 3 km must be preserved around the following places and territories:

1. a developed campground with at least 8 camping lots;
2. a scenic outlook;
3. a developed campground with at least 8 camping lots;
4. an accommodation centre;
5. the boundaries of a town;
6. a reception station;
7. a complementary vacation site;
8. a grouped vacation site;
9. a projected site or place, referred to in paragraphs 1 to 4, 6 to 8 and 10 and indicated in the (French website only) regional plan for the development of the public territory – recreation and tourism sector – or in a regional plan for integrated land and resource development;
10. a downhill skiing station.

1

Objectives

- To maintain landscape quality
- To contribute to the quality of the experience in the forest

Additional information

The (French website only) regional plan for the development of the public territory is intended to establish, in conjunction with regional stakeholders, where, when and how land rights may be issued in order to ensure harmonization of public land use.

Heritage sites are listed in the (in French only) Répertoire du patrimoine culturel du Québec (Directory of Cultural Heritage).

The following guide (in French only) contains good landscape quality maintenance practices:

Stratégie d'aménagement pour l'intégration visuelle des coupes dans les paysages

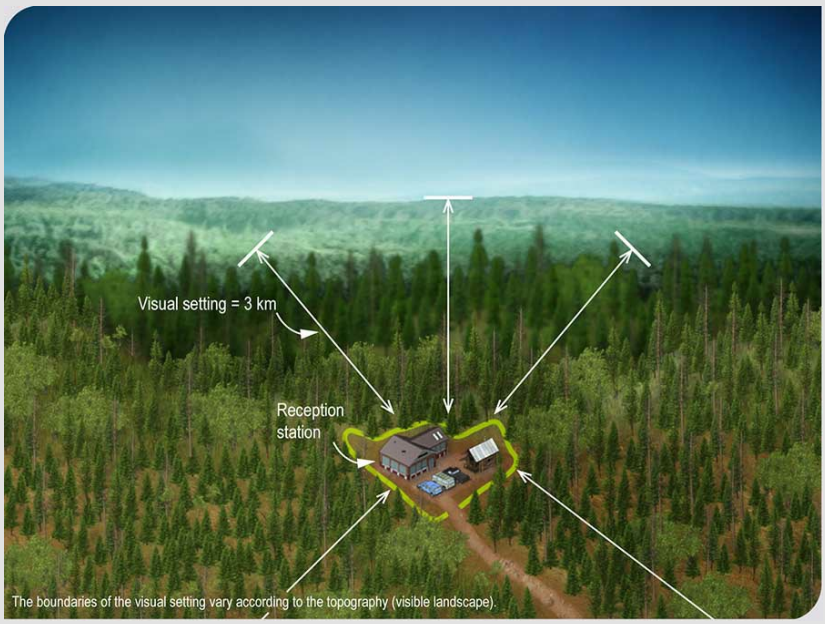


Figure 13A Visual setting around a reception station



Figure 13B Visual setting around a downhill skiing centre

Chapter II – Protection of particular places and territories Division I - General §3 - Visual setting

Section 14

Partial cutting with maintenance of a continuous forest cover is allowed throughout the visual setting or in a heritage cultural landscape. Partial cutting without maintenance of a continuous forest cover is prohibited.

1

Objectives

- To maintain landscape quality
- To allow for the harvesting of wood
- To reconcile forest development activities with the protection of the cultural heritage

Additional information

The following guide (in French only) contains good landscape quality maintenance practices: Stratégie d'aménagement pour l'intégration visuelle des coupes dans les paysages The Government may designate a heritage cultural landscape by order-in-council. The designation is then entered in the Cultural Heritage Register, the data from which appears in the Répertoire du patrimoine culturel du Québec (Directory of Cultural Heritage).

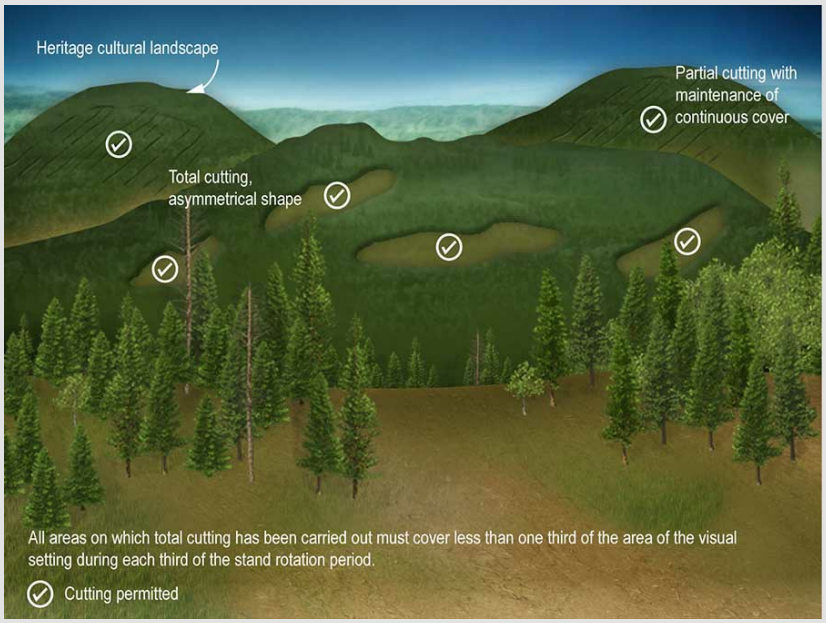


Figure 14 A Cuts permitted in a visual setting or heritage cultural landscape

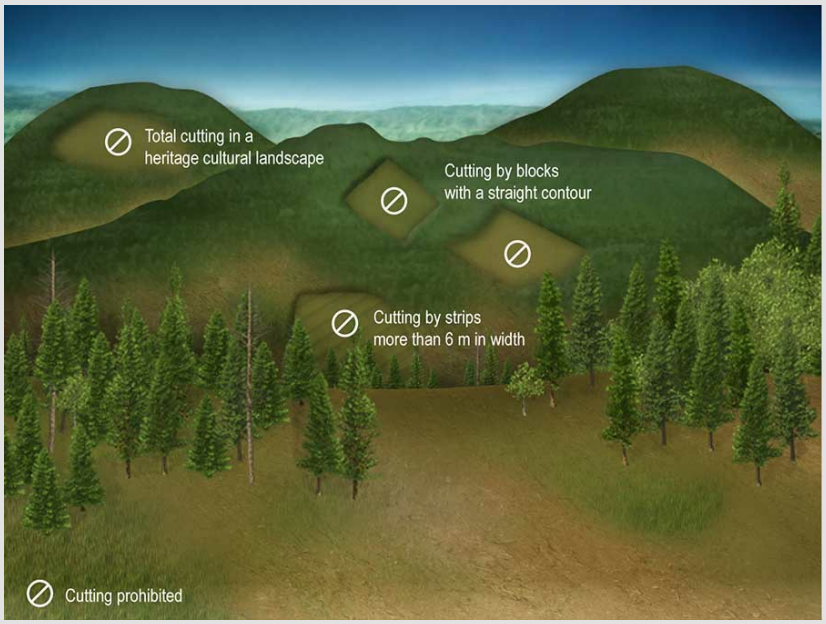


Figure 14B Cuts prohibited in a visual setting or heritage cultural landscape

Total cutting is also allowed in a visual setting, except total cutting with a harvest pattern by harvest strips more than 6 m in width or by blocks with a straight contour. However, all the areas where the allowed total cutting is carried out must cover at least the third of the area of the visual setting during each third of the expected period of rotation of the stands, in order to preserve at all times the quality of the landscape.

2

Objectives

- To maintain landscape quality
- To allow for the harvesting of wood

Additional information

All the areas where total cutting is carried out must cover less than one-third of the area of the visual setting during each third of the expected period of rotation of the stands. The period of rotation is the same as that used to calculate the allowable cuts. For example, if the prescribed period of rotation is 75 years, total cutting can be carried out in less than one-third of the area of the visual setting every 25 years. The following guide (in French only) contains good landscape quality maintenance practices: Stratégie d'aménagement pour l'intégration visuelle des coupes dans les paysages

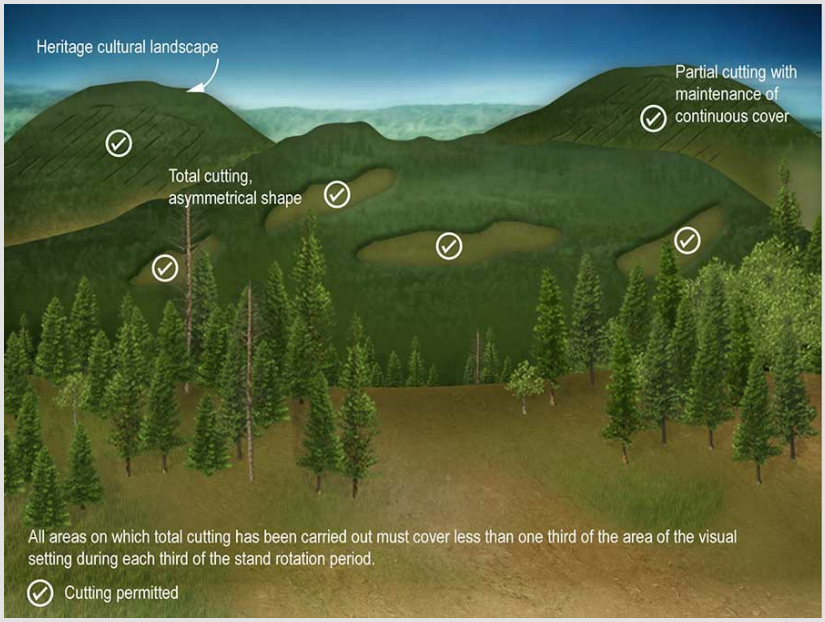


Figure 14 A Cuts permitted in a visual setting or heritage cultural landscape

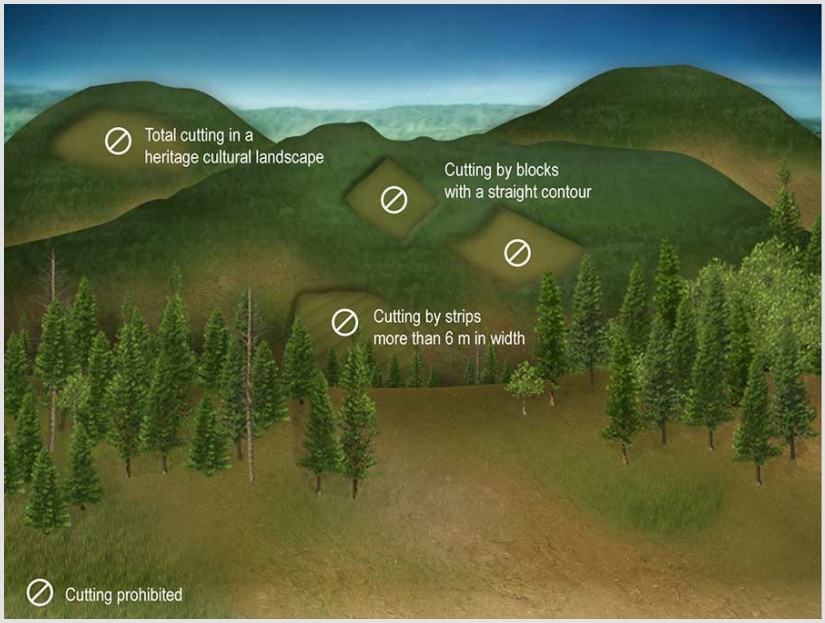


Figure 14B Cuts prohibited in a visual setting or heritage cultural landscape

Total cutting is prohibited in a heritage cultural landscape designated by the Government under the Cultural Heritage Act (chapter P-9.002).

3

Objective

- To maintain landscape quality

Additional information

The Government may designate a heritage cultural landscape by order-in-council. The designation is then entered in the (in French only) Cultural Heritage Register, the data for which appears in the (in French only) Répertoire du patrimoine culturel du Québec (Directory of Cultural Heritage).

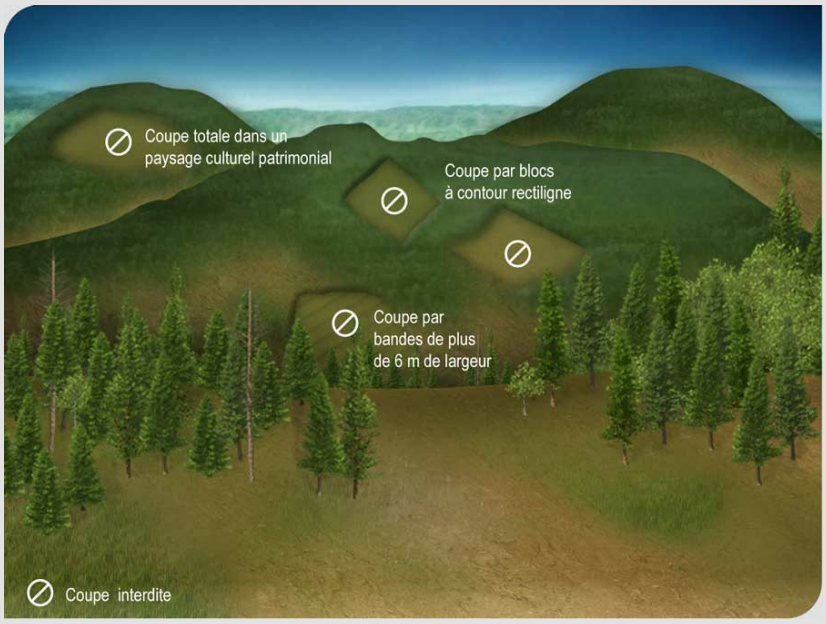


Figure 14B Cuts prohibited in a visual setting or heritage cultural landscape

This section does not apply to the holder of a forestry permit issued for public utility works.

4

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person who holds a forestry permit can carry out the forest development activities required for public utility works without applying the standards set out in this section for heritage cultural landscapes and the visual settings of the places and territories listed in sections 12 and 13. The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter II – Protection of particular places and territories Division I - General §4 - Maintenance of an area of stands on islands, in outfitting operations with exclusive rights, controlled zones and wildlife sanctuaries

Section 15

At least 30% of the productive forest area constituted of stands of 7 m or more in height must be preserved at all times on an island of 250 to 500 ha.

1

Objectives

- To preserve the integrity of a particular place or territory
- To ensure the renewal of the forest canopy



Figure 15 Percentage of forest stands of 7 m or more in height to be preserved in an island of 250 ha to 500 ha

Chapter II – Protection of particular places and territories
Division I - General
§4 - Maintenance of an area of stands on islands, in outfitting operations with exclusive rights, controlled zones and wildlife sanctuaries

Section 16

At least 30% of the productive forest area constituted of stands of 7 m or more in height must be preserved at all times in an outfitting operation with exclusive rights, in a controlled zone or in a wildlife sanctuary.

In addition, at least 30% of the productive forest area constituted of stands of 7 m or more in height must be preserved in the following territories or portions of territory:

1. in each territorial reference unit or portion thereof at least 30 km2 included in an outfitting operation with exclusive rights, in a controlled zone or in a wildlife sanctuary and situated in the bioclimatic domains of the maple forest and fir forest;
2. in each aggregated cut block or part thereof at least 30 km2 included in an outfitting operation with exclusive rights, in a controlled zone or in a wildlife sanctuary and situated in the bioclimatic domain of the spruce-moss forest.

1

Objectives

- To contribute to the maintenance of wildlife habitats and the species that use them
- To limit the impact of cutting on recreational and tourism activities and hunting
- To ensure the renewal of the forest canopy



Figure 16A Proportion of forest stands of 7 m or more in height to be preserved in an outfitting business with exclusive rights, a zone of controlled exploitation or a wildlife reserve located in the bioclimatic areas of the maple bush or fir stand



Figure 16B Percentage of forest stands of 7 m or more in height to be preserved in an outfitting operation with exclusive rights, in a controlled zone or in a wildlife preserve situated in the spruce-moss forest bioclimatic domain

Chapter II – Protection of particular places and territories Division I - General §5 - Protection of certain trails

Section 17

The following trails may not be used for hauling or trucking purposes:

1. hiking trails forming part of an ecological or nature interpretation centre or of a concentrated network of hiking trails;
2. access trails to a scenic outlook and hiking trails of an outlying circuit of a concentrated network of hiking trails or interregional trail, deforested specifically for those purposes;
3. trails intended for motorized all-terrain vehicles, portage trails of boat access route to trapping grounds and portage trails comprised in a canoe-kayak-camping course, developed specifically or those purposes;
4. developed trails.

1

Objectives

- To preserve the integrity of a particular place or territory
- To protect the investments made in a particular place or territory

Explanations

The trails mentioned in subsections 1 to 4 cannot be used for hauling or trucking purposes. However, for this to apply, the trails must have been developed specifically for the purpose shown. For example, the prohibition would not apply to a snowmobile trail established on a multi-purpose road originally developed to transport wood.

Chapter II – Protection of particular places and territories Division I - General §5 - Protection of certain trails

Section 18

All trees or parts thereof that fall on a trail during the carrying out of forest development activities must be removed. The pilling and windrowing of logging residues is prohibited on a trail.



Objectives

- To preserve the integrity of a particular place or territory
- To reconcile the various activities that take place in the forest
- To protect the investments made in a particular place or territory

Where a trail is damaged because of a forest development activity carried out near a trail, in particular during hauling, the trail must be put back in the condition it was in before the carrying out of the activity.



Objective

- To ensure that the site is restored to its former condition

This section applies to all the trails referred to in section 17.



Objectives

- To preserve the integrity of a particular place or territory
- To reconcile the various activities that take place in the forest
- To protect the investments made in a particular place or territory
- To ensure that the site is restored to its former condition

Chapter II – Protection of particular places and territories Division II - Special provisions applicable to Native portage trials, Native campgrounds and Native gathering or sojourn areas

Section 19

No forest development activity may be carried out on a Native portage trail. However, it is allowed to build or improve a road that crosses a Native portage trail.

1

Objective

- To preserve the integrity of a site of particular interest to a Native community

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

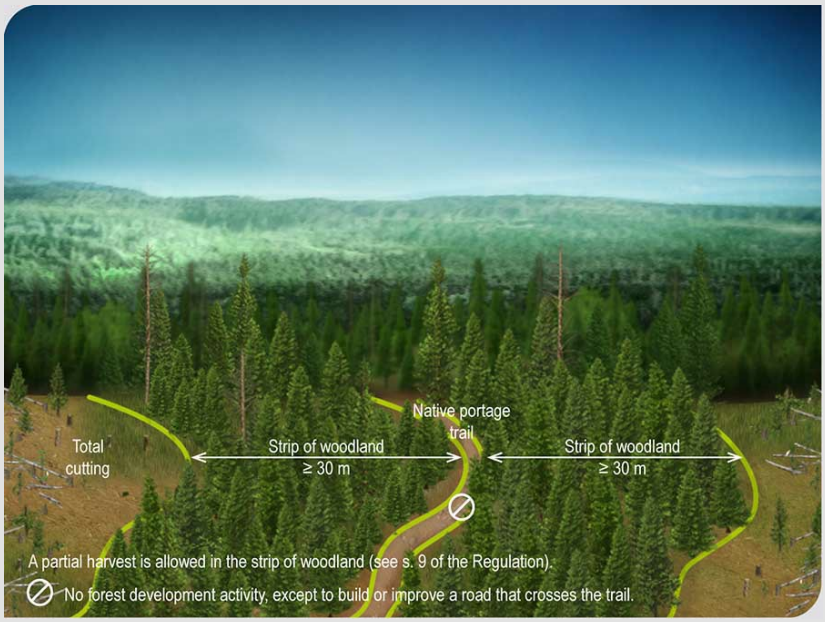


Figure 19 Strip of woodland on either side of a Native portage trail

2

Objective

- To reconcile the various activities that take place in the forest

A strip of woodland at least 30 m wide must be preserved on each side of Native portage trails so as to create a visual setting and to maintain the forest ambiance of the site.

3

Objectives

- To preserve the integrity of a site of particular interest to a Native community
- To contribute to the quality of the experience in the forest

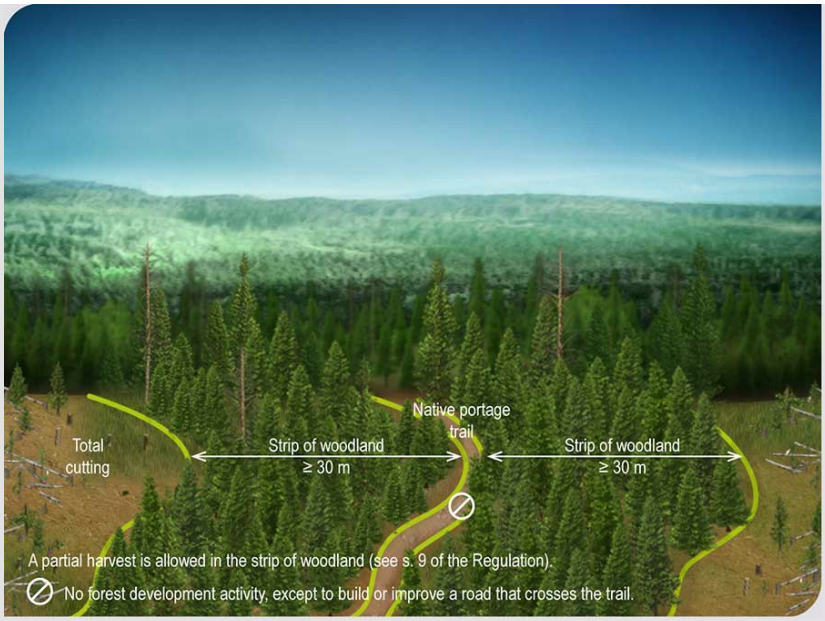


Figure 19 Strip of woodland on either side of a Native portage trail

The provisions of section 9 respecting partial cutting applies to that strip of woodland kept on each side of Native portage trails.

4

Objectives

- To allow for the harvesting of wood
- To ensure the renewal of trees in the strip of woodland

Explanations

The provisions of section 9 respecting partial cutting are as follows: The permitted intensity of harvesting in the strip of woodland kept on either side of a Native portage trail varies by stand type. In the case of a stand composed of the species referred to in Part A of Schedule 2, up to 40% of the merchantable stems may be harvested, provided the density of the stand is not reduced to less than 700 merchantable stands/ha. In the case of a stand composed of species referred to in Part B of that Schedule, up to 40% of the basal area may be harvested, provided the density of the stand is not reduced to less than 16 m²/ha. However, where partial cutting takes place in the stand adjacent to the strip of woodland kept on either side of a Native portage trail, the harvest level in the strip of woodland must comply with the specifications set out in the sylvicultural prescription of the adjacent stand.

This section does not apply to the holder of a forestry permit issued for forest development activities carried out by the holder of mining rights to exercise those rights, unless the mining activities are to extract surface mineral substances.

5

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A holder of mining rights who also holds a forestry permit may carry out forest development activities on and around a Native portage trail, unless the mining activities are to extract surface mineral substances. The Minister responsible for applying the Sustainable Forest Development Act may, when giving authorization, specify the forest development activities that are authorized in the forestry permit and set the conditions that must be met when carrying them out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter II – Protection of particular places and territories Division II - Special provisions applicable to Native portage trials, Native campgrounds and Native gathering or sojourn areas

Section 20

Where a campground established under the Act respecting hunting and fishing rights in the James Bay and New Québec territories (chapter D-13.1) is installed on a trapping ground situated in a development unit or other forest of the domain of the State, no forest development activity may be carried out over an area of 40,000 m^2, including the campground area. The foregoing also applies to a Native campground used to trap in a beaver reserve and situated in a development unit or other forest of the domain of the State. This section applies to a campground per 100 km^2 of trapping ground.

1

Objectives

- To preserve the integrity of a site of particular interest to a Native community

Explanations

On a trapping ground situated in a forest in the domain of the State, forest development activities are prohibited over an area of 40,000 m^2 around:

- a campground established under the Act respecting hunting and fishing rights in the James Bay and New Québec territories
- a Native campground situated in a beaver reserve.

Protection is granted to only one campground per 100 km^2 of trapping ground. If there is more than one campground per 100 km^2 of trapping ground, the trapper may choose which one is protected.

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.



Figure 20 Area where forest development activities are prohibited around a campground or group of campgrounds installed on a trapping ground

Chapter II – Protection of particular places and territories Division II - Special provisions applicable to Native portage trials, Native campgrounds and Native gathering or sojourn areas

Section 21

Where a Native campground or group of campgrounds not referred to in the second paragraph of section 20 is installed on the territory of a beaver reserve, no forest development activity may be carried out over an area of 4,000 m^2, including the area of the campground or group of campgrounds. This section applies to a maximum of 2 campgrounds or 2 groups of campgrounds per 100 km^2 of trapping ground.

1

Objective

- To preserve the integrity of a site of particular interest to a Native community

Explanations

Section 20 grants protection to only one campground per 100 km^2 of trapping ground situated in a beaver reserve. If there is more than one Native campground per 100 km² of trapping ground, the trapper may choose which one is protected. The other Native campgrounds or groups of campgrounds are nevertheless protected under this section, since forest development activities cannot be carried out over an area of 4,000 m^2, including the area of the campground or group of campgrounds. This protection applies to no more than two campgrounds or two groups of campgrounds per 100 km² of trapping ground situated in a beaver reserve.

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.



Figure 20 Area where forest development activities are prohibited around a campground or group of campgrounds installed on a trapping ground

Chapter II – Protection of particular places and territories Division II - Special provisions applicable to Native portage trials, Native campgrounds and Native gathering or sojourn areas

Section 22

Where a Native gathering or sojourn area is located in a development unit or other forest in the domain of the State, no forest development activity may be carried out on an area 40 m wide and 100 m long alongside a lake or watercourse near those areas. That area includes the area of the strip of woodland kept alongside the lake or watercourse.

1

Objective

- To preserve the integrity of a site of particular interest to a Native community

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

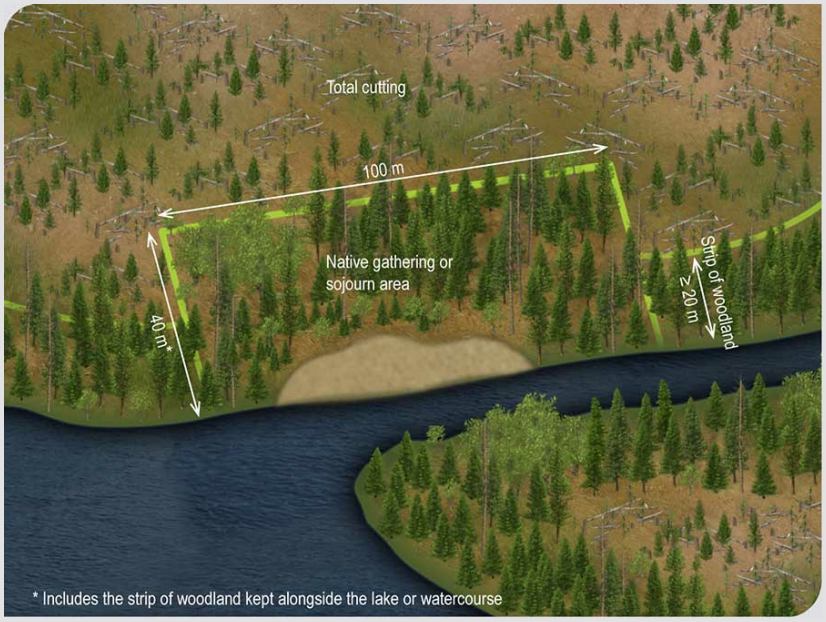


Figure 22 Area where forest development activities are prohibited around a Native gathering or sojourn area

Chapter II – Protection of particular places and territories Division II - Special provisions applicable to Native portage trials, Native campgrounds and Native gathering or sojourn areas

Section 23

Sections 19 to 22 do not apply to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects.

1

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit may carry out forest development activities as part of wildlife, recreational or agricultural development projects:

- on or around a Native portage trail (section 19);
- in the 40,000 m² area around a Native campground installed on a trapping ground (section 20);
- in the 4,000 m² area around a Native campground or group of Native campgrounds installed on a trapping ground in a beaver reserve (section 21);
- in the area measuring 40 m wide by 100 m long, on the shore of a lake or the bank of a watercourse near which a Native gathering or sojourn area has been established (section 22).

The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter II – Protection of particular places and territories Division II - Special provisions applicable to Native portage trials, Native campgrounds and Native gathering or sojourn areas

Section 24

Native portage trails and Native gathering or sojourn areas referred to in sections 19 to 22 must be indicated in the numeric information layers used for forest planning after having been recognized by the Native band council concerned.



Objective

- To provide protection for a known place or territory in the public forest

Explanations

The numeric information layers used in forest planning contain the most up-to-date map data on Native portage trails, Native campgrounds and Native gathering or sojourn areas recognized by Native band councils. Places that are not indicated in the numeric information layers cannot be taken into consideration when planning forestry work and are therefore not protected by the provisions of this Regulation. However, the consultations on the integrated forest development plans give participants an opportunity to express their concerns about the potential impacts of the proposed activities for these places, and may, where necessary, give rise to particular protection agreements.

Chapiter III - Protection of aquatic environments, riparian areas, wetlands and soils

Division I - Beds of lakes and watercourses

- Section 25. Travel of logging machines on the bed of a lake
- Section 26. Travel of logging machines on the bed of a watercourse

Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercourses

- Section 27. Strip of woodland at least 20 m wide
- Section 28. Partial harvest in the strip of woodland
- Section 29. Exceptions applicable to the holders of certain permits
- Section 30. Opening in the strip of woodland for mine exploration work
- Section 31. Opening in the strip of woodland for a forest camp
- Section 32. Travel of logging machines in the riparian ecotone and the strip of woodland

Division III - Riparian shrub, open peat bogs (unwooded) without a pond and intermittent watercourses

- Section 33. Harvesting in riparian shrub swamps
- Section 34. Travel of logging machines and harvesting near the perimeter of an open peat bog without a pond or an intermittent watercourse

Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris

§1. Sylvicultural drainage ditch

- Section 35. Openings in the strip of woodland
- Section 36. Creation of networks of drainage ditches
- Section 37. Maintenance of settling ponds

§2. Discharge, recovery and treatment of washing water

- Section 38. Location for washing of logging machines
- Section 39. Discharge of water used to wash logging machines
- Section 40. Recovery and treatment of water used to wash logging machines
- Section 41. Certificate of compliance with standards relating to water used to wash logging machines

§3. Discharge of contaminants and earth and removal of trees or tree debris

- Section 42. Discharge of contaminants
- Section 43. Discharge of earth
- Section 44. Removal of trees or parts of trees in aquatic or wetland environments

Division V - Soils

- Section 45. Rutting
- Section 46. Fertility

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Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division I - Beds of lakes and watercourses

Section 25

The travel of logging machines is prohibited on the bed of a lake.



Objectifs

- To preserve the integrity of a wildlife habitat
- To avoid disturbing the bed of a lake or watercourse
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid contaminating the forest
- To preserve the integrity of an aquatic, wetland or riparian environment

Despite the foregoing, the travel of logging machines is allowed on the bed of a lake to construct, improve or repair a road, bridge or culvert to cross a lake if such work is authorized as part of an activity or project for which a certificate of authorization was issued following a decision of the authority concerned made under section 31.5, 164 or 201 of the Environment Quality Act (chapter Q-2).



Objective

- To allow certain forest development activities in or near a particular place

Additional information

Where a certificate of authorization was issued under the Environment Quality Act to carry out construction, improvement or repair work on a road, bridge or culvert in order to cross a lake, this work must also be authorized by the Minister responsible for the Sustainable Forest Development Act . The Minister specifies the forest development activities that are permitted and sets the conditions that must be met when carrying them out.

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division I - Beds of lakes and watercourses

Section 26

The travel of logging machines is prohibited on the bed of a watercourse, except to construct or remove a bridge or culvert or to place or remove a removable structure. In that case, only one round trip of the logging machine in the watercourse is then allowed on the site of the installation and no work may be done from the bed of the watercourse.

1

Objectives

- To preserve the integrity of a wildlife habitat
- To avoid disturbing the bed of a lake or watercourse
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid contaminating the forest
- To preserve the integrity of an aquatic, wetland or riparian environment

The travel of logging machines is also allowed on the bed of a watercourse to carry out work to install coffer dams and structures to temporarily divert the watercourse, in accordance with section 93.

2

Objectives

- To preserve the integrity of a wildlife habitat
- To avoid disturbing the bed of a lake or watercourse
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid contaminating the forest
- To preserve the integrity of an aquatic, wetland or riparian environment

This section does not apply to the travel of logging machines used to carry out vegetation control activities by the holder of a forestry permit issued for public utility works. However, passing through the fish habitat requires the prior issue of the authorizations required under the Act respecting the conservation and development of wildlife (chapter C-61.1).

3

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit issued for public utility work and is authorized to carry out vegetation control activities may travel with a logging machine on the bed of a watercourse when travelling for the purpose of carrying out the work (e.g. in the right-of-way of electricity transmission lines). However, under section 128.7 de la Act respecting the conservation and development of wildlife (chapter C-61.1), the person must first obtain authorization to travel on the bed of a watercourse that is a fish habitat. If this authorization is not obtained, the person must build a means of crossing the watercourse.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercourses

Section 27

A strip of woodland at least 20 m wide must be preserved alongside a peat bog with a pond, a marsh, riparian shrub swamp, lake or permanent watercourse. The strip of woodland is measured from the limit that separates the stand from the environment to be protected or, in the presence of a riparian ecotone, from the limit of the ecotone farthest from the environment to be protected. The strip of woodland must be linked to the residual forest.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To contribute to the quality of the experience in the forest
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

A swamp is said to be riparian when it is adjacent to a lake or watercourse.

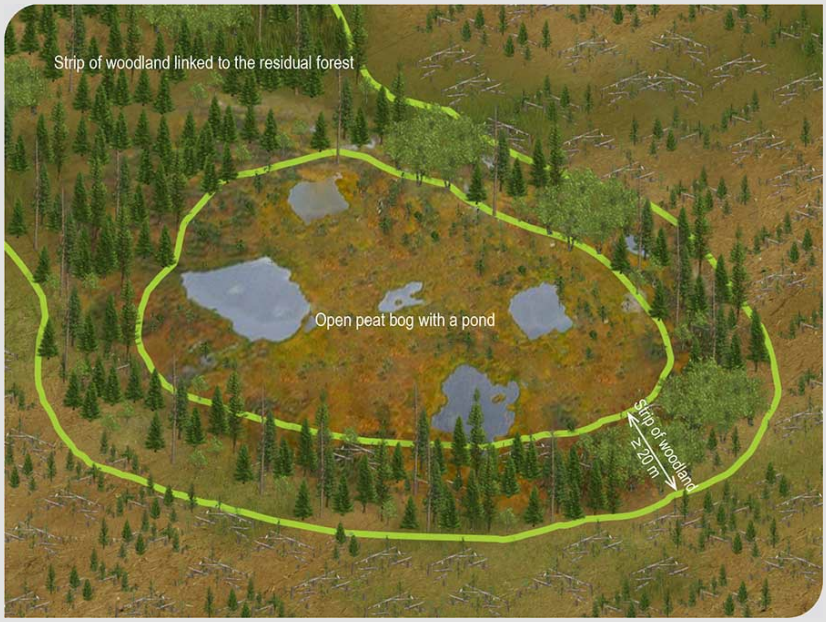


Figure 27A Strip of woodland alongside an open peat bog with a pond

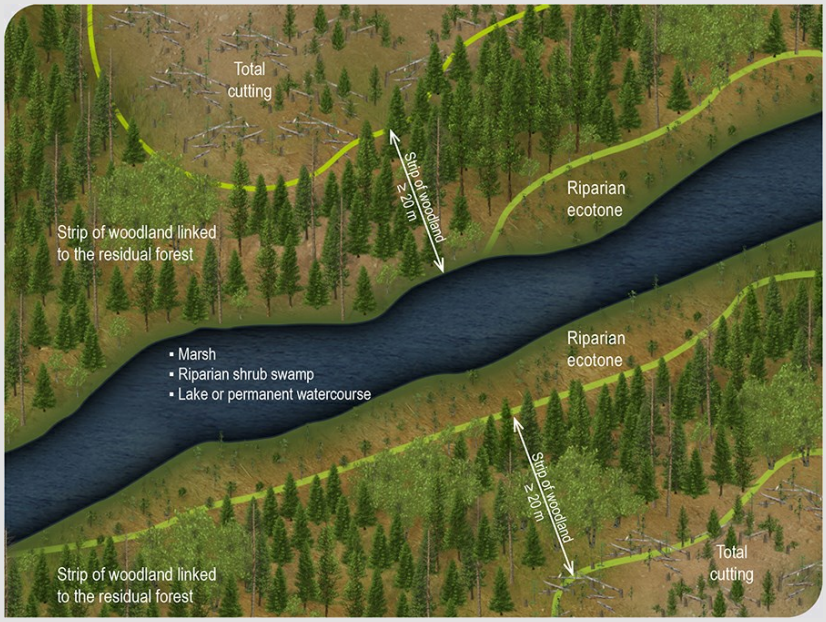


Figure 27B Strip of woodland alongside a wetland or aquatic environment

2

Objective

- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest

Explanations

The strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse must be connected to the residual forest. Wildlife uses the strip of woodland as a corridor to travel to other sections of its habitat. In most cases, strips of woodland that are preserved alongside aquatic and wetland environments or sites to be protected, and between total cutting areas, form a network of corridors that is connected to the residual forest at several locations. However, this is not the case for isolated peat bogs with ponds, and special attention is therefore needed to connect the surrounding strips of woodland to the residual forest.

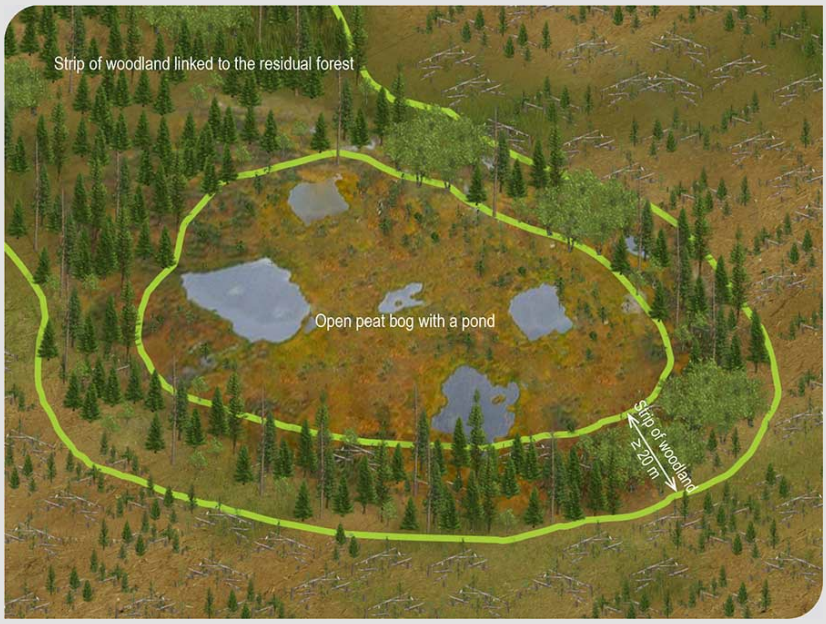


Figure 27A Strip of woodland alongside an open peat bog with a pond

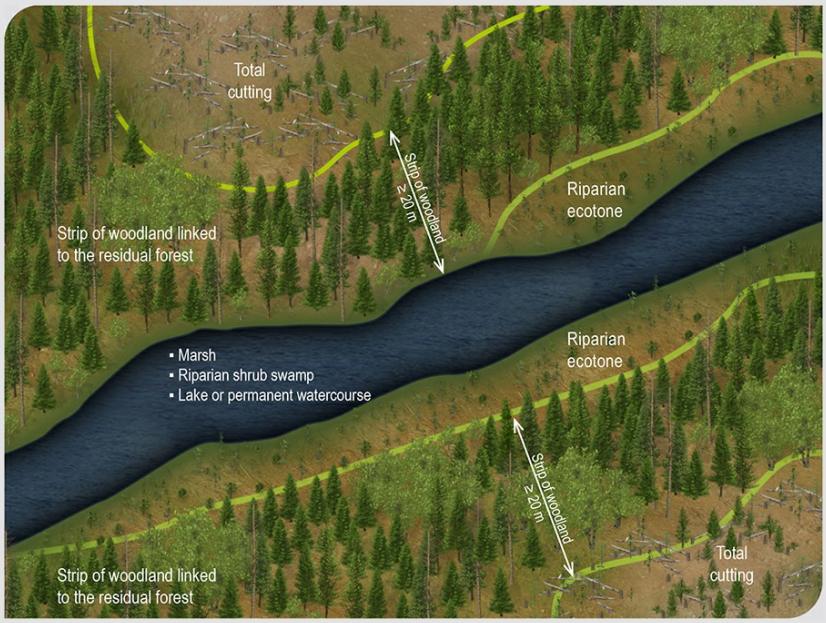


Figure 27B Strip of woodland alongside a wetland or aquatic environment

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercoursess

Section 28

A maximum partial harvest of 40% of merchantable stems, in the case of stands of the species referred to in Part A of Schedule 2, or 40% of the basal area, in the case of stands of the species referred to in Part B of that Schedule, is however allowed in the strip of woodland if the slope degree is less than 30%. However, the density of the stand may never be reduced to less than 700 merchantable stems/ha, in the case of stands of the species referred to in Part A of Schedule 2, or the basal area may not be reduced to less than 16 m2/ha, in the case of stands of the species referred to in Part B of that Schedule. Despite the first and second paragraphs, where the sylvicultural prescription provides for partial cutting in the stand adjacent to the strip of woodland referred to in section 27, the harvest level indicated in the prescription for the adjacent stand then applies to the strip of woodland.

1

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the integrity of an aquatic, wetland or riparian environment
- To allow for the harvesting of wood
- To ensure the renewal of trees in the strip of woodland

Explanations

Some of the trees in the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse may be harvested if the slope of the land is equal to or less than 30%. All harvesting is therefore prohibited if the slope degree is more than 30%. The permitted intensity of harvesting varies by stand type. In the case of a stand composed of the species referred to in Part A of Schedule 2, up to 40% of the merchantable stems may be harvested, provided the density of the stand is not reduced to less than 700 merchantable stands/ha. In the case of a stand composed of species referred to in Part B of that Schedule, up to 40% of the basal area may be harvested, provided the density of the stand is not reduced to less than 16 m²/ha. However, where partial cutting takes place in the stand adjacent to the strip of woodland on either side of an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse, the harvest level in the strip of woodland must comply with the specifications set out in the sylvicultural prescription of the adjacent stand.

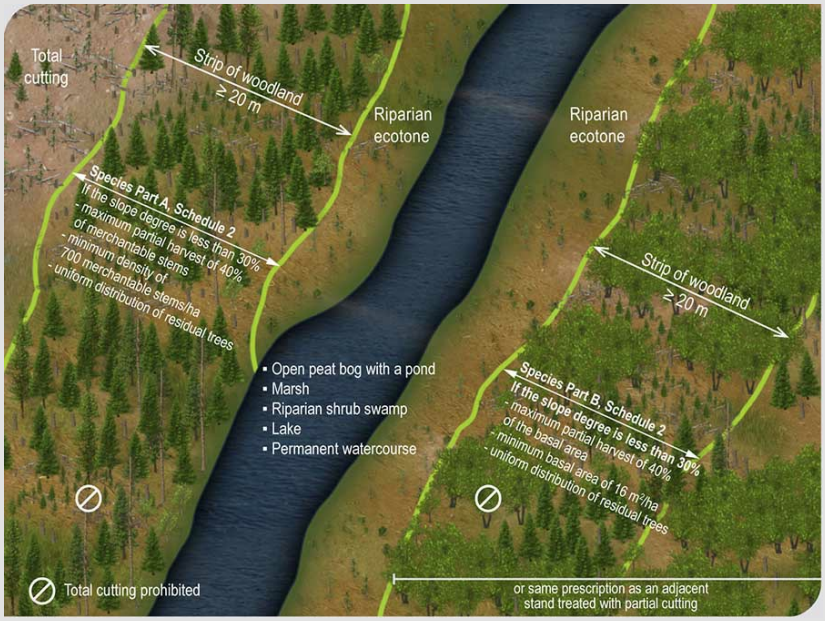


Figure 28 Partial cutting in a strip of woodland alongside a wetland or aquatic environment

The residual trees in the strip of woodland must be spread evenly to ensure the protection of aquatic environments, riparian areas and wetlands.

2

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the integrity of an aquatic, wetland or riparian environment
- To contribute to the quality of the experience in the forest

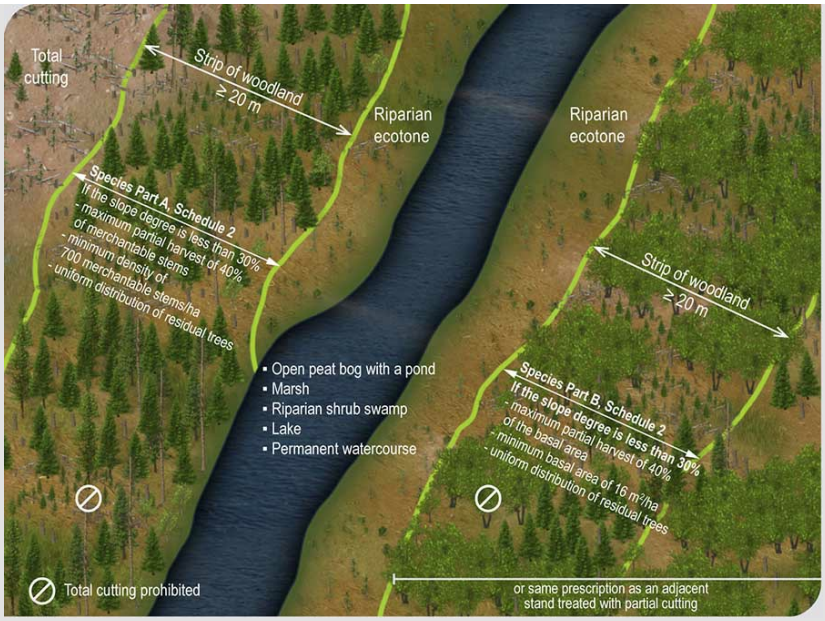


Figure 28 Partial cutting in a strip of woodland alongside a wetland or aquatic environment

Total cutting is prohibited in the strip of woodland.

3

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the integrity of an aquatic, wetland or riparian environment
- To contribute to the quality of the experience in the forest

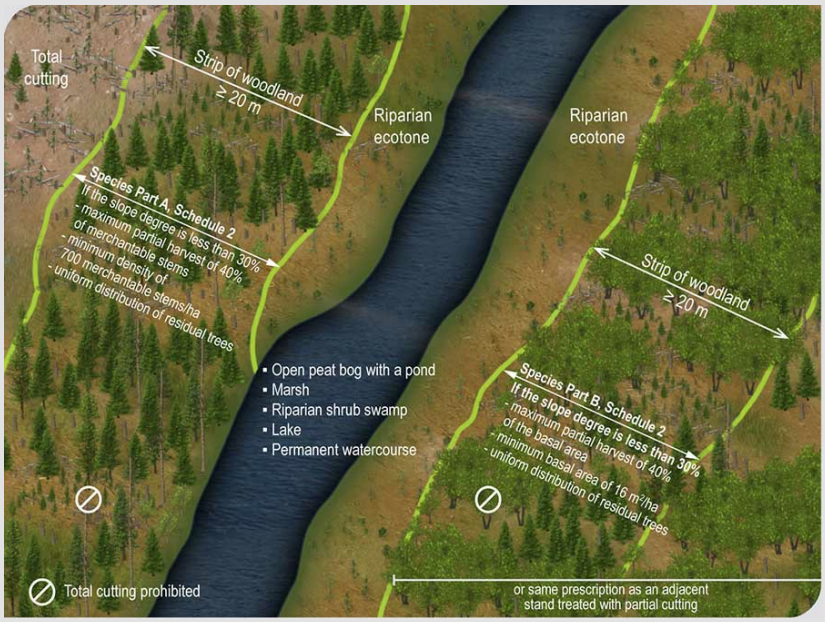


Figure 28 Partial cutting in a strip of woodland alongside a wetland or aquatic environment

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercourses

Section 29

Sections 27 and 28 do not apply to the holder of a forestry permit issued for forest development activities carried out by a holder of mining rights where the holder carries out mining exploration work, to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects, nor to the holder of a forestry permit issued for public utility works, nor to the construction, improvement or repair of a road.



Objective

- To reconcile the various activities that take place in the forest

Explanations

A holder of mining rights who also holds a forestry permit issued for forest development activities carried out during mining exploration work is not required to preserve a strip of woodland at least 20 m wide alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse, and is not required to apply the provisions of section 28 concerning partial cutting in the strip of woodland alongside these areas. These exemptions apply to a person who holds a forestry permit issued in respect of forest development activities carried out for wildlife, recreational or agricultural development projects, public utility works or road construction, improvement or repair work. The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

However, the holder of a development permit issued for public utility works who installs a power transmission line or a gas pipeline requiring the deforestation of the strip of woodland must preserve the stumps, shrubs and grass in that strip, or reestablish such vegetation.



Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercourses

Section 30

Despite section 27, the holder of a mining right to whom a forestry permit was issued who lays out an access to an open peat bog with a pond, to a marsh, to a riparian shrub swamp, to a lake or to a permanent watercourse in order to carry out mining exploration work or to install equipment required for such work may clear an opening not wider than 5 m in the strip of woodland.

1

Objective

- To reconcile the various activities that take place in the forest

Explanations

A holder of mining rights who also holds a forestry permit may clear an opening no wider than 5 m in the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse, in order to gain access for the purpose of carrying out mining exploration work, or to install the equipment required for that work. The Minister responsible for applying the Sustainable Forest Development Act may, when giving authorization, specify, in the forestry permit, the forest development activities that are authorized and the conditions that must be met when carrying them out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

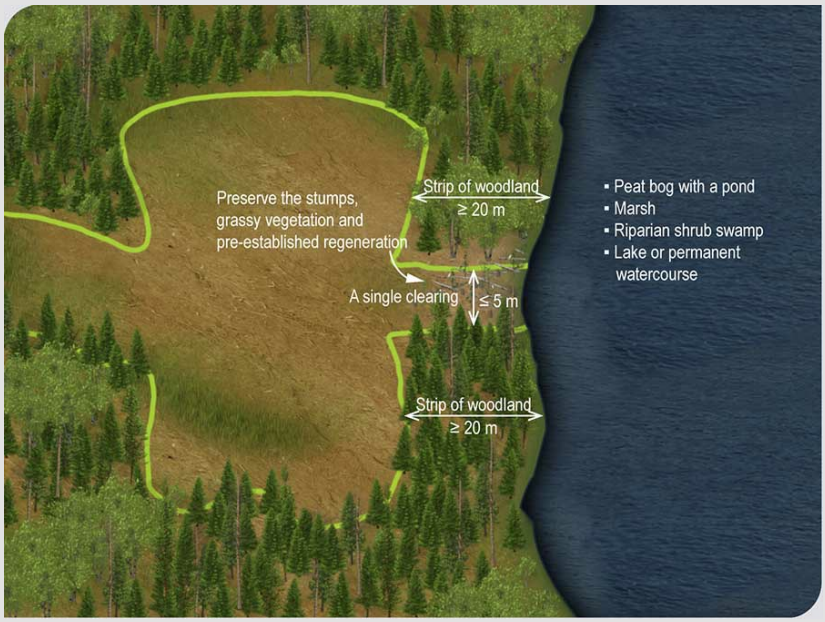


Figure 30 Clearing of an opening in the strip of woodland alongside a wetland or aquatic environment in order to carry out mining exploration work

The stumps, grass and advance growth must be preserved in that opening.

2

Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

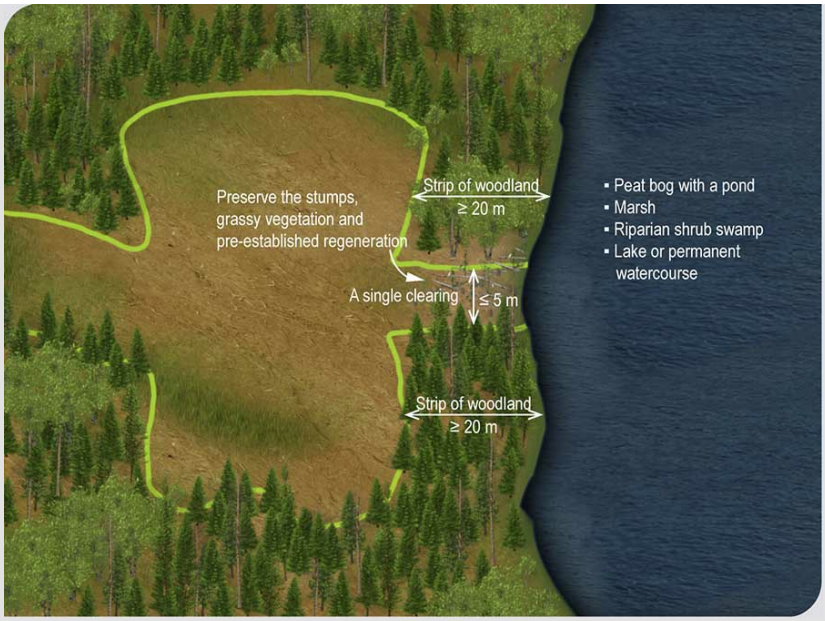


Figure 30 Clearing of an opening in the strip of woodland alongside a wetland or aquatic environment in order to carry out mining exploration work

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercourses

Section 31

Despite section 27, a maximum of 3 visual openings may be cleared in the strip of woodland where a forest camp is established near a peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse. The width of each opening must not exceed 10% of the length of the strip of woodland separating the camp from those environments.

1

Objective

- To contribute to the quality of the experience in the forest

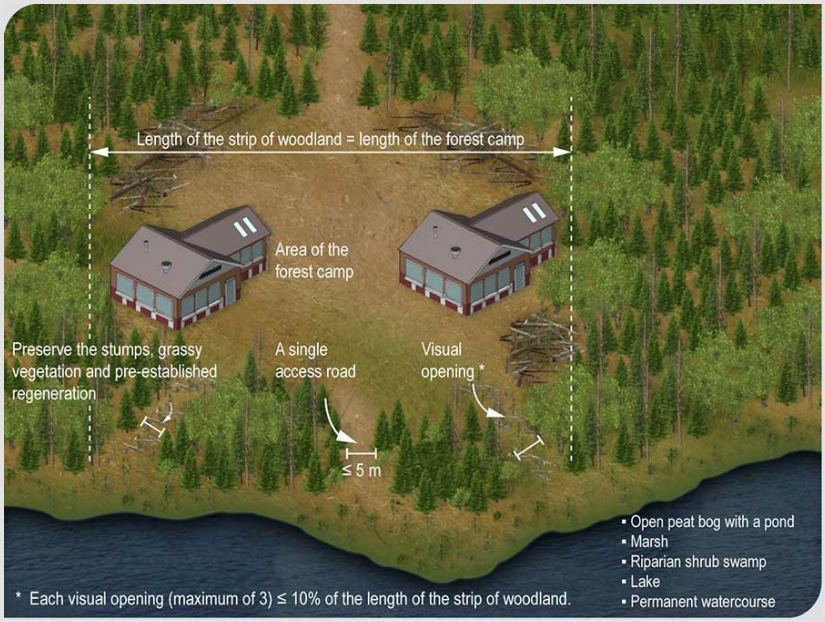


Figure 31 Clearing of openings in the strip of woodland alongside a wetland or aquatic environment located near a forest camp

2

Objective

- To preserve the integrity of an aquatic, wetland or riparian environment

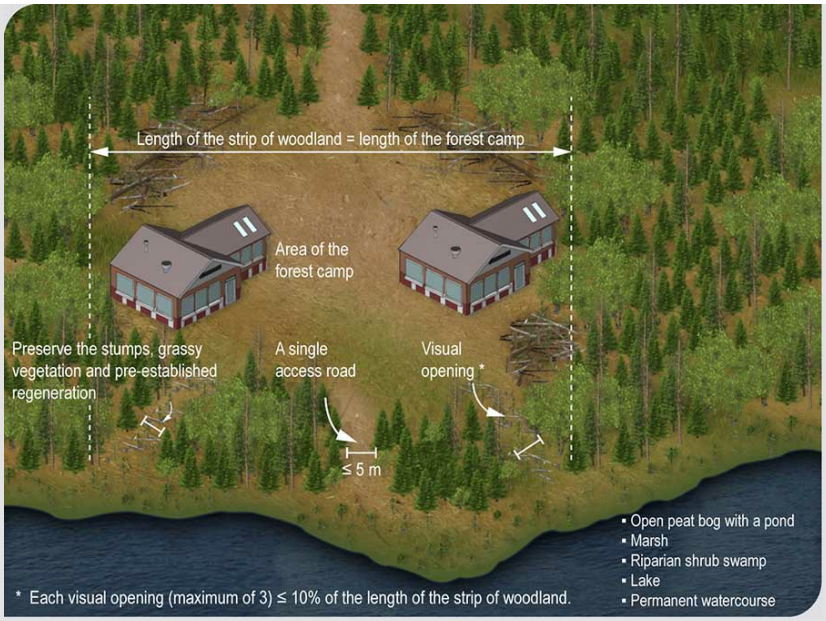


Figure 31 Clearing of openings in the strip of woodland alongside a wetland or aquatic environment located near a forest camp

The stumps, grass and advance growth must be preserved in those openings.

3

Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

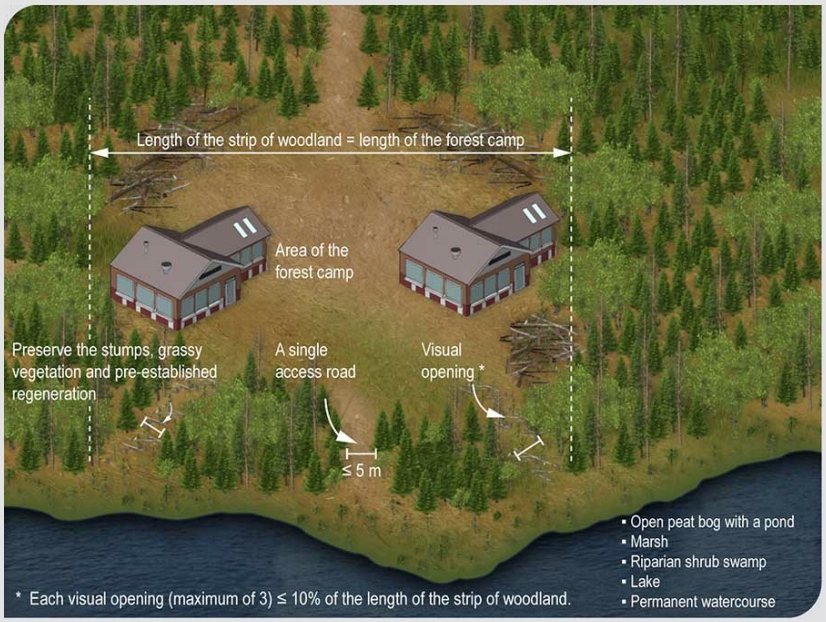


Figure 31 Clearing of openings in the strip of woodland alongside a wetland or aquatic environment located near a forest camp

Only one road not exceeding 5 m in width and leading to the environments referred to in the first paragraph may be developed for all the openings.

4

Objectives

- To contribute to the quality of the experience in the forest
- To reconcile the various activities that take place in the forest

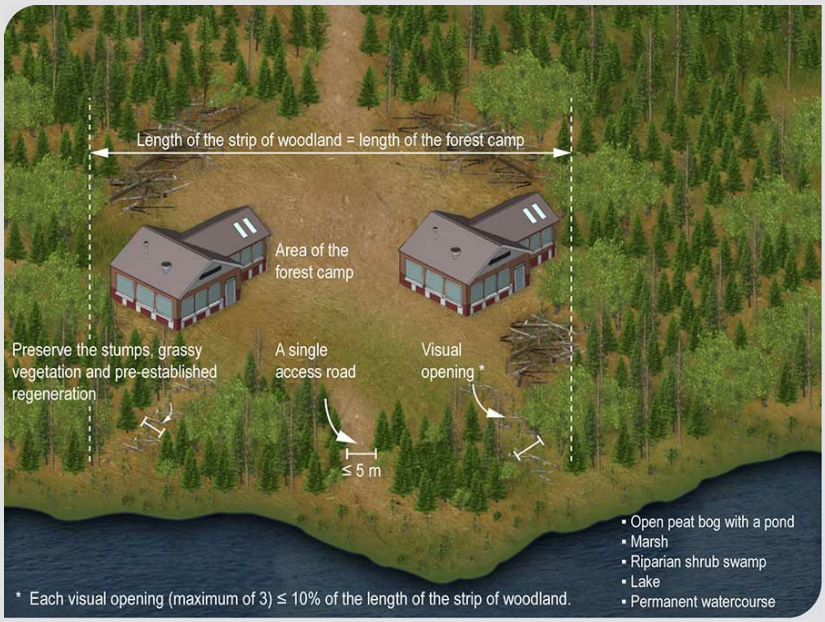


Figure 31 Clearing of openings in the strip of woodland alongside a wetland or aquatic environment located near a forest camp

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division II - Open peat bogs (unwooded) with a pond, marshes, riparian shrub swamps, lakes and permanent watercoursess

Section 32

The travel of logging machines is prohibited in the riparian ecotone when the latter is present and within the first 20 metres of a strip of woodland kept alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse, except in the following cases:

1

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid disturbing the soil around the perimeter of a wetland or aquatic environment

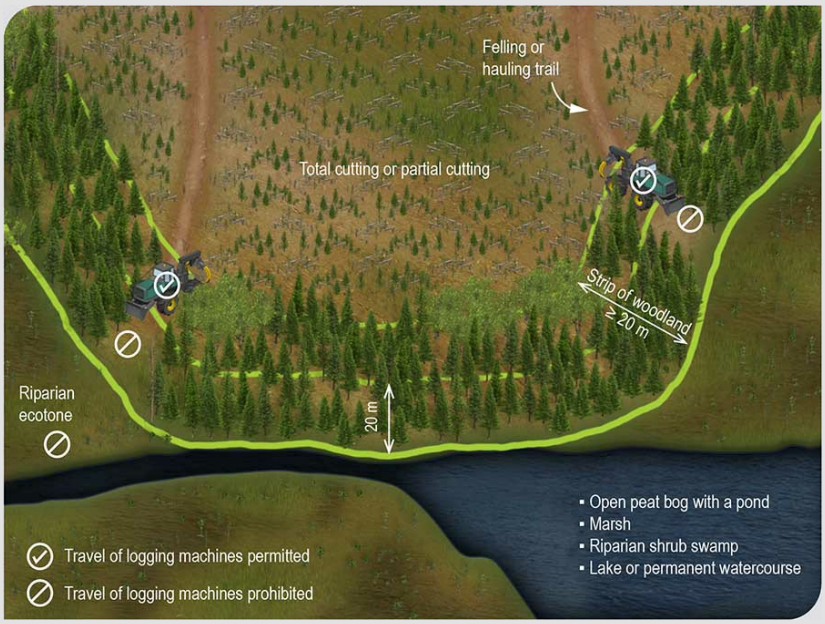


Figure 32A Rules governing travel of logging machines in the riparian ecotone and in the strip of woodland alongside a wetland or aquatic environment

1. to dig drainage ditches for sylvicultural purposes;
2. to take a felling and hauling trail across a watercourse by means of a removable structure;
3. to carry out a wildlife development project authorized under a forestry permit, provided that the development project is carried out in accordance with the conditions set out in the permit;
4. to construct, improve or repair a road or remove a structure used to cross a watercourse;
5. to carry out public utility works.

2

Objectives

- To reconcile the various activities that take place in the forest
- To allow certain forest development activities in or near a particular place

Explanations

The travel of logging machines is permitted in the riparian ecotone, if one exists, and in the first 20 metres of a strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse, in the cases mentioned in subsections 1 to 5 of this section.

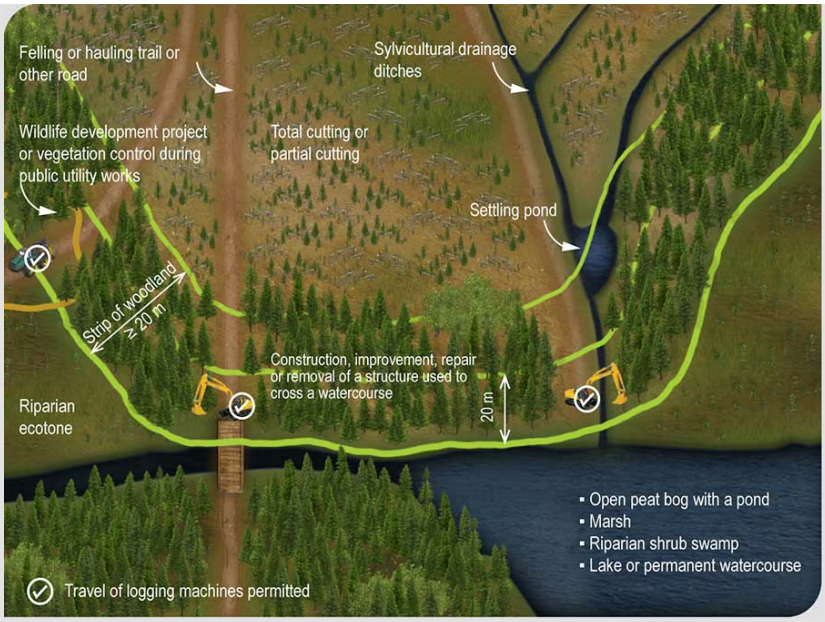


Figure 32B Rules governing travel of logging machines in the riparian ecotone and in the strip of woodland alongside a wetland or aquatic environment

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils
Division III - Riparian shrub, open peat bogs (unwooded) without a pond and intermittent watercourses

Section 33

Harvesting is prohibited in the riparian shrub swamps whose ecological type is one of the following forests:

1. silver maple, elm, ash forest (FO18);
2. black ash, fir forest on hydric drainage (MF18);
3. yellow birch, fir, sugar maple forest on hydric drainage (MJ18);
4. fir, yellow birch forest on hydric drainage (MS18);
5. fir, red maple forest on hydric drainage (MS68);
6. fir, white cedar forest (RS18).

1

Objectives

- To preserve the integrity of a riparian shrub swamp
- To allow certain forest development activities in or near a particular place

Additional information

A swamp is said to be riparian when it is adjacent to a lake or watercourse.

Harvesting is allowed in riparian shrub swamps whose ecological type is not one of those referred to in the first paragraph. However, the travel of logging machines during harvest may not result in the natural drainage of the soil being disturbed.

2

Objectives

- To preserve the natural drainage of the soil
- To allow for the harvesting of wood

Additional information

The ecological types for which harvesting is done without disturbance to natural drainage are RS37, RE37, MJ28, RS38 and RE38 (as indicated in the definition of swamp in section 2, the type of deposit must be mineral).

When harvesting in a riparian shrub swamp, steps must be taken to avoid disturbing the natural drainage of the soil. Examples include:

- giving priority to lopping on the harvest site so that harvest waste can be used in the hauling trails to improve carrying capacity;
- using logging machines that place less pressure on the ground;
- giving priority to winter harvesting, when the ground is frozen;
- avoiding forest operations during periods where ground humidity is high (after several consecutive days of rain, in the fall, etc.).

This section does not apply to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects who carries out forest management activities required for wildlife development projects, nor to the holder of a forestry permit issued for public utility works.

3

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit issued for wildlife, recreational or agricultural development projects may carry out forest management activities required for wildlife development projects in riparian shrub swamps. The same applies to a person holding a forestry permit to carry out forest development activities for public utility works.

The Minister responsible for applying the Sustainable Forest Development Act specifies which forest development activities are authorized in the forestry permit and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division III - Riparian shrub, open peat bogs (unwooded) without a pond and intermittent watercourses

Section 34

The travel of logging machines is prohibited over a width of at least 6 m alongside an open peat bog without a pond or an intermittent watercourse, except in any of the cases provided for in paragraph 1, 2, 4 or 5 of section 32. The 6 m-width is measured from the perimeter of the peat bog or the upper limit of the bank of the intermittent watercourse.

1

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid disturbing the soil around the perimeter of a wetland or aquatic environment
- To preserve the natural drainage of the soil
- To allow certain forest development activities in or near a particular place

Explanations

The travel of logging machines is prohibited over a width of at least 6 m alongside an open peat bog without a pond or an intermittent watercourse, except in the following cases:

- to dig drainage ditches for sylvicultural purposes (subsection 1 of section 32);
- to take a felling and hauling trail across a watercourse by means of a removable structure (subsection 2 of section 32);
- to construct, improve or repair a road or remove a structure used to cross a watercourse (subsection 4 of section 32);
- to carry out public utility works (subsection of section 32).

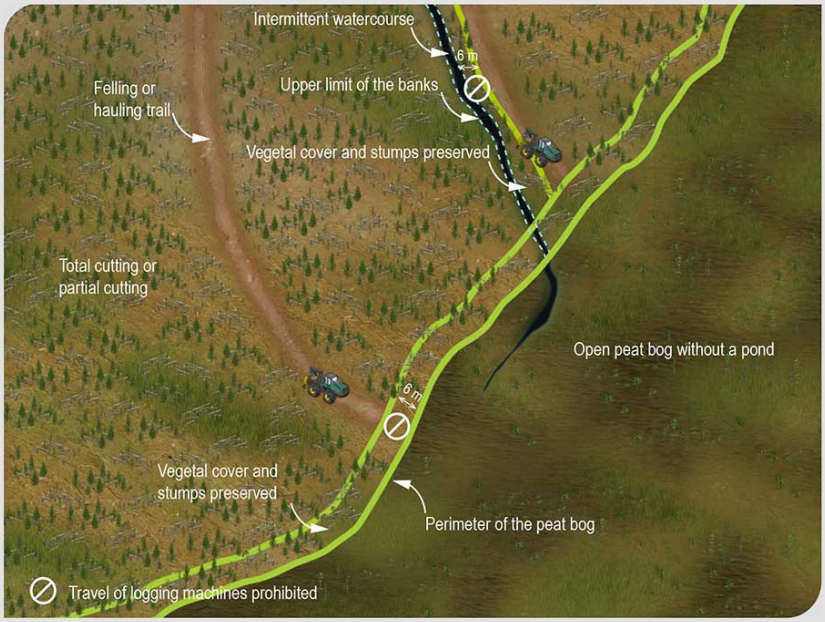


Figure 34A Rules governing the travel of logging machines alongside a wetland or aquatic environment

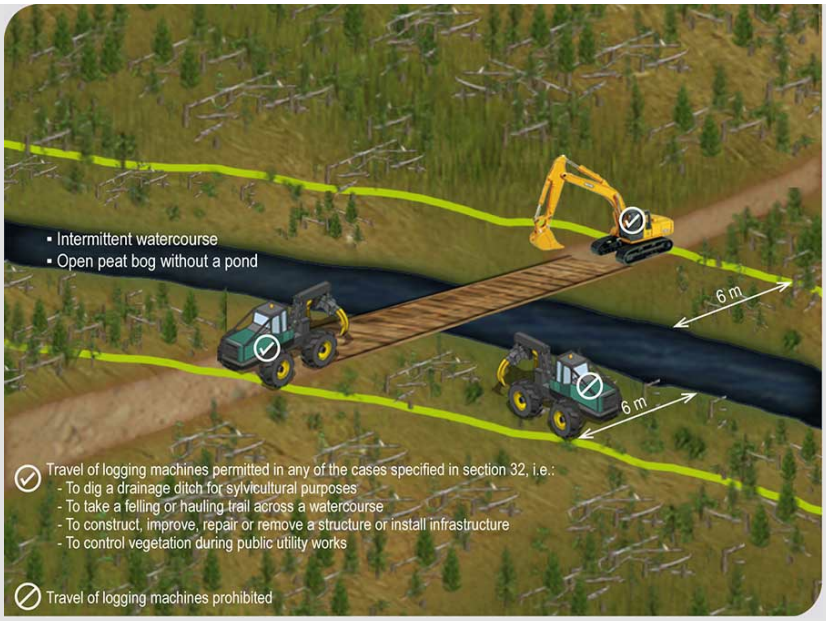


Figure 34B Rules governing the travel of logging machines alongside a wetland or aquatic environment

Harvesting is however allowed in that 6 m strip of land. However, the vegetal cover and the stumps must be preserved to minimize disturbances in the soil and water regime.

2

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid disturbing the soil around the perimeter of a wetland or aquatic environment
- To preserve the natural drainage of the soil
- To allow for the harvesting of wood

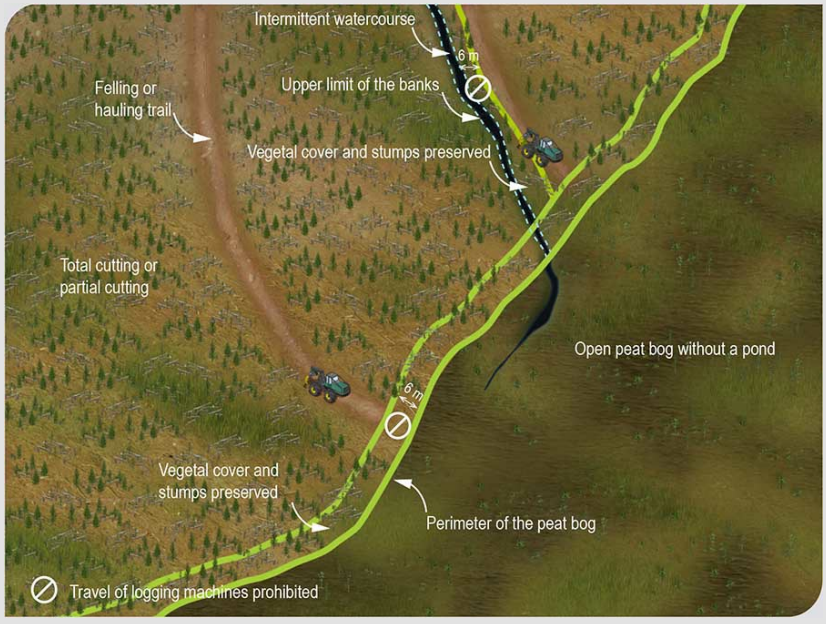


Figure 34A Rules governing the travel of logging machines alongside a wetland or aquatic environment

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §1. Sylvicultural drainage ditch

Section 35

Despite section 27, an opening not wider than 5 m in the strip of woodland referred to in that section may be cleared to dig a drainage ditch for sylvicultural purposes.

1

Objective

- To allow certain forest development activities in or near a particular place

Explanations

An opening not wider than 5 m may be cleared in the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse to dig a drainage ditch. The ditch evacuates water from the settling pond to the outlet.

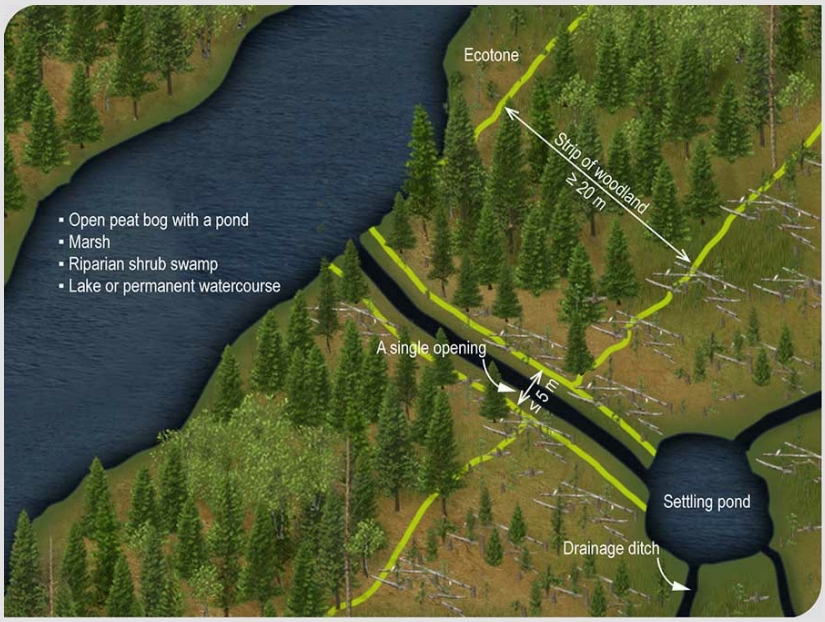


Figure 35 Rules governing the digging of a drainage ditch or network of sylvicultural drainage ditches

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §1. Sylvicultural drainage ditch

Section 36

A ditch or network of sylvicultural drainage ditches must have a settling pond at its outlet. The ditch or network of sylvicultural drainage ditches and the settling pond must not allow for the introduction of sediments into an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse, nor over a width of 20 m, measured from the limit that separates the stand from the environment to be protected or, in the presence of a riparian ecotone, from the limit of the ecotone farthest from the environment to be protected.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

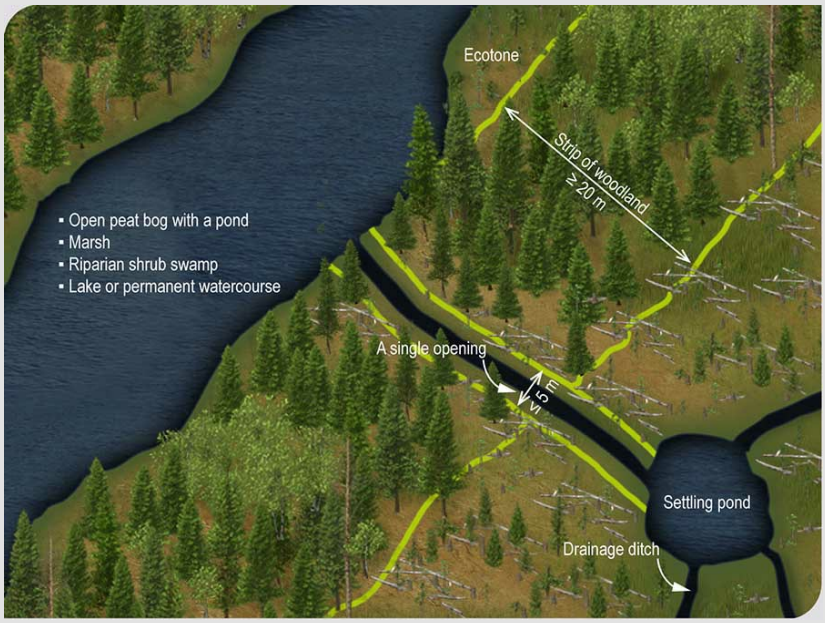


Figure 35 Rules governing the digging of a drainage ditch or network of sylvicultural drainage ditches

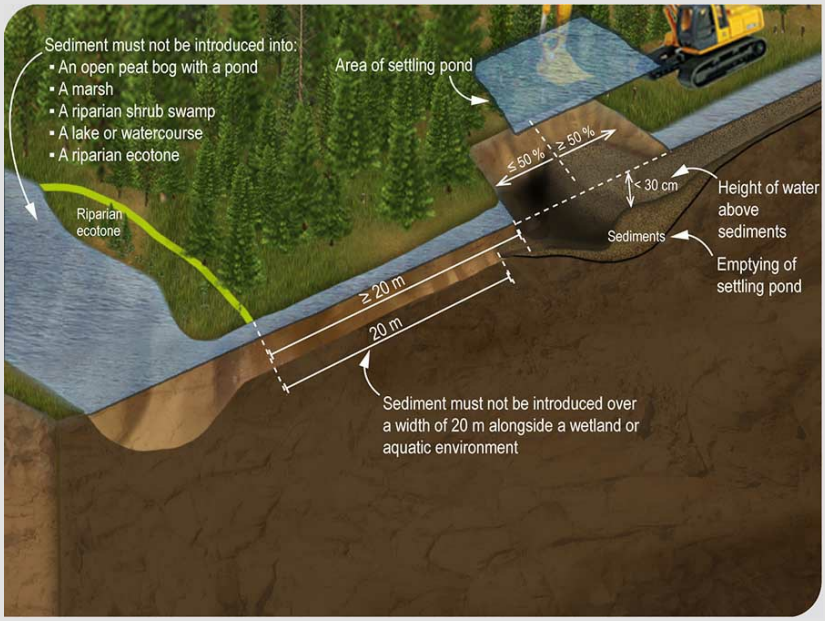


Figure 36 Rules governing the digging of a drainage ditch or network of sylvicultural drainage ditches

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §1. Sylvicultural drainage ditch

Section 37

The settling pond must remain operational and be drained when the water height above the sediments is less than 30 cm over at least 50% of the settling pond's area.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

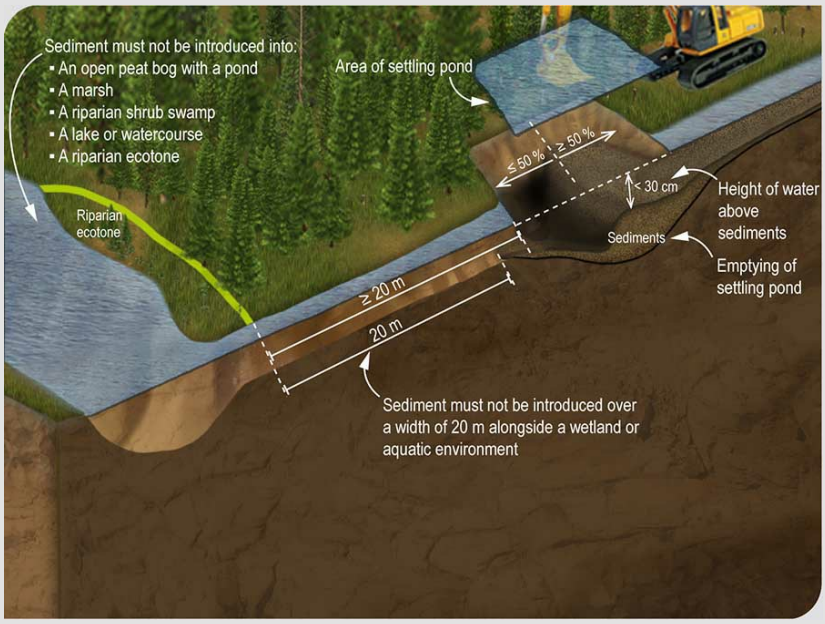


Figure 36 Rules governing the digging of a drainage ditch or network of sylvicultural drainage ditches

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §2. Discharge, recovery and treatment of washing water

Section 38

Washing logging machines is prohibited in a forest if it takes place at 60 m or less from an open peat bog, a swamp, a riparian marsh, a lake or a watercourse. The 60-m distance is measured from the perimeter of the peat bog, marsh or swamp or from the upper limit of the shore of a lake or bank of a watercourse or, in the presence of a riparian ecotone, from the limit of the ecotone farthest from the environment to be protected.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid contaminating the forest

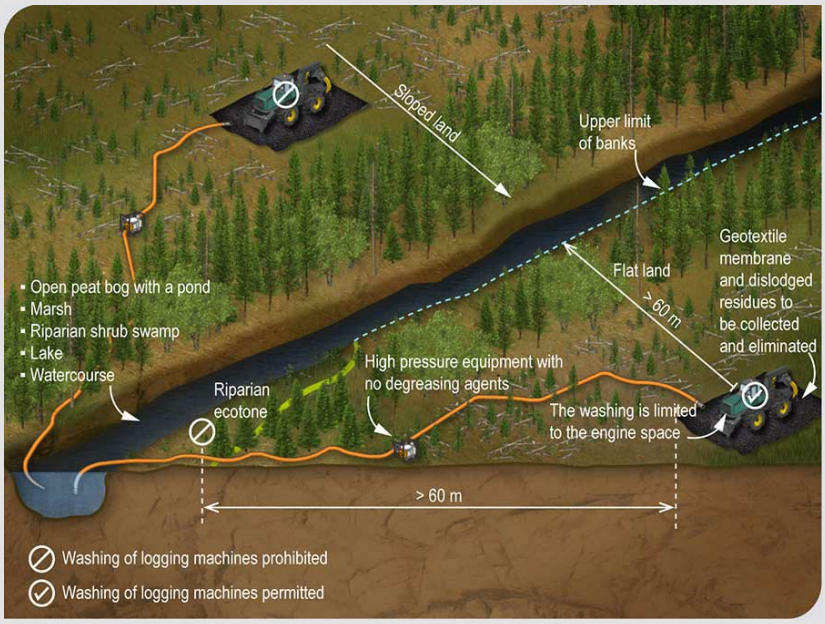


Figure 38 Rules governing the washing of logging machines

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §2. Discharge, recovery and treatment of washing water

Section 39

Water for washing logging machines may be discharged in the forest only if all the following conditions are met:

1. washing is not done at the top of a slope leading directly to an open peat bog, a marsh, a swamp, a lake or a watercourse;
2. the washing is limited to the engine space;
3. washing is done using high pressure equipment and without degreasing agents;
4. a geotextile membrane is placed under the logging machine to collect the residues dislodged by washing;
5. the geotextile membrane and dislodged residues must be recovered and disposed of in accordance with the Regulation respecting hazardous materials (chapter Q-2, r. 32).

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid contaminating the forest

Additional information

Logging machines must not be washed at the top of a continuous slope leading directly to an open peat bog, a marsh, a swamp, a lake or a watercourse. Washing must take place further away, at a place where the land no longer slopes towards these environments. This will ensure that the water will be evacuated towards an area of vegetation, well away from the other environments.

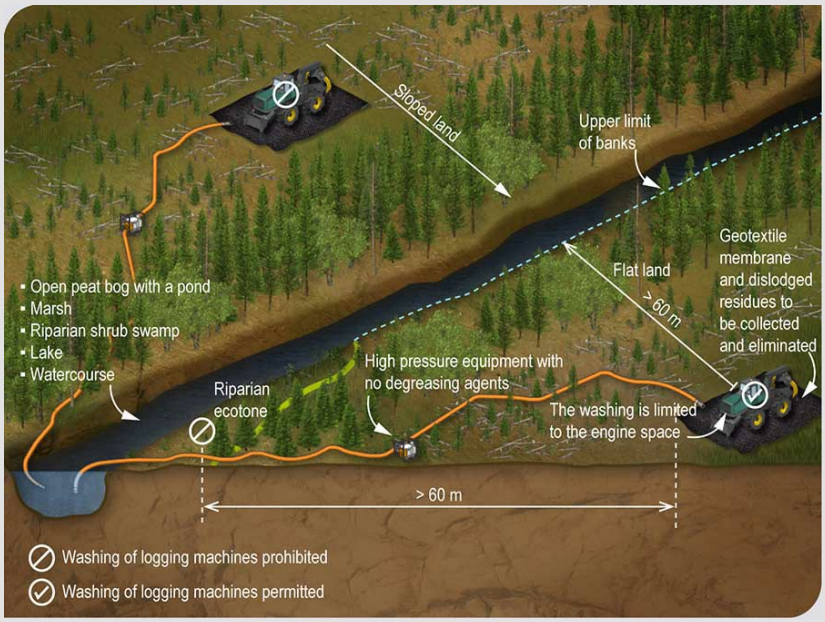


Figure 38 Rules governing the washing of logging machines

Despite the first paragraph, washing water may be discharged in the forest provided that it is treated on the site and that it does not contain more than 30 mg/l of suspended matter and 15 mg/l of hydrocarbons (C10-C50).

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid contaminating the forest

Explanations

Water for washing logging machines may be discharged in the forest if all the conditions set out in subparagraphs 1 to 5 of the first paragraph of this section are met. However, if all the conditions cannot be met, but the washing water is treated on the site and does not contain more than 30 mg/l of suspended matter and 15 mg/l of hydrocarbons (C10-C50), it may still be discharged in the forest.

Residues from washing and water treatment on the site must be recovered and disposed of in accordance with applicable laws and regulations.

3

Objective

- To avoid contaminating the forest

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §2. Discharge, recovery and treatment of washing water

Section 40

Water for washing logging machines that may not be discharged in the forest must be recovered and be treated in accordance with applicable laws and regulations.



Objective

- To avoid contaminating the forest

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §2. Discharge, recovery and treatment of washing water

Section 41

The owner of the logging machine must obtain from the enterprise that treats the washing water on the site a certificate of compliance with the standards provided for in the second paragraph of section 39 before the washing water may be discharged in the forest. The certificate must contain the name and address of the enterprise that has treated the washing water on the site and the signature of the person who, within that enterprise, has treated the water, the name, address and signature of the logging machine's owner or his or her representative, the GPS positioning data of the washing site and the volume of water treated and discharged in the forest. The certificate must be preserved for at least one year and be submitted, upon request, to the Minister.



Objective

- To allow for regulatory compliance to be checked

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §3. Discharge of contaminants and earth and removal of trees or tree debris

Section 42

The discharge of hydrocarbons, chemicals or other similar contaminants is prohibited in the forest when carrying out a forest development activity.



Objective

- To avoid contaminating the forest

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §3. Discharge of contaminants and earth and removal of trees or tree debris

Section 43

During a forest development activity, the discharge of earth is prohibited in an open peat bog, a swamp, a marsh, a lake or a watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

This section does not apply to the discharge of earth during the construction, improvement or repair of a road where those activities are carried out in accordance with this Regulation, except the portion of a snowmobile trail crossing a lake or its ecotone.

2

Objectives

- To allow certain forest development activities in or near a particular place
- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Explanations

In cases where a road is constructed, improved or repaired in compliance with this Regulation, earth may be discharged into an open peat bog, a marsh, a swamp, a lake or a watercourse, except for the portion of a snowmobile trail crossing a lake or its ecotone. In this portion of the trail, an ice bridge – in other words, a work composed solely of frozen water – must be built.

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division IV - Sylvicultural drainage, washing water, contaminants, earth and tree debris §3. Discharge of contaminants and earth and removal of trees or tree debris

Section 44

Any person who carries out a forest development activity alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a watercourse must remove all trees or tree parts that fall into those environments during the carrying out of the activity.

1

Objective

- To preserve the integrity of an aquatic, wetland or riparian environment

This section does not apply to vegetation control activities carried out by the holder of a forestry permit issued for public utility works where trees or parts of trees fall in an open peat bog with a pond, a marsh or a riparian shrub swamp.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit issued for public utility works may leave any trees or parts of trees that fall into an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a watercourse during vegetation control activities (e.g. in the right-of-way of electricity transmission lines). The Minister responsible for applying the Sustainable Forest Development Act specifies the forest development activities that are authorized in the forestry permit and sets the conditions that must be met when carrying them out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division V - Soils

Section 45

The ruts created in the falling and hauling trails during forest operations must not appear over more than 25% of the length of trails per total cutting area. For the purposes of this section, a rut is a trace dug in the ground by the wheels or tracks of logging machines assigned to land preparation or to operations to harvest, haul, pile or load timber, and that is at least 4 m in length. On organic soil, a torn vegetal cover is considered as a rut. On mineral soil, a rut is more than 200 mm deep, measured from the mineral soil that it not disturbed by the logging machine.

1

Objectives

- To preserve the natural drainage of the soil
- To avoid disturbing the soil
- To avoid a reduction in soil productivity

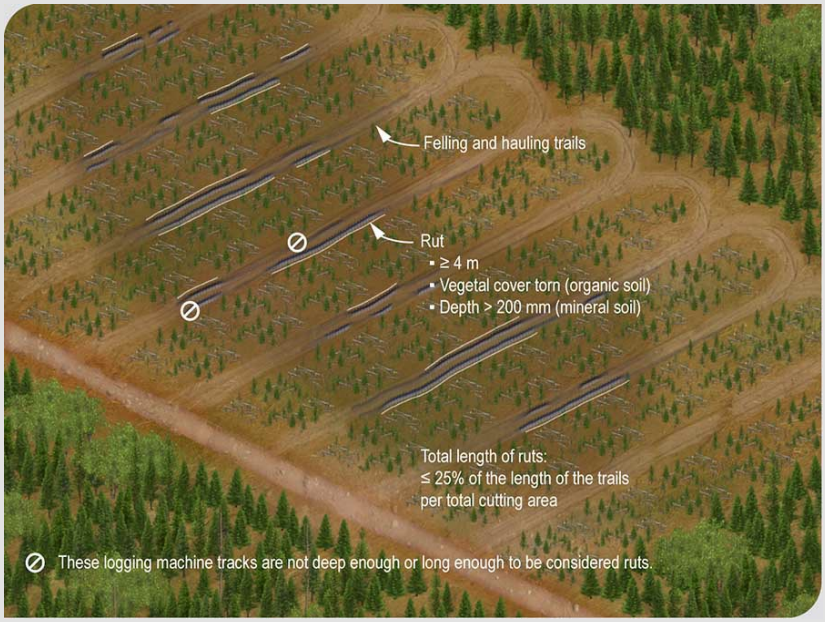


Figure 45A Limitation of rutting in felling and hauling trails

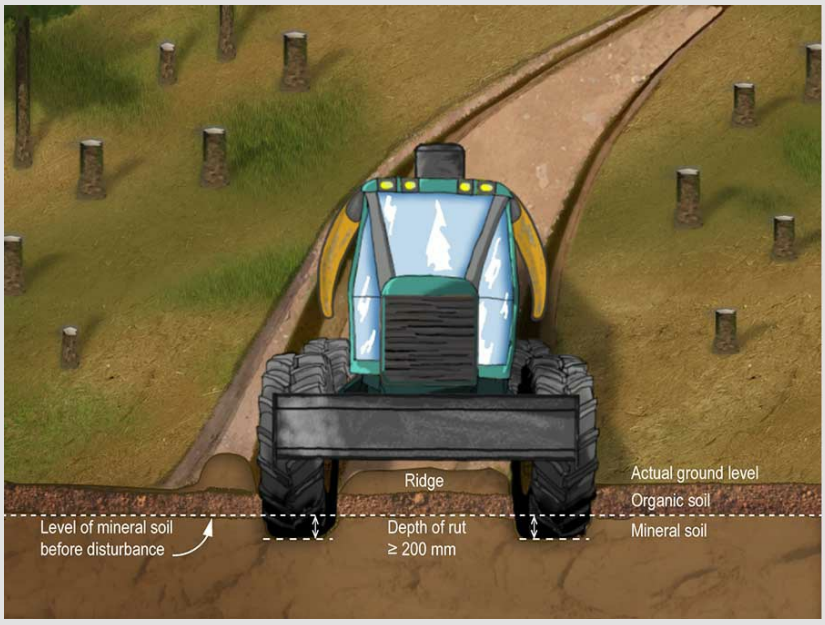


Figure 45B Measuring rut depth

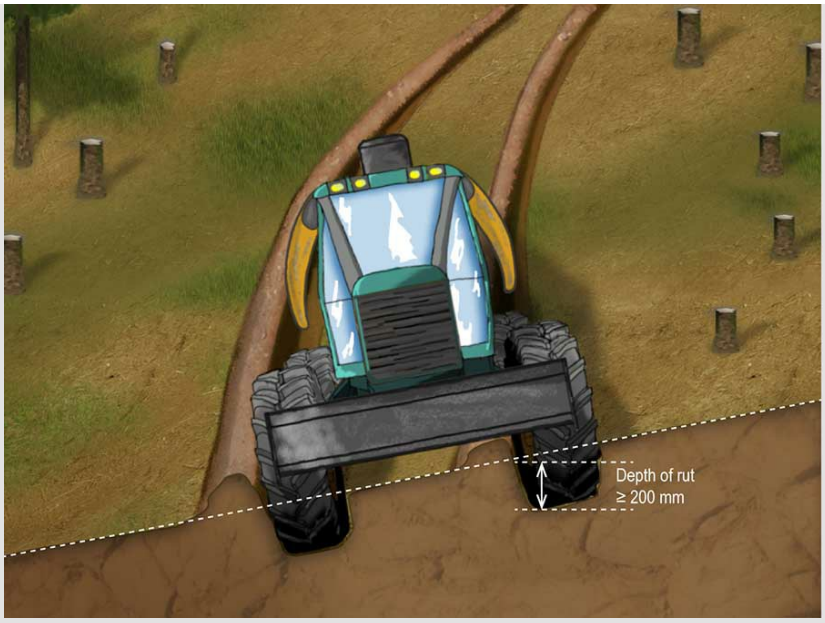


Figure 45C Measuring rut depth on slopes

Chapter III – Protection of aquatic environments, riparian areas, wetlands and soils Division V - Soils

Section 46

In forest stands belonging to the ecological subregions and ecological types indicated in Schedule 3, tree branches must be left on the falling site, near the stump, to prevent a loss in soil fertility in the long term.

1

Objectives

- To avoid a loss in soil productivity in the long term
- To avoid a reduction in soil productivity

Additional information

For the purposes of this article, a single block forest stand of the same ecological type must have an area greater than 2 ha within a cutting area identified in the forest management annual program, or in the contract resulting from the auction. Some harvesting processes allow for tree branches and crowns to be left on the cutting site. This portion of tree biomass helps maintain soil fertility. Branches and crowns may be placed on the felling and hauling trail to increase the ground's carrying capacity.

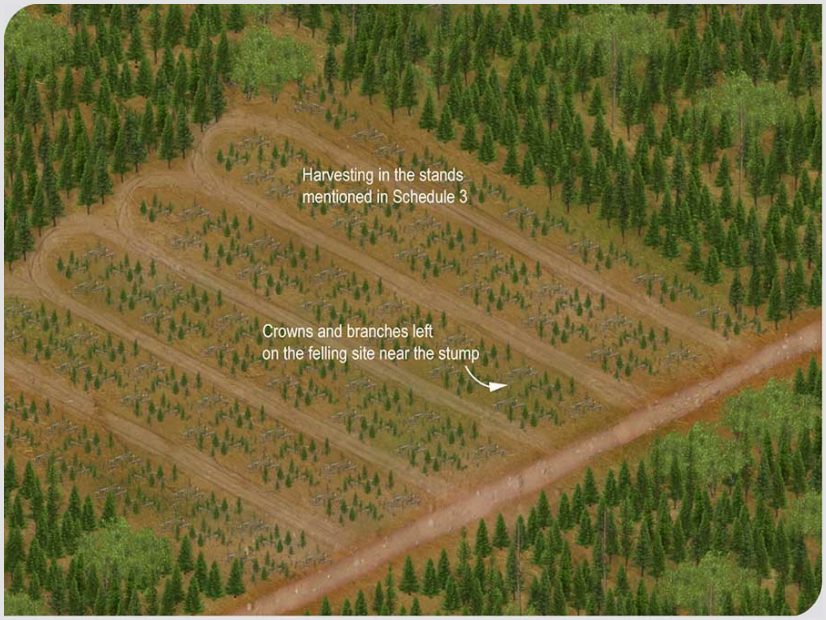


Figure 46 Branches and crowns left on the felling site to prevent long-term loss of soil productivity

Chapitre IV - Wildlife habitat protection

Division I - Prohibited forest development activities

- Section 47. Wildlife habitat
- Section 48. Waterfowl gathering areas
- Section 49. Exceptions applicable to the holders of certain permits

Division II - Strips of woodland

§1. White-tailed deer yards

- Section 50. Strips of woodland alongside wetland or aquatic environments
- Section 51. Partial cutting in a strip of woodland
- Section 52. Strip of woodland connecting a white-tailed deer yard to the residual forest
- Section 53. Exceptions applicable to the holders of certain permits

§2. Heronries

- Section 54. Forest development activities in or around the habitat

§3. Salmon rivers

- Section 55. Forest development activities in or around the habitat

§4. Bear dens

- Section 56. Forest development activities in or around the habitat

§5. Salt licks

- Section 57. Forest development activities in or around the habitat

Division III - Operations in certain wildlife habitats

§1. White-tailed deer yard

- Section 58. Forest development activities in or around the habitat

§2. Woodland caribou habitat, woodland ecotype

- Section 59. Forest development activities in or around the habitat
- Section 60. Road construction
- Section 61. Road closure

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Chapter IV – Wildlife habitat protection Division I - Prohibited forest development activities

Section 47

No forest development activity may take place in the following wildlife habitats:

1. a caribou calving area north of the 52nd parallel;
2. a cliff inhabited by a colony of birds;
3. a muskrat habitat;
4. the site where a heronry's nests are located;
5. an island or peninsula inhabited by a colony of birds;
6. a salt lick.

1

Objective

- To preserve the integrity of a wildlife habitat

Additional information

The wildlife habitats in which forest development activities are prohibited are defined in section 2 of this Regulation. It is important to note that the definition of the term "forest development activity" in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

Chapter IV – Wildlife habitat protection Division I - Prohibited forest development activities

Section 48

The following forest development activities are prohibited in a waterfowl gathering area:

1. the application of pesticides to control insect epidemics and cryptogamic diseases;
2. the application of phytocides;
3. the construction of roads;
4. the digging of a drainage ditch for sylvicultural purposes.

1

Objective

- To preserve the integrity of a wildlife habitat

The foregoing also applies to tree pruning, felling or harvesting and preparatory work for forest production purposes in the floodplain of a waterfowl gathering area, subject to the third paragraph.

2

Objectives

- To allow for the harvesting of wood
- To avoid disturbing wildlife

Explanations

Tree pruning, felling or harvesting and preparatory work for forest production purposes is prohibited in the floodplain of a waterfowl gathering area. However, the work mentioned in the third paragraph of this section is not prohibited. In other words:

- From December 16 to March 14, partial cutting not exceeding 30% of the merchantable stems present in a waterfowl gathering area, carried out over a 10-year period, is permitted.

From 16 December to 14 March, partial cutting not exceeding 30% of the merchantable stems present, carried out over a 10-year period, is allowed in a floodplain of a waterfowl gathering area.

3

Objectives

- To allow for the harvesting of wood To avoid disturbing wildlife

Explanations

From December 16 to March 14, partial cutting not exceeding 30% of the merchantable stems present in a waterfowl gathering area, carried out over a 10-year period, is permitted.

Chapter IV – Wildlife habitat protection Division I - Prohibited forest development activities

Section 49

Section 47 and the second and third paragraphs of section 48 do not apply to the holder of a forestry permit issued for forest development activities carried out by the holder of mining rights for the purposes of exercising his or her rights, unless the mining activities are to extract surface mineral substances, nor to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects.

1

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit can carry out forest management activities for wildlife, recreational or agricultural development projects in the wildlife habitats mentioned in section 47. The forestry permit lists the forest development activities that are permitted and sets the conditions to be met when they are carried out. In the same wildlife habitats, a holder of mining rights who also holds a forestry permit can carry out forest development activities in the habitats, unless the activities in question are to extract surface mineral substances. The forestry permit lists the forest development activities that are permitted and sets the conditions to be met when they are carried out. The wildlife habitats mentioned in section 47 are:

1. a caribou calving area north of the 52nd parallel;
2. a cliff inhabited by a colony of birds;
3. a muskrat habitat;
4. the site where a heronry's nests are located;
5. an island or peninsula inhabited by a colony of birds;
6. a salt lick.

A person holding a forestry permit issued for wildlife, recreational or agricultural development projects may carry out, in the floodplain of a waterfowl gathering area, the forest development activities indicated in the second and third paragraphs of section 48. This means that tree pruning, felling or harvesting and preparatory work for forest production purposes are all permitted. Partial cutting may be carried out in these habitats at any time of the year. There are no restrictions on the number of merchantable stems harvested over a ten-year period. The forestry permit lists the forest development activities that are permitted and sets the conditions to be met when they are carried out. The same permissions also apply to a holder of mining rights who also holds a forestry permit to carry out forest development activities in the floodplain of a waterfowl gathering area, unless the activities in question are to extract surface mineral substances. The forestry permit lists the forest development activities that are permitted and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Sections 47 and 48 do not apply to the holder of a forestry permit issued for public utility works. However, before forest development activities required for public utility works and not authorized by sections 47 and 48 may be carried out in all or part of the wildlife habitats referred to in those sections, the Minister consults the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) before issuing the permit.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit may carry out the forest development activities required for public utility purposes in all or part of a wildlife habitat mentioned in sections 47 and 48, without meeting the conditions set out in those sections. Before issuing the permit, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to protect the wildlife habitats concerned. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized in the forestry permit and setting the conditions that must be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter IV – Wildife habitat protection Division II - Strips of woodland §1. White-tailed deer yards

Section 50

Despite the provisions of sections 28 and 30 to 32, no forest development activity is allowed within the first 20 metres of the strip of woodland kept alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse located in a white-tailed deer yard.

1

Objective

- To preserve an appropriate riparian environment for use by wildlife

Explanations

Sections 28 and 30 to 32 allow a person to carry out certain forest development activities (e.g. partial cutting and construction of a structure to cross a watercourse) in the strip of woodland alongside a wetland or aquatic environment. However, in a white-tailed deer yard, all forest development activities are prohibited in the first 20 metres of the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse.

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases. It should also be noted that section 53 of this Regulation allows certain forestry permit holders to carry out forest development activities in a white-tailed deer yard in the first 20 metres of the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse. Section 53 also allows for the construction, improvement or repair of a road. Section 53 clarifies the conditions of authorization. The term “white-tailed deer yard” refers to an area where white-tailed deer gather in winter. The terms “concentration area” and “wintering area” (“ravage” in French) are also commonly used to refer to a white-tailed deer yard. If the white-tailed deer population is to be maintained in Québec, access to good quality wintering areas is essential. The Guide d’aménagement des ravages de cerf de Virginie (available in French) was prepared to help forest managers improve the quality of white-tailed deer winter habitats when drawing up development plans in deer yards. Among other things, the Guide sets out development principles for deer yards to help ensure that travel corridors and canopy components offering shelter and food are maintained when forestry activities are carried out.

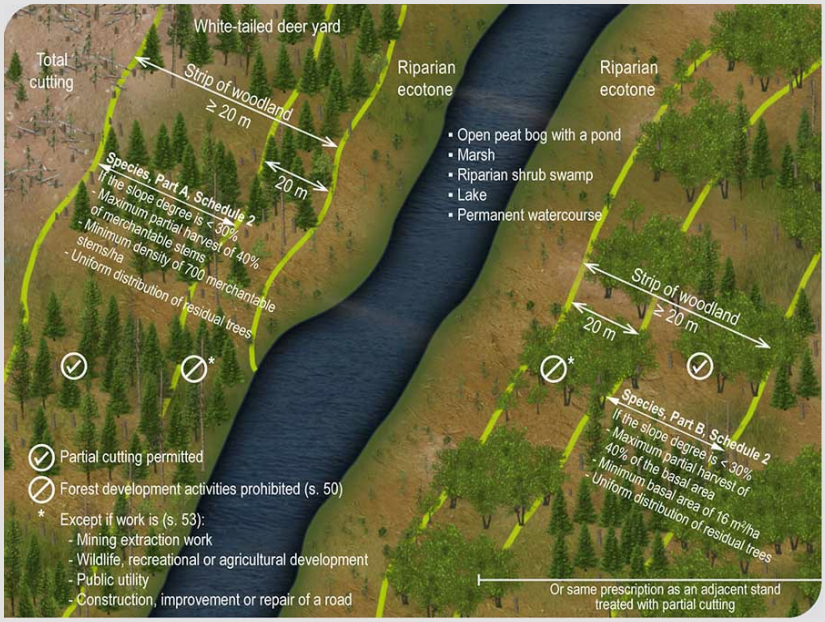


Figure 50A Rules governing forest development activities in the strip of woodland alongside a wetland or aquatic environment located in a white-tailed deer yard

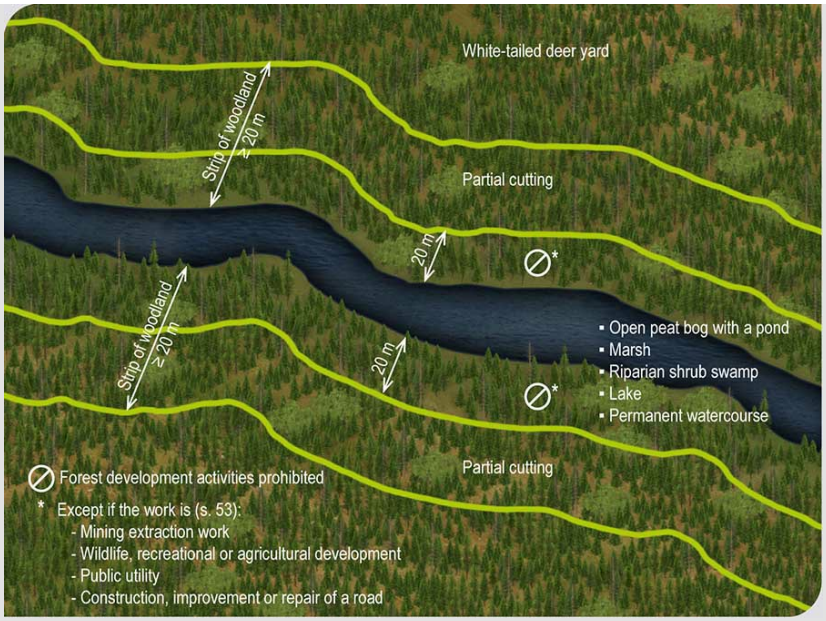


Figure 50B Rules governing forest development activities in the strip of woodland alongside a wetland or aquatic environment located in a white-tailed deer yard

Chapter IV – Wildife habitat protection
Division II - Strips of woodland
§1. White-tailed deer yards

Section 51

Where the strip of woodland referred to in section 50 is made wider than 20 m to fulfill the needs of the white-tailed deer habitat, only partial cutting not exceeding 40% of the merchantable stems, in the case of stands of species referred to in Part A of Schedule 2, or 40% of the basal area in the case of stands of species referred to in Part B of that Schedule, is allowed beyond the first 20 metres of the strip of woodland.

In addition, the density of the stand may never be reduced to less than 700 merchantable stems/ha, in the case of stands of species referred to in Part A of Schedule 2, or the basal area may not be reduced to less than 16 m2/ha, in the case of stand of species referred to in Part B of that Schedule.

Despite the first and second paragraphs, where the sylvicultural prescription provides for partial cutting in the stand adjacent to the strip of woodland referred to in section 50, the harvest level indicated in the sylvicultural prescription of the adjacent stand then applies to the widened part of that strip of woodland.

1

Objectives

- To allow for the harvesting of wood
- To ensure the renewal of trees in the strip of woodland
- To preserve an appropriate riparian environment for use by wildlife

Explanations

Where the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse located in a white-tailed deer yard is made wider than 20 m, some of the trees may be harvested in the portion of the strip beyond the first 20 metres.

The permitted intensity of harvesting varies by stand type. In the case of a stand composed of the species referred to in Part A of Schedule 2, up to 40% of the merchantable stems may be harvested, provided the density of the stand is not reduced to less than 700 merchantable stands/ha. In the case of a stand composed of species referred to in Part B of that Schedule, up to 40% of the basal area may be harvested, provided the density of the stand is not reduced to less than 16 m²/ha.

However, where partial cutting takes place in the stand adjacent to the strip of woodland on either side of an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse situated in a white-tailed deer yard, the harvest level in the extended portion of the strip beyond the first 20 metres must comply with the specifications set out in the sylvicultural prescription of the adjacent stand.

Additional information

It should be noted that section 53 of this Regulation allows certain forestry permit holders not to apply the conditions set out in this section for harvesting in the extended portion of the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse located in a white-tailed deer yard. Section 53 clarifies the conditions of authorization.

The term “white-tailed deer yard” refers to an area where white-tailed deer gather in winter. The terms “concentration area” and “wintering area” (“ravage” in French) are also commonly used to refer to a white-tailed deer yard. If the white-tailed deer population is to be maintained in Québec, access to good quality wintering areas is essential. The Guide d’aménagement des ravages de cerf de Virginie (available in French) was prepared to help forest managers improve the quality of white-tailed deer winter habitats when drawing up development plans in deer yards. Among other things, the Guide sets out development principles for deer yards to help ensure that travel corridors and canopy components offering shelter and food are maintained when forestry activities are carried out.

Residual trees in the widened strip of woodland where partial harvest takes place must be spread uniformly so as to favor the renewal of the forest cover and to maintain shelters and food for the white-tailed deer.

2

Objectives

- To preserve an appropriate riparian environment for use by wildlife
- To maintain the components of the forest cover that provide shelter for wildlife
- To maintain the components of the forest cover that provide food for wildlife

Additional information

It should be noted that section 53 of this Regulation allows certain forestry permit holders not to apply the conditions set out in this section for harvesting in the extended portion of the strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse located in a white-tailed deer yard. Section 53 clarifies the conditions of authorization.

The term “white-tailed deer yard” refers to an area where white-tailed deer gather in winter. The terms “concentration area” and “wintering area” (“ravage” in French) are also commonly used to refer to a white-tailed deer yard. If the white-tailed deer population is to be maintained in Québec, access to good quality wintering areas is essential. The Guide d’aménagement des ravages de cerf de Virginie (available in French) was prepared to help forest managers improve the quality of white-tailed deer winter habitats when drawing up development plans in deer yards. Among other things, the Guide sets out development principles for deer yards to help ensure that travel corridors and canopy components offering shelter and food are maintained when forestry activities are carried out.

Chapter IV – Wildife habitat protection Division II - Strips of woodland §1. White-tailed deer yards

Section 52

A strip of woodland at least 60 m wide and at least 7 m high linking a white-tailed deer yard to the residual forest must be preserved and kept in place until the adjacent stands have reached an average height of 7 m. No forest development activity may be carried out in that strip of woodland.

1

Objective

- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases. It should also be noted that section 53 of this Regulation allows the holder of a forestry permit issued for public utility purposes not to apply the conditions set out in this section. Section 53 clarifies the conditions of authorization.

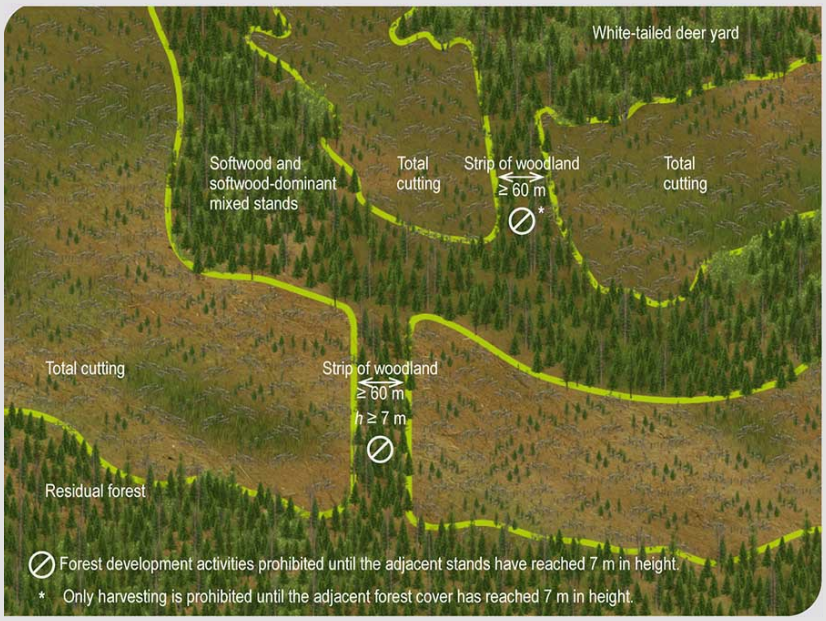


Figure 52 Strips of woodland connecting a white-tailed deer yard to the residual forest or separating two areas of total cutting in softwood and softwood-dominant mixed stands within a white-tailed deer yard

In softwood and softwood-dominant mixed stands within a white-tailed deer yard, a strip of woodland at least 60 m wide must be preserved and kept in place between 2 areas of total cutting until the dominant forest cover in those cutting areas has reached an average height of 7 m.

2

Objective

- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest

Additional information

The term “white-tailed deer yard” refers to an area where white-tailed deer gather in winter. The terms “concentration area” and “wintering area” (“ravage” in French) are also commonly used to refer to a white-tailed deer yard. If the white-tailed deer population is to be maintained in Québec, access to good quality wintering areas is essential. The Guide d’aménagement des ravages de cerf de Virginie (available in French) was prepared to help forest managers improve the quality of white-tailed deer winter habitats when drawing up development plans in deer yards. Among other things, the Guide sets out development principles for deer yards to help ensure that travel corridors and canopy components offering shelter and food are maintained when forestry activities are carried out.

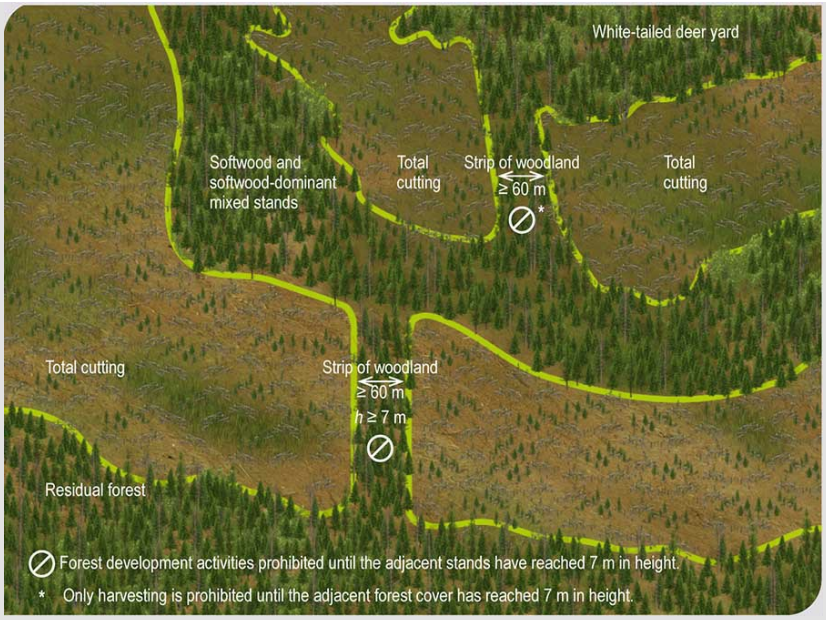


Figure 52 Strips of woodland connecting a white-tailed deer yard to the residual forest or separating two areas of total cutting in softwood and softwood-dominant mixed stands within a white-tailed deer yard

Chapter IV – Wildife habitat protection Division II - Strips of woodland §1. White-tailed deer yards

Section 53

Sections 50 and 51 do not apply to the holder of a forestry permit issued for forest development activities carried out by the holder of mining rights where the holder carries out mining exploration work, nor to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects, nor to the construction, improvement or repair of a road.

1

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A holder of mining rights who also holds a forestry permit may carry out forest development activities during mining exploration work in a strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse located within a white-tailed deer yard (section 50), and is not required to apply the conditions set out in section 51 for harvesting in the strip of woodland alongside these environments. These exemptions also apply to a person who holds a forestry permit to carry out the forest development activities required for wildlife, recreational or agricultural development projects, and to a person who constructs, improves or repairs a road. The forestry permit lists the forest development activities that are permitted and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

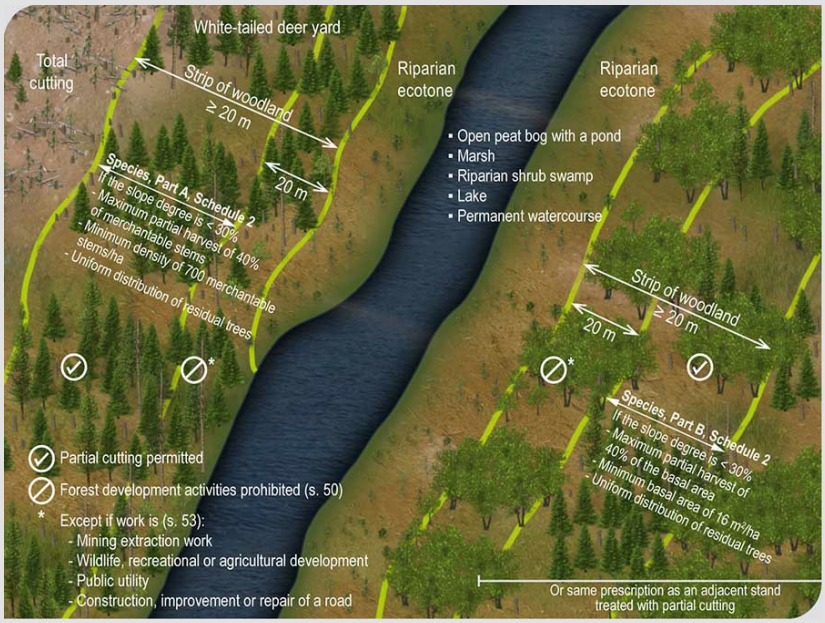


Figure 50A Rules governing forest development activities in the strip of woodland alongside a wetland or aquatic environment located within a white-tailed deer yard

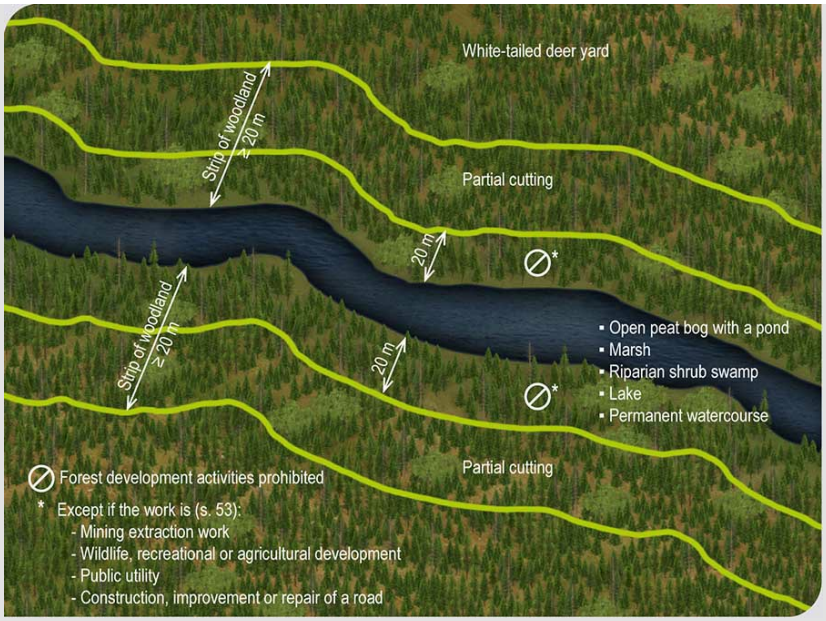


Figure 50B Rules governing forest development activities in the strip of woodland alongside a wetland or aquatic environment located within a white-tailed deer yard

Sections 50 to 52 do not apply to the holder of a forestry permit issued for public utility works. However, before forest development activities required for public utility works and not authorized by sections 50 and 52 may be carried out in part of a white-tailed deer yard referred to in those sections, the Minister consults the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) before issuing the permit.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit may carry out the forest development activities required for public utility development projects in a strip of woodland alongside an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a permanent watercourse located in a white-tailed deer yard (section 50), and is not required to apply the conditions set out in section 51 for harvesting in the strip of woodland alongside these environments or those set out in section 52 that are intended to allow wildlife to travel by maintaining connectivity between habitats and neighbouring residual forests. Before issuing such a permit, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to protect the white-tailed deer yard. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized in the forestry permit and setting the conditions that must be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

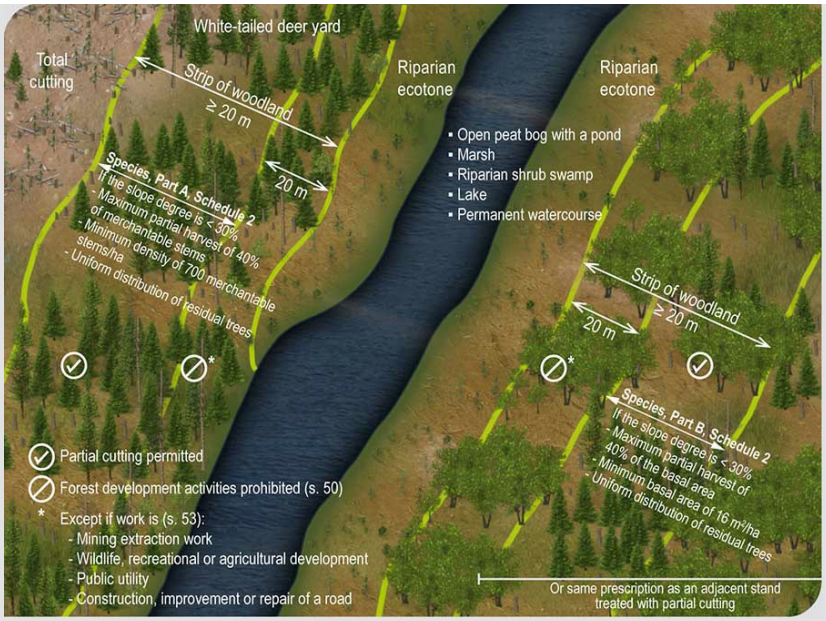


Figure 50A Rules governing forest development activities in the strip of woodland alongside a wetland or aquatic environment located within a white-tailed deer yard

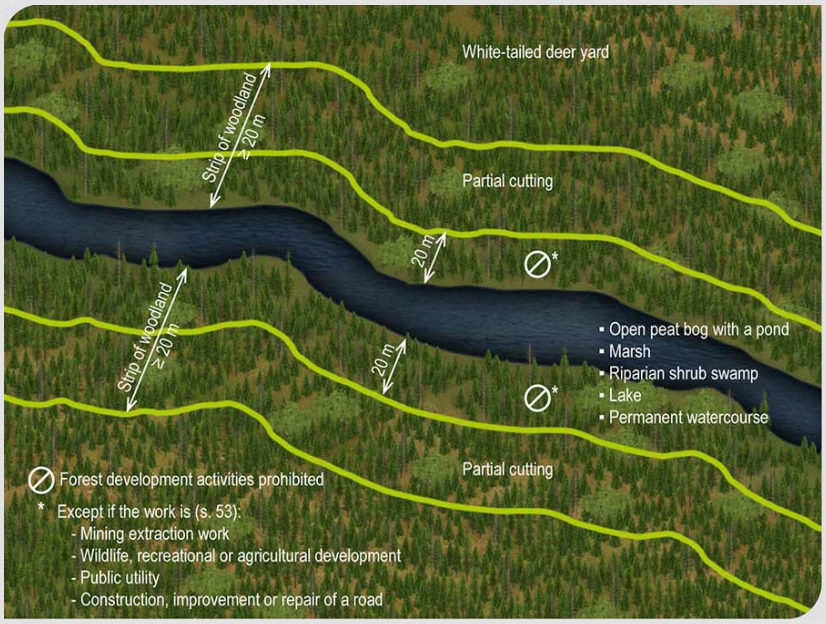


Figure 50B Rules governing forest development activities in the strip of woodland alongside a wetland or aquatic environment located within a white-tailed deer yard

Chapter IV – Wildife habitat protection Division II - Strips of woodland §2. Heronries

Section 54

A strip of woodland at least 200 m wide must be preserved within a strip of 500 m surrounding the site where a heronry's nests are located. The strip of woodland is measured from the limit that separates the stand from the site of the nests. Forest development activities are prohibited within the first 200 m of the strip of woodland referred to in the first paragraph. They are allowed beyond the first 200 m of that strip of woodland, but only from 1 August to 31 March.

1

Objective

- To preserve the integrity of a wildlife habitat

Additional information

It is important to note that the definition of the term "forest development activity" in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

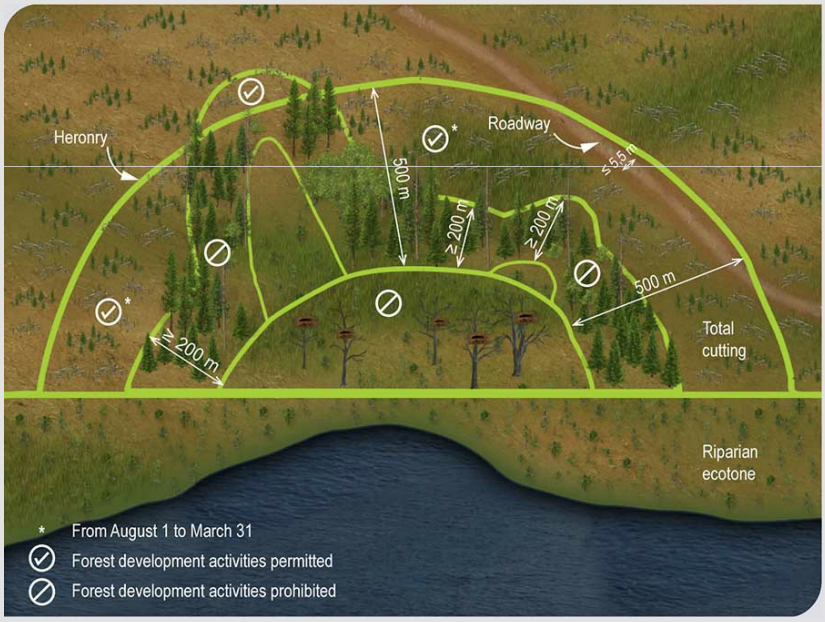


Figure 54 Rules governing forest development activities in heronries

2

Objectives

- To avoid disturbing wildlife To allow for the harvesting of wood

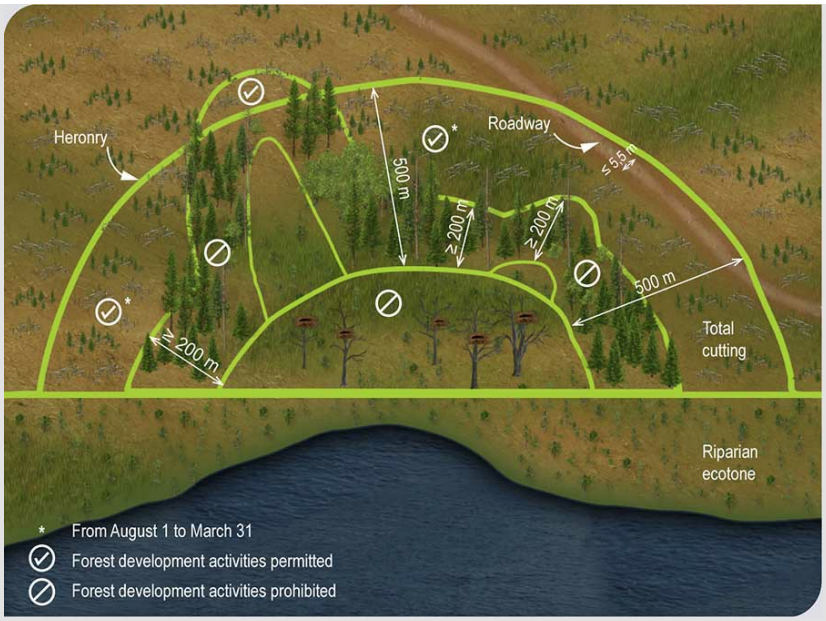


Figure 54 Rules governing forest development activities in heronries

The maximum width of the roadway of a road located within the limits of a heronry is 5.5 m.

3

Objective

- To allow certain forest development activities in or near a particular place

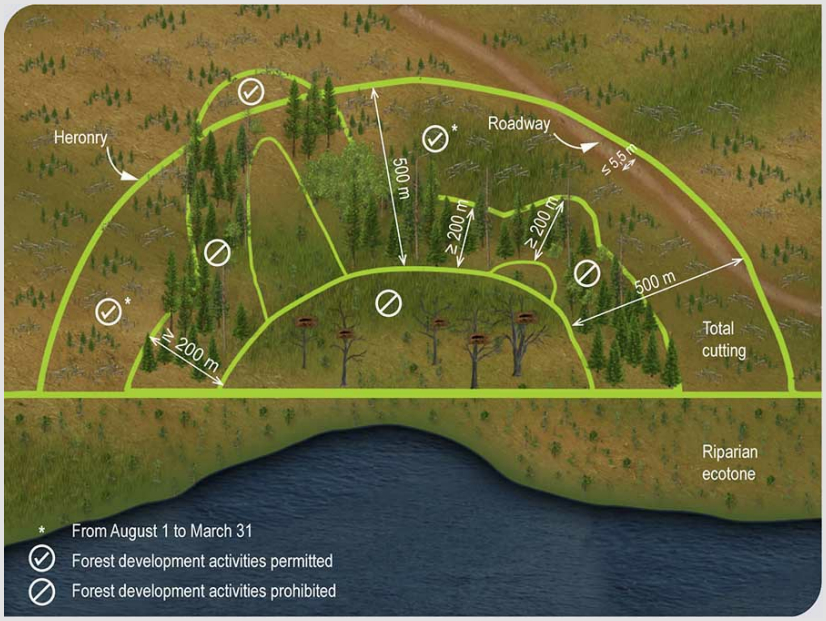


Figure 54 Rules governing forest development activities in heronries

The first and second paragraphs do not apply to the holder of a forestry permit issued for forest development activities carried out by the holder of mining rights for the purposes of exercising his or her rights, unless the mining activities are to extract surface mineral substances, nor to the holder of a forestry permit issued for wildlife, recreational or agricultural development projects.

4

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit for wildlife, recreational or agricultural development projects may carry out forest development activities in the 500 m strip surrounding the site where a heronry's nests are located without applying the conditions set out in the first and second paragraphs of this section. The same exemptions also apply to a holder of mining rights who also holds a forestry permit, unless the mining activities are to extract surface mineral substances. The forestry permit specifies the forest development activities that are authorized and the conditions that must be met when carrying them out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

This section does not apply to the holder of a forestry permit issued for public utility works. However, before forest development activities required for public utility works and not authorized by this section may be carried out in the part of a heronry referred to in this section, the Minister consults the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) before issuing the permit.

5

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit for wildlife, recreational or agricultural development projects may carry out forest development activities in the 500 m strip surrounding the site where a heronry's nests are located without applying the conditions set out in this section. Before issuing such a permit, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to protect the heronry. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized and setting the conditions that must be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter IV – Wildife habitat protection Division II - Strips of woodland §3. Salmon rivers

Section 55

A strip of woodland at least 60 m wide must be preserved on both sides of the river or part of a river designated by the Minister as a salmon river. The strip of woodland is measured from the limit that separates the stand from the environment to be protected or, in the presence of a riparian ecotone, from the limit of the ecotone farthest from the environment to be protected.

1

Objectives

- To maintain landscape quality To contribute to the quality of the experience in the forest

Additional information

Each year, the Ministère des Forêts, de la Faune et des Parcs (MFFP) publishes, on its website, the main rules in force for Sport Fishing in Québec (including salmon fishing). The rules include a (in French only) list and a map of all salmon rivers. It is important to contact the MFFP's regional representatives for detailed information on the stretches of salmon river alongside which a strip of woodland at least 60 m wide must be preserved during forest development activities.

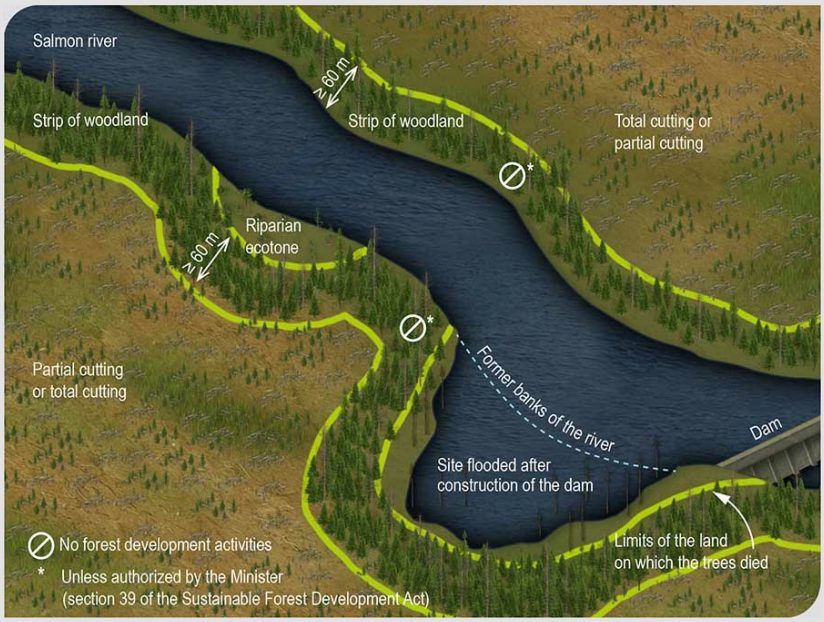


Figure 55 Rules governing forest development activities alongside a salmon river

Forest development activities are prohibited in that strip of woodland, unless prior authorization is obtained from the Minister in accordance with section 39 of the Sustainable Forest Development Act (chapter A-18.1).

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person may carry out forest development activities in the strip of woodland on both sides of a river or portion of a river designated as a salmon river, provided authorization is obtained from the Minister responsible for applying the Sustainable Forest Development Act. The Minister specifies which forest development activities are authorized and sets the conditions to be met when they are carried out.

Additional information

It is important to note that the definition of the term "forest development activity" in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

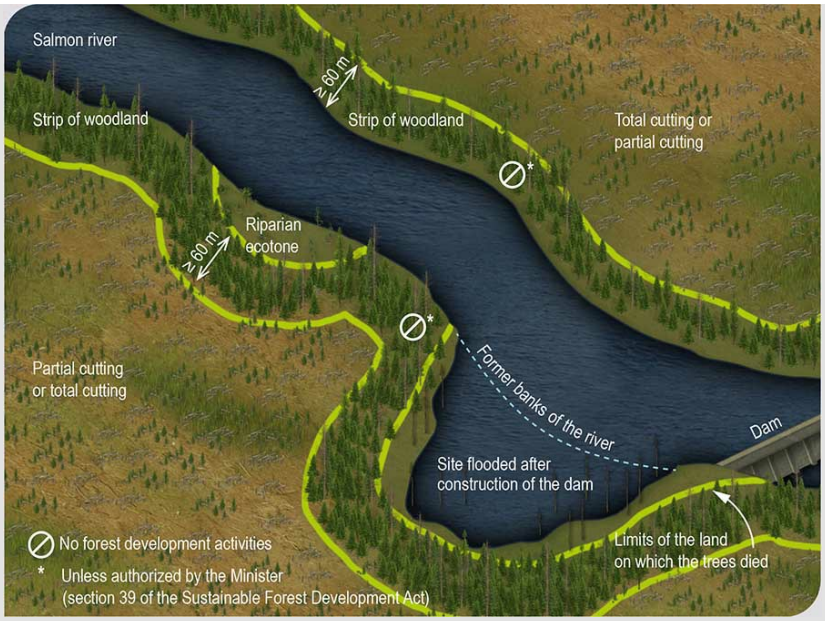


Figure 55 Rules governing forest development activities alongside a salmon river

In the case of land immersed following the construction of dams, the strip of woodland begins at the limit of the land where the trees have perished as a result of the immersion.

3

Objectives

- To maintain landscape quality
- To contribute to the quality of the experience in the forest

Additional information

This paragraph refers to dams built by humans and does not apply to land submerged by water that has accumulated because of a beaver dam.

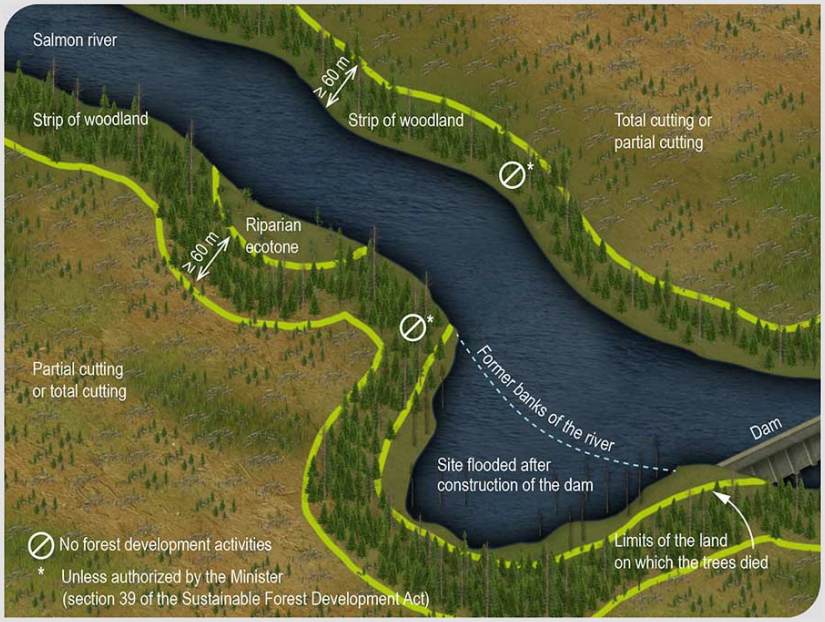


Figure 55 Rules governing forest development activities alongside a salmon river

Chapter IV – Wildife habitat protection Division II - Strips of woodland §4. Bear dens

Section 56

A strip of woodland at least 60 m wide must be preserved around a bear den from 15 November to 15 April. The strip may be harvested outside that period.

1

Objective

- To avoid disturbing wildlife



Figure 56 Rules governing forest development activities alongside a bear den

The first paragraph does not apply to the holder of a forestry permit issued for public utility works. However, before forest development activities required for public utility works and not authorized by this section may be carried out in the strip of woodland referred to in the first paragraph, the Minister consults the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) before issuing the permit.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit may carry out the forest development activities required for public utility works in the strip of woodland at least 60 m wide surrounding the site of a bear den, during the period from November 15 to April 15. Before issuing the permit, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to protect the bear den. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized and setting the conditions that must be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter IV – Wildlife habitat protection Division II - Strips of woodland §5. Salt licks

Section 57

A strip of woodland at least 60 m wide and at least 7 m high linking a the salt lick to the residual forest must be preserved intact and kept in place until the adjacent stands have reached a height of 7 m. No forest development activity may be carried out in that strip of woodland.

1

Objective

- To preserve the integrity of a wildlife habitat

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.



Figure 57 Rules governing forest development activities alongside a salt lick

This section does not apply to the holder of a forestry permit issued for public utility works. However, before forest development activities required for public utility works and not authorized by this section may be carried out in the strip of woodland referred to in the first paragraph, the Minister consults the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) before issuing the permit.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit may carry out the forest development activities required for public utility works in the strip of woodland at least 60 m wide connecting the salt lick to the residual forest. Before issuing such a permit, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to protect the salt lick. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized and setting the conditions that must be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter IV – Wildlife habitat protection Division III - Operations in certain wildlife habitats §1. White-tailed deer yard

Section 58

Total cutting, carried out in one or more operations or according to the terms of block cutting, is prohibited in a white-tailed deer yard on the following areas:

1. in hardwood and hardwood-dominant mixed stands, over a single block greater than 25 ha once all operations are completed;
2. in softwood and softwood-dominant mixed stands, over a single block greater than 10 ha once all operations are completed.

1

Objectives

- To maintain the components of the forest cover that provide shelter for wildlife
- To maintain the components of the forest cover that provide food for wildlife

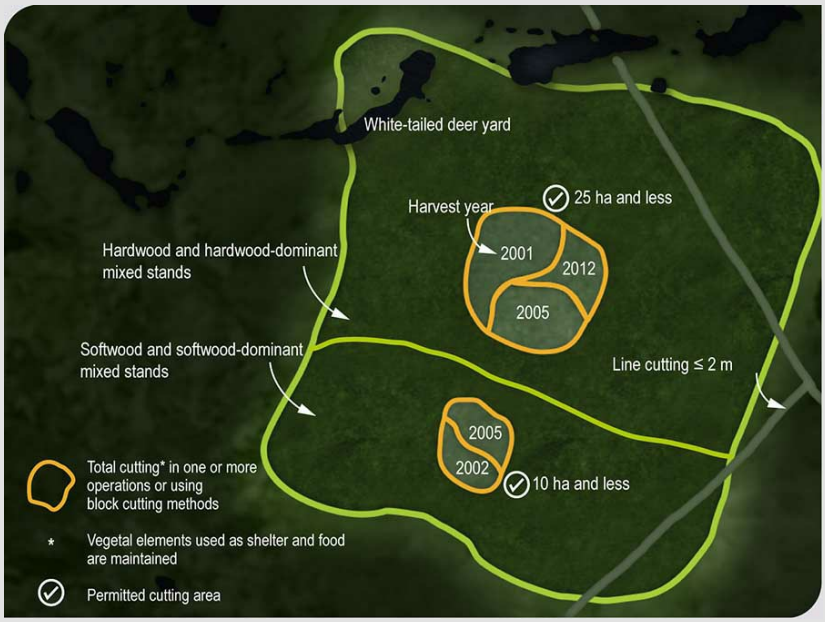


Figure 58 Rules governing forest development activities in a white-tailed deer yard

Total cutting may be carried out again on the areas adjacent to total cutting areas where regeneration of the areas has reached a height of 7 m.

2

Objective

- To allow for the harvesting of wood



Figure 58 Rules governing forest development activities in a white-tailed deer yard

At the time of cutting, the vegetal elements used as shelter and food by white-tailed deer must be preserved.

3

Objectives

- To maintain the components of the forest cover that provide shelter for wildlife
- To maintain the components of the forest cover that provide food for wildlife

Additional information

The term “white-tailed deer yard” refers to an area where white-tailed deer gather in winter. The terms “concentration area” and “wintering area” (“ravage” in French) are also commonly used to refer to a white-tailed deer yard. If the white-tailed deer population is to be maintained in Québec, access to good quality wintering areas is essential. The Guide d’aménagement des ravages de cerf de Virginie (available in French) was prepared to help forest managers improve the quality of white-tailed deer winter habitats when drawing up development plans in deer yards. Among other things, the Guide sets out development principles for deer yards to help ensure that travel corridors and canopy components offering shelter and food are maintained when forestry activities are carried out.



Figure 58 Rules governing forest development activities in a white-tailed deer yard

Line cutting over a width greater than 2 m is prohibited in a white-tailed deer yard.

4

Objective

- To allow certain forest development activities in or near a particular place



Figure 58 Rules governing forest development activities in a white-tailed deer yard

The construction, improvement or repair of a road is prohibited in a white-tailed deer yard from 1 December to 1 May, except if it is authorized by a forestry permit issued for wildlife, recreational or agricultural development projects and the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) has been consulted before issuing the permit.

5

Objective

- To avoid disturbing wildlife

Explanations

A person holding a forestry permit issued for wildlife, recreational or agricultural development projects may construct, improve or repair a road in a white-tailed deer yard between December 1 and May 1. Before issuing a permit, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to protect the white-tailed deer yard. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized and setting the conditions that must be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

The first, second and third paragraphs do not apply to the holder of a forestry permit issued for public utility works who installs a power transmission line or gas pipeline.

6

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit issued for public utility projects may carry out the cuts that are required without applying the conditions set out in the first, second and third paragraphs of this section when developing a power transmission line or gas pipeline in a white-tailed deer yard. The forestry permit specifies the forest development activities that are authorized and the conditions that must be met when carrying them out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows

the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter IV – Wildife habitat protection Division III - Operations in certain wildlife habitats §2. Woodland caribou habitat, woodland ecotype

Section 59

In the application zone of the (in French only) Plan de rétablissement du caribou forestier under a program referred to in paragraph 2 of section 7 of the Act respecting threatened or vulnerable species (chapter E-12.01), no forest development activity may be carried out in a territory of 4 ha or more in a single block, of the LA1 or RE1 ecological type or recognized as being dry bare soil with lichen. That plan is accessible on the website of the department within which the Minister responsible for the application of that plan carries out duties.

1

Objectives

- To preserve the integrity of a wildlife habitat
- To maintain the components of the forest cover that provide shelter for wildlife
- To maintain the components of the forest cover that provide food for wildlife

Additional information

It is important to note that the definition of the term “forest development activity” in section 2 of the Regulation means that the standards set out in sections 3, 5, 19 to 22, 47, 50, 52, 54, 55, 57 and 59 do not apply to the repair, maintenance or closure of forest roads or to the control of fires, insect epidemics and cryptogamic diseases.

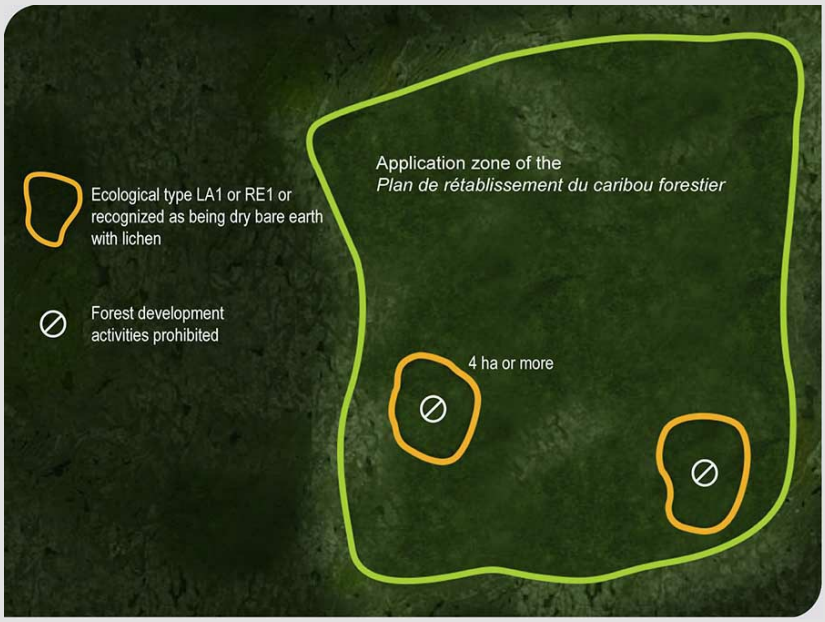


Figure 59 Rules governing forest development activities in the application zone of the Plan de rétablissement du caribou forestier, écotype forestier

However, a forest development activity may be carried out there if it is authorized as part of an activity or project for which a certificate of authorization was issued following a decision of the authority concerned made under section 31.5, 164 or 201 of the Environment Quality Act (chapter Q-2) or if it is authorized by the Minister as part of the application of the Sustainable Forest Development Act (chapter A-18.1) after consulting the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1).

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a certificate of authorization issued under section 31.5, 164 or 201 of the Environment Quality Act , may carry out a forest development activity in a territory of 4 ha or more in a single block, of the LA1 or RE1 ecological type or recognized as being dry bare soil with lichen. Although a certificate of authorization has been issued, authorization must also be obtained from the Minister responsible for applying the Sustainable Forest Development Act , who will specify the forest development activities that are authorized and set the conditions that must be met when carrying them out. Under the Sustainable Forest Development Act, it is also possible to authorize a forest development activity in a territory of 4 ha or more in a single block, of the LA1 or RE1 ecological type or recognized as being dry bare soil with lichen. Before granting authorization, the Minister responsible for applying that Act must consult the Minister responsible for applying the Act respecting the conservation and development of wildlife to obtain his or her opinion of the mitigation measures that have been recommended to maintain the essential components of the woodland caribou, woodland ecotype habitat. In light of the opinion, the Minister responsible for applying the Sustainable Forest Development Act may then give authorization, specifying which forest development activities are authorized and setting the conditions that must be met when they are carried out.

This section does not apply to a person who, in accordance with section 41 of the Sustainable Forest Development Act, has been authorized by the Minister to build or improve a road in a forest stand referred to in the first paragraph of this section, nor to a person who has obtained such authorization under a forestry permit or a contract or agreement entered into under that Act.

3

Objective

- To protect forest resources during particular construction or improvement work on a road, bridge or culvert

Explanations

A person authorized by the Minister in compliance with section 41 of the Sustainable Forest Development Act (chapter A-18.1) may build or improve a road across a territory of 4 ha or more in a single block, of the LA1 or RE1 ecological type or recognized as being dry bare soil with lichen. The Minister may grant authorization and set the conditions to be met when carrying out the work.

Additional information

A person wishing to obtain authorization must apply to the (in French only) regional office of the Ministère des Forêts, de la Faune et des Parcs by completing the special form. The application must include a description of the situation justifying the use of standards that differ from those enacted in this Regulation, and must propose the alternative measures that the person intends to implement to achieve the objectives of the regulatory standards that will not be applied. Where the proposed alternative standards meet the requirements for approval, authorization may be granted, along with conditions that must be met when carrying out the work.

Division III - Operations in certain wildlife habitats §2. Woodland caribou habitat, woodland ecotype

Section 60

In the application zone of the (in French only) Plan de rétablissement du caribou forestier, exceptional roads, class 1 and class 2, whose characteristics are defined in Schedule 4, must be located at least 1 km from the limit of the timber stands for the protection of woodland caribou, woodland ecotype, that are indicated in the numeric information layers used for forest planning.

1

Objective

- To avoid disturbing wildlife

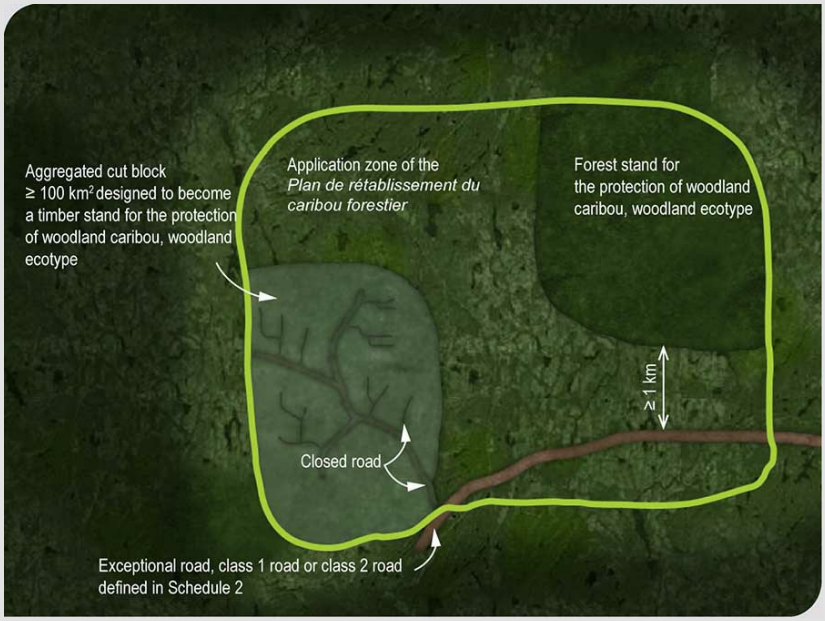


Figure 60 Rules governing the location, closure and restoration to production of a road in the application zone of the *Plan de rétablissement du caribou des bois, écotype forestier*

Chapter IV – Wildife habitat protection Division III - Operations in certain wildlife habitats §2. Woodland caribou habitat, woodland ecotype

Section 61

In the application zone of the (in French only) Plan de rétablissement du caribou forestier, roads built in an aggregated cut block of 100 km^2 or more designed to become a timber stand for the protection of woodland caribou, woodland ecotype, must be closed and put back into production at the end of the forest development activities. Closing the roads and putting them back into production must help the cutting areas to reach the requirements required to become timber stands for the protection of caribou so as to take the relay as soon as those timber stands will be cut. The integrated forest development plan must indicate those roads, specify the means to be used to close and put them back into production, and describe the procedure to be followed.

1

Objectives

- To avoid disturbing wildlife
- To promote reconstitution of the forest canopy

Additional information

The standards applicable to road closures are set out in section 81 of the Regulation.

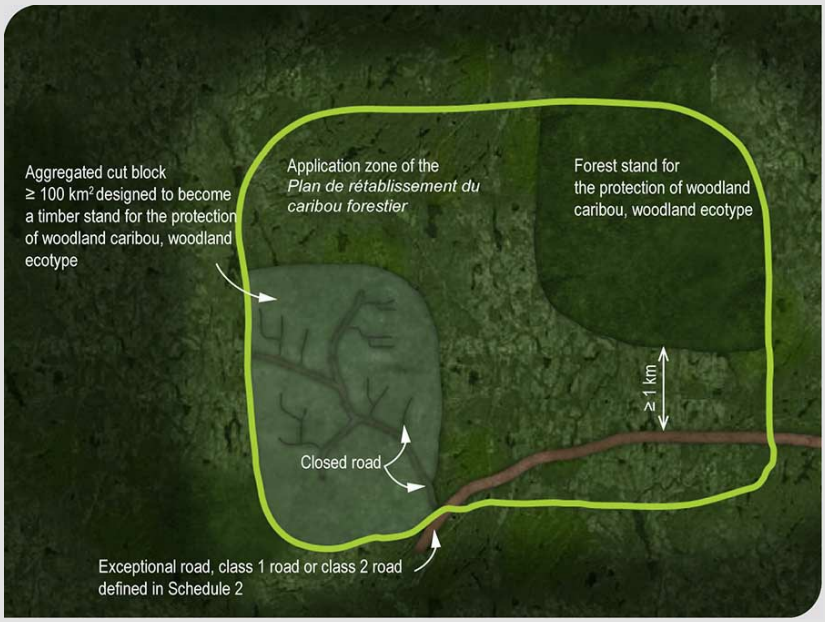


Figure 60 Rules governing the location, closure and restoration to production of a road in the application zone of the *Plan de rétablissement du caribou des bois, écotype forestier*

Chapter V - Roads, sandpits and forest infrasructures

Division I - Scope

- Section 62. Types of roads covered

Division II - Roads

§1. General

- Section 63. Waste and other residual materials, safety devices and road signs
- Section 64. Repairs
- Section 65. Notice describing repair work

§2. Prohibited construction, improvement or repair

- Section 66. Construction or improvement of a road across a lake
- Section 67. Construction or improvement of a road near an aquatic or wetland environment
- Section 68. Repair of a road near an aquatic or wetland environment
- Section 69. Measurement of distances to be respected
- Section 70. Construction or improvement of a road in an open peat bog

§3. Road implantation features

- Section 71. Right-of-way of a road
- Section 72. Materials from the right-of-way

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- Section 73. Stabilization
- Section 74. Natural drainage
- Section 75. Runoff from the roadway surface
- Section 76. Water flowing at the foot of a road embankment
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- Section 78. Measurement of distances to be respected
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§5. Maintenance and closure of a road

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§7. Control of the access of motorized vehicles to sugar bushes

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Division III - Bridge, culverts, removable structures and rudimentary structures

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- Section 86. Free flow of water, carrying of sediments and stabilization times

§2. Prohibited construction, improvement or repair

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- Section 89. Bridge, culvert or removable structure in a spawning ground
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- Section 91. Exceptions for work authorized under the Environment Quality Act
- Section 92. Period for completion of work

§3. Drying of work area

- Section 93. Coffer dams and structures for the temporary diversion of a watercourse
- Section 94. Composition of coffer dams and piers in a salmonid watercourse

§4. General provisions applicable to bridges or culverts

- Section 95. Stabilization of a road embankment
- Section 96. Stabilization of a watercourse bed
- Section 97. Maintenance by regular users of a road
- Section 98. Minimum clearance for free passage of boats
- Section 99. Stabilization, compaction, spring inspection and correction
- Section 100. Fill
- Section 101. Discharge capacity at peak flow
- Section 102. Culvert with parallel conduits
- Section 103. Conditions to determine whether free flow of fish must be ensured
- Section 104. Crossing site where the free flow of fish need not be ensured
- Section 105. Crossing site where the free flow of fish must be ensured (conduit depth of 20 or 30 %)
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- Section 107. Bridge or culvert with an arch
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§6. Special provisions applicable to removable structures and rudimentary structures

- Section 110. Types of roads on which removable structures are permitted
- Section 111. Types of removable structures permitted at each period of the year
- Section 112. Removal of a removable structure
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§7. Stabilization of the bed, banks and riparian zone of a watercourse

- Section 114. Stabilization requirements

Division IV - Road signs

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- Section 115. Road and traffic signs
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- Section 117. Road and traffic signs

Division V - Sandpits

§1. Scope

- Section 118. Types of sandpits covered

§2. Sandpit operating area and organic matter storage area

- Section 119. Location in proximity to an aquatic or wetland environment and diversion of runoff water
- Section 120. Site restoration
- Section 121. Location in proximity to certain places and territories
- Section 122. Location in proximity to certain territories protected by law
- Section 123. Operation above the level of groundwater

Division VI -Piling areas, forest camps and facilities used to operate a sugar bush

§1. Piling area

- Section 124. Location in proximity to a road corridor or an aquatic or wetland environment
- Section 125. Harvesting by partial cutting
- Section 126. Harvesting by total cutting
- Section 127. Site restoration

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- Section 128. Location in proximity to an aquatic or wetland environment
- Section 129. Site restoration

§3. Facilities used to operate a sugar bush

- Section 130. Location in proximity to an aquatic or wetland environment

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Chapter V – Roads, sandpits and forest infrastructures Division I - Scope

Section 62

The provisions of this Chapter apply to forests roads over all the territory referred to in section 1. However, they do not apply to roads under the management of the Minister responsible for the Act respecting roads (chapter V-9) that are classified as autoroutes or national roads, regional roads or collector roads, except the provisions of Division V regarding sandpits comprised in sections 118 to 123.

1

Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State

Explanations

The provisions of Chapter V apply to all forest roads and mining roads located in the forest area in the domain of the State that extends to the northern limit of the forest tundra zone. This forest area is shown on the (in French only) map of vegetation zones and bioclimatic domains in Québec . However, the provisions of Divisions I to IV and VI of Chapter V do not apply to roads under the management of the Minister responsible for the Act respecting roads (chapter V-9) that are classified as autoroutes or national roads, regional roads or collector roads as shown on (in French only) Québec's road network classification map . Only the provisions of the Regulation respecting the sustainable development of forests in the domain of the State, sections 118 to 123 of Division V on sandpits, apply to these roads.

Additional information

Roads in the forest are authorized under the Sustainable Forest Development Act , except for mining roads, which are authorized under the Mining Act . Section 41 of the Sustainable Forest Development Act states that a person who intends to carry out work for the construction, improvement or decommissioning of a multi-purpose road must be authorized by the Minister on the conditions determined by the Minister. When granting authorization, the Minister stipulates which forest development activities are authorized and sets the conditions that must be met when performing them. Therefore, although the provisions of this chapter do not apply to roads classified as autoroutes or national roads, regional roads or collector roads that fall under the authority of the Minister responsible for the Act respecting roads (chapter V-9) – except for the provisions of Division V regarding sandpits –construction, improvement and decommissioning work carried out on these roads must be authorized by the Minister responsible for the Sustainable Forest Development Act .

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§1. General

Section 63

Where construction, improvement, repair, maintenance or closing work is carried out on a road or road segment, waste and other residual materials other than granular, organic or plant material must be collected and carried outside the forest to an appropriate site.

1

Objective

- To avoid contaminating the forest

Additional information

Examples of waste and residual materials include materials removed from bridges and culverts during road improvement, repair or closing work, and the tubes on which geotextile fabric is rolled.

Where improvement work is carried out on a road or road segment, the bridges, culverts, safety devices and road signs of the road must be modified if need be so as to comply with the characteristics of the new class of roads.

2

Objective

- To ensure the safety of forest road users

Additional information

When improvement work is carried out to widen a road, the bridges, culverts, safety devices and road signs must comply with the characteristics of the new road class. Thus, the roadway and the shoulders must also be widened at the level of the culvert, meaning that it may be required to replace the culvert by another one with a conduit of a sufficient length.

However, it is acceptable to maintain an existing conduit that is in good condition, that effectively ensures the free flow of water and that has a residual life of at least 5 years. Measures to ensure the safety of users, including the establishment and maintenance of adequate road signs, are required. The assessment of the need to replace the culvert is based on its condition at the time of the work.

The following general criteria must be met:

- The maximum acceptable narrowing is based on the class of the road, the location of the crossing and site safety issues and approaches. The maximum narrowing is 25% of the width of the pavement and shoulders;
- Appropriate signs for the road type and site conditions must be in place and maintained;
- Other elements, such as improper end stabilization or scouring of watercourse, must however be corrected when the road is upgraded.

The following situations require a culvert to be replaced:

- Scouring or external runoff from conduit;
- Raising of one end of the culvert from the watercourse bed;
- Installation defects creating a specific problem (separation of collet(s), loss of material around the conduit, chimneys in embankment, etc.);
- Significant presence of cracks or abrasion;- Deformation greater than 10% of the diameter;
- Significant puncture or corrosion with anticipated puncture in less than 5 years.

It is recommended that arrangements be made with the management unit in charge before proceeding with the work to agree on whether or not a culvert should be replaced.

It is important to note that a culvert left in place in accordance with the above provisions shall, when the time will come for it to be replaced, be installed so as not to reduce the width of the road's roadway surface and shoulders.

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§1. General

Section 64

Every person who is authorized to carry out forest development activities and who, in the course of those activities, damages a road or renders it unusable must make the repairs required without delay to make the road usable. The road must be usable for all kinds of vehicles likely to take the class of road to which the road belongs.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the safety of forest road users
- To ensure that the site is restored to its former condition
- To provide access to the territory

Additional information

A road that has been damaged or made unusable during a forest management activity must be repaired immediately, so that it can be driven on by any type of vehicle likely to use it. A road is suitable for motor vehicles when it ensures its safe use, under normal traffic conditions, for a 4 x 4 pickup truck at normal speed for the road class. These criteria apply to the spring, summer and fall seasons for non-standard class roads 1, 2, 3, 4 and 5, and winter season for winter roads. It is normal for roads to be affected by loading and other operations during the period when wood is being transported. For this reason, the concept of a usable road applies after the period during which the wood is transported (or during each period, when the transportation takes place over more than one year).

For example, an access road to an outfitter that has been damaged or rendered unusable must be repaired so that it is usable by automobiles.

In addition, a road whose condition has deteriorated significantly may be used as a winter road. In this case, it must be restored to a condition equivalent to or better than its condition before it was used for this purpose, in particular with regard to natural drainage of the soil.

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§1. General

Section 65

Every person who intends to do repair work on a road, bridge or culvert must, at least 7 days before the work is to begin, send to the Minister a written notice describing the intended work and showing the place and date of beginning of the work.

1

Objective

- To allow for regulatory compliance to be checked

Additional information

Repair work on a road, bridge or culvert is governed by several sections of the Regulation. However, repair work is not included in the types of work (construction, improvement or closure of a multi-purpose road) that require authorization under the Sustainable Forest Development Act.

It is recommended to fill the available Notice of repair work of a road, a bridge or a culvert form (in French) for the Minister.

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §2. Prohibited construction, improvement or repair

Section 66

The construction or improvement of a road to cross a lake is prohibited, unless authorized as part of an activity or project for which a certificate of authorization was issued following a decision of the authority concerned made under section 31.5, 164 or 201 of the Environment Quality Act (chapter Q-2).

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To allow certain forest development activities in or near a particular place
- To provide access to the territory

Additional information

Where a certificate of authorization has been issued under the Environment Quality Act for the construction or improvement of a road across a lake, the work must also be authorized by the Minister responsible for the Sustainable Forest Development Act . The Minister specifies which forest development activities are authorized and sets the conditions to be met when they are carried out.

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§2. Prohibited construction, improvement or repair

Section 67

The construction or improvement of a road, other than a felling trail, a hauling trail or a trail not intended for motorized all-terrain vehicles, is prohibited within 60 m of an open peat bog with a pond, a marsh, a riparian swamp, a lake or a permanent watercourse, as well as within 30 m of an intermittent watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

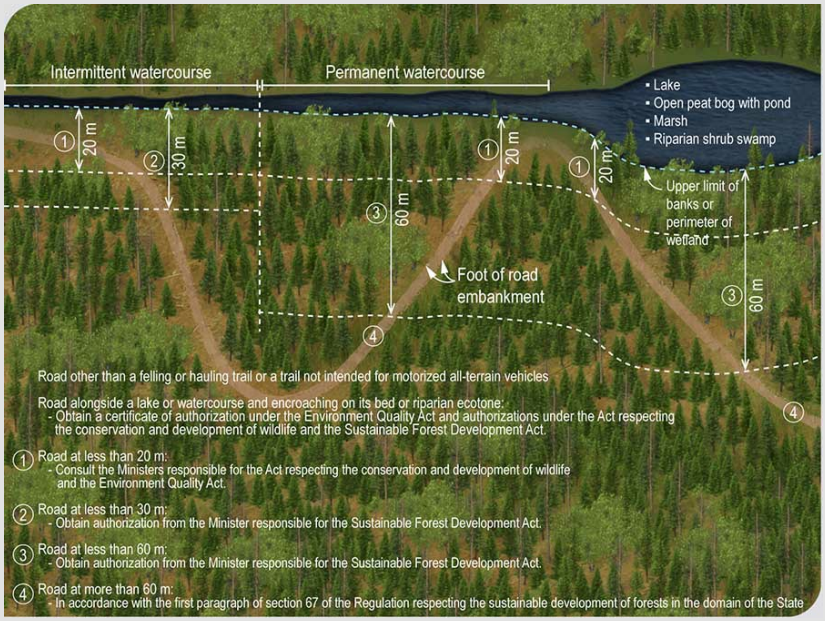


Figure 67A Rules governing the construction or improvement of a road located near a wetland or aquatic environment

In places where the soil is impervious hardpan, the distance between the road and the lake or watercourse to be considered for the purposes of the first paragraph must be at least 4 times the height of the lakeshore or the bank of the watercourse, with a minimum of 60 m. In those places, the hardpan must be left intact and the vegetal cover and stumps must be preserved.

2

Objectives

- To avoid a landslide
- To preserve the natural drainage of the soil

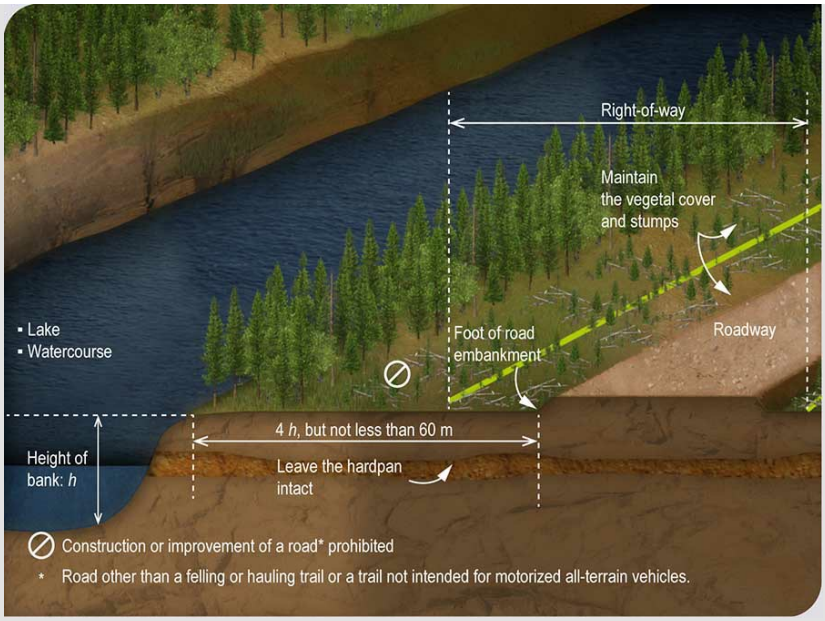


Figure 67B Rules governing the construction or improvement of a road located near a lake or watercourse, on soil that is impervious hardpan

The first and second paragraphs do not apply if the topography or hydrography of the site does not make it possible to comply with the distances prescribed in those paragraphs and, in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1), the construction or improvement of the road within a shorter distance has been authorized by the Minister, or the performance of such work is authorized under a forestry permit or a contract or agreement entered into under that Act. Those situations must be the subject of written applications justifying a departure from the first or second paragraph and indicating the alternative measures proposed to ensure the protection of the environment.

The Minister consults the ministers responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1) and the Environment Quality Act (chapter Q-2) where the situations described in the third paragraph require the construction or improvement of the road less than 20 m from the lake or watercourse. In addition, the construction, improvement or repair of a road running along a lake or watercourse while encroaching on its bed or riparian ecotone requires the authorizations provided for in those Acts.

3

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To obtain the operational flexibility required for certain forest development activities
- To protect forest resources during specific road, bridge or culvert construction or improvement work

Explanations

For the application of section 67, the wetlands to be protected (open peat bog with pond, marsh, riparian swamp) are determined from the digital information layers.

For watercourses and lakes, the application of section 67 must be in relation to the watercourses that are on location.

An application for an exemption must be filed when a road is built or improved along any of the wetlands provided for in section 67 within 30 m or 60 m depending on the type of environment, regardless of the length of the road along it.

No exemption from section 67 is required when a road is built or improved to perpendicularly cross a wetland provided for in section 67, including all riparian treed swamps, except for the types of riparian treed swamps mentioned in section 33 when wood harvesting is required.

A person authorized by the Minister in accordance with section 41 of the Sustainable Forest Development Act may – where the topography or hydrography of the site does not make it possible to move the road in order to comply with the distances prescribed below[1] – build or improve a road:

- less than 60 m from an open peat bog with a pond, a marshland, a riparian swamp, a lake or a watercourse (see fig. 67A, item 3), and less than 30 m from an intermittent watercourse (see fig. 67A, item 2);
- less than 60 m from a lake or watercourse, or at a distance equal to less than four times the height of the shore of the lake or watercourse at places where the soil is impervious hardpan (see fig. 67B).

A person wishing to obtain authorization for this must apply in writing to the regional office of the Ministère des Forêts, de la Faune et des Parcs (in French only). The application must contain arguments to justify an exemption from the rule prohibiting road construction or improvement work within the distances mentioned above, and must indicate the replacement distances proposed to protect the aquatic and wetland environments. The only elements that may be invoked in the application are topography and hydrography. The Minister responsible for applying the Sustainable Forest Development Act may give authorization and specify the conditions that must be met during the work.

In the case of an application to construct or improve a road less than 20 m from a lake or watercourse (see fig. 67A, item 1), the Minister responsible for applying the Sustainable Forest Development Act must consult the Ministers responsible for applying the Act respecting the conservation and development of wildlife and the Environment Quality Act in order to obtain their opinions of the proposed replacement measurements to protect the aquatic environments. In light of these opinions, the Minister responsible for applying the Sustainable Forest Development Act may give authorization and specify the forest management activities that are authorized and the conditions that must be met when carrying them out. In the case of an application to construct, improve or repair a road running along a lake or watercourse while encroaching on its bed or riparian ecotone (see fig. 67A), the work must also be authorized under section 128.7 of the Act respecting the conservation and development of wildlife and by a certificate of authorization issued pursuant to section 22 of the Environment Quality Act.

Additional information

The application must be made using the form provided for that purpose. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with certain conditions that must be met when carrying out the work.

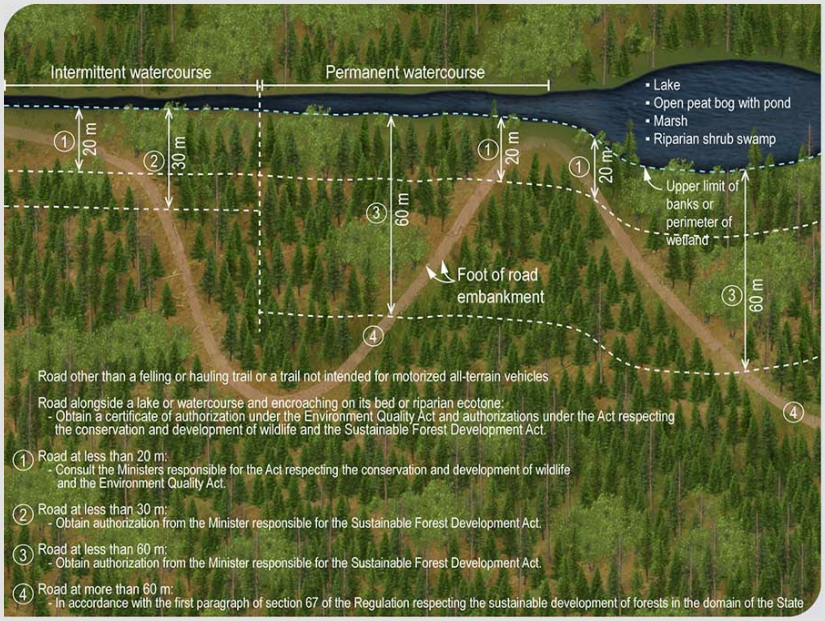


Figure 67A Rules governing the construction or improvement of a road located near a wetland or aquatic environment

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[1] : Road other than a felling or hauling trail or a trail not intended for motorized all-terrain vehicles

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §2. Prohibited construction, improvement or repair

Section 68

The repair of a road, other than a felling or hauling trail or other than a trail not intended for motorized all-terrain vehicles, is prohibited within 60 m from an open peat bog with a pond, a marsh, a riparian swamp, a lake or a permanent watercourse and within 30 m from an intermittent watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To obtain the operational flexibility required for certain forest development activities

Despite the first paragraph, the repair of a road is allowed in the environments referred to in that paragraph where all the following conditions are met:

1. no tree cutting is carried out in the strip of woodland referred to in section 27, except the place occupied by the roadway, shoulders, ditches and embankments of the road under repair;
2. no logging machine travels in the strip of woodland referred to in section 27, except the place occupied by the roadway, shoulders, ditches and embankments of the road under repair;
3. the repair work is not carried out from 15 December to 31 March;
4. the road surface is profiled so that the runoff leaves the roadway on the side opposite to the environment to be protected;
5. the water flowing at the foot of the embankments of a road is diverted towards vegetation areas more than 20 m away from the environment to be protected to prevent sediments from being carried into the environment or, if that condition cannot be met, settling ponds are built;
6. measures are taken during the repair of the road to prevent at all times sediments from being carried into the environment to be protected.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To provide access to the territory

Additional information

Repair work on a road, bridge or culvert is governed by several sections of the Regulation. However, repair work is not included in the types of work (construction, improvement or closure of a multi-purpose road) that require authorization under the Sustainable Forest Development Act.

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §2. Prohibited construction, improvement or repair

Section 69

The distances referred to in section 67 and the first paragraph of section 68 are measured from the perimeter of the open peat bog with a pond, a marsh or a riparian swamp or from the upper limit of the shore of a lake or bank of a watercourse, as the case may be, to the foot of the embankment of the road situated closest to the environment to be protected. The 20-m distance referred to in subparagraph 5 of the second paragraph of section 68 is measured from the perimeter of the open peat bog with a pond, a marsh or a riparian swamp or the upper limit of the shore of a lake or bank of a watercourse.



Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§2. Prohibited construction, improvement or repair

Section 70

The construction or improvement of a road segment longer than 100 m is prohibited in an open peat bog, unless that work is carried out to develop a felling or hauling trail, a trail not intended for motorized all-terrain vehicles or a winter road. The trails and winter roads must be used only where the bearing capacity of the ground allows it, depending on the logging machine, so as not to create ruts.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

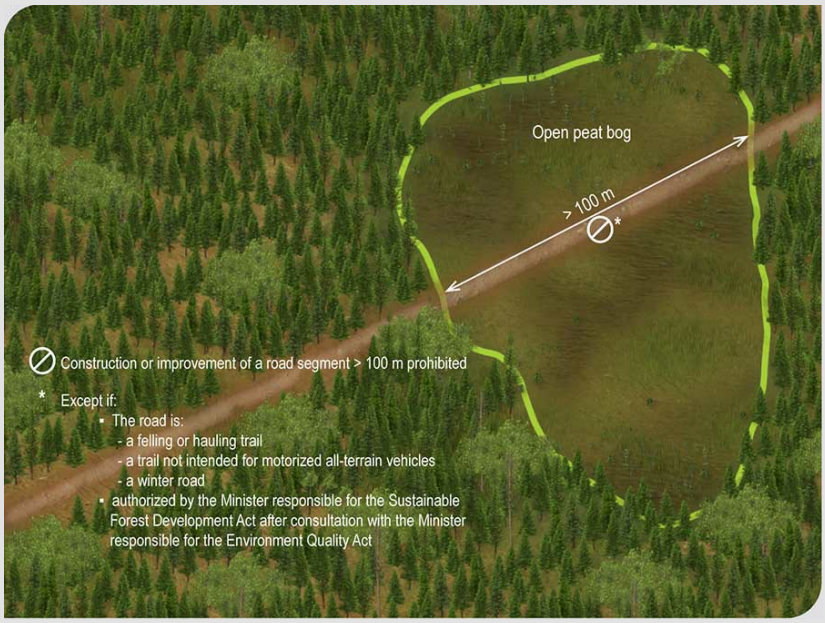


Figure 70 Rules governing the construction or improvement of a road located in an open peat bog

The first paragraph does not apply if the topography or hydrography of the site does not allow for the construction or improvement of a road elsewhere than in the open peat bog and, in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1), the construction or improvement of the road has been authorized by the Minister, or the performance of such work is authorized under a forestry permit or a contract or agreement entered into under that Act. Those situations must be the subject of written applications justifying a departure from the first paragraph and indicating the alternative measures proposed to ensure the protection of the open peat bog.

The Minister consults the Minister responsible for the administration of the Environment Quality Act (chapter Q-2) where the situations described in the second paragraph require the construction or improvement of the road over a distance of more than 100 m in an open peat bog.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State
- To protect forest resources during specific road, bridge or culvert construction or improvement work

Explanations

A person authorized by the Minister in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1) may build or improve a stretch of road[1] more than 100 m long in an open peat bog if the topography or hydrography of the site does not allow for the work to be carried out elsewhere than in the peat bog.

A person wishing to obtain this authorization msut apply in writing to the regional (in French only) office of the Ministère des Forêts, de la Faune et des Parcs
. The application must contain arguments to justify an exemption from the rule prohibiting the construction or improvement of a stretch of road more than 100 m long in an open peat bog, and must indicate the replacement measurements proposed to protect the environment.

In the case of an application to construct or improve a road over a distance of more than 100 m in an open peat bog, the Minister responsible for applying the Sustainable Forest Development Act must consult the Minister responsible for applying the Environment Quality Act in order to obtain his or her opinion of the proposed replacement measurements to protect the environment. In light of

this opinion, the Minister responsible for applying the Sustainable Forest Development Act may give authorization and specify the conditions that must be met when carrying out the work.

Additional information

The application must be made using the form provided for that purpose. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with certain conditions that must be met when carrying out the work.

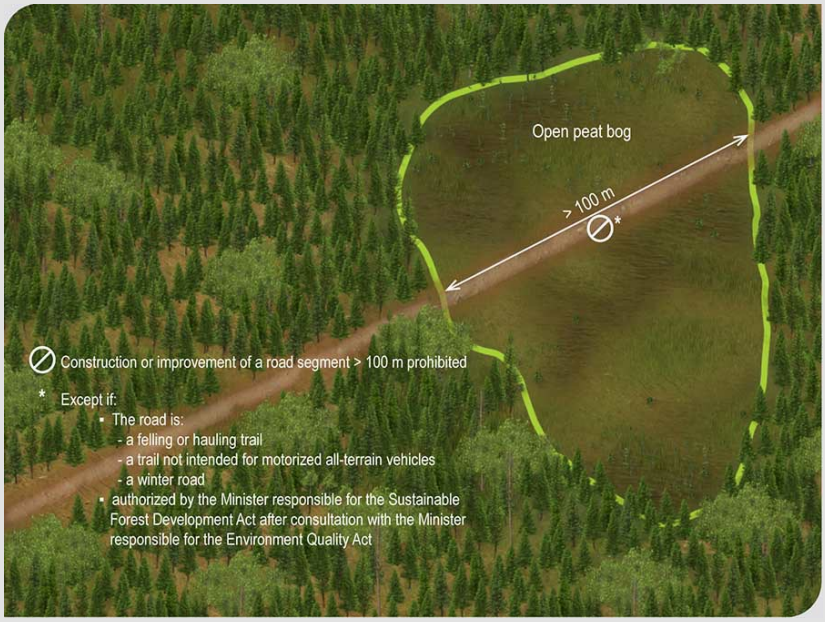


Figure 70 Rules governing the construction or improvement of a road located in an open peat bog

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[1] Road other than a felling or hauling trail, a trail not intended for motorized all-terrain vehicles, or a winter road

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§3. Road implantation features

Section 71

Subject to the second paragraph, the width of the right-of-way of a road may not exceed the width prescribed in Schedule 4 for the class of road to which it belongs. For the purposes of this paragraph, the class of road is assessed on the basis of the width of the roadway and road shoulders, as indicated in Schedule 4.

The maximum width of the right-of-way of a road located within the limits of a sugar bush operated for acericultural purposes or having a potential for maple production or within the limits of a white-tailed deer yard is 20 m. For the purposes of this paragraph, a hardwood stand at least 60% of which is composed of sugar maples or red maples or a combination of both species and allowing more than 150 tapholes per hectare constitutes a sugar bush with a potential for maple production. The sugar bushes with a potential for maple production to be protected are those indicated in the numeric information layers used for forest planning.

1

Objectives

- To reconcile the various activities that take place in the forest
- To preserve the integrity of a wildlife habitat
- To maintain the components of the forest cover that provide shelter for wildlife
- To maintain the components of the forest cover that provide food for wildlife
- To reduce loss of productive forest areas

Explanations

The maximum width of a road located within the limits of a sugar bush operated for acericultural purposes or having a potential for maple production or within the limits of a white-tailed deer yard is 20 m, as indicated in the second paragraph of this section.

For road classes 1 to 5 and for unclassified roads, the maximum right-of-way width is established according to the width of the roadway and road shoulders. Refer to Schedule 4 for maximum right-of-way widths for these roads as well as for winter roads, trails intended for motorized all-terrain vehicles and trails intended for other activities. Other than right-of-way, roadway and shoulder width, all other characteristics given in Schedule 4 are for information only and are not provisions to observe in the application of this section.

The maximum right-of-way width given is the maximum width that may be cleared for the roads and trails listed in Schedule 4.

It should be noted that the maximum width of the right-of-way corresponds to the maximum width that can be cleared for the roads and paths mentioned in Schedule 4. For classes 4, 5 and winter roads, during construction or improvement work, the right-of-way can be cleared over a maximum width of 30 m. However, for all other forest management activities (including maintenance and repair of a road, bridge or culvert), the width of right-of-way provided for in Schedule 4 must be respected. The maximum width of the right-of-way of all roads located inside the limits of a sugar bush operated for acericultural purposes, or with such production potential, or of a white-tailed deer containment area is 20 m.

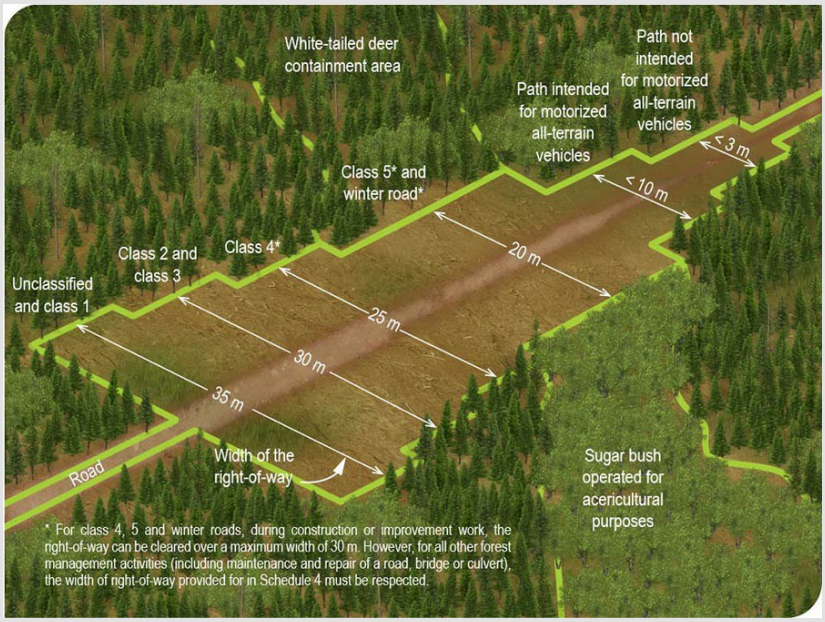


Figure 71 Width of right-of-way by class of road

Additional information

A sugar bush operated for maple syrup production purposes is governed by a sugar bush management permit for acericultural purposes issued pursuant to the Sustainable Forest Development Act.

This first paragraph does not apply to a person who, in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1), has been authorized by the Minister to build or improve a road whose right-of-way is wider than the width provided for in the first paragraph, nor to a person who has obtained such authorization under a forestry permit or a contract or agreement entered into under that Act.

2

Objective

- To protect forest resources during specific road, bridge or culvert construction or improvement work

Explanations

A person authorized by the Minister in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1) may construct or improve a road whose right-of-way is wider than the width provided in the first paragraph of section 71. The Minister may grant authorization and specify the conditions that must be met when carrying out the work.

Additional information

A person wishing to obtain authorization for this must apply to the regional office of the Ministère des Forêts, de la Faune et des Parcs
(in French only) by completing the form provided for that purpose. The application must describe the situation that justifies completion of the work in accordance with standards different from those enacted in the Regulation. It must also propose replacement measures that will be implemented to achieve the objectives of the regulatory standards from which a departure is requested. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with conditions that must be met when carrying out the work.

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §3. Road implantation features

Section 72

The soil may not be removed over a width greater than the width of the right-of-way of the road during the construction, improvement, repair or maintenance of a road.

1

Objectives

- To maintain the presence of stands in the growth stage
- To reduce loss of productive forest areas

Explanations

Required material removal must be done within the rights-of-way provided for in section 71.

Additional information

The soil can be taken from the entire deforested right-of-way in accordance with what is provided for in Section 71. When building or improving a class 5 or winter road of which the right-of-way has been deforested over 25 m, the sample can be taken over this width. For subsequent repair, maintenance or closure activities, the withdrawal is limited to a width of 20 m. The maximum width of the right-of-way of all roads located inside the limits of a maple bush operated for acericultural purposes, or with such potential, or of a white-tailed deer containment area is 20 m. A person who wishes to remove soil outside the right-of-way must sign a lease to mine surface mineral substances with the Minister responsible for the Mining Act (chapter M-13.1) and comply with the provisions of the Act. Any site from which unconsolidated material is extracted that is partially or completely outside the right-of-way is considered to be a sandpit under this Regulation.

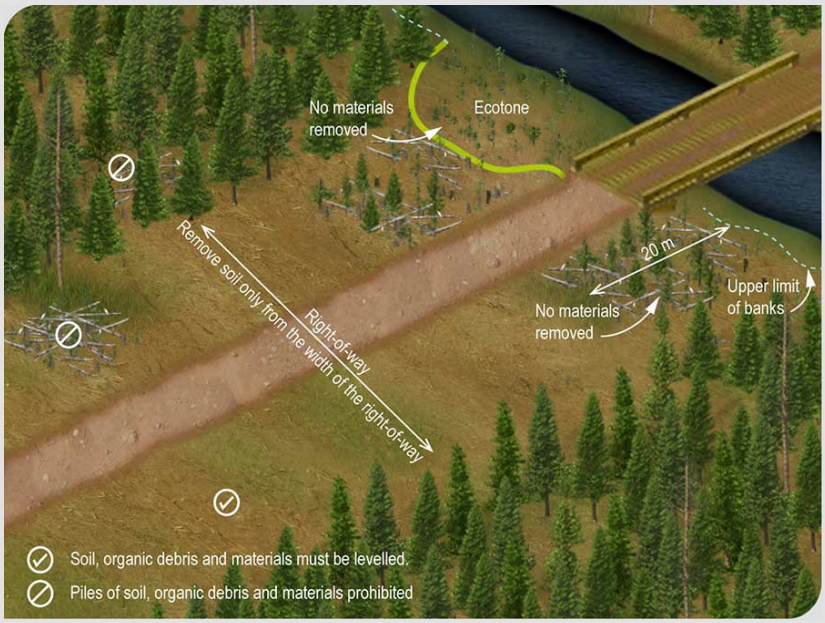


Figure 72 Removal of soil, organic debris and materials from the right-of-way of a road

The soil, organic debris and materials removed during the construction, improvement or repair of a road may not be deposited outside the right-of-way. Where they are deposited in the zone between the road shoulder and the limit of the right-of-way, they must be leveled.

2

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the safety of forest road users
- To reduce loss of productive forest areas

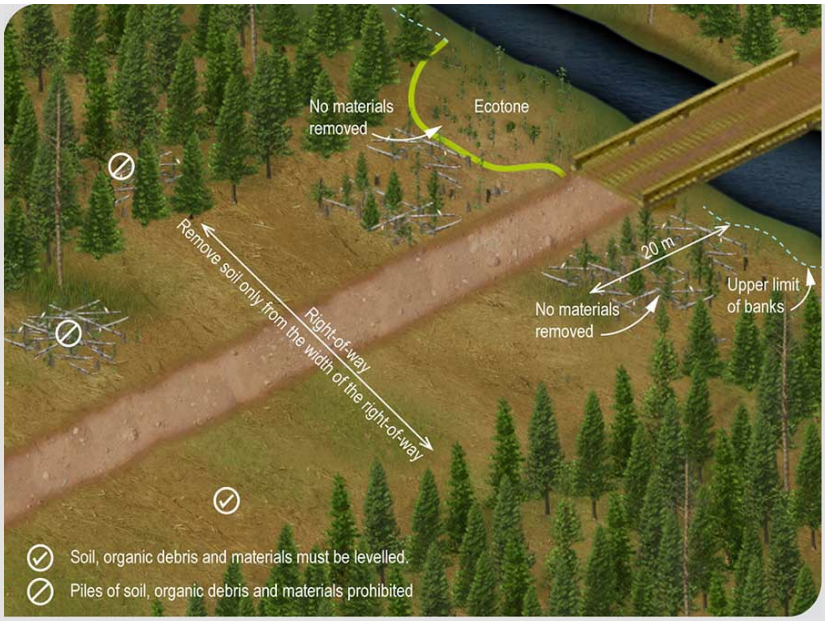


Figure 72 Removal of soil, organic debris and materials from the right-of-way of a road

In the case of a road crossing a watercourse, no material may be removed in the riparian ecotone or over a width of 20 m measured from the upper limit of the watercourse bank.

3

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid disturbing the soil around the perimeter of a wetland or aquatic environment

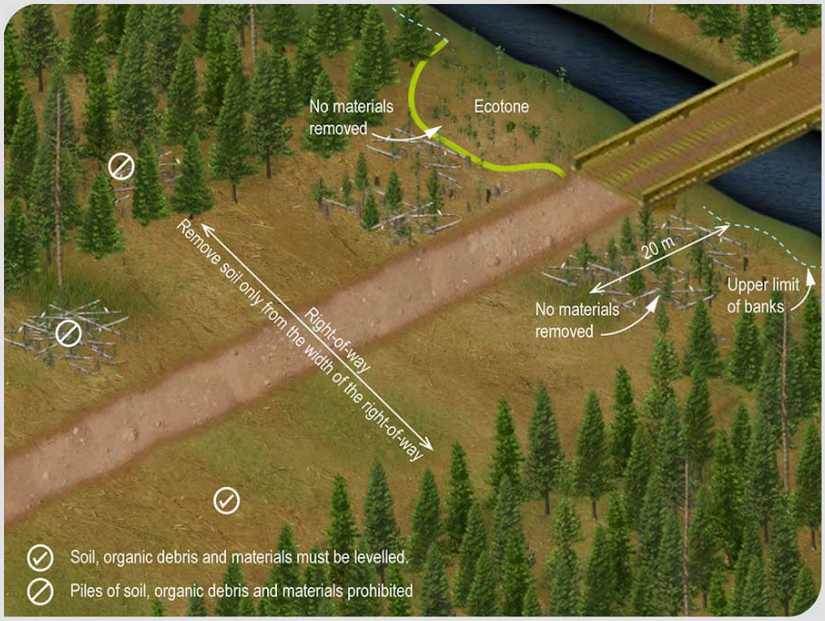


Figure 72 Removal of soil, organic debris and materials from the right-of-way of a road

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 73

The excavated soils and road embankments must be stabilized without delay during the construction, improvement or repair of a road, by means of soil stabilization techniques as much as possible in harmony with the natural setting of the environment, in places where the erosion of the road could bring sediments into an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert
- To promote natural regeneration

Additional information

Road development generally requires significant quantities of granular materials. Since large expanses of soil may be exposed to erosion as a result of this, the excavated soils and road embankments must be stabilized without delay in all places where the erosion of the road may bring sediments into a wetland or aquatic environment. The granular materials used to cover the conduit or arch of a culvert must also be stabilized as soon as they are installed. This is especially important because the embankments they create are located just above the watercourse. The risk of erosion may be reduced by carrying out the different phases of construction, improvement or repair work and stabilization as part of an ongoing sequence. For example, if the embankment is high, it must be stabilized each time fill material is added. If there is to be a delay between the shaping of the road and gravelling, the slope must be stabilized using normal techniques as soon as it is created.

Stabilization techniques are, in particular: stabilization with vegetation, riprap and the construction of a retaining wall. A geotextile membrane must be placed under the riprap or retaining wall if there is a risk of bringing sediments into the environments referred to in the first paragraph.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert
- To promote natural regeneration

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 74

A road other than a felling or hauling trail or other than a trail intended for motorized all-terrain vehicles must be built, improved, repaired or maintained while respecting the natural drainage of the soil in order to maintain, by the installation of a drainage channel, the normal flow of the water from one side of the road to the other.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To preserve the natural drainage of the soil
- To reduce loss of productive forest areas

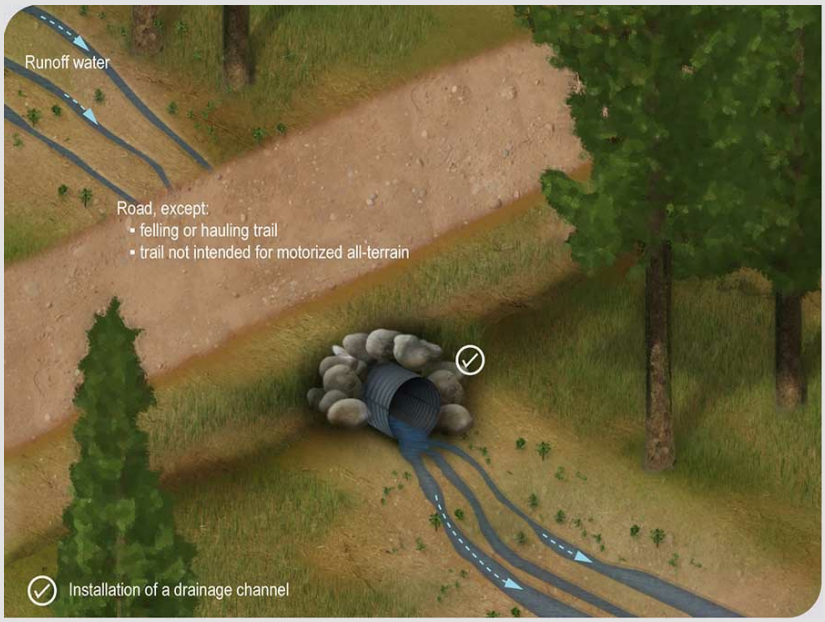


Figure 74 Installation of a drainage channel to allow water to flow from one side of the road to the other

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 75

During the construction, improvement, repair or maintenance of a road, the runoff from the roadway surface, other than a felling or hauling trail, other than a trail not intended for motorized all-terrain vehicles or other than a winter road, must be discharged outside the roadway and shoulders towards vegetation areas located more than 20 m from an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

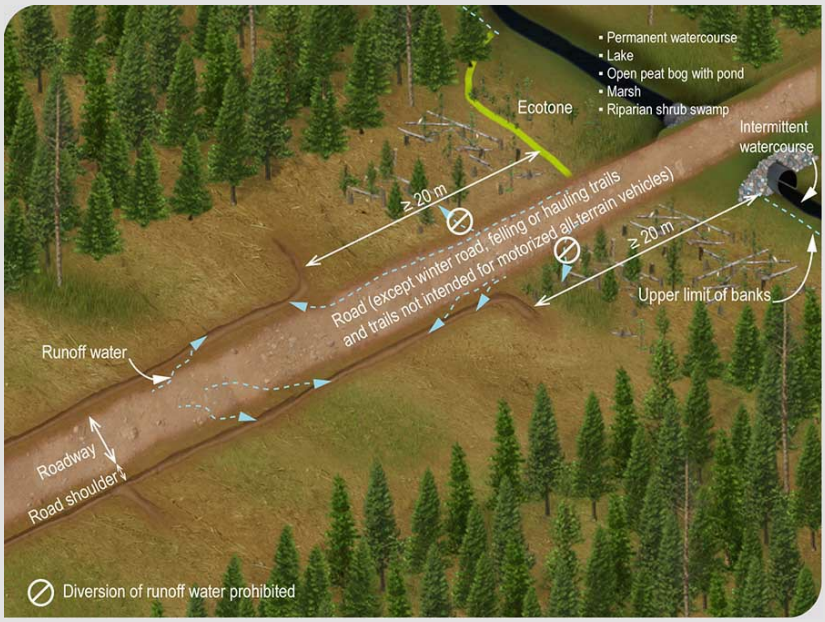


Figure 75 Evacuation of runoff water from the roadway surface

Explanations

A shaping of the road to allow for the drainage of water from the road surface and from the shoulder to the ditches, as specified in this section, is preferred.

When maintaining roads, the management of water on the road surface and shoulders can be inadequate. It is normal to encounter this situation on roads built at a time when the normative framework framed the management of waters on road surfaces differently, or simply did not foresee it. In some major cases, such as permanent overwashing of a section of road due to a torn off drainage conduit, corrective action may be requested. The purpose of these corrections is not to bring the road up to current standards but to limit road degradation and ensure the safety of users. However, when improvement or repair work is carried out on this road, all requirements must be met.

Chapter V – Roads, sandpits and forest infrastructures
Division II - Roads
§4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 76

During the construction, improvement, repair or maintenance of a road, the water flowing at the foot of the embankments of a road, other than a felling or hauling trail, other than a trail not intended for motorized all-terrain vehicles or other than a winter road, must be regularly diverted outside the right-of-way of the road towards vegetation areas located more than 20 m from an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse.

The maximum distance in meters to be respected between the diversions is calculated by dividing the number 500 by the percentage, in whole number rounded to the closest unit, of the road slope, or is calculated by any other technique ensuring that the diversions are in a sufficient number and laid out so as to prevent the erosion of the road.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

Additional information

The maximum distance in metres to be respected between the diversions is calculated by dividing the number 500 by the percentage of the road slope as a whole number rounded to the closest unit.

$$\text{Maximum distance between diversions (m)} = \frac{500}{\text{Percentage of road slope as a whole number, rounded to the nearest unit}}$$

For example, if the road slope is 9.6%, the slope percentage as a whole number rounded to the nearest unit is 10. The maximum distance to be respected between the diversions is therefore 50 m, or 500 ÷ 10.

The distance between the diversions may also be calculated using a different technique, to make sure they are sufficient in number and laid out so as to prevent the erosion of the road. While this is not mandatory, we recommend that appropriate techniques be agreed upon with representatives from the regional office of the Ministère des Forêts, de la Faune et des Parcs before beginning work to divert water flowing at the foot of the embankment of a road.

In the event that an alternative method is chosen, it must meet the following objectives:

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

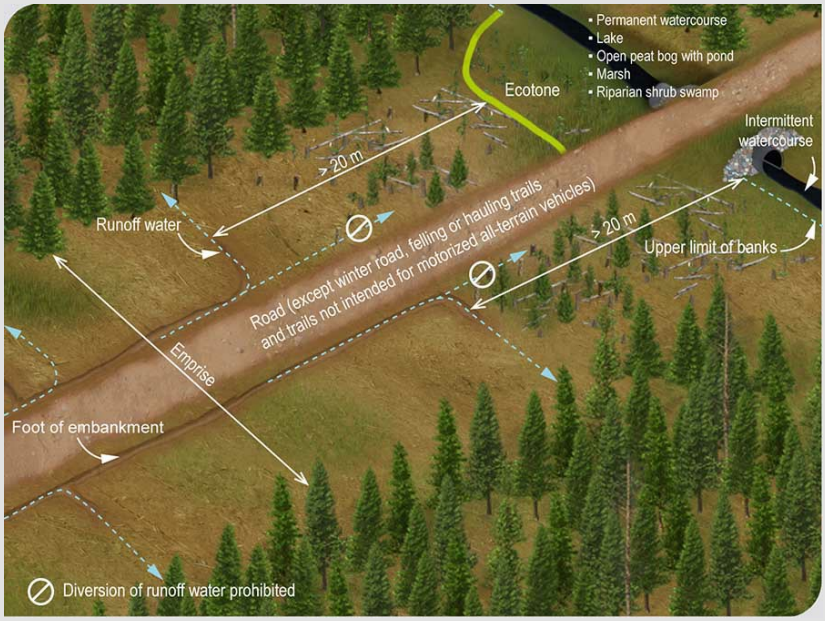


Figure 76A Diversion of water flowing at the foot of the embankment of a road

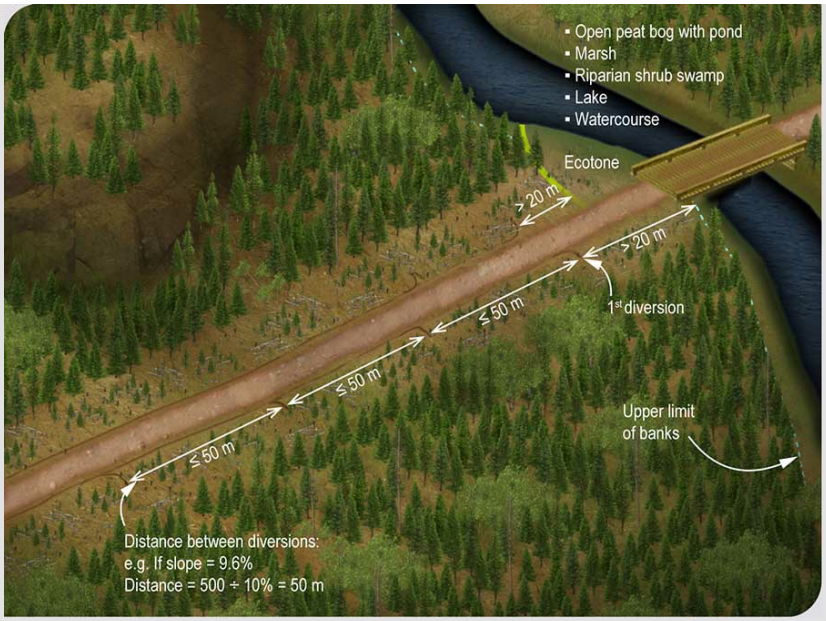


Figure 76B Distance between diversions of water flowing at the foot of the embankment of a road

Where the slope of the road to be built or improved is greater than 9% and the foot of the slope is less than 60 m from an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a watercourse, the slope of the embankment and the clearing of the road must be reduced to a ratio of at least 1 (V): 1.5 (H) and the embankment must be stabilized using the techniques mentioned in section 73. This paragraph does not apply to a person who, in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1), was authorized by the Minister to build or improve a road meeting other conditions, or to a person who has obtained such an authorization by a forestry permit or a contract or agreement entered into under that Act.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

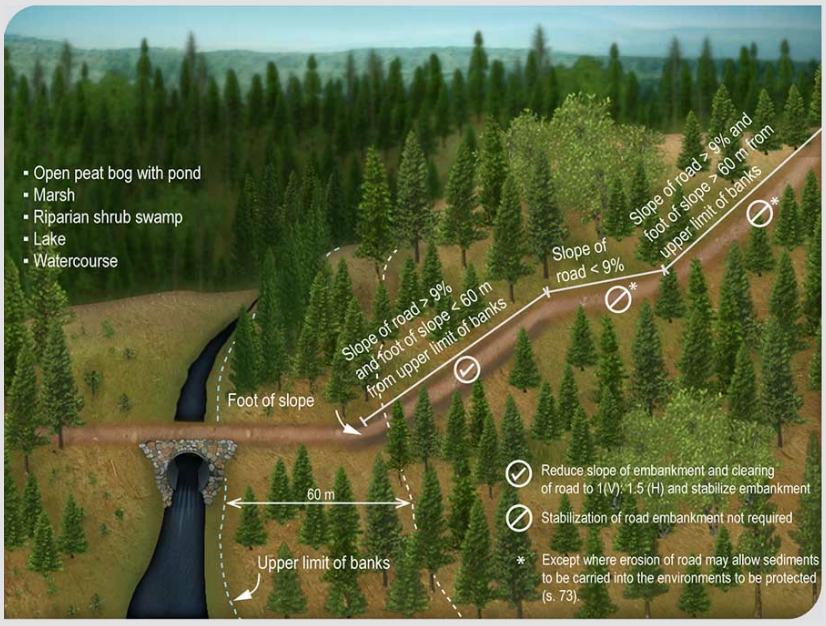


Figure 76C Stabilization of the embankment of a road with a slope greater than 9%

3

Objective

- To protect forest resources during specific road, bridge or culvert construction or improvement work

Explanations

A person authorized by the Minister in accordance with section 41 of the Sustainable Forest Development Act may build or improve a road on conditions other than those indicated in the third paragraph of this section concerning reduction of the slope of the embankment, the clearing of the road and stabilization of the embankment. The Minister may grant authorization, specifying the authorized replacement standards and setting conditions to be met when carrying out the work.

Additional information

A person wishing to obtain authorization for this must apply to the regional office of the Ministère des Forêts, de la Faune et des Parcs (in French only) by completing the form provided for that purpose. The application must describe the situation that justifies completion of the work in accordance with standards different from those enacted in the Regulation. It must also propose replacement measures that will be implemented to achieve the objectives of the regulatory standards from which a departure is requested. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with conditions that must be met when carrying out the work.

In the case of the repair of a road whose slope is greater than 9% and whose foot of the slope is less than 60 m from an open peat bog with a pond, a marsh, a riparian shrub swamp, a lake or a watercourse, the slope of the embankment and the clearing of the road must be stable and not allow the carrying of sediments into the environment to be protected.

4

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 77

The water flowing in felling or hauling trails that channel surface water into the hydrographic system must be blocked and diverted towards vegetation areas located more than 20 m from an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

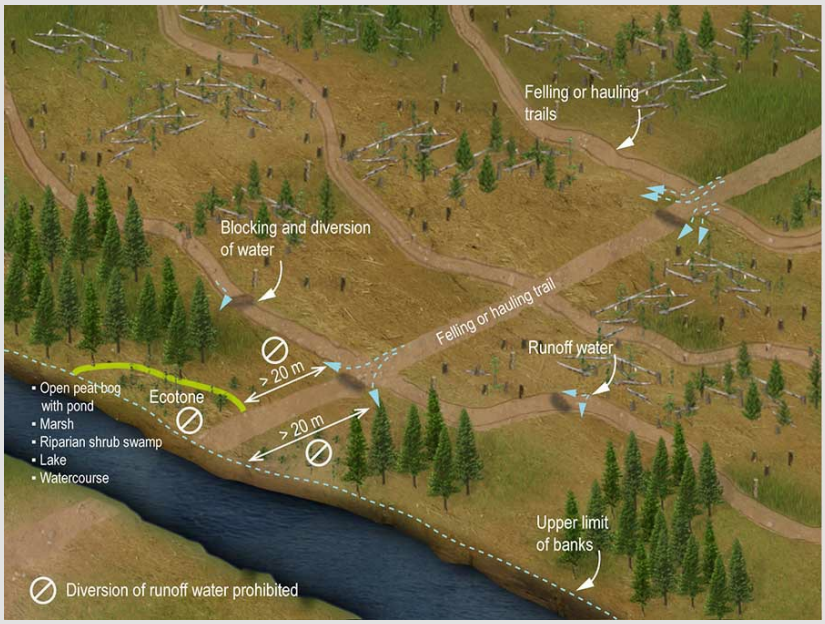


Figure 77 Blocking and diversion of water flowing in a felling or hauling trail

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 78

The 20-m distance referred to in section 75, the first paragraph of section 76 and section 77 is measured from the limit that separates the stand from the open peat bog with a pond, a marsh, a riparian swamp, a lake or a permanent watercourse or from the upper limit of the bank of the intermittent watercourse. In the presence of a riparian ecotone, the measurement is made from the limit of the ecotone farthest from the environment to be protected.

1

Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State

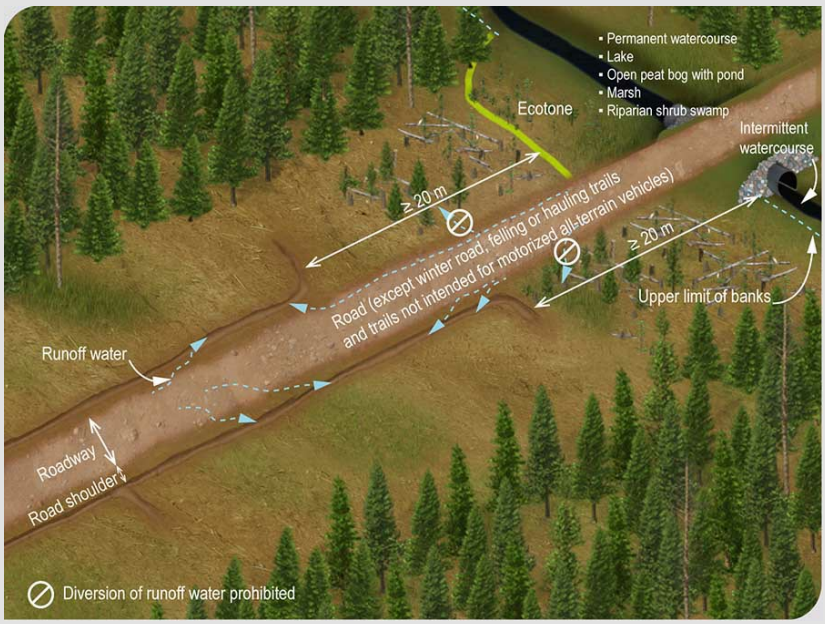


Figure 75 Evacuation of runoff water from the roadway surface

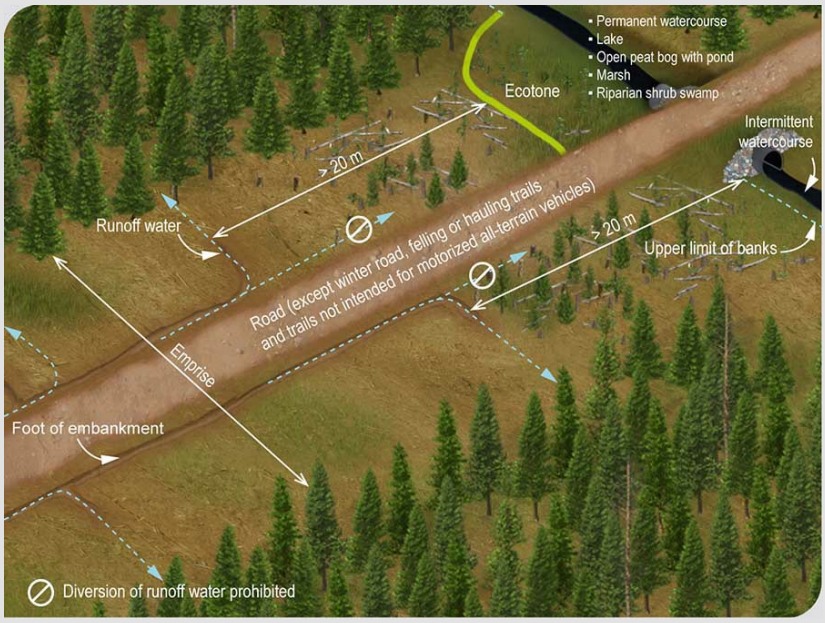


Figure 76A Diversion of water flowing at the foot of a road embankment

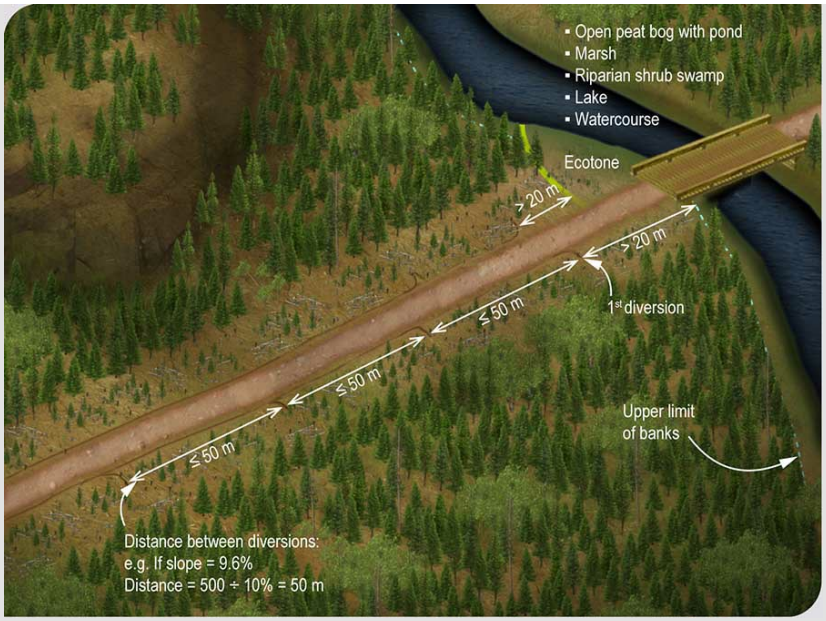


Figure 76B Distance between diversions of water flowing at the foot of a road embankment and stabilization of the fill and slopes

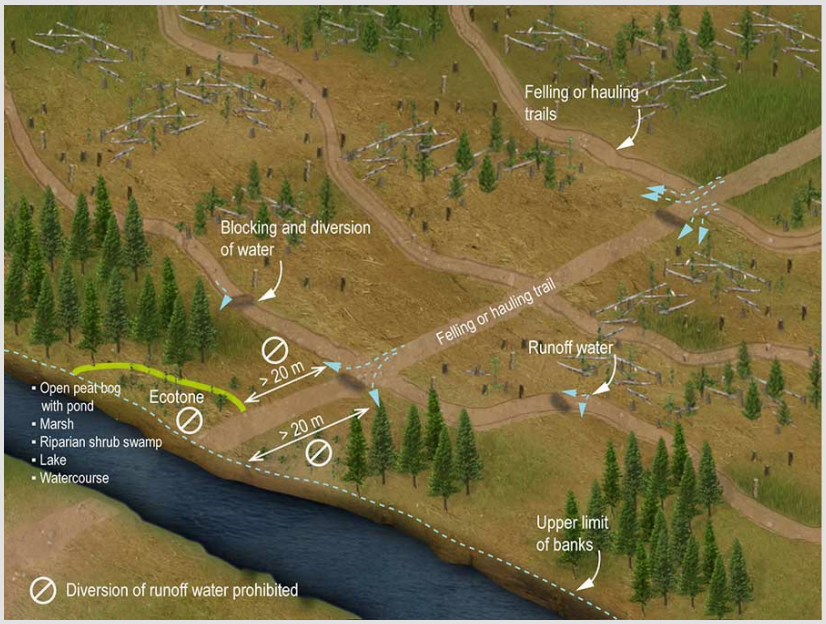


Figure 77 Blocking and diversion of water flowing in a felling or hauling trail

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §4. Stabilization of excavated soils and road embankments and diversion of runoff

Section 79

The diameter of a drainage channel used to divert water from one side of a road to the other must be sufficient to prevent the obstruction of the channel and maintain at all times the free flow of the water. The diameter of the channel may not be less than 300 mm.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To preserve the natural drainage of the soil
- To reduce loss of productive forest areas

Additional information

It is often the case that a drainage channel with a diameter of more than 300 mm (e.g. 450 mm) is needed to maintain the free flow of water at all times.

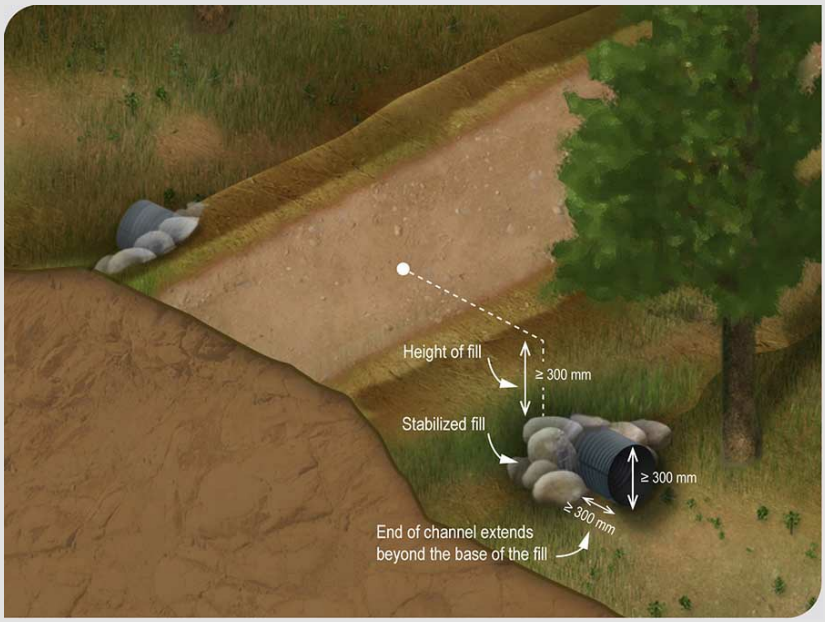


Figure 79 Characteristics of drainage channel installation

The fill covering a drainage channel must be greater than 300 mm.

2

Objective

- To ensure the lifespan of a road, bridge or culvert

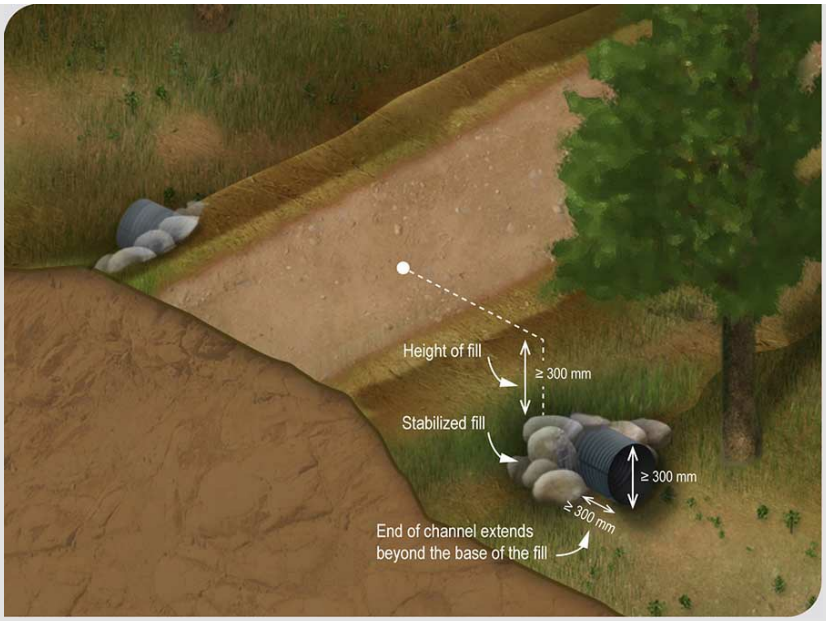


Figure 79 Characteristics of drainage channel installation

The end of the drainage channel must extend at least 300 mm beyond the base of the fill supporting the road and the fill in that location must be stabilized at the time of installation.

3

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To preserve the natural drainage of the soil

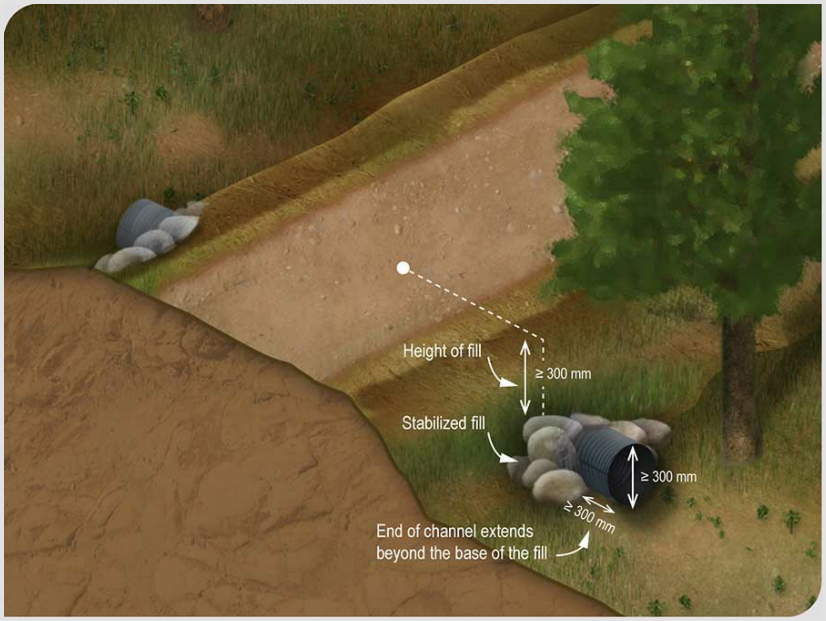


Figure 79 Characteristics of drainage channel installation

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §5. Maintenance and closure of a road

Section 80

During the maintenance of roads, measures must be taken to prevent materials from the roadway surface and abrasives spread on the roadway in winter from covering the stabilized embankments and end up in an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse or over a width of 20 m, measured from the limit that separates the stand from the environment to be protected or, in the presence of a riparian ecotone, from the limit of the ecotone farthest from the environment to be protected. Road maintenance work and the spreading of abrasives must be carried out so as to prevent sediments from being carried into the aquatic environments, wetlands and riparian environments.



Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

When maintaining roads, several things can be done to help prevent sediments from being carried into aquatic environments, wetlands and riparian environments. They include:

- Levelling the road regularly to eliminate ruts that may channel water towards an aquatic, wetland or riparian environment.
- Preventing the formation of small ridges along the roadway, except where they are planned, for example above a culvert and within 20 m of a watercourse.
- Avoiding transportation of granular material on the deck of a bridge.
- Avoiding spillage of materials on stabilized fill within 20 m of a structure across a watercourse.
- By cutting drainage channels into snowbanks before the spring thaw, to direct runoff water away from the roadway surface into areas located more than 20 m from aquatic, wetland or riparian environments.

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §5. Maintenance and closure of a road

Section 81

The techniques used during the temporary or permanent closure of a road must prevent the obstruction of the water flow and the sedimentation in watercourses. They must also ensure the free flow of fish to the crossing site in situations other than those described in section 103.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To preserve the integrity of a wildlife habitat
- To ensure the free flow of fish

Explanations

Section 103 describes situations in which the free flow of fish need not be ensured when developing a culvert, because the watercourse presents one or more obstacles to the fish close to the site of the crossing. Situations other than those described in section 103 are therefore cases in which the free flow of fish must be ensured. The techniques used during the temporary or permanent closure of a road must allow for this objective to be achieved.

Additional information

Citizens, companies or organizations wishing to obtain the (in French only) closure of a road on land in the domain of the State may request either temporary or permanent closure. The procedure and form can be found in the (in French only) guide and form for applications for closure of a multi-purpose road .

Where a road, closed permanently, has bridges, culverts or removable structures, they must be removed when the road is closed. After their removal, the bed and banks of the watercourses must be stabilized. The vegetal cover in the strip of woodland or the strip of land referred to in section 27 or 34 must be reconstituted. The right-of-way of the road must be reforested over a minimum length of 250 m from the point of closure or up to the first bridge, culvert or removable structure removed in order to make use impossible. Reforestation must be carried out within 2 years using species adapted to the site.

3

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the free flow of water
- To ensure the free flow of fish
- To make it impossible for the road to be used after closure
- To ensure that forest production is resumed on the site

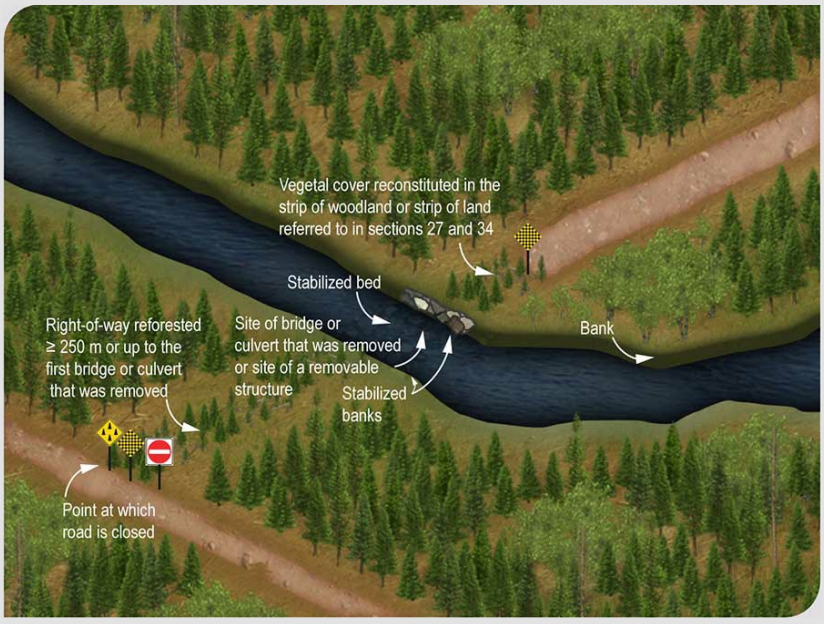


Figure 81 Work to be carried out for permanent closure of a road

4

Objectives

- To make it impossible for the road to be used after closure
- To ensure that forest production is resumed on the site

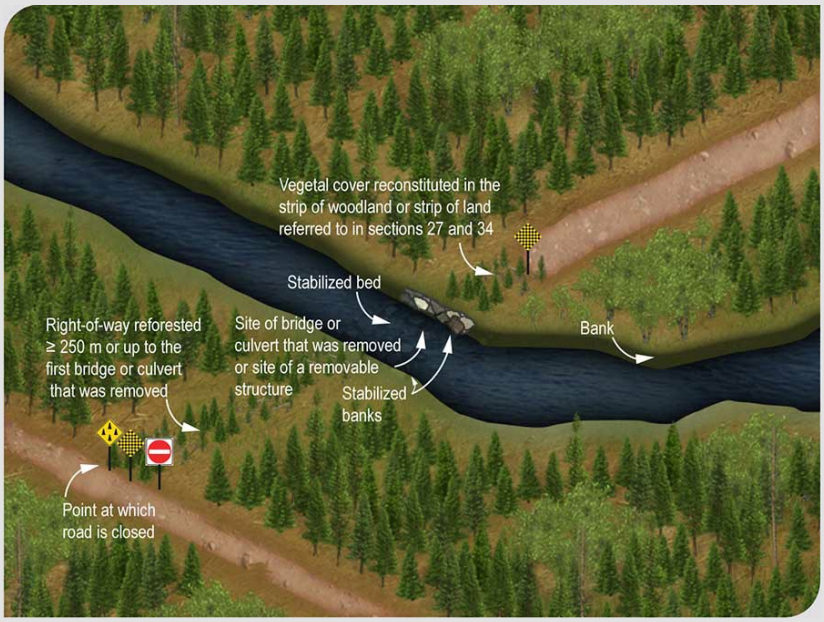


Figure 81 Work to be carried out for permanent closure of a road

The renewal of the vegetation cover and reforestation of the right-of-way of the road, provided for in the second paragraph, do not apply to forest development activities carried out in the right-of-way of power transmission lines by the holder of a forestry permit issued for public utility works.

5

Objective

- To obtain the operational flexibility required for certain forest development activities

Explanations

A person holding a forestry permit issued for public utility works is not required to renew the vegetation cover or carry out reforestation of the right-of-way of a road that has been permanently closed and is located in the right-of-way of power transmission lines.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §6. Winter roads

Section 82

A winter road must preserve of the natural drainage of the soil and must not have the effect of channeling water on the surface of the road.

1

Objectives

- To preserve the natural drainage of the soil
- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

It is important to make sure the winter road does not disturb the natural drainage of the soil. It may alter the path of the water by channelling it to the sides and sometimes even onto the roadway surface. If this is likely to happen, the runoff water must be diverted to the other side of the winter road by installing a drainage channel.

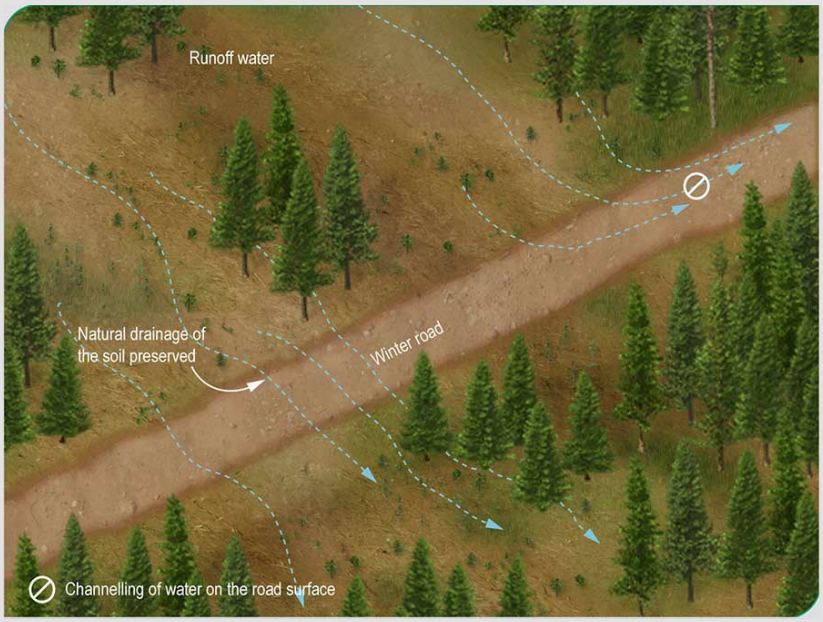


Figure 82 Preserving the natural drainage of the soil on a winter road

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §6. Winter roads

Section 83

Runoff from the right-of-way of a winter road disturbed during the construction of the road must be blocked and diverted towards vegetation areas located more than 20 m from an open peat bog with a pond, a marsh, a riparian swamp, a lake or a watercourse. The 20-m distance is measured from the limit that separates the stand from the open peat bog with the pond, the marsh, the riparian swamp, the lake or the permanent watercourse or from the upper limit of the bank of the intermittent watercourse. In the presence of a riparian ecotone, the measurement is made from the limit of the ecotone farthest from the environment to be protected.

1

Objectives

- To preserve the natural drainage of the soil
- To preserve the quality of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

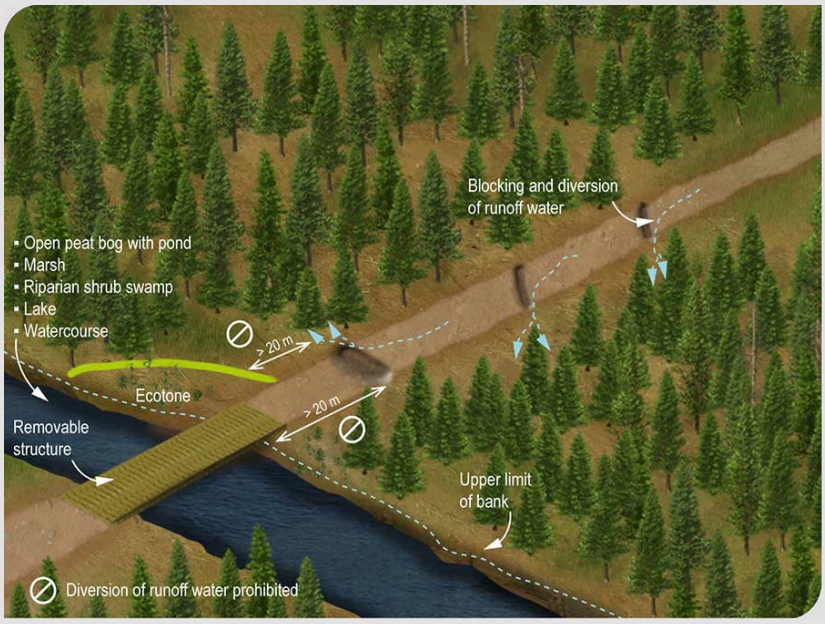


Figure 83 Blocking and diversion of runoff water flowing on the surface of a winter road

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads §7. Control of the access of motorized vehicles to sugar bushes

Section 84

The holder of a sugar bush management permit may, on the conditions provided for in section 85, control the access of motorized vehicles to the main building used for boiling the sap by means of a gate or any other safe means approved by the Minister and indicated in the permit, that the holder may install for that purpose.



Objectives

- To protect the investments made in a particular place or territory
- To ensure the safety of forest road users

Chapter V – Roads, sandpits and forest infrastructures Division II - Roads

§7. Control of the access of motorized vehicles to sugar bushes

Section 85

Access of motorized vehicles may only be controlled on the following conditions:

1. the main building used for boiling the sap must be located within the limits of the sugar bush that is the subject of the management permit;
2. the road on which access is controlled must lead only to the main building;
3. the control must take place within the limits of the sugar bush and less than 100 m from the main building;
4. the device used for controlling the access of motorized vehicles must be visible at all times in order to ensure the safety of the public.

1

Objectives

- To reconcile the various activities that take place in the forest
- To protect the investments made in a particular place or territory
- To ensure the safety of forest road users
- To provide access to the territory

Explanations

Second paragraph of this section.

A barrier installed on the road to a sugar bush operated for maple production purposes must not prevent motor vehicles from travelling to other portions of the public land. The road on which the barrier is installed must be a cul-de-sac leading to the main building.

Additional information

A sugar bush operated for maple production purposes is governed by a sugar bush management permit for acericultural purposes issued pursuant to the Sustainable Forest Development Act.

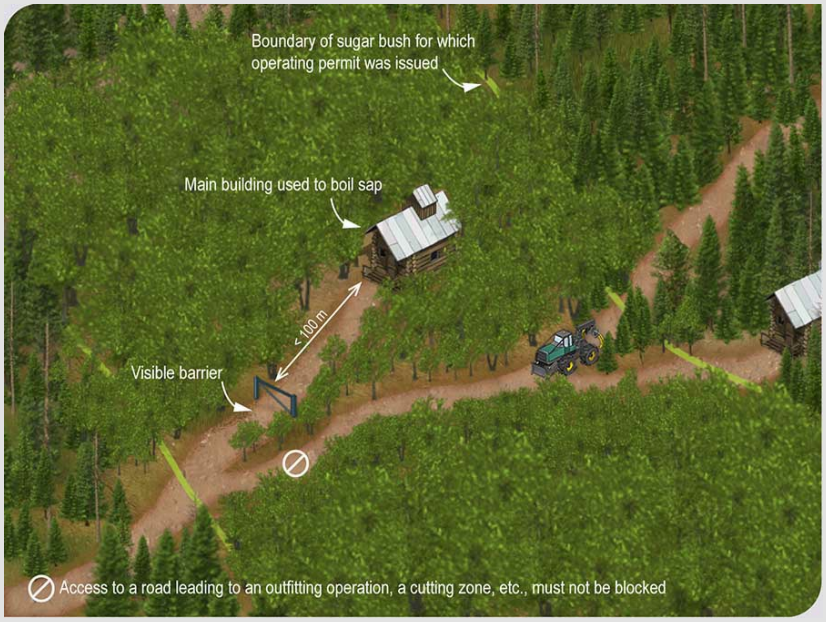


Figure 85 Control of motor vehicle access to the main building of a sugar bush

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §1. General

Section 86

Every person authorized to build or improve a road crossing a watercourse must ensure that the bridges, culverts or removable structures that are part of the road allow the free flow of the water. The foregoing also applies to a person who repairs a road crossing a watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To ensure the free flow of water
- To ensure the lifespan of a road, bridge or culvert

Bridges, culverts and removable structures must prevent the contact of vehicles with the water and the bed of the watercourse and the carrying of sediments into the aquatic environment.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid contaminating the forest
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Bridges, culverts and removable structures must be stabilized as soon as possible during the work to prevent any possible risk of erosion.

3

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

Additional information

The granular materials used to cover the conduit or arch of a culvert must also be stabilized as soon as they are installed. This is especially important because the embankments created during the work and the materials used to stabilize the abutments and pillars of bridges are located just above the watercourse. The risk of erosion may be reduced by carrying out the different phases of construction, improvement or repair work and stabilization as part of an ongoing sequence. For example, if the embankment is high, it must be stabilized each time fill material is added.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §1. General

Section 87

The construction or improvement of a bridge or culvert to cross a lake is prohibited, except if it is authorized as part of an activity or a project for which a certificate of authorization was issued following a decision of the authority concerned made under section 31.5, 164 or 201 of the Environment Quality Act (chapter Q-2).

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To limit encroachment by a structure into an aquatic environment
- To allow certain forest development activities in or near a particular place

Additional information

When a certificate of authorization has been issued under the Environment Quality Act for work intended to build or improve a bridge or culvert to cross a lake, the work must also be authorized by the Minister responsible for the Sustainable Forest Development Act. The Minister specifies which forest development activities are authorized and sets the conditions to be met when they are carried out.

This Regulation does not apply to a holder of a management permit issued for a wildlife, recreational or agricultural development project who lays out a snowmobile trail.

2

Objective

- To allow certain forest development activities in or near a particular place

Explanations

A person holding a forestry permit issued for wildlife, recreational or agricultural development work may create a snowmobile trail to cross a lake. The forestry permit specifies which forest development activities are authorized (e.g. creation of an ice bridge) and sets the conditions to be met when they are carried out.

Additional information

The Sustainable Forest Development Act states that a forestry permit is required to carry out certain forest development activities in forests in the domain of the State (section 73). The Act allows the Minister to issue a permit authorizing the holder to carry out the forest development activities specified on the permit, on the conditions determined by the Minister (section 74).

Chapter V – Roads, sandpits and forest infrastructures Division III – Bridge, culverts, removable structures and rudimentary structures §2. Prohibited construction, improvement or repair

Section 88

The construction of a bridge or a culvert is prohibited on a winter road or in felling or hauling trails.



Objective

- To preserve the quality of spawning grounds

Additional information

A removable structure may be installed on a winter road or in a felling or hauling trail. Sections 110 to 113 of the Regulation specify the standards applicable to removable structures.

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§2. Prohibited construction, improvement or repair

Section 89

The construction of a bridge or a culvert or the installation of a removable structure is prohibited in a spawning ground. Such work is also prohibited within the first 100 meters upstream from a spawning ground indicated in the numeric information layers used for forest planning.

1

Objective

- To preserve the quality of spawning grounds

Explanations

The construction of a bridge or culvert or the installation of a removable structure is prohibited in a spawning ground. Such work is also prohibited within the first 100 metres upstream from a spawning ground indicated in the numeric information layers used for forest planning. The purpose of this is to avoid the destruction or deterioration of spawning grounds as a result of work carried out in the watercourse bed.

However, the construction of a bridge without piers or a culvert with an arch, or the installation of a removable structure whose supports are located outside the upper limit of the bank, is permitted provided all the work takes place outside the watercourse bed, and provided no forest machinery circulates in the watercourse. Consequently, all the components of the bridge, culvert or structure pass over the watercourse without altering the bed or banks and without touching the spawning ground to be protected.

In addition, the replacement of a bridge by another bridge with piers or by a culvert with a conduit is strictly prohibited since such an operation would involve work in the watercourse bed.

Additional information

Spawning grounds are essential, since fish use them for reproduction and lay their eggs there to ensure the survival of the species.

When planning to construct a bridge or culvert or install a removable structure, it is important to contact the MFFP's regional representatives for information on the locations of the spawning grounds shown on numeric information layers.

Since it is impossible to know where all the spawning grounds are located, forest stakeholders must carefully examine the sites at which they plan to erect the structures in order to identify any indicators associated with these habitats, which vary according to the species of fish concerned.

The brook trout, commonly known as the speckled trout, is much sought-after by fishing enthusiasts. It is found in most bodies of water in Québec. It lives in streams, rivers and lakes where the water is cool, clear and well-oxygenated.

To help identify sites conducive to spawning before starting work, we recommend that you consult the (in French only) guide to the identification of brook trout spawning grounds in watercourses.

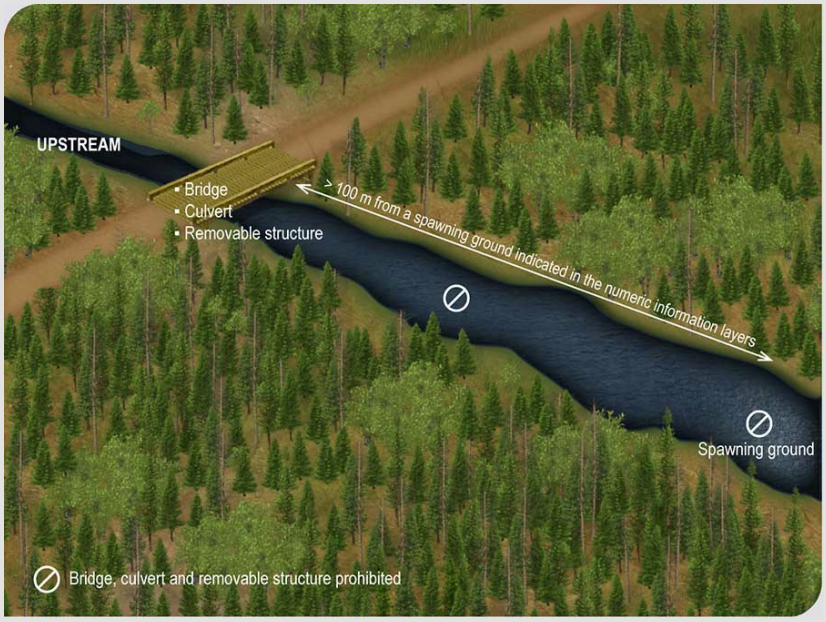


Figure 89 Distance between a spawning ground and a bridge, culvert or removable structure

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §2. Prohibited construction, improvement or repair

Section 90

The construction, improvement or repair of a bridge or a culvert or the installation of a removable structure in a salmonid watercourse must be carried out at all times by using techniques that allow to limit the carrying of sediments outside the work area and thus preserve the attributes of the habitats present such as spawning grounds. The techniques must be adapted to the conditions of the site. The techniques include the drying of the work area, the performance of the work during the period of minimum flow and the installation of a sediment confinement curtain. The first paragraph does not apply where all the construction, improvement or repair work of a bridge or a culvert or the installation work of a removable structure are done outside the upper limit of the bank.

1

Objectives

- To preserve the quality of spawning grounds
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the integrity of an aquatic, wetland or riparian environment

Additional information

A salmonid watercourse may host one or more of the following species: lake whitefish, brook trout, ouananiche, Atlantic salmon and lake trout.

A spawning ground affected by sediment deposition following work must be restored as soon as possible.

2

Objective

- To preserve the quality of spawning grounds

Additional information

We recommend that you contact the regional MFFP representatives for information on the appropriate restoration guidelines and techniques before beginning the task of restoring a spawning ground affected by sediment deposition.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §2. Prohibited construction, improvement or repair

Section 91

Sections 89 and 90 do not apply if the work referred to in those sections are authorized as part of an activity or a project for which a certificate of authorization was issued following a decision of the authority concerned made under section 31.5, 164 or 201 of the Environment Quality Act (chapter Q-2).

1

Objective

- To allow certain forest development activities in or near a particular place

Additional information

Sections 89 and 90 cover the following work:

- construction of a bridge or culvert or installation of a removable structure in a spawning ground or within the first 100 metres upstream of a spawning ground indicated in the numeric information layers used for forest planning;
- construction, improvement or repair of a bridge or culvert or installation of a removable structure in a salmonid watercourse.

When a certificate of authorization has been issued under the Environment Quality Act for work covered by sections 89 and 90, the work must also be authorized by the Minister responsible for the Sustainable Forest Development Act . The Minister specifies which forest development activities are authorized and sets the conditions to be met when they are carried out.

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§2. Prohibited construction, improvement or repair

Section 92

The construction, improvement or repair of a bridge or a culvert between the banks of a watercourse containing any of the species of fish referred to in Schedule 5 is allowed only during the periods of work provided for in that Schedule, which vary depending on the regions and the species of fish present. The work may be carried out outside the periods if all the work is carried out outside the upper limits of the banks or if all the work carried out on the bed of the watercourse is done in less than 72 hours.

Excavation, installation of the conduit, backfilling, stabilization of embankments located between the banks of the watercourse and work on the piers of a bridge are covered by this section.

1

Objectives

- To avoid the construction, improvement or repair of a bridge or culvert during critical periods for fish
- To allow certain forest development activities in or near a particular place

Explanations

When a watercourse contains any of the species referred to in Schedule 5, the construction, improvement or repair of a bridge or a culvert between the banks of the watercourse is permitted only during the work periods indicated in that Schedule, which vary according to the region and the species of fish present.

However, these types of work are permitted in the watercourse regardless of the time of year if they take place outside the upper limits of the banks or if all the work carried out on the bed of the watercourse is done in less than 72 hours.

This section applies to excavation of the watercourse bed, installation of the conduit, backfilling, stabilization of embankments located between the banks of the watercourse and work on the piers of a bridge.

Additional information

The species of fish referred to in Schedule 5 are:

smallmouth bass, walleye, sauger, rainbow smelt, Northern pike, lake whitefish, maskinongé, brook trout, ouananiche, yellow perch, salmon, lake trout and species of fish entered on the (in French only) list of wildlife species designated as threatened or vulnerable or likely to be so designated

.

This section does not apply to a person who, in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1), was authorized by the Minister to build or improve a bridge or a culvert outside the periods of work provided for in Schedule 5 or to a person who obtained such an authorization under a forestry permit or a contract or agreement entered into under the Act.

2

Objective

- To protect forest resources during specific road, bridge or culvert construction or improvement work

Explanations

A person authorized by the Minister in accordance with section 41 of the Sustainable Forest Development Act may construct or improve a bridge or culvert between the banks of a watercourse containing one of the species of fish referred to in Schedule 5 outside the periods specified in the Schedule. The Minister may grant authorization, specifying the standards that are authorized and the conditions that must be met when carrying out the work.

Additional information

A person wishing to obtain authorization for this must apply to the regional office of the Ministère des Forêts, de la Faune et des Parcs (in French only) by completing the form provided for that purpose. The application must describe the situation that justifies completion of the work in accordance with standards different from those enacted in the Regulation. It must also propose replacement measures that will be implemented to achieve the objectives of the regulatory standards from which a departure is requested. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with conditions that must be met when carrying out the work.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §3. Drying of work area

Section 93

Every person who installs coffer dams and structures for the temporary diversion of a watercourse, such as a diversion canal, to dry all or part of the work area during the construction, improvement, repair or removal of a bridge or a culvert must, in situations other than those described in section 103, ensure that the coffer dams and diversion structures do not prevent the flow of fish during more than 5 days and that they limit the carrying of sediments into the watercourse. Where the period exceeds 5 days, the coffer dams and diversion structures must not reduce the width of the watercourse by more than 1/3. The width of the watercourse is measured at the level of the upper limit of the banks.

1

Objectives

- To limit the time during which the flow of fish is obstructed
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the integrity of an aquatic, wetland or riparian environment

Explanations

Coffer dams and structures for the temporary diversion of a watercourse, such as a diversion canal, are sometimes installed to dry all or part of the work area during the construction, improvement, repair or removal of a bridge or culvert. In a watercourse in which the free flow of fish must not be obstructed, these dams and structures must not prevent the fish from passing through for more than five days, and must also limit the carrying of sediments into the watercourse. Section 103 provides information on the watercourses in which the free flow of fish must not be obstructed.

Additional information

A coffer dam is a temporary dam (sometimes an embankment or enclosure) installed in the bed of a watercourse to dry it out so that work can be performed. A diversion canal is a temporary canal built outside the bed of a watercourse to divert the flow so that work can be performed.

2

Objectives

- To ensure the free flow of water
- To ensure the free flow of fish
- To avoid scouring of the watercourse

Explanations

It may be that coffer dams and structures for the temporary diversion of a watercourse remain in place for several weeks, for example during construction of a bridge. Where a dam or structure is in place for more than five days, it must not reduce the width of the watercourse by more than one-third, to avoid causing the water to flow at speeds in excess of the swimming ability of the fish, and to avoid causing erosion in the remaining portion of the watercourse. The width of a watercourse is measured at the level of the upper limit of the banks.

Additional information

How is the width of a watercourse measured? The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank”.

At the end of the work, the coffer dams must be removed and the diversion canal used during the diversion of the watercourse must be filled by restoring the vegetal cover.

3

Objectives

- To promote the reconstitution of the forest canopy
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the integrity of an aquatic, wetland or riparian environment

Additional information

The bed, banks and riparian zone of the watercourse must be stabilized as specified in section 114 of this Regulation.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §3. Drying of work area

Section 94

The person must also ensure that the coffer dams and the piers installed in a watercourse frequented by salmonids are composed of clean materials, free from fine particles less than 5 mm, except if mitigation measures limiting the carrying of sediments are applied. The purpose of the measures is to preserve the attributes of the habitats present, such as spawning grounds.



Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve the quality of spawning grounds

Explanations

The materials used to construct coffer dams and piers in watercourses frequented by salmonids must be clean and free from fine particles of less than 5 mm. The use of this type of material is recommended. When the materials do not satisfy these criteria, mitigation measures must be applied to limit the carrying of sediments into the watercourse, so as to preserve the attributes of the habitats present, such as spawning grounds. A mitigation measure may include confining fine particles of less than 5 mm in coffer dams and piers using a filter cloth or waterproof membrane.

Additional information

A watercourse used by salmonid may host one or more of the following species: lake whitefish, brook trout, ouananiche, Atlantic salmon and lake trout.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §4. General provisions applicable to bridges or culverts

Section 95

The embankments of a road that crosses a watercourse must be stabilized between the banks up to above the conduit or the arch, during the construction, improvement or repair of the road, with a geotextile membrane covered with riprap or a retaining wall.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

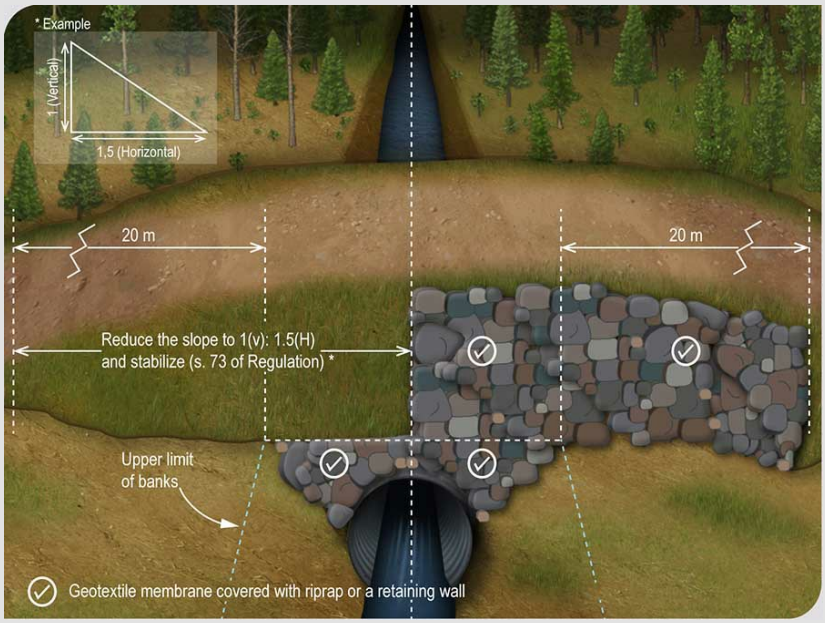


Figure 95A Stabilization of the embankment of a road that crosses a watercourse

The slope of the embankments located between the banks and above the conduit or the arch and the slope of the embankment located within 20 m of the watercourse, measured from the upper limit of the bank, must be reduced to a ration of 1 (V):1.5 (H) and the embankment must be stabilized using the usual techniques, such as those referred to in the second paragraph of section 73. The reduction of the slope is not required if the embankment is stabilized with a geotextile membrane covered with riprap or a retaining wall.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

Additional information

The techniques indicated in section 73 are stabilization with vegetation, riprap and the construction of a retaining wall. A geotextile membrane must be placed under the riprap or retaining wall if there is a risk of bringing sediments into an aquatic or wetland environment.

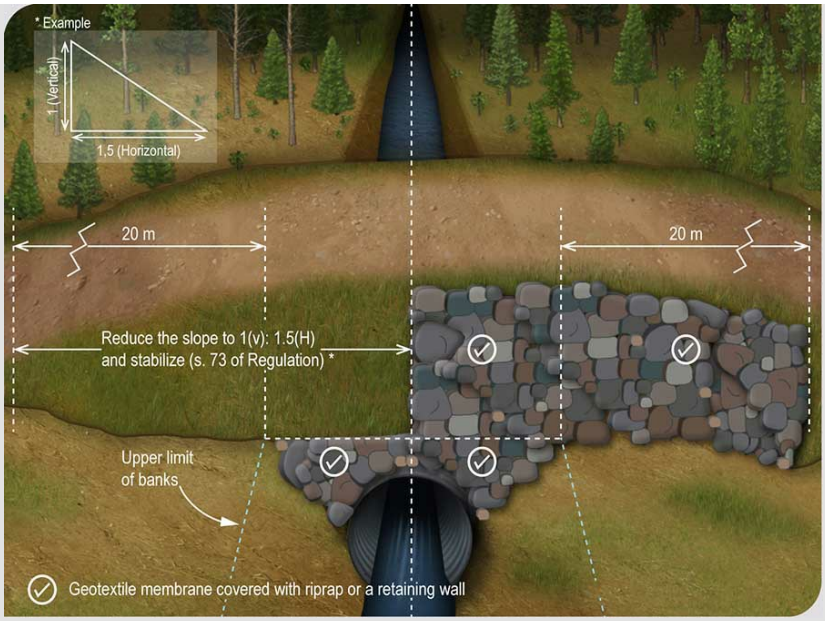


Figure 95A Stabilization of the embankment of a road that crosses a watercourse

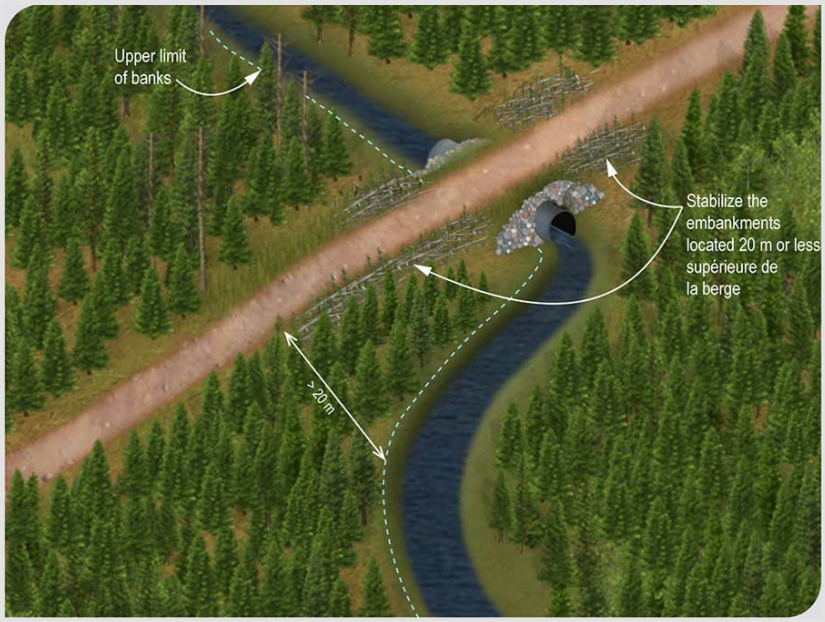


Figure 95B Stabilization of embankments located 20 m or less from a watercourse

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §4. General provisions applicable to bridges or culverts

Section 96

During the construction, improvement or repair of a road, the bed of the watercourse upstream and downstream of a bridge or a culvert must be stabilized at the time of the work with adequate materials to prevent the scouring of the bed and ensure the free circulation of water and fish if the free flow of fish must be ensured by reason of the absence of any of the situations described in section 103.

1

Objectives

- To avoid scouring of a watercourse
- To ensure the lifespan of a road, bridge or culvert

Explanations

During construction, improvement or repair of a stretch of road that includes a bridge or culvert, the bed of the watercourse upstream and downstream of the structure must be stabilized using adequate materials to prevent scouring.

Additional information

The materials used to stabilize the watercourse bed must be able to support the water flow speed so that they are not eroded and carried away by the current. A variety of materials similar to those that make up the natural bed of the watercourse should be used (rounded materials with a variety of particle sizes), and they should be arranged so as to overlap one another. This ensures that the reconstituted bed is watertight, and that water cannot filter through the materials. The addition of large stones (roughly 1.5 times the size of the largest stones in the natural watercourse), scattered across the bed, will improve stability and prevent scouring. The presence of large stones also helps to create a variety of flow conditions and also to create shelter for fish. When the stones are installed, it is important to ensure that they are nested and anchored in the underlying substrate, by partially burying them.

2

Objectives

- To ensure the free flow of water
- To ensure the free flow of fish

Explanations

The materials used to stabilize the bed of the watercourse must not hinder the flow of water or the flow of fish, in a watercourse where the free flow of fish must be maintained. Section 103 provides information on the watercourses in which the free flow of fish must be maintained.

Additional information

When installing a bridge or culvert, as little work as possible must be carried out in the bed of the watercourse upstream and downstream of the structure. This promotes stability of the bed and minimizes the need for stabilization work.. To avoid hindering the free flow of fish, the stabilized bed:

- must be composed of materials that are embedded and anchored in the underlying substrate;
- must be watertight to prevent water from filtering through the materials making up the bed, which would render the depth of the water insufficient;
- must not include a waterfall or vertical drop that is too large, which would create a barrier or excessive flow speed;
- has a channel that provides a sufficient depth of water at low flow.

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 97

Every person carrying out a forest development activity that regularly uses a road crossing a watercourse must ensure that the bed of the watercourse is stabilized at the entrance and exit of the culvert and that the condition of the culvert allows free circulation of the water in order to ensure the durability of the road. The foregoing also applies to the manager of an outfitting operation, a controlled zone or a wildlife sanctuary within the meaning of sections 86, 104 and 111 of the Act respecting the conservation and development of wildlife (chapter C-61.1) or an enterprise carrying on mining activities or public utility works.

1

Objectives

- To avoid scouring of a watercourse
- To ensure the lifespan of a road, bridge or culvert
- To ensure the free flow of water

Explanations

As stated in this section, the following persons or organizations that regularly use a road crossing a watercourse must ensure that the bed of the watercourse is stabilized at the entrance and exit of culverts and that the condition of the culverts allows for free flow of water in order to ensure the durability of the road.

- Every person carrying out a forest development activity.
- Every manager of an outfitting operation, a controlled zone or a wildlife sanctuary within the meaning of sections 86, 104 and 111 of the Act respecting the conservation and development of wildlife (chapter C-61.1).
- Every enterprise carrying on mining activities or public utility works.

The notion of frequency of use is applied to determine whether or not a road is used regularly. Use is considered to be regular when the person or organization uses the road crossing a watercourse a certain number of times within a given period.

Below are three examples of individuals or organizations that must ensure that the culverts located on the road they use allow for the free circulation of water and that the bed of the watercourse is stabilized at the entrance and exit of the culverts for the full duration of their activities.

- A forestry company that harvesting or carrying out other forest development activities such as non-commercial sylvicultural work.
- A manager of a controlled zone, in respect of the stretches of road that provide users and visitors with access to the wildlife area in question, or to a campsite or lake with a boat launching ramp.
- An enterprise that carries out public utility work, including repair and maintenance of energy transmission lines.

Additional information

The materials used to stabilize the watercourse bed must be able to support the water flow speed so that they are not eroded and carried away by the current. A variety of materials similar to those that make up the natural bed of the watercourse should be used (rounded materials with a variety of particle sizes), and they should be arranged so as to overlap one another. This ensures that the reconstituted bed is watertight, and that water cannot filter through the materials. The addition of large stones (roughly 1.5 times the size of the largest stones in the natural watercourse), scattered across the bed, will improve stability and prevent scouring. The presence of large stones also helps to create a variety of flow conditions and also to create shelter for fish. When the stones are installed, it is important to ensure that they are nested and anchored in the underlying substrate, by partially burying them.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §4. General provisions applicable to bridges or culverts

Section 98

Every person authorized to build or improve a bridge or a culvert on the watercourse of a canoe-kayak-camping course and downriver canoeing course or boat access route to trapping grounds must ensure that the minimum clearance of the bridge or culvert is 1.5 m above the upper limit of the bank. The foregoing also applies to a person who repairs a bridge or a culvert on the watercourse of a canoe-kayak-camping course and downriver canoeing course or boat access route to trapping grounds.

1

Objectives

- To reconcile the various activities that take place in the forest
- To allow for boats to pass under a bridge or culvert

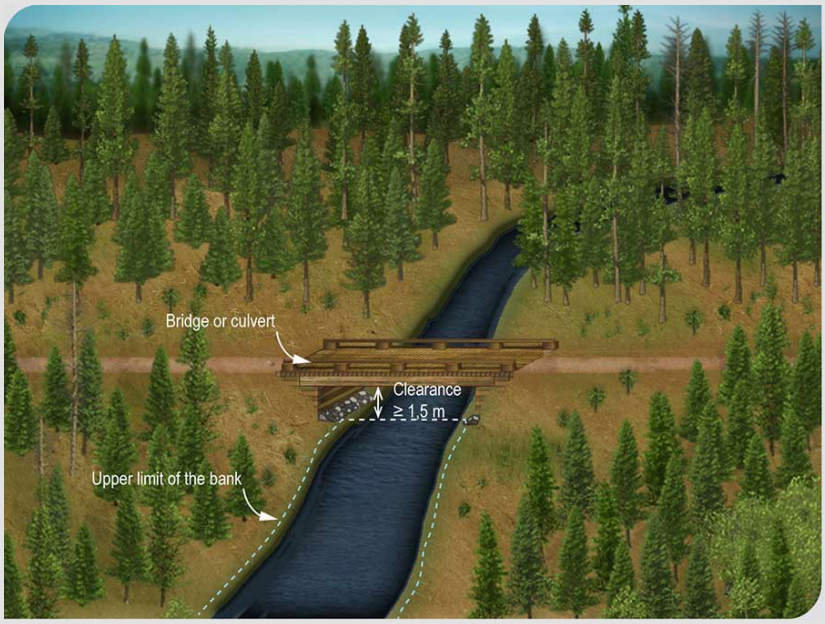


Figure 98 Clearance required for boats

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 99

The construction, improvement or repair of a bridge or a culvert must be carried out in a manner that ensures its stability and operation regardless of the period the work is carried out and the work methods used. The stabilization of the bridge or culvert must be done as the work progresses and any defect must be corrected as soon as it is detected.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

Climate factors can cause technical problems during construction, improvement or repair work on a bridge or culvert. For example, winter work presents a number of challenges, mostly related to water management, compaction, stabilization of the structure and control of sediment inflows. Additional precautions are therefore needed in winter, compared to other seasons.

2

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To avoid carrying sediment into an aquatic, wetland or riparian environment

The fill must be compacted in successive layers up to above the conduit or arch.

3

Objective

- To ensure the lifespan of a road, bridge or culvert

Additional information

Preparation of the foundation and backfilling of a culvert or a wooden or non-wooden arch of a culvert are two crucial steps in ensuring the longevity of the structure and the safety of forest road network users. Note that a wooden culvert is a culvert with a wooden arch.

Preparation of the foundation

The conduit, the walls of a wooden culvert or the shoe of an arch other than a wooden arch must be installed on a flat foundation and must be consolidated over their full length.

If the base of the excavation is in sand or stone-free gravel, this is the ideal material for a foundation. On the other hand, if the base is composed of clay or organic matter, or if there are stones, a sufficient quantity of this material must be excavated and replaced with sand or gravel. In some situations, it is preferable to install a geotextile membrane first, to improve the load-bearing capacity of the foundation and avoid the possibility that the structure will sink under the weight of vehicles.

Backfilling

When the conduit or arch of the culvert is in place, it must be consolidated with backfill. This is an important step, since it will determine the culvert's structural capacity. Arches and conduits are not particularly resistant to loads; it is the backfill material surrounding them that allows them to bear loads. Vehicles must not be allowed to drive over the conduit or arch until the backfill has reached the minimum thickness required by section 100.

The choice of materials for backfilling the conduit or arch, as well as its installation and compacting of the backfill are also important. The materials used must be of the same category as those used for the foundation, i.e. sand or stone-free gravel, to avoid deformation or perforation of the conduit or arch. In addition, these materials are easier to compact and improve the structure's stability. They are deposited by means of a shovel, under the widest portion of the conduit or to the sides of the arch, and then they are compacted to ensure that there are no empty spaces. It is also preferable to deposit backfill material on top of the conduit to prevent it from lifting when the lower materials are compacted.

Backfill material must be present under the quarters along the entire length of the conduit to ensure its bearing capacity. It must be packed in such a way as to avoid empty spaces. Note that it is preferable to deposit backfill material on the conduit to prevent it from lifting when the materials placed under the quarters are compacted.

The filling of the conduit or arch is completed by depositing the material in layers of about 30 cm, compacted successively. The compaction must be carried out with a suitable device such as a vibratory plate compactor, a compacting pestle or a compacting roller. Each layer must be deposited and compacted equally, on both sides of the conduit or the arch. Proper compaction of the material prevents its deformation and ensures optimum bearing capacity and the durability of the culvert.

Backfilling of the conduit or arch is completed by depositing the materials in layers of roughly 30 cm and then compacting it using an appropriate device, such as a vibrating plate. Each layer must be laid and compacted equally, on either side of the conduit or arch. Proper compaction will help avoid distortion and will improve the culvert's load-bearing capacity and longevity.

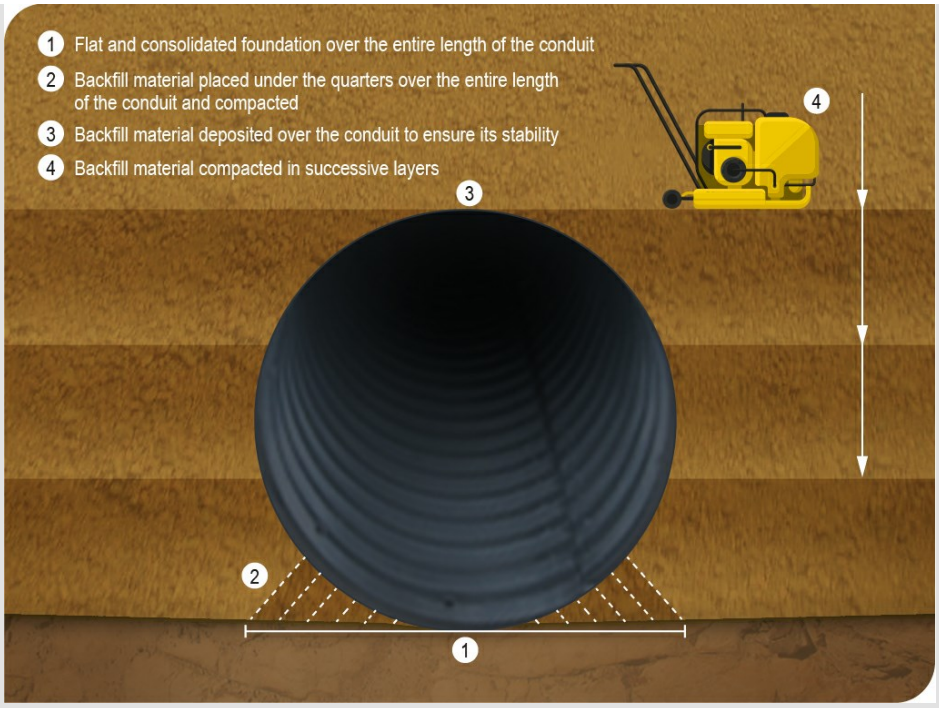


Figure 99 Backfilling of a conduit

To ensure the durability of the culvert, special measures must be taken to ensure compaction and an adequate stabilization when materials used are frozen.

4

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Every person authorized to build or improve a culvert who builds or improves the culvert from 15 December to 31 March must inspect the culvert after the spring flood and correct any defect within 7 days after the inspection. The foregoing also applies to a person who repairs a culvert during that period. The inspection must be carried out not later than 30 June following that period.

5

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

All anomalies identified outside the inspection period must be corrected as soon as they are identified, as indicated in the first paragraph of this section.

Considering the varying climatic realities that can change from one year to another and from one region to another, any person authorized to build or improve a culvert or any person who rebuilds a culvert during the period from 15 December to 31 March may agree, with the management unit in charge, on a different date than 30 June to complete the required culvert inspection and corrective actions.

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §4. General provisions applicable to bridges or culverts

Section 100

Every person authorized to build or improve a culvert must ensure that the end of the conduit or arch extends from the base of the embankment after its stabilization by not more than 300 mm. The foregoing also applies to a person who repairs a culvert.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the free flow of water



Figure 100A End of a conduit or arch extending from the base of the embankment

Except culverts with a reinforced concrete rectangular conduit and wooden culverts, the person must also fill above the conduit or arch of the culvert up to the following height:

1. for conduits or arches having a diameter or span of 600 mm or less, up to a height corresponding to the diameter or the span of the conduit or the arch divided by 4, plus 300 mm;
2. for conduits or arches having a diameter or span of more than 600 mm to 3,600 mm, up to a height corresponding to the diameter or the span of the conduit or the arch divided by 4, with a minimum of 600 mm;
3. for conduits or arches having a diameter or span greater than 3,600 mm, up to a height of at least 1,500 mm.

2

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the safety of forest road users

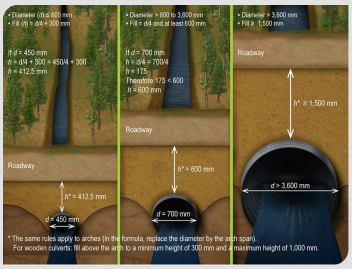


Figure 100B Minimum thickness of fill above a conduit or arch, based on its diameter or span

For a wooden culvert, the person must fill above the arch to a minimum height of 300 mm up to a maximum of 1,000 mm.

3

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the safety of forest road users

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 101

The minimum discharge capacity that a culvert must possess is determined on the basis of the peak flow calculated using the method provided for in Schedule 6 for drainage basins having an area equal to or less than 60 km2 or in Schedule 7 for drainage basins having an area greater than 60 km2 and on the basis of the size of circular conduits provided for in Schedule 8. Conduits that are not circular, arches or bridges must have a discharge surface sufficient for a peak flow calculated using the method provided for in Schedule 6 or 7, as the case may be, and so that the water depth is at all times less than or equal to 85% of the vertical clearance of the structure.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the free flow of water

Explanations

Culverts and bridges that are built, improved or repaired must have a discharge capacity large enough to evacuate peak flow. This is calculated using the method provided for in Schedule 6 for drainage basins having an area equal to or less than 60 km2 or using the method provided for in Schedule 7 for drainage basins having an area greater than 60 km². The diameter of the circular conduits must be calculated using the method provided for in Schedule 8, i.e. based on the flow rate, type of conduit entrance (projection, bevelled or straight) and burial.

Additional information

Installation of a culvert to cross a watercourse with a width of 600 mm or less

The rational method prescribed in Schedule 6 is used to establish the 10-year interval peak flow (Q_{10}) at the crossing point of the watercourse for drainage basins having an area equal to or less than 60 km². This method is based on several hypotheses, and as a result may not be well adapted to certain drainage basins. A difference, sometimes significant, may be observed between the peak flows calculated and the flows measured in small intermittent watercourses linked to small drainage basins. Indeed, sometimes significant differences can be observed between the calculated peak flows and the flows recorded in small rivers associated with small watersheds.

In this context, the procedures must be applied for watercourses with a width of 600 mm or less, mapped or not:

- The culvert does not need to be laid out in a way that ensures the free flow of fish. As a result, there is no need to verify if any of the situations described in the first and second paragraphs of section 103 are present.
- The culvert must be laid out in accordance with the following conditions:
  1. the diameter of the conduit must be at least 450 mm;
  2. the conduit must be installed following the natural slope of the watercourse and be buried under the watercourse bed to a depth equivalent to 10% of its diameter, without however exceeding 500 mm, regardless of its size;
  3. the culvert may include one smooth wall conduit or two in the case of parallel conduits.
- When the diameter of the conduit determined according to the calculated peak flow is greater than the width of the watercourse, the conduit installed must belong to the diameter class closest to the average width of the watercourse. The conduit must in no case reduce the width by more than 20%, measured at the upper limit of the banks.
- When the diameter of the conduit determined according to the calculated peak flow is less than the width of the watercourse, the conduit installed cannot reduce the width of the watercourse by more than 50%, measured at the level of the upper edge of the banks.
- It is acceptable not to calculate the peak flow rate of the watercourse before installing the culvert provided that the conduit installed is in the diameter class closest to the average width of the watercourse. The conduit must in no case reduce the width by more than 20%, measured at the upper limit of the banks. If, under the second paragraph of this section, the Minister requests the calculation of the peak flow rate of the watercourse, the reason which guided the choice not to make this calculation before the work must be provided to him within 48 hours.

How is the width of a watercourse measured?

The width of a watercourse is determined using the average of at least four representative measurements of the natural watercourse taken upstream and downstream from the crossing point. If signs of narrowing or broadening are present, the section concerned must be excluded (for example, a zone disturbed by a beaver dam). The width is measured at the upper limit of the banks, determined as indicated in the definition of "bank" or "shore".

Every person authorized to build or improve a bridge or a culvert must, at the request of the Minister, give to the Minister within 48 hours of the request the calculations of the peak flow performed prior to the work. The foregoing also applies to a person who repairs a bridge or a culvert.

2

Objective

- To allow for regulatory compliance to be checked

Additional information

Installation of a culvert to cross a watercourse with a width of 600 mm or less

It is acceptable not to calculate the peak flow rate of the watercourse with a width of 600 mm or less before installing the culvert provided that the conduit installed is in the diameter class closest to the average width of the watercourse. The conduit must in no case reduce the width by more than 20%, measured at the upper limit of the banks. If the Minister requests the calculation of the peak flow rate of the watercourse, the reason which guided the choice not to make this calculation before the work must be provided to him within 48 hours.

Unmapped watercourse

It is difficult to calculate the peak flow of watercourses that are now shown on the ecoforest maps. In such a situation, it is not mandatory to complete the calculation before installing the culvert if its conduit belongs to the diameter class closest to the average width of the watercourse. The conduit must in no case reduce the width by more than 20%, measured at the upper limit of the banks.

How is the width of a watercourse measured?

The width of a watercourse is determined using the average of at least four representative measurements of the natural watercourse taken upstream and downstream from the crossing point. If signs of narrowing or broadening are present, the section concerned must be excluded (for example, a zone disturbed by a beaver dam). The width is measured at the upper limit of the banks, determined as indicated in the definition of "bank" or "shore".

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §4. General provisions applicable to bridges or culverts

Section 102

During the construction, improvement or repair of a road, a culvert may not have more than 2 parallel conduits. The conduits may be of different diameters provided that, according to Schedule 8, their diameters vary only by one class of diameter and provided that the total minimum discharge capacity determined according to the method of calculation of the peak flow for drainage basins provided for in Schedule 6 or 7, as the case may be, is met.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the free flow of fish
- To obtain the operational flexibility required for certain forest development activities

Additional information

In the case of repairs to or improvement of a culvert with parallel conduits, the number of conduits is limited to two, even if the structure had more than two before the work. The inverts of a culvert with parallel conduits and no outlets must be placed at the same level in the bed of the watercourse. The conduits must be installed in accordance with the conditions set out in Schedule 9 or section 104, depending on whether or not there is a requirement to ensure the free flow of fish under section 103 of the Regulation. As specified in Schedule 10 of the Regulation, the inverts of a culvert with parallel conduits must be placed at the same level in the bed of the watercourse where both conduits are equipped with outlets and at different levels where outlets are installed in only one conduit.

- If outlets are installed in both conduits, the conduit inverts must be buried at the same depth.
- If outlets are installed in only one conduit, the invert of the conduit without outlets must be located 500 mm higher than the invert of the conduit with outlets. By placing the conduit without outlets higher than the conduit with outlets, water is concentrated in the latter conduit during low flow periods. This ensures a sufficient level of water in the conduit with outlets. The outlets create a series of thresholds and basins in the culvert that maintains a water flow speed and depth sufficient to ensure the free flow of fish.



Figure 102A Culvert with parallel conduits of different diameters

The minimum distance between the conduits is 1 m.

2

Objectives

- To ensure the lifespan of a road, bridge or culvert



Figure 102B Distance between the conduits of a culvert with parallel conduits

A device for guiding debris must be installed upstream from a culvert with parallel conduits.

3

Objectives

- To ensure the lifespan of a road, bridge or culvert

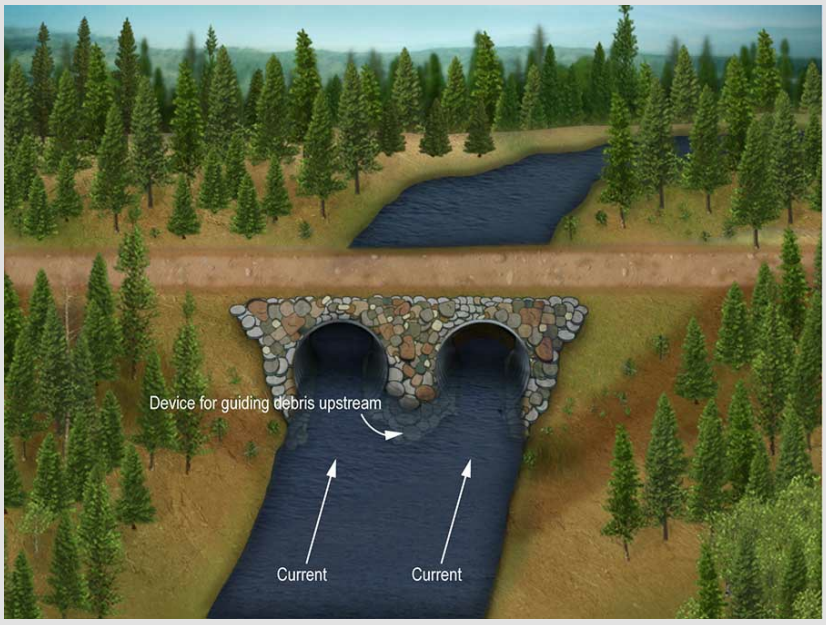


Figure 102C Culvert with parallel conduits and an upstream debris guide

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 103

During the construction, improvement or repair of a road that crosses a watercourse, a culvert must be installed so as to ensure the free flow of fish, except if, less than 250 m upstream or 500 m downstream of the crossing site, any of the following situations is present:

1. there is the presence of a vertical fall more than 1 m high, measured from the surface of the water, and no spawning ground identified on the land or indicated in the numeric information layers used for forest planning is present between the fall and the crossing site;
2. the bed of the watercourse has a section of smooth bedrock with an average slope of 5% or more over a minimum distance of 3 m and the depth of the water flowing over the entire section is less than 100 mm;
3. a section of the watercourse has a slope equal to or greater than 20%, evaluated using the department's topographical maps or observed on the site over a distance of more than 20 m.

A culvert need not be installed to ensure the free flow of fish where, less than 250 m upstream from the crossing site, the bed of the watercourse disappears over a distance of more than 5 m.

1

Additional information

It is also acceptable not to secure the free passage of fish if, least than 500 m downstream from the crossing site, the watercourse bed (mapped or not) disappears on a distance of more than 5 m, since this is an obstacle to the free passage of fish.

Subparagraphs 1 and 2 of the first paragraph do not apply to a watercourse frequented by Atlantic salmon, ouananiche, Arctic char of the oquassa subspecies and anadromous brook trout.

For the purposes of this section, beaver dams, wood debris and anthropogenic obstacles are deemed not to be obstacles to the free flow of fish.

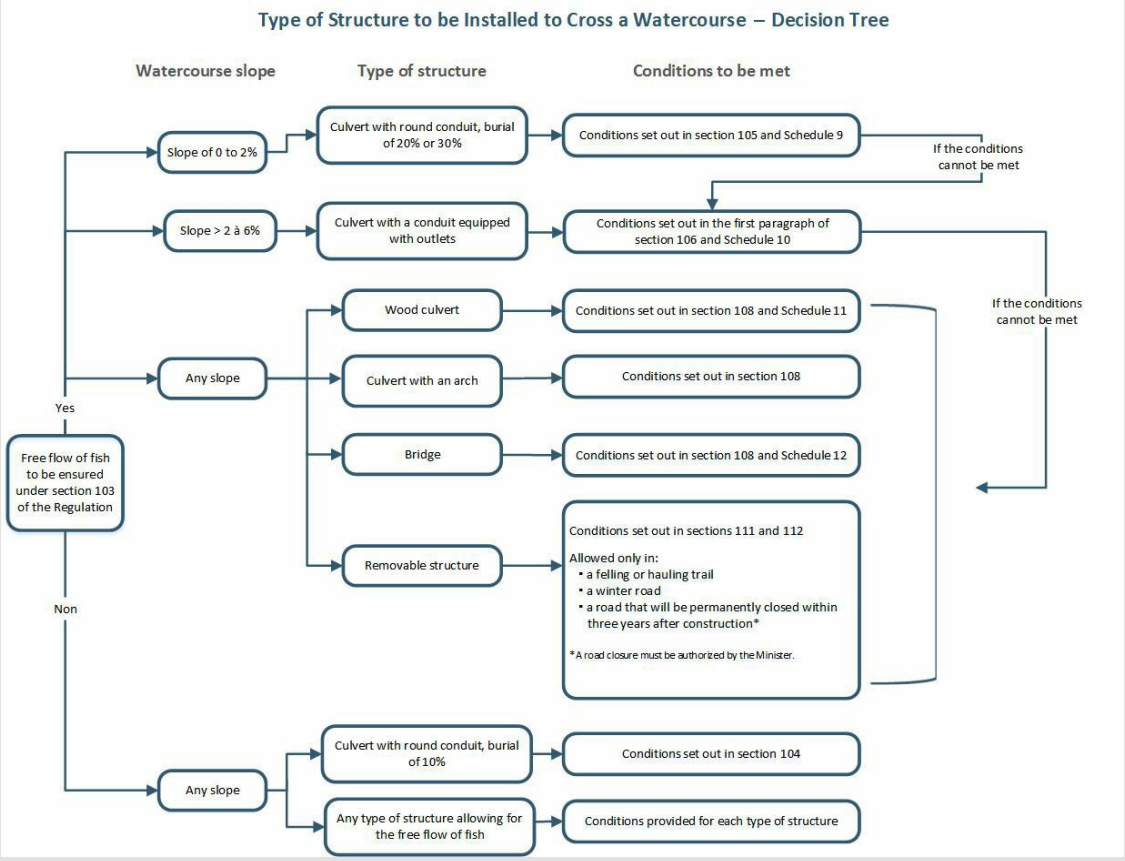
2

Objective

- To ensure the free flow of fish

Additional information

When installing bridges and culverts on a stretch of water where the free flow of fish must be ensured, the structures must not become obstacles to the fish (e.g. insufficient depth of water, excessive water speed in the culvert or a vertical fall at the culvert outlet). Compliance with the standards set out in sections 103, 105, 106, 108 and 110 and with the conditions specified in Schedules 9 to 12 will help avoid situations such as these.



Why must the free flow of fish be ensured in a watercourse?[1]

Fish migrate throughout their lives, to access good quality habitats that will provide food, shelter and a place to reproduce. It is essential for fish to be able to circulate freely in order to meet their vital needs. If they cannot feed properly, they will be in poor condition, which may delay their growth, reduce their breeding success or make them easier prey for predators. During reproduction periods, obstacles may delay their arrival at spawning grounds or prevent them from reaching the best spawning grounds, thereby depriving them of suitable conditions for incubation of their eggs and compromising the survival of the young fish.

The presence of several structures limiting the upstream flow of fish in the same drainage basin will fragment the fish habitat and hinder the free flow of fish, and may also have a negative effect on fishing and harvesting, thereby creating significant social and economic impacts.

Fish flow may, in some circumstances, be limited in specific portions of a natural watercourse. It is therefore not necessary to ensure the free flow of fish everywhere, at all times. For example, the free flow of fish is not required if there is a permanent natural obstacle such as a waterfall or steep slope at the watercourse crossing site or nearby, or if the habitat upstream of the structure is marginal (i.e. small and of poor quality), or if the water conditions are unfavourable, because the fish will not swim upstream during these periods. On the other hand, the free flow of fish through the structure must be assured during periods in which water conditions are favourable to the migration for the species present in the watercourse.

Compliance with the standards set out in sections 103, 105, 106, 108 and 110 and with the conditions presented in Schedules 9 to 12 will ensure that the structures do not hinder the free flow of fish.

Structures that allow for the free flow of fish

Bridges

The most effective structures to ensure the free flow of fish are bridges in general and clear-span bridges in particular, where all the components span the watercourse without altering the bed or banks. Bridges allow natural flow conditions to be maintained by preserving the characteristics (substrate, slope and width) of the watercourse bed. A bridge also crosses a shorter stretch of water than a culvert, due to the absence of fill.

Culverts with an arch

Culverts with an arch, especially those for which all the work is performed outside the banks, are also effective in ensuring the free flow of fish, provided the characteristics of the natural watercourse are preserved or reproduced. In these situations, the fish encounter water conditions that are similar to natural water conditions in migration periods.

Culverts with a conduit

Culverts with a conduit can also ensure the free flow of fish if they are designed and installed properly.

- First, culverts can ensure the free flow of fish if the conduit is buried sufficiently deeply for the water to be pushed back upstream by means of a sill located downstream in the watercourse. This increases the level of the water and reduces water flow speed in the conduit. These conditions can only be created in watercourses with low-angle slopes.
- Culverts with a conduit equipped with outlets can also ensure the free flow of fish in watercourses with steeper slopes. Outlets are installed at regular intervals in the conduit to create a series of thresholds and basins that increases the level of water in the conduit and reduces flow speed. The water is pushed back towards the first outlet downstream of the culvert by a sill located downstream in the watercourse.

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[1] Authors: Collaboration, Ministère des Forêts, de la Faune et des Parcs and Fisheries and Oceans Canada

Specific conditions for certain types of work

Improvement or repair of a stretch of road that crosses a watercourse

When improving or repairing a stretch of road that crosses a watercourse, it is not necessary to install a new structure if the conduit or culvert is in good condition (i.e. if the structure is stable and allows the water to flow freely). However, if the work affects the conduit itself (e.g. extending its length or replacing it when the road is widened), the structure must allow for the free flow of fish after the work, except if one of the situations described in section 103 is present.

Construction of a culvert to cross an effluent or tributary of a lake in which Arctic char of the oquassa sub-species are present

Arctic char of the oquassa sub-species is a freshwater fish found in Québec south of the 52nd parallel. It is on the list of wildlife species likely to be designated as threatened or vulnerable. The Centre de données sur le patrimoine naturel du Québec (CDPNQ) defines the boundaries of an occurrence of oquassa Arctic char as being the area of a lake in which such a fish has been observed or caught, or of a lake in which a spawning ground has been observed. The species is generally found in deep, coldwater, transparent, well-oxygenated oligotrophic lakes (i.e. lakes poor in nutrition). It usually spends its entire life cycle in the lake, and is therefore not often found in watercourses.

It is therefore not necessary for a culvert crossing an effluent or tributary of a lake in which Arctic char of the oquassa sub-species are present to be built in such a way as to ensure the free circulation of the species if one of the situations described in section 103 is present less than 250 metres upstream or 500 metres downstream of the crossing site. This includes the following situations:

(1) there is the presence of a vertical fall more than one metre high, measured from the surface of the water, and no spawning ground identified on the land or indicated in the numeric information layers used for forest planning is present between the fall and the crossing site;

(2) the bed of the watercourse has a section of smooth bedrock with an average slope of 5% or more over a minimum distance of three metres and the depth of the water flowing over the entire section is less than 100 mm.

It goes without saying that section 103 applies in its entirety to other species of fish. Consequently, the requirement of ensuring the free flow of fish when constructing a culvert must be determined on the basis of the situations described in that section.

Installation of a culvert to cross a watercourse with a width of 600 mm or less

The rational method prescribed in Schedule 6 is used to establish the 10-year interval peak flow (Q_{10}) at the crossing point of the watercourse for drainage basins having an area equal to or less than 60 km². This method is based on several hypotheses, and as a result may not be well adapted to certain drainage basins. Indeed, sometimes significant differences can be observed between the calculated peak flows and the flows recorded in small rivers associated with small watersheds.

In this context, the following conditions must be applied for watercourses with a width of 600 mm or less, mapped or not:

- The culvert does not need to be laid out in a way that ensures free flow of fish. As a result, there is no need to verify if any of the situations described in the first and second paragraphs of section 103 are present.
- The culvert must be laid out in accordance with the following conditions:
  1. the diameter of the conduit must be at least 450 mm;
  2. the conduit must be installed following the natural slope of the watercourse and be buried under the watercourse bed to a depth equivalent to 10% of its diameter, without however exceeding 500 mm, regardless of its size;
  3. the culvert may include one smooth wall conduit or two in the case of parallel conduits.
- When the diameter of the conduit determined according to the calculated peak flow is greater than the width of the watercourse, the conduit installed must belong to the diameter class closest to the average width of the watercourse. The conduit must in no case reduce the width by more than 20%, measured at the upper limit of the banks.
- When the diameter of the conduit determined according to the calculated peak flow is less than the width of the watercourse, the conduit installed cannot reduce the width of the watercourse by more than 50%, measured at the upper edge of the banks. It is acceptable not to calculate the peak flow rate of the watercourse before installing the culvert provided that the conduit installed is in the diameter class closest to the average width of the watercourse.
- If, under Section 101, the Minister requests the calculation of the peak flow of the watercourse, the reason that guided the choice not to make this calculation before the work must be provided within 48 hours.

How is the width of a watercourse measured?

The width of a watercourse is determined using the average of at least four representative measurements of the natural watercourse taken upstream and downstream from the crossing point. If signs of narrowing or broadening are present, the section concerned must be excluded (for example, a zone disturbed by a beaver dam). The width is measured at the upper limit of the banks, determined as indicated in the definition of "bank" or "shore".

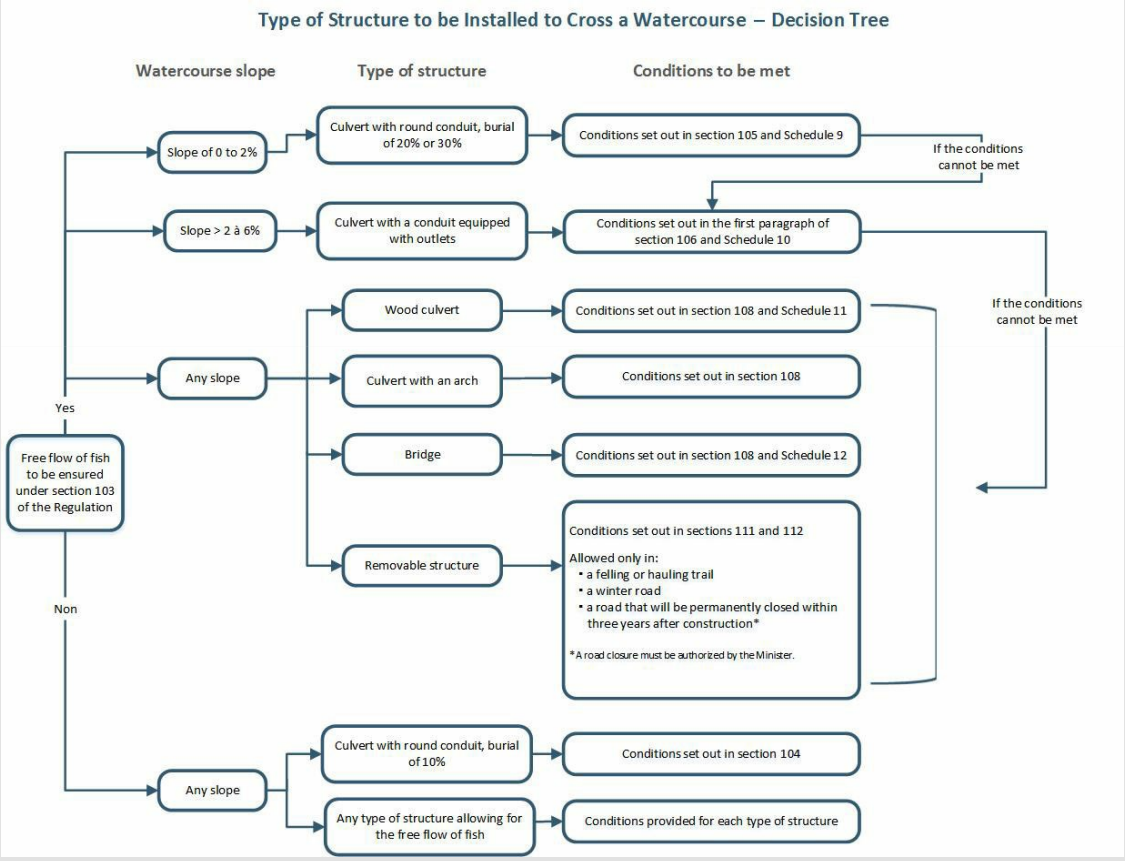
Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 104

1

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



On crossing sites where the free flow of fish needs not be ensured by reason of the presence of any of the situations described in section 103, the installation of the culvert must meet the following conditions:

1. the diameter or span of the conduit or arch must be at least 450 mm;
2. the conduit must be installed following the natural slope of the watercourse and be buried under the bed of the watercourse at a depth equivalent to 10% the height of the conduit, without exceeding 500 mm regardless of the size of the conduit;
3. the culvert may not reduce the width of the watercourse by more than 50%, measured from the upper limit of the banks.

2

Objectives

- To ensure the free flow of water
- To ensure the lifespan of a road, bridge or culvert

Additional information

How is the width of a watercourse measured?

The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank”.

3

Objectives

- To avoid formation of a vertical fall at the culvert outlet
- To ensure the free flow of water
- To ensure the lifespan of a road, bridge or culvert

Additional information

If, at the time of construction, it is not possible to bury the conduit 10% of its height due to the presence of bedrock that was not visible prior to the work, it must be installed so as to bury it as much as possible. In these situations, no waterfall shall be created in or out of the conduit.

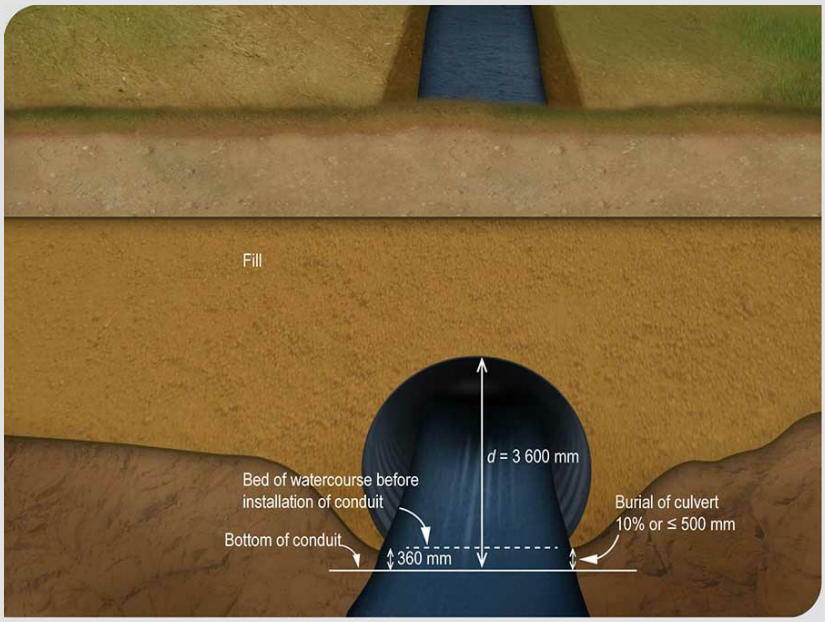


Figure 104A Burial of a culvert conduit in the bed of a watercourse where it is not necessary to ensure the free flow of fish

4

Objectives

- To ensure the free flow of water
- To ensure the lifespan of a road, bridge or culvert
- To avoid scouring of the watercourse

Additional information

How is the width of a watercourse measured?

The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank”.

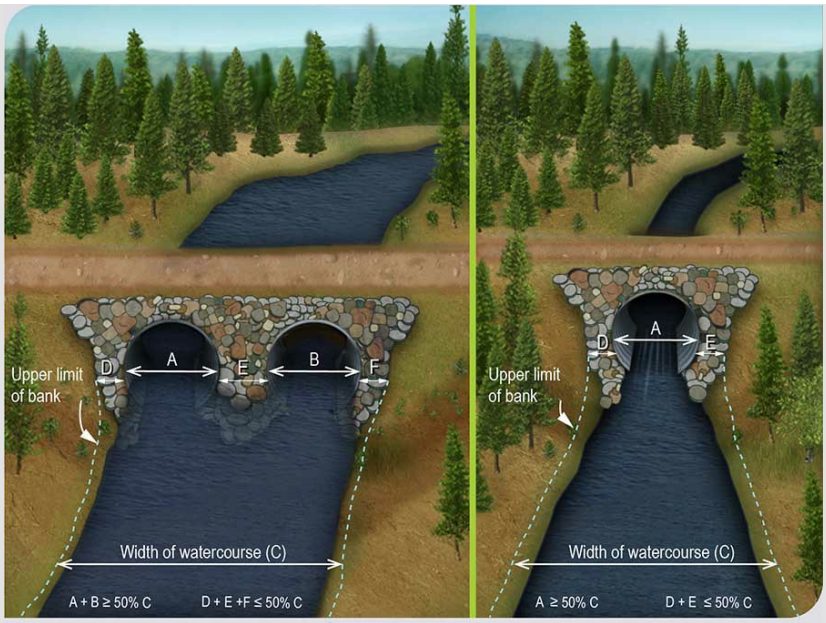


Figure 104B Maximum reduction of the width of a watercourse where it is not necessary to ensure the free flow of fish

On a crossing site where the free flow of fish need not be ensured, a culvert may include 1 smooth wall conduit or 2 in the case of parallel conduits.

5

Objective

- To ensure the free flow of water

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 105

On crossing sites where the free flow of fish must be ensured, a culvert may be installed only if it includes a circular conduit and if its installation meets the conditions provided for in Schedule 9.

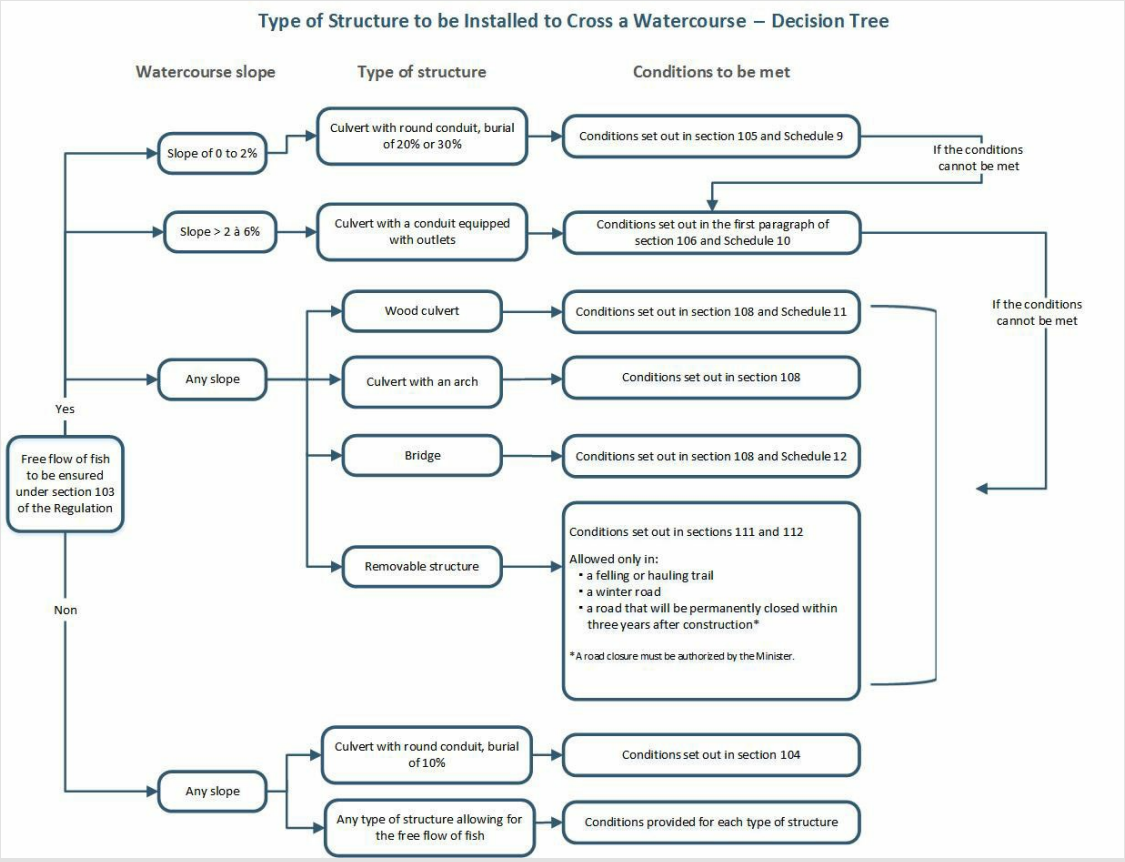
1

Objectives

- To ensure the free flow of water
- To ensure the lifespan of a road, bridge or culvert
- To avoid scouring of a watercourse
- To maintain a flow level and water level in the culvert that are sufficient to ensure the free flow of fish

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



Where the conditions specified in Schedule 9 cannot be met for a crossing site at which the free flow of fish must be ensured, section 106 provides that one or other of the following culverts may be installed:

1. A culvert including a conduit with outlets, designed and installed according to the conditions provided for in Schedule 10;
2. A culvert that meets other conditions, the installation of which was authorized by the Minister under section 41 of the Sustainable Forest Development Act (chapter A-18.1), or the installation of which is authorized under a forestry permit or by a contract or an agreement entered into under the Act.

A person wishing to obtain authorization for this must apply to the (in French only) regional office of the Ministère des Forêts, de la Faune et des Parcs by completing the form provided for that purpose. The application must describe the situation that justifies completion of the work in accordance with standards different from those enacted in the Regulation. It must also propose replacement measures that will be implemented to achieve the objectives of the regulatory standards from which a departure is requested. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with conditions that must be met when carrying out the work.

In addition, regardless of the watercourse slope or the need to ensure the free flow of fish, section 107 provides that a bridge or culvert with an arch may be installed, provided it meets the conditions provided for in section 108.

When installing bridges and culverts on a stretch of water where the free flow of fish must be ensured, the structures must not become obstacles to the fish (e.g. insufficient depth of water, excessive water speed in the culvert or a vertical fall at the culvert outlet). Compliance with the standards set out in sections 103, 105, 106, 108 and 110 and with the conditions specified in Schedules 9 to 12 will help avoid situations such as these.

Why must the free flow of fish be ensured in a watercourse?[1]

Fish migrate throughout their lives, to access good quality habitats that will provide food, shelter and a place to reproduce. It is essential for fish to be able to circulate freely in order to meet their vital needs. If they cannot feed properly, they will be in poor condition, which may delay their growth, reduce their breeding success or make them easier prey for predators. During reproduction periods, obstacles may delay their arrival at spawning grounds or prevent them from reaching the best spawning grounds, thereby depriving them of suitable conditions for incubation of their eggs and compromising the survival of the young fish.

The presence of several structures limiting the upstream flow of fish in the same drainage basin will fragment the fish habitat and hinder the free flow of fish, and may also have a negative effect on fishing and harvesting, thereby creating significant social and economic impacts.

Fish flow may, in some circumstances, be limited in specific portions of a natural watercourse. It is therefore not necessary to ensure the free flow of fish everywhere, at all times. For example, the free flow of fish is not required if there is a permanent natural obstacle such as a waterfall or steep slope at the watercourse crossing site or nearby, or if the habitat upstream of the structure is marginal (i.e. small and of poor quality), or if the water conditions are unfavourable, because the fish will not swim upstream during these periods. On the other hand, the free flow of fish through the structure must be assured during periods in which water conditions are favourable to the migration for the species present in the watercourse.

Compliance with the standards set out in sections 103, 105, 106, 108 and 110 and with the conditions specified in Schedules 9 to 12 will ensure that the structures do not hinder the free flow of fish.

It is not necessary to ensure the free flow of fish everywhere, at all times. For example, the free flow of fish is not required if there is a permanent natural obstacle such as a waterfall or steep slope at the watercourse crossing site or nearby, or if the habitat upstream of the structure is marginal (i.e. of poor quality). On the other hand, the free flow of fish through the structure must be assured during periods in which water conditions are representative of favourable migration conditions for the species present in the watercourse. If these conditions are not favourable, the fish will not swim upstream, and it is therefore not necessary to ensure the free flow of fish through the structure during that period.

Structures that allow for the free flow of fish

Bridges

The most effective structures to ensure the free flow of fish are bridges in general and clear-span bridges in particular, where all the components span the watercourse without altering the bed or banks. Bridges allow natural flow conditions to be maintained by preserving the characteristics (substrate, slope and width) of the watercourse bed. A bridge also crosses a shorter stretch of water than a culvert, due to the absence of fill.

Culverts with an arch

Culverts with an arch, especially those for which all the work is performed outside the banks, are also effective in ensuring the free flow of fish, provided the characteristics of the natural watercourse are preserved or reproduced. In these situations, the fish encounter water conditions that are similar to natural water conditions in migration periods.

Culverts with a conduit

Culverts with a conduit can also ensure the free flow of fish if they are designed and installed properly.

- First, culverts can ensure the free flow of fish if the conduit is buried sufficiently deeply for the water to be pushed back upstream by means of a sill located downstream in the watercourse. This increases the level of the water and reduces water flow speed in the conduit. These conditions can only be created in watercourses with low-angle slopes.
- Culverts with a conduit equipped with outlets can also ensure the free flow of fish in watercourses with steeper slopes. Outlets are installed at regular intervals in the conduit to create a series of thresholds and basins that increases the level of water in the conduit and reduces flow speed. The water is pushed back towards the first outlet downstream of the culvert by a sill located downstream in the watercourse.

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[1] Authors: Collaboration, Ministère des Forêts, de la Faune et des Parcs and Fisheries and Oceans Canada

During the installation of a culvert, the installation of smooth wall conduits is prohibited in a watercourse where the free flow of fish must be ensured.

2

Objective

- To maintain a flow level and water level in the culvert that are sufficient to ensure the free flow of fish

Additional information

A culvert with a smooth wall conduit limits the free flow of fish because of its lack of roughness. The lower the Manning roughness coefficient of a conduit, the faster the water will flow through the culvert, and the shallower the water is likely to be. Conduits with a Manning coefficient of less than 0.022 are considered to be smooth wall conduits. Conduits made of concrete and high-density polyethylene normally fall into this category.

Some conduits with annular corrugated interiors, such as aluminized or galvanized metal pipe (ACSP, GCSP), create the conditions that are conducive to the free flow of fish despite having a Manning coefficient of under 0.022. Consequently, they are not considered to be smooth wall conduits.

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§4. General provisions applicable to bridges or culverts

Section 106

Despite section 105, the following culverts may be installed where the conditions provided for in Schedule 9 may not be met:

1. a culvert including a conduit with outlets, designed and installed according to the conditions provided for in Schedule 10;
2. a culvert that meets other conditions the installation of which was authorized by the Minister under section 41 of the Sustainable Forest Development Act (chapter A-18.1) or the installation of which is authorized under a forestry permit or by a contract or an agreement entered into under the Act.

1

Objectives

- To ensure the free flow of water
- To ensure the lifespan of a road, bridge or culvert
- To avoid scouring of a watercourse
- To maintain a flow level and water level in the culvert that are sufficient to ensure the free flow of fish
- To protect forest resources during specific road, bridge or culvert construction or improvement work

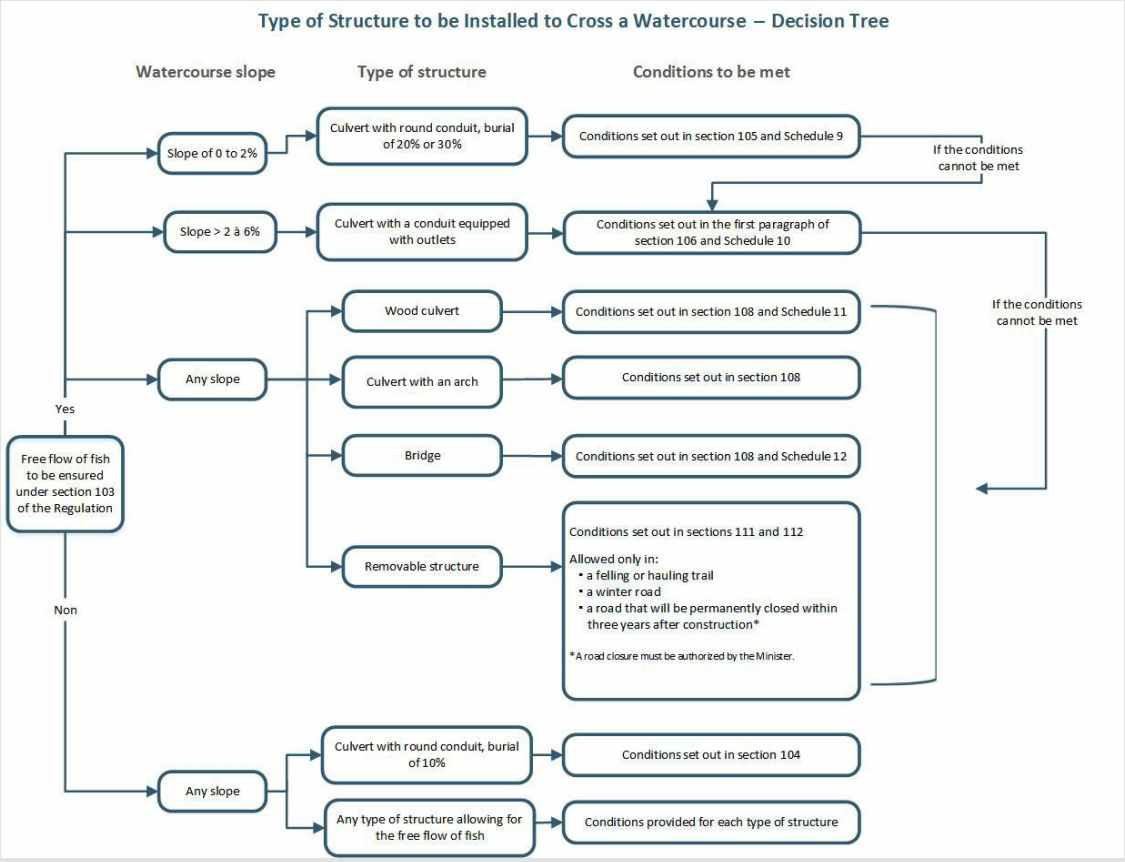
Explanations

On crossing sites where the free flow of fish must be ensured, section 105 requires the installation of a culvert with a circular conduit, in accordance with the conditions set out in Schedule 9. However, where these conditions cannot be met, a culvert with a conduit equipped with outlets may be designed and installed in accordance with the conditions set out in Schedule 10. A culvert that meets other conditions may also be installed if it has been authorized by the Minister, in compliance with section 41 of the Sustainable Forest Development Act .

A person wishing to obtain authorization for this must apply to the (in French only) regional office of the Ministère des Forêts, de la Faune et des Parcs by completing the form provided for that purpose. The application must describe the situation that justifies completion of the work in accordance with standards different from those enacted in the Regulation. It must also propose replacement measures that will be implemented to achieve the objectives of the regulatory standards from which a departure is requested. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with conditions that must be met when carrying out the work.

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



Regardless of the watercourse slope or the need to ensure the free flow of fish, section 107 provides that a bridge or culvert with an arch may be installed, provided it meets the conditions provided for in section 108.

When installing bridges and culverts on a stretch of water where the free flow of fish must be ensured, the structures must not become obstacles to the fish (e.g. insufficient depth of water, excessive water speed in the culvert or a vertical fall at the culvert outlet). Compliance with the standards set out in sections 103, 105, 106, 108 and 110 and with the conditions specified in Schedules 9 to 12 will help avoid situations such as these.

Why must the free flow of fish be ensured in a watercourse? [1]

Fish migrate throughout their lives, to access good quality habitats that will provide food, shelter and a place to reproduce. It is essential for fish to be able to circulate freely in order to meet their vital needs. If they cannot feed properly, they will be in poor condition, which may delay their growth, reduce their breeding success or make them easier prey for predators. During reproduction periods, obstacles may delay their arrival at spawning grounds or prevent them from reaching the best spawning grounds, thereby depriving them of suitable conditions for incubation of their eggs and compromising the survival of the young fish.

The presence of several structures limiting the upstream flow of fish in the same drainage basin will fragment the fish habitat and hinder the free flow of fish, and may also have a negative effect on fishing and harvesting, thereby creating significant social and economic impacts.

Fish flow may, in some circumstances, be limited in specific portions of a natural watercourse. It is therefore not necessary to ensure the free flow of fish everywhere, at all times. For example, the free flow of fish is not required if there is a permanent natural obstacle such as a waterfall or steep slope at the watercourse crossing site or nearby, or if the habitat upstream of the structure is marginal (i.e. small and of poor quality), or if the water conditions are unfavourable, because the fish will not swim upstream during these periods. On the other hand, the free flow of fish through the structure must be assured during periods in which water conditions are favourable to the migration for the species present in the watercourse.

Compliance with the standards set out in sections 103, 105, 106, 108 and 110 and with the conditions specified in Schedules 9 to 12 will ensure that the structures do not hinder the free flow of fish.

It is not necessary to ensure the free flow of fish everywhere, at all times. For example, the free flow of fish is not required if there is a permanent natural obstacle such as a waterfall or steep slope at the watercourse crossing site or nearby, or if the habitat upstream of the structure is marginal (i.e. of poor quality). On the other hand, the free flow of fish through the structure must be assured during periods in which water conditions are representative of favourable migration conditions for the species present in the watercourse. If these conditions are not favourable, the fish will not swim upstream, and it is therefore not necessary to ensure the free flow of fish through the structure during that period.

Structures that allow for the free flow of fish

Bridges

The most effective structures to ensure the free flow of fish are bridges in general and clear-span bridges in particular, where all the components span the watercourse without altering the bed or banks. Bridges allow natural flow conditions to be maintained by preserving the characteristics (substrate, slope and width) of the watercourse bed. A bridge also crosses a shorter stretch of water than a culvert, due to the absence of fill.

Culverts with an arch

Culverts with an arch, especially those for which all the work is performed outside the banks, are also effective in ensuring the free flow of fish, provided the characteristics of the natural watercourse are preserved or reproduced. In these situations, the fish encounter water conditions that are similar to natural water conditions in migration periods.

Culverts with a conduit

Culverts with a conduit can also ensure the free flow of fish if they are designed and installed properly.

- First, culverts can ensure the free flow of fish if the conduit is buried sufficiently deeply for the water to be pushed back upstream by means of a sill located downstream in the watercourse. This increases the level of the water and reduces water flow speed in the conduit. These conditions can only be created in watercourses with low-angle slopes.
- Culverts with a conduit equipped with outlets can also ensure the free flow of fish in watercourses with steeper slopes. Outlets are installed at regular intervals in the conduit to create a series of thresholds and basins that increases the level of water in the conduit and reduces flow speed. The water is pushed back towards the first outlet downstream of the culvert by a sill located downstream in the watercourse

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[1] Authors: Collaboration, Ministère des Forêts, de la Faune et des Parcs and Fisheries and Oceans Canada

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §5. Special provisions applicable to bridges or culverts with an arch

Section 107

Despite sections 103 to 106, a bridge or a culvert with an arch may be installed on a crossing site, on the conditions provided for in section 108, regardless of the slope of the watercourse and whether or not the flow of fish must be ensured.

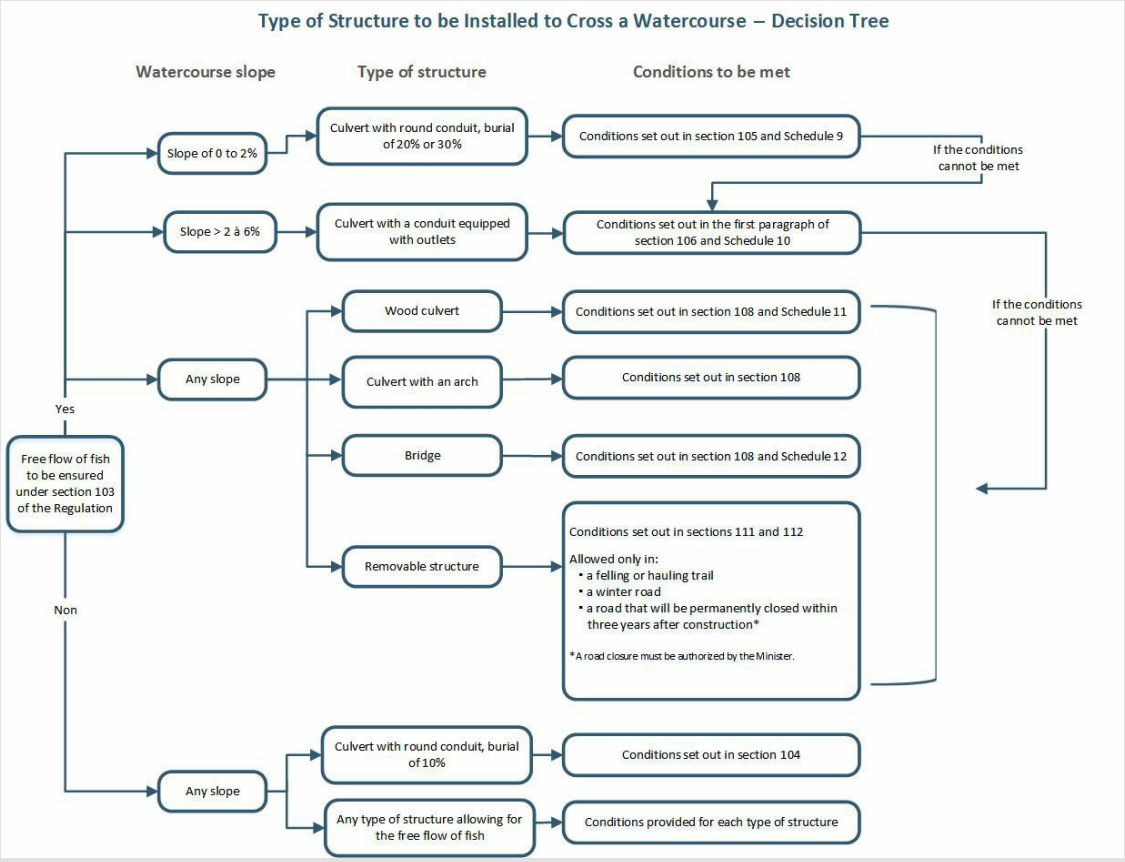
1

Objectives

- To ensure the free flow of water
- To avoid disturbing the bed of a lake or watercourse
- To ensure the lifespan of a road, bridge or culvert

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



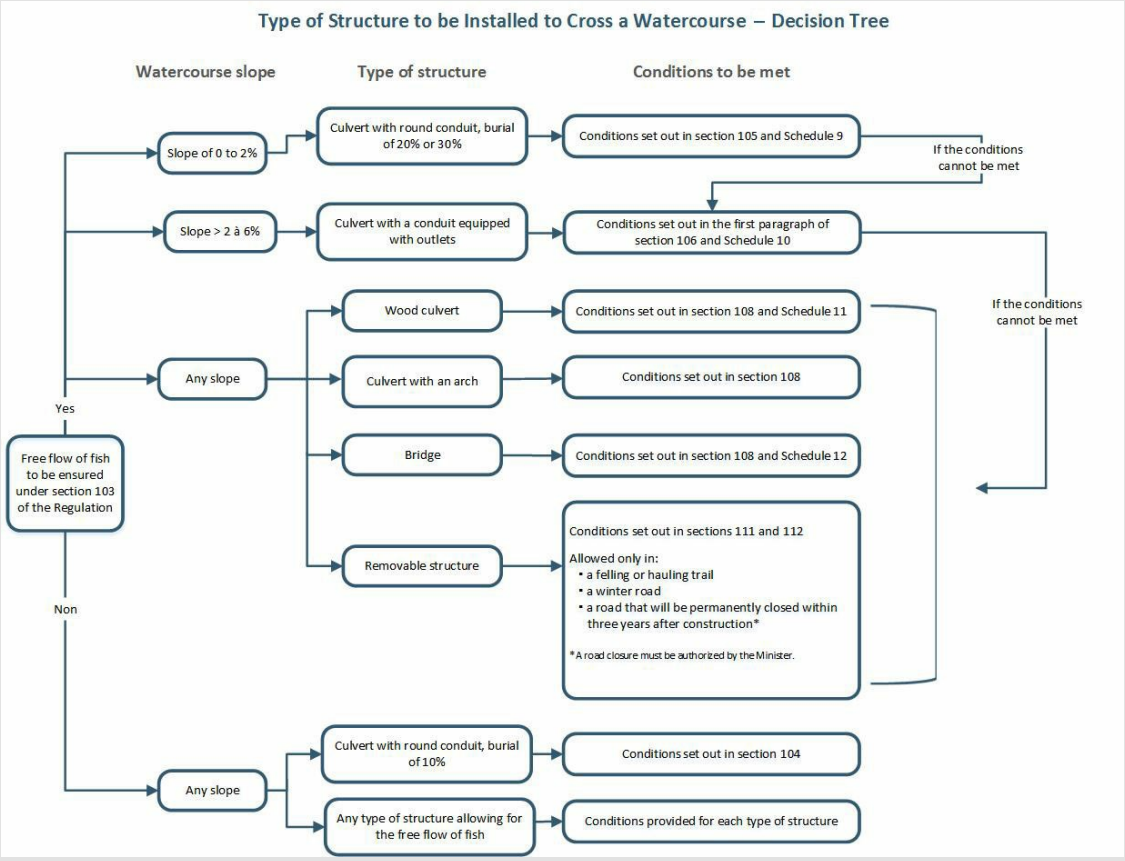
Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §5. Special provisions applicable to bridges or culverts with an arch

Section 108

1

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



The construction, improvement or repair of a bridge must meet the following conditions: (1) the bridge must not have the effect of reducing the width of the watercourse, measured from the upper limit of the banks;

2

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the free flow of water
- To ensure the free flow of fish
- To preserve the integrity of an aquatic, wetland or riparian environment

Additional information

The materials used to stabilize the abutments form an integral part of the bridge as defined in section 2. These materials must therefore not have the effect of reducing the width of the watercourse, measured at the level of the upper limit of the banks.

How is the width of a watercourse measured?

The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank” or “shore”. When a bridge built, improved or repaired before the coming into force of this Regulation is improved or repaired, the width of the watercourse is determined using the measurements made at the upper limit of the banks created during that work if it reduces the width of natural watercourse and if the materials used to consolidate the banks are stable. If the banks are unstable at the crossing point, the width of the watercourse is determined using the method set out in the preceding paragraph.

(2) the abutments of a bridge must be installed outside the upper limit of the bank and be buried at least 600 mm under the level of the upper limit of the bank.

3

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To limit the structure's encroachment into an aquatic environment

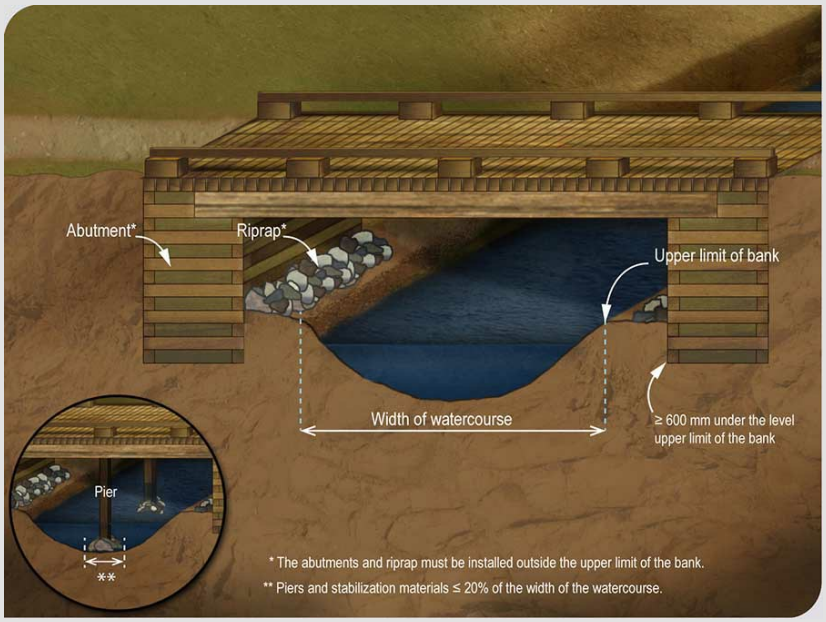


Figure 108A Characteristics of a bridge installation in relation to the upper limit of the banks

Subparagraph (1) of the first paragraph does not apply to a bridge including 1 or a number of piers. The piers and materials used for their stabilization must not have the effect of reducing the width of the watercourse by more than 20%, measured from the upper limit of the banks.

4

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the free flow of water
- To ensure the free flow of fish
- To limit the structure's encroachment into an aquatic environment

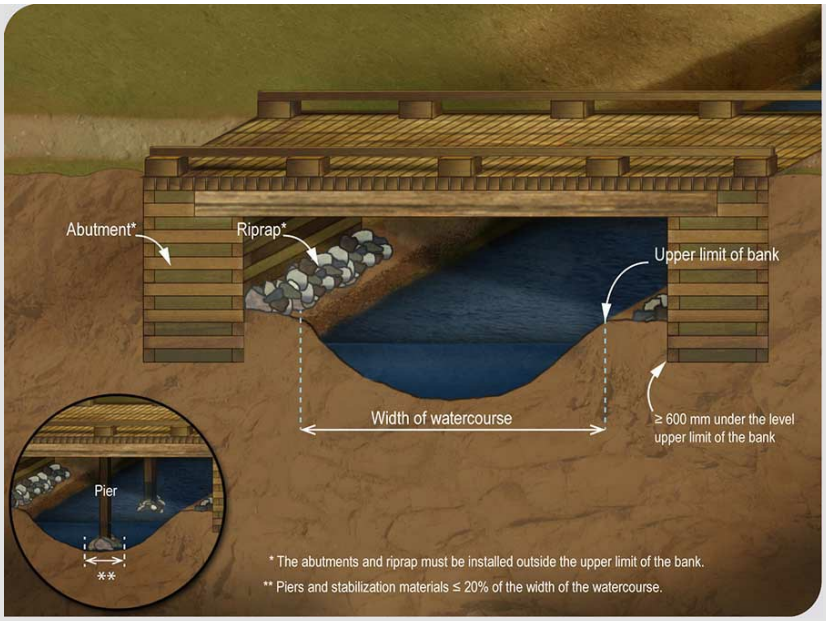


Figure 108A Characteristics of a bridge installation in relation to the upper limit of the banks

Additional information

The materials used to stabilize piers form an integral part of the bridge as defined in section 2. The piers and materials must not reduce the width of the watercourse by more than 20%, measured at the upper limit of the banks.

How is the width of a watercourse measured?

The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank” or "shore". When a bridge built, improved or repaired before the coming into force of this Regulation is improved or repaired, the width of the watercourse is determined using the measurements made at the upper limit of the banks created during that work if it reduces the width of natural watercourse and if the materials used to consolidate the banks are stable. If the banks are unstable at the crossing point, the width of the watercourse is determined using the method set out in the preceding paragraph.

The construction, improvement or repair of a culvert with an arch must meet the following conditions: (1) the work area must be dried;

5

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the lifespan of a road, bridge or culvert

(2) the length of an arch must be not more than 24 m;

6

Objectives

- To ensure the free flow of fish
- To minimize straightening of a watercourse

(3) an arch must be installed in the natural axis of the watercourse, in a relatively straight section whose banks are well defined. The length of an arch must be greater than 80% of the length of the thalweg of the section of the watercourse that will be disrupted by the work;

7

Objectives

- To avoid the scouring of a watercourse
- To minimize straightening of a watercourse

Additional information

The limit on the length of the arch compared to the length of the thalweg measured before the work is intended to limit straightening of the stretch of watercourse affected by the work and to maintain

its natural balance. The fact of limiting straightening also helps avoid increasing the slope and hence the speed of the current. A faster current may cause erosion and degradation of the bed and banks of the watercourse.

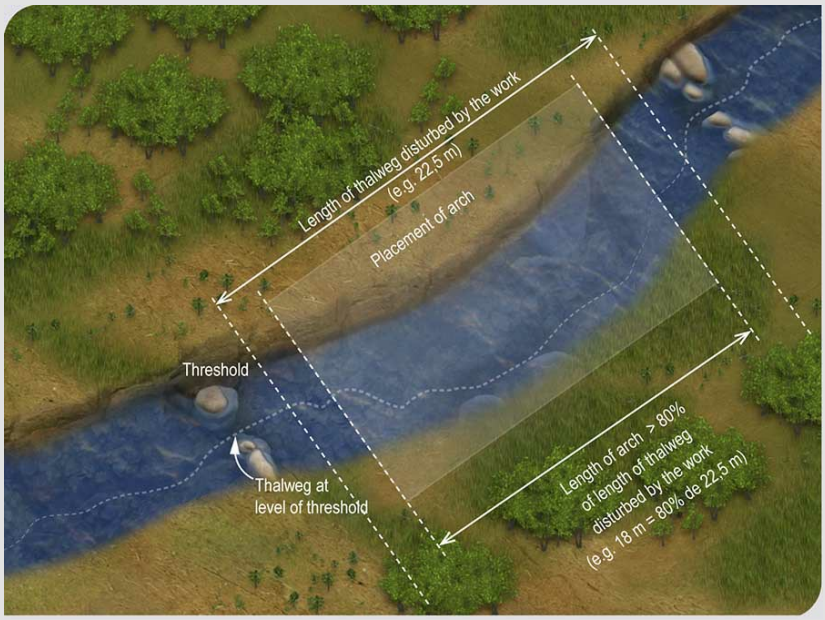


Figure 108B Minimum length of the arch compared to the length of the thalweg disturbed by the work

(4) an arch must not have the effect of reducing the width of the watercourse, measured from the upper limit of the banks;

8

Objectives

- To maintain a flow level and water level in the culvert that are sufficient to ensure the free flow of fish
- To limit the structure's encroachment into an aquatic environment
- To avoid scouring of a watercourse
- To ensure the lifespan of a road, bridge or culvert

Additional information

How is the width of a watercourse measured?

The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of "bank".

(5) the walls of a wooden culvert or the shoes of an arch other than wooden must be installed outside the upper limit of the bank;

9

Objective

- To ensure the lifespan of a road, bridge or culvert

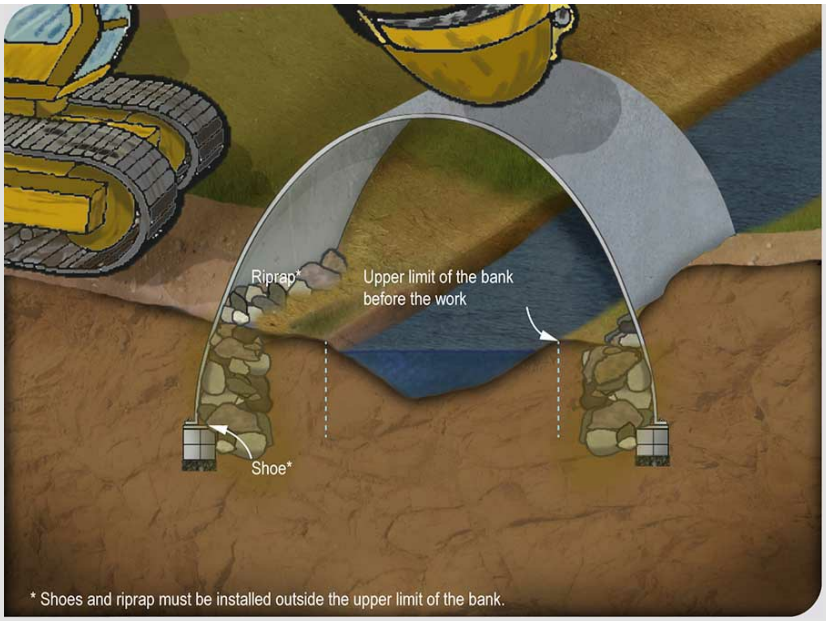


Figure 108C Characteristics of an arch installation in relation to the upper limit of the banks

(6) the parts of each shoe of an arch other than wooden must be installed so as to form a continuous shoe and be attached over the whole length of the arch. Where there are materials, in particular in millwork wood or concrete, between the foundations and the shoes of an arch other than wooden, they must be attached to the shoes and cover their whole length;

10

Objective

- To ensure the lifespan of a road, bridge or culvert

Additional information

The materials located between the foundations and the shoes of an arch other than a wooden arch are intended to create a sufficiently large working space to reconstitute the bed of the watercourse and stabilize the internal base of the arch with a riprap.

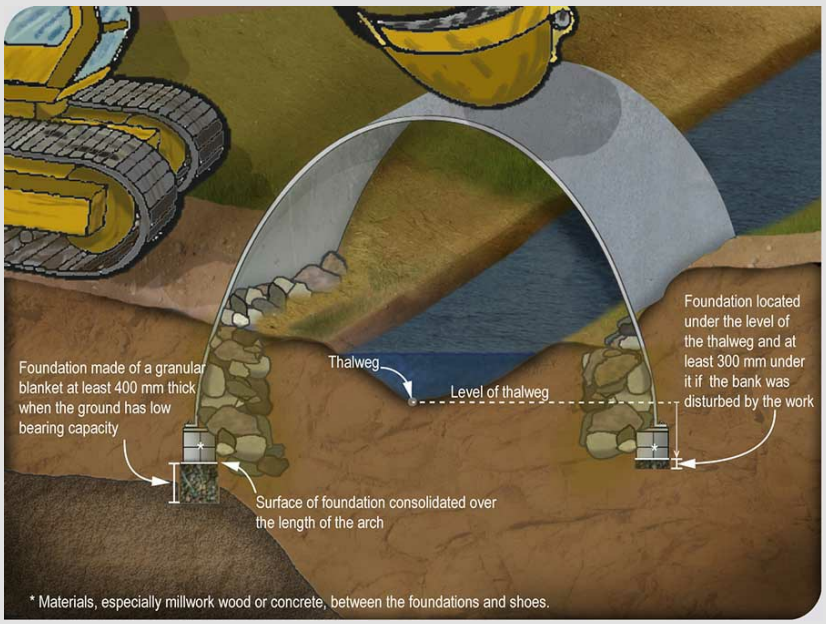


Figure 108D Characteristics of the foundations of an arch

(7) the walls of a wooden culvert or the shoes of an arch other than wooden must be installed on level foundations consolidated over the whole length of the arch. The foundations must be below the thalweg. Where the banks are disturbed by the work, the foundations must be at least 300 mm under the thalweg. If rock is present before reaching that depth, the walls or shoes must be anchored to the rock. For ground with weak bearing capacity, the walls or shoes must be installed on foundations made of a granular blanket at least 400 mm thick;

11

Objective

- To ensure the lifespan of a road, bridge or culvert

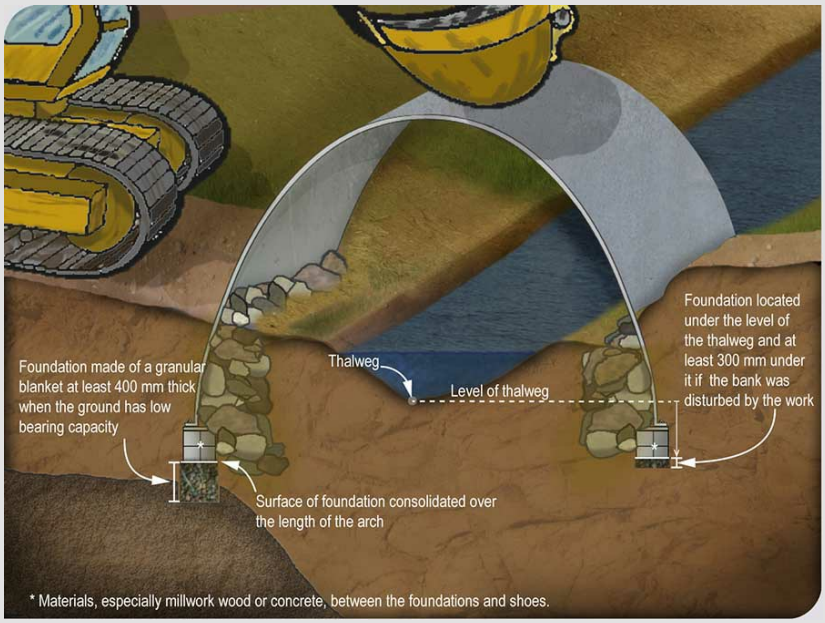


Figure 108D Characteristics of the foundations of an arch

(8) the walls, shoes, foundations and materials placed between the shoes and the foundations of an arch must be adequately protected with riprap that is flood resistant in order to prevent scouring. The riprap of an arch must not encroach on the bed of the reconstituted watercourse;

12

Objective

- To avoid scouring of a watercourse
- To limit the structure's encroachment into an aquatic environment
- To ensure the lifespan of a road, bridge or culvert
- To ensure the free flow of fish

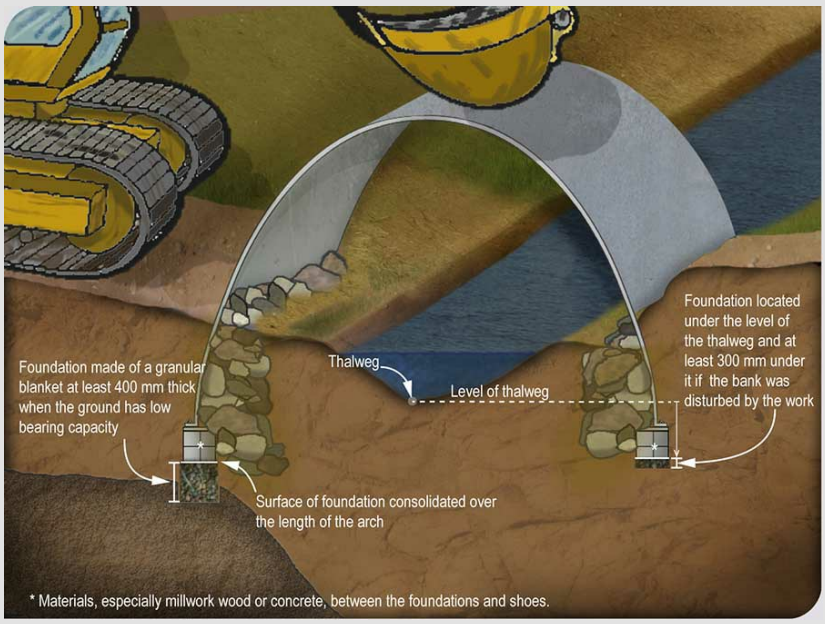


Figure 108D Characteristics of the foundations of an arch

(9) a section of watercourse disrupted by the construction, improvement or repair work of a culvert with an arch must be reconstituted by meeting the following conditions:

a. the reconstituted section of the watercourse must have the same width as that measured from the upper limit of the banks before the work;

13

Objectives

- To avoid scouring of a watercourse
- To ensure the lifespan of a road, bridge or culvert
- To maintain a flow level and water level in the culvert that are sufficient to ensure the free flow of fish

Additional information

How is the width of a watercourse measured?

The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank”.

b. the bed must be reconstituted with heterogeneous materials similar to that constituting the bed of the natural watercourse to which big rocks must be added;

14

Objectives

- To avoid scouring of a watercourse
- To ensure the free flow of fish
- To maintain a flow level and water level in the culvert that are sufficient to ensure the free flow of fish

Additional information

The materials used to stabilize the watercourse bed must be able to support the water flow speed so that they are not eroded and carried away by the current. A variety of materials similar to those that make up the natural bed of the watercourse should be used (rounded materials with a variety of particle sizes), and they should be arranged so as to overlap one another. This ensures that the reconstituted bed is watertight, and that water cannot filter through the materials. The addition of large stones (roughly 1.5 times the size of the largest stones in the natural watercourse), scattered across the bed, will improve stability and prevent scouring. The presence of large stones also helps to create a variety of flow conditions and also to create shelter for fish. When the stones are installed, it is important to ensure that they are nested and anchored in the underlying substrate, by partially burying them.

c. wood debris, organic matter and topsoil may not be used to reconstitute the bed. The materials that may be used must include enough fine particles to seal the reconstituted bed. Where materials from the bed excavated during the work are used to reconstitute the bed, only surface materials may be used;

15

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid scouring of a watercourse
- To ensure the lifespan of a road, bridge or culvert

Additional information

Wood debris, organic matter and topsoil may not be used to reconstitute the bed inside the arch, because they may introduce suspended matter into the watercourse and hinder the stability of the bed. The materials used must be of different sizes (with a particle size composition similar to that of the watercourse) and be laid out so as to overlap one another. This ensures that the reconstituted bed is watertight, and that water cannot infiltrate through the materials. Infiltration may hinder the stability of the bed by causing scouring. It may also have the effect of reducing the water level in the arch, where the water must be deep enough to allow the biggest fish to swim past the structure. The water must be at least 20 cm deep, or of equal depth to the water in the section of the natural watercourse downstream of the arch.

d. a canal must be laid out in the reconstituted section of the watercourse in order to concentrate the water during the low flow period;

16

Objective

- To ensure the free flow of fish

Additional information

A low-flow channel similar to the one found in the natural watercourse must be laid out in the reconstituted section of the watercourse in order to concentrate the water during the low flow period. The bottom of the channel must correspond to the thalweg of the watercourse bed.

e. the water of the watercourse must be gradually re-circulated in the work area to allow the adjustment and imbrication of the materials of the reconstituted bed and thus ensure the imperviousness of the bed;

17

Objective

- To avoid scouring of a watercourse

Additional information

The devices that were used to dry out the work area temporarily must be removed gradually, starting with the one located upstream, so that the materials making up the reconstituted bed can adjust and overlap one another.

f. in a salmonid watercourse, the devices used to temporarily dry the work area must be removed gradually so that 2/3 of the flow of the watercourse is re-circulated in the work area;
g. in a salmonid watercourse, the arch, riprap, bed and banks located in the work area must be cleaned to remove fine particles deposited on the surface. The cleaning must take place before opening the cofferdam located downstream from the culvert with an arch;
h. in a salmonid watercourse, roily water must be pumped outside the work area to vegetation areas located more than 20 m from the watercourse. The 20-m distance is measured from the limit that separates the stand from the watercourse or, in the presence of a riparian ecotone, from the limit of the ecotone farthest from the environment to be protected. The water must be clear before opening the cofferdam located downstream from the culvert with an arch and before removing all the devices used to temporarily dry the work area.

18

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid scouring of a watercourse

Explanations

In a salmonid watercourse, the arch, riprap, bed and banks located in the work area must be cleaned to remove fine particles deposited on the surface. Not only does this limit the input of fine sediment into the watercourse, but the washing of the surface of the reconstituted bed helps make it more watertight by adjusting and overlapping the materials of which it is composed. A commonly used technique is to clean the surface of a reconstituted watercourse directly, using a fire hose, working upstream to downstream. The washing water is directed towards a low point of the work area and pumped into vegetation located more than 20 m from the watercourse or, where there is a riparian ecotone, from the limit of the ecotone located furthest from the environment to be protected. The water must be clear before opening the coffer dam located downstream from the culvert with an arch and before removing all the devices used to dry out the work area temporarily. Special care is needed when removing the devices used to dry out the work area temporarily in a salmonid watercourse. The devices must be removed gradually, starting with the one located upstream, until less than two-thirds of the watercourse flow has been restored in the reconstituted bed. During this operation, which is also designed to clean the bed and make it more watertight, the roily water must be pumped outside the work area into vegetation areas located more than 20 m from the watercourse. The hose used to pump the water must be equipped with a strainer to prevent fish from being sucked in.

In addition to the conditions provided for in the third paragraph applicable to all culverts with an arch, a wooden culvert must also meet the conditions provided for in Schedule 11 during its construction, improvement or repair.

19

Objective

- To ensure the lifespan of a road, bridge or culvert

Explanations

A wooden culvert is a culvert with a wooden arch. The provisions of the third, fourth and fifth paragraphs of this section (from the fifth to the twentieth flag) concerning culverts with an arch therefore also apply to wooden culverts. In addition, this type of culvert must meet the conditions provided for in Schedule 11.

This section does not apply to a person who, in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1), was authorized by the Minister to build a bridge or a culvert with an arch meeting other conditions or to a person who has obtained such an authorization under a forestry permit or by a contract or an agreement entered into under the Act.

20

Objective

- To protect forest resources during specific road, bridge or culvert construction or improvement work

Explanations

A person authorized by the Minister in accordance with section 41 of the Sustainable Forest Development Act (chapter A-18.1) may construct a bridge or culvert that meets conditions other than those indicated in this section. The Minister may grant authorization and specify the conditions that must be met when carrying out the work.

Additional information

A person wishing to obtain authorization for this must apply to the regional office of the Ministère des Forêts, de la Faune et des Parcs by completing the form provided for that purpose. The application must describe the situation that justifies completion of the work in accordance with standards different from those enacted in the Regulation. It must also propose replacement measures that will be implemented to achieve the objectives of the regulatory standards from which a departure is requested. Where the proposed replacement standards fall within the approval framework, authorization may be granted along with conditions that must be met when carrying out the work.

Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§5. Special provisions applicable to bridges or culverts with an arch

Section 109

Every person authorized to build or improve a bridge must, in addition to the conditions concerning bridges provided for in section 108, meet the conditions relating to bridges provided for in Schedule 12. The foregoing also applies to a person who repairs a bridge.

1

Objectives

- To ensure the lifespan of a road, bridge or culvert
- To ensure the safety of forest road users

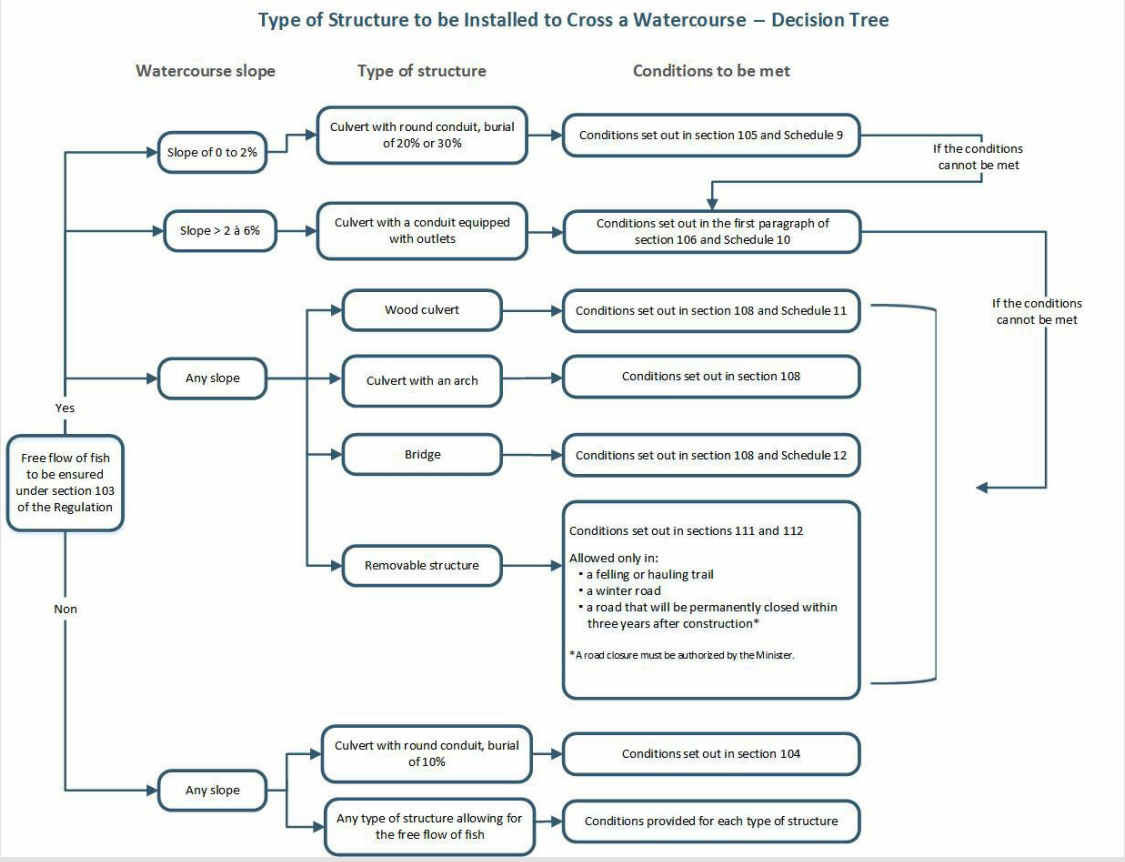
Explanations

A person who builds, improves or repairs a bridge must comply with the conditions applicable to bridges that are specified in Schedule 12, in addition to those set out in section 108.

It should be noted that in some situations, the conditions specified in Schedule 12 may apply only to the elements of the bridge being repaired or improved. The person responsible for the work must agree on this with the representatives of the Ministère des Forêts, de la Faune et des Parcs, and must provide plans and specifications for the proposed work, along with an inspection and evaluation report for the bridge produced within the last year.

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§6. Special provisions applicable to removable structures and rudimentary structures

Section 110

The installation of a removable structure is allowed exclusively in a felling or hauling trail, in a winter road or in a road that is intended to be used and closed permanently less than 3 years after its construction.

The structure must be installed so as to prevent the contact of the motorized vehicle with the watercourse while ensuring the free flow of the water and of the fish where the free flow of fish must be ensured by reason of the absence of a situation described in section 103.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid disturbing the bed of a lake or watercourse
- To ensure the free flow of water
- To ensure the free flow of fish
- To avoid contaminating the forest
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

Citizens, companies or organizations wishing to obtain the (in French only) closure of a road on land in the domain of the State may request either temporary or permanent closure.

The procedure and form can be found in the (in French only) guide and form for applications for closure of a multi-purpose road

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Chapter V – Roads, sandpits and forest infrastructures
Division III - Bridge, culverts, removable structures and rudimentary structures
§6. Special provisions applicable to removable structures and rudimentary structures

Section 111

The installation of a removable structure whose supports are located outside the upper limit of a bank is allowed all year long. However, that type of structure must not be in contact with the watercourse.

1

Objectives

- To avoid disturbing the bed of a lake or watercourse
- To ensure the free flow of water
- To ensure the free flow of fish

Additional information

Removable structures must be stabilized immediately during the construction, improvement or repair of a road crossing a watercourse, so as to avoid all risk of erosion in the future (see section 86).

The risk of erosion may be reduced by carrying out the different phases of construction, improvement or repair work and stabilization as part of an ongoing sequence. The granular materials used and the soils exposed to erosion must therefore be stabilized as the work is being carried out.

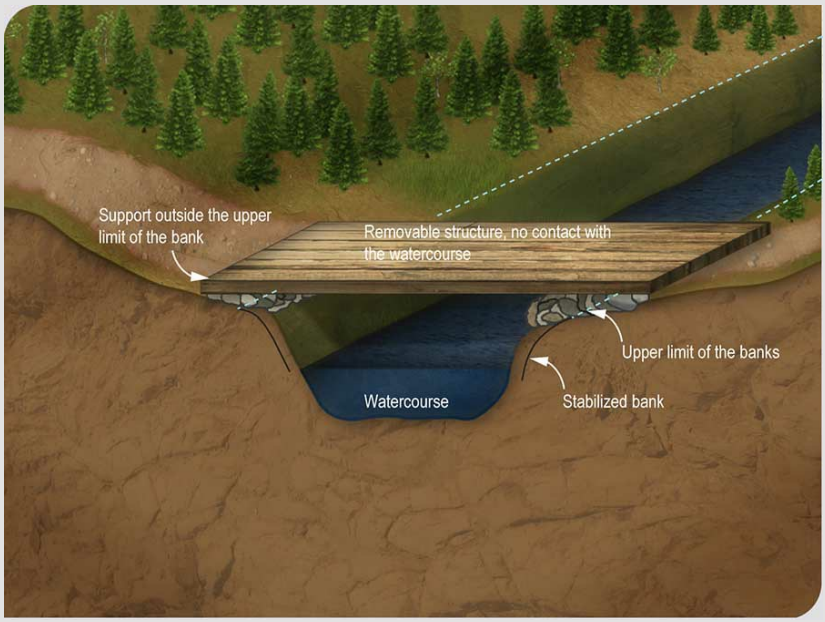


Figure 111A Supports for a removable structure outside the upper limit of the banks

From 15 December to 31 March, the following types of removable structures may also be installed:

1. a structure composed of 1 or more conduits at least 600 mm in diameter installed on the bed of a watercourse and whose fill is constituted of tree trunks or snow and covered if needed with a geotextile membrane and granular materials;
2. a structure composed of compacted snow or frozen water, covered if needed by a geotextile membrane and granular materials, in particular where there is a risk of carrying sediments into the watercourse;
3. an ice bridge, that is a structure composed only of frozen water and reinforced if needed by log mats that are interconnected.

Any type of removable structure other than those described in the second paragraph is prohibited from 15 December to 31 March.

2

Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

Additional information

Considering the varying climatic realities that can change from one year to another and from one region to another, any person who installs a removable structure may agree, with the management unit in charge, on a different period than the one from 15 December to 31 March to install and remove removable structures.

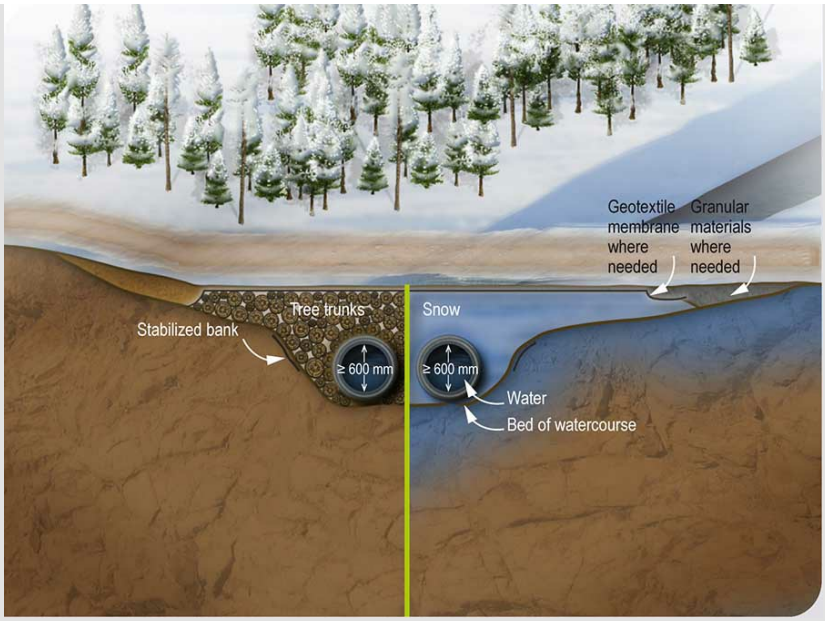


Figure 111B Removable structure composed of one or more conduits of at least 600 mm

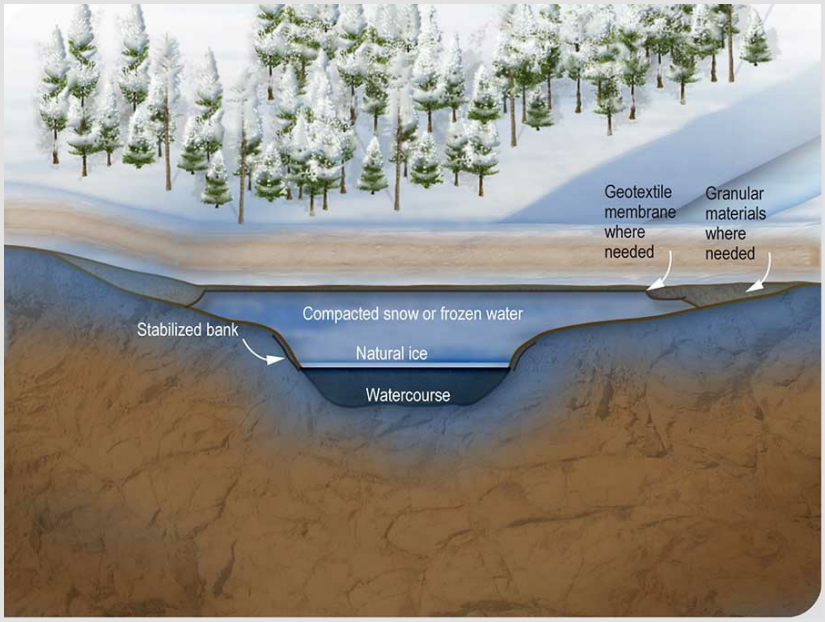


Figure 111C Removable structure composed of compacted snow or frozen water

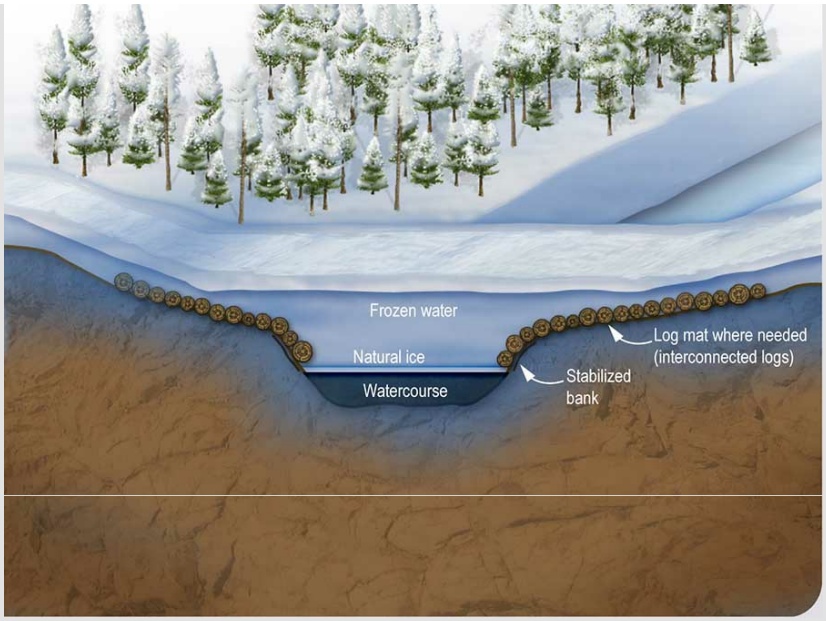


Figure 111D Ice bridge

Where a removable structure is installed from 15 December to 31 March, the banks must be stabilized over the whole width of the trail regardless of the type of removable structure installed. The removable structure installed must be appropriate for the crossing site in order to minimize the disruptions of the bed of the watercourse when it is used and removed.

3

Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

4

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid disturbing the bed of a lake or watercourse

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §6. Special provisions applicable to removable structures and rudimentary structures

Section 112

Removable structures whose supports are located outside the upper limit of the bank must be removed from the watercourse not later than 6 months after their installation in felling or hauling trails or not later than 3 years after their installation in a winter road or a road that will be closed permanently. The types of removable structures described in the second paragraph of section 111 must be removed from the watercourse at the end of their use, not later than 31 March following their installation or before spring freshet if it occurs before that date, so as to prevent the carrying of sediments into the watercourse and the creation of an ice jam.

1

Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To ensure the free flow of water

Additional information

The types of structures referred to in the second paragraph of section 111 are as follows:

1. a structure composed of one or more conduits at least 600 mm in diameter installed on the bed of a watercourse and whose fill is composed of tree trunks or snow and covered if needed with a geotextile membrane and granular materials;
2. a structure composed of compacted snow or frozen water, covered if needed by a geotextile membrane and granular materials, in particular where there is a risk of carrying sediments into the watercourse;
3. an ice bridge, that is a structure composed only of frozen water and reinforced if needed by log mats that are interconnected.

Considering the varying climatic realities that can change from one year to another and from one region to another, any person who installs a removable structure may agree, with the management unit in charge, on a different period than the one from 15 December to 31 March to install and remove removable structures.

Where log mats that are interconnected were used to stabilize the banks, they must be stable and left in place. The granular materials used for the roadway surface near the removable structures that have been removed must be recovered over a distance of at least 20 m, measured from the upper limit of the bank and they must be deposited further than that distance.

2

Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

3

Objective

- To avoid carrying sediment into an aquatic, wetland or riparian environment

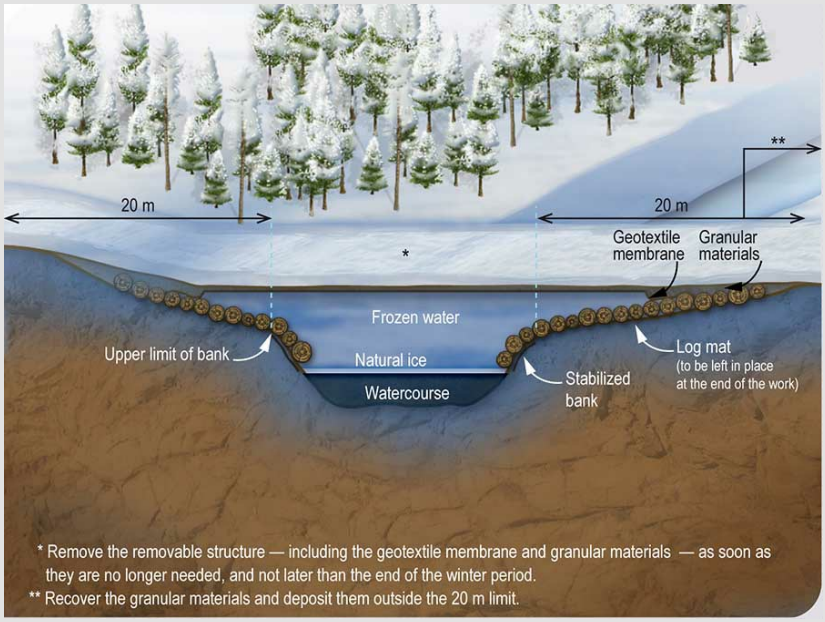


Figure 112 Timeframe for removing any of the removable structures described in the second paragraph of section 111

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §6. Special provisions applicable to removable structures and rudimentary structures

Section 113

The installation of rudimentary or light structures to cross a watercourse, such as foot bridges or small structures made of logs, is only allowed in a trail that is not intended for motorized all-terrain vehicles, in particular in a cross-country ski trail, a bike trail and a hiking trail.

1

Objective

- To reconcile the various activities that take place in the forest

The structure must allow the free flow of water and its supports must be outside the banks.

2

Objectives

- To ensure the free flow of water
- To avoid disturbing the bed of a lake or watercourse

Chapter V – Roads, sandpits and forest infrastructures Division III - Bridge, culverts, removable structures and rudimentary structures §7. Stabilization of the bed, banks and riparian zone of a watercourse

Section 114

The bed, banks, riparian ecotone of a watercourse and the strip of woodland and land strip referred to in section 27 or 34 that have been disrupted during the construction, improvement, repair or removal of a bridge or a culvert or during the installation or removal of a removable structure must be stabilized immediately. The soil stabilization techniques used must allow the rapid reconstitution of the vegetal cover of the affected basal areas.



Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To promote natural regeneration

Additional information

A bed, bank or riparian ecotone of a watercourse or a strip of woodland or land strip referred to in section 27 or 34 must be stabilized immediately when disrupted. The risk of erosion may be reduced by carrying out the different phases of construction, improvement or repair work and stabilization as part of an ongoing sequence. The granular materials used and the soils exposed to erosion must therefore be stabilized as the work is being carried out. The strip of woodland referred to in section 27 is at least 20 m wide and is located alongside an open peat bog with a pond, a swamp, a riparian shrub marsh, a lake or a permanent watercourse. The strip of woodland is measured from the boundary separating the stand from the environment to be protected or, where there is a riparian ecotone, from the limit of the ecotone located furthest from the environment to be protected. The land strip referred to in section 34 is at least 6 m wide and is located alongside an open peat bog with a pond or an intermittent watercourse. The width of at least 6 m is measured from the boundary of the peat bog or the upper limit of the banks of the intermittent watercourse.

Materials with a sufficient gauge and stable enough to be flood resistant must be used when stabilizing the bed and banks of a watercourse.



Objectives

- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To avoid scouring of a watercourse
- To ensure the lifespan of a road, bridge or culvert

Additional information

The materials used to stabilize the watercourse bed must be able to support the water flow speed so that they are not eroded and carried away by the current. A variety of materials similar to those that make up the natural bed of the watercourse should be used (rounded materials with a variety of particle sizes), and they should be arranged so as to overlap one another. This ensures that the reconstituted bed is watertight, and that water cannot filter through the materials. The addition of large stones (roughly 1.5 times the size of the largest stones in the natural watercourse), scattered across the bed, will improve stability and prevent scouring. The presence of large stones also helps to create a variety of flow conditions and also to create shelter for fish. When the stones are installed, it is important to ensure that they are nested and anchored in the underlying substrate, by partially burying them.

Chapter V – Roads, sandpits and forest infrastructures
Division IV - Road signs
§1. Provisions applicable to roads

Section 115

Every person authorized to build or improve a road must, at the end of the work, post the following elements: mandatory stops, dangerous curves and intersections, steep slopes, level crossings, rock fall areas; truck crossings, unsawn timber transportation areas, narrow passages and restricted visibility areas, the number of the road, kilometre markers, the maximum speed on main roads and all situations potentially dangerous for the users of the road. The foregoing also applies to a person who repairs a road.

1

Objective

- To ensure the safety of forest road users

Every person authorized to close a road must, at the intersection of the road crossing the closed road, signal the closure of the road, the presence of gates or obstacles, if applicable, and the removal of bridges or culverts where the closure of the road is permanent.

2

Objective

- To ensure the safety of forest road users

Additional information

Citizens, companies or organizations wishing to obtain the closure of a road on land in the domain of the State (in French only) may request either temporary or permanent closure.

The procedure and form can be found in the guide and form for applications for closure of a multi-purpose road (in French only).

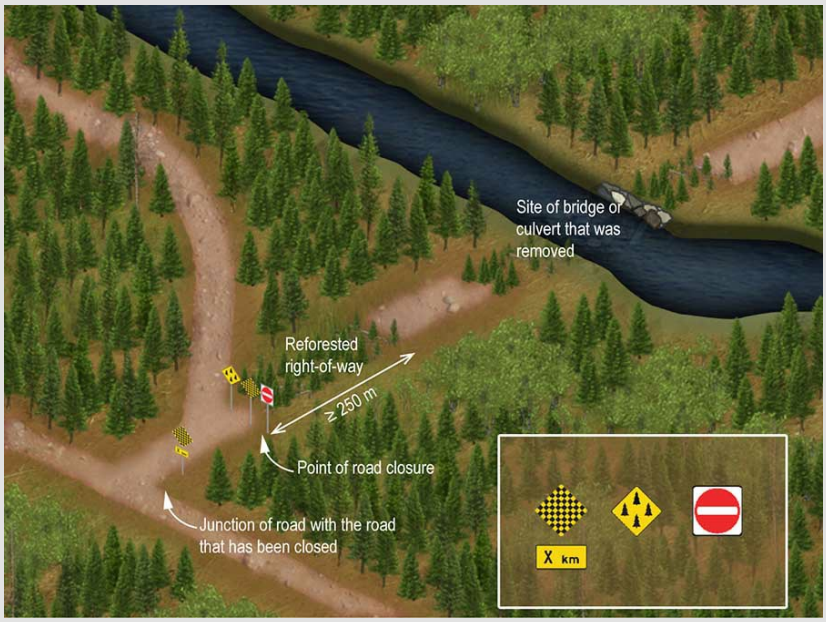


Figure 115A Road sign indicating permanent closure of a road

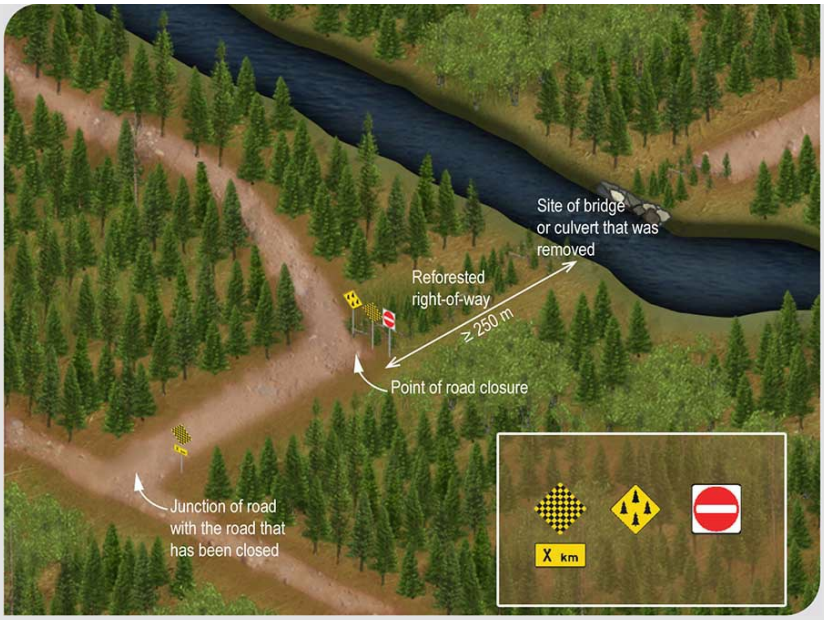


Figure 115B Road sign indicating permanent closure of a road



Figure 115C Road sign indicating permanent closure of a road

Road signs must comply with, as the case may be, the standards in chapter 2 or 3 of Volume V of the Signalisation routière (in French only) manual determined and set out by the Minister of Transport under the second paragraph of section 289 of the Highway Safety Code (chapter C-24.2) or the standards of the Guide de signalisation routière sur les terres du domaine de l'État (in French only), published by the Minister responsible for the administration of the Sustainable Forest Development Act (chapter A-18.1).

3

Objectives

- To ensure the safety of forest road users
- To ensure that road signs are consistent

All road and traffic signs must be installed with care, facing vehicles, so as to be perfectly visible even at night. No obstacle such as vegetation or a snow bank must reduce the visibility of the signs.

4

Objective

- To ensure the safety of forest road users

Chapter V – Roads, sandpits and forest infrastructures
Division IV - Road signs
§1. Provisions applicable to roads

Section 116

Every person who carries out forest development activities that regularly uses a road must adequately maintain the road and traffic signs in order to ensure the safety of users and the protection of road infrastructures. The foregoing also applies to the manager of an outfitting operation, of a controlled zone or of a wildlife sanctuary within the meaning of sections 86, 104 and 111 of the Act respecting the conservation and development of wildlife (chapter C-61.1) or of an enterprise that carries out mining activities or public utility works.

1

Objective

- To ensure the safety of forest road users

Additional information

Forest road users must be guided clearly and consistently when travelling in the forest. To ensure that this is done, the road signs must be routinely inspected to check, among other things, that the road sign devices are clean, visible and in good condition. Devices that have been damaged or have deteriorated must be replaced as quickly as possible.

As stated in this section, the following persons or organizations that regularly use the road are responsible for maintaining the road signs.

- Every person carrying out a forest development activity.
- Every manager of an outfitting operation, a controlled zone or a wildlife sanctuary within the meaning of sections 86, 104 and 111 of the Act respecting the conservation and development of wildlife (chapter C-61.1).
- Every enterprise carrying on mining activities or public utility works.

The notion of frequency of use is applied to determine whether or not a road is used regularly. Use is considered to be regular when the person or organization uses the road crossing a watercourse a certain number of times within a given period.

Below are three examples of individuals or organizations that are responsible for maintaining the road signs on the roads they use for the full duration of their activities.

- A forestry company harvesting or carrying out other forest development activities such as non-commercial sylvicultural work.
- A manager of a controlled zone, in respect of the stretches of road that provide users and visitors with access to the wildlife area in question, or to a campsite or lake with a boat launching ramp.
- An enterprise that carries out public utility work, including repair and maintenance of energy transmission lines.

Chapter V – Roads, sandpits and forest infrastructures
Division IV - Road signs
§2. Provisions applicable to bridges

Section 117

Every person authorized to build or improve a bridge must, at the end of the work, post at each end of the bridge the following elements: hazard markers signalling the limits of the bridge deck, the indication of a narrow crossing, the maximum load the bridge may support based on the types of vehicles and the speed allowed for crossing the bridge. The foregoing also applies to a person who repairs a bridge.

1

Objective

- To ensure the safety of forest road users

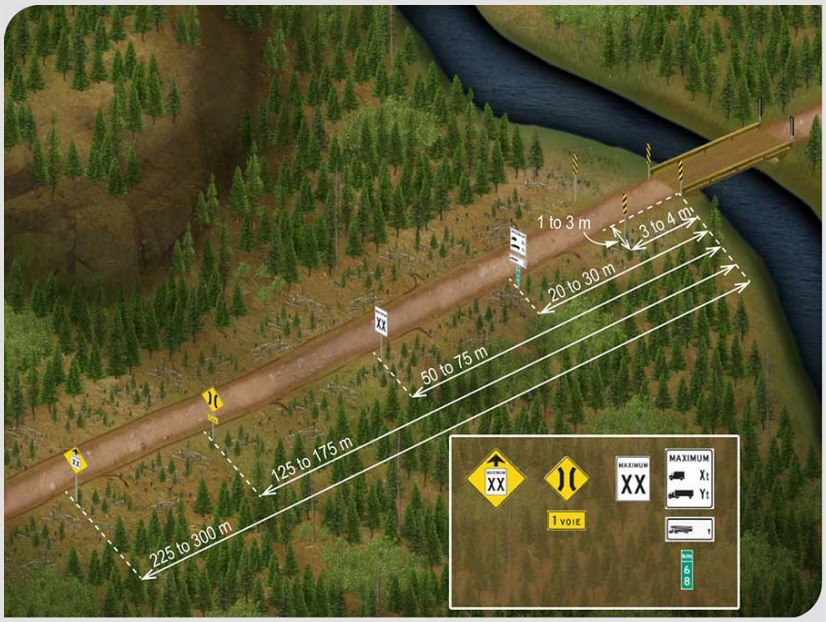


Figure 117 Road signs near a bridge

All signs and tab signs must be installed with care, facing the vehicles, so as to be perfectly visible even at night. No obstacle such as vegetation or a snow bank must reduce the visibility of the signs or tab signs. They must comply with the standards in the (in French only) Guide de signalisation routière sur les terres du domaine de l'État, published by the Minister responsible for the administration of the Sustainable Forest Development Act
(chapter A-18.1).

2

Objective

- To ensure the safety of forest road users

3

Objectives

- To ensure the safety of forest road users
- To ensure that road signs are consistent

A vehicle whose total loaded mass exceeds the mass posted on site pursuant to the first paragraph may not travel on the bridge of a road.

4

Objectives

- To ensure the lifespan of a road, bridge or culvert

- To ensure the safety of forest road users

Additional information

Request to travel over a bridge with a very heavy load

The owner of a truck who wishes to travel over a bridge with a load in excess of that permitted, or with a truck whose configuration is different from the authorized configuration, must obtain a permit for that purpose. The procedure for obtaining the permit is described (in French only) in the application procedure: permit for very heavy loads

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Chapter V – Roads, sandpits and forest infrastructures
Division V - Sandpits
§1. Scope

Section 118

This Division applies to sandpits used for the construction, improvement, repair, maintenance or closure of forest roads.

1

Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State

Additional information

Division V on sandpits applies to all forest roads located in forests in the domain of the State, including roads whose management falls under the authority of the Minister responsible for the Act respecting roads (chapter V-9) that are classified as autoroutes or national roads, regional roads or collector roads as shown on (in French only) Québec's road network classification map .

Chapter V – Roads, sandpits and forest infrastructures Division V - Sandpits §2. Sandpit operating area and organic matter storage area

Section 119

A sandpit operating area and the storage area for the organic matter that covered the sandpit must be at more than 30 m from an open peat bog, a swamp, a riparian shrub marsh, a lake or a watercourse.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve organic matter in order to recreate conditions conducive to regeneration

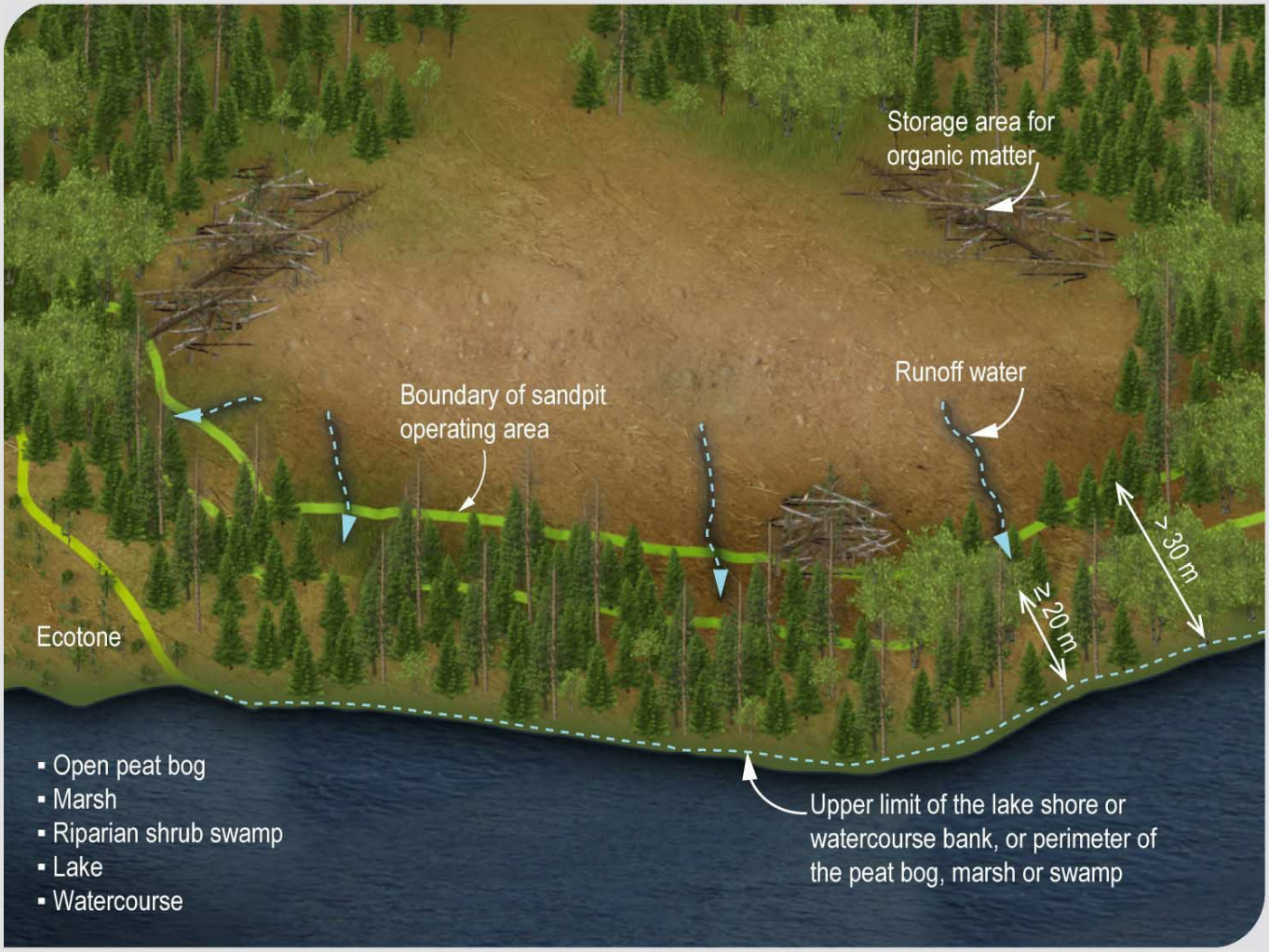


Figure 119 Distance between a sandpit and a wetland or aquatic environment

Runoff from a sandpit operating area or the storage area for the organic matter that covered the sandpit must be diverted to a vegetation area located at a distance of more than 20 m from an open peat bog, a swamp, a riparian shrub marsh, a lake or a watercourse. The distances referred to in this section are measured from the perimeter of the peat bog, marsh or swamp or from the upper limit of the shore of the lake or the bank of the watercourse. In the presence of a riparian ecotone, the measurement is made from the limit of the ecotone farthest from the environment to be protected.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

Chapter V – Roads, sandpits and forest infrastructures Division V - Sandpits §2. Sandpit operating area and organic matter storage area

Section 120

The holder of a lease to mine surface mineral substances referred to in section 140 of the Mining Act (chapter M-13.1) must, before the expiry of the lease, restore the site to allow its integration into the environment and, for that purpose, clear the surface of the site of machine parts, waste, debris and other litter, reduce the slopes to a ratio of 1 (V) in 1 (H) or to a lesser ratio and respread the organic matter that has been piled up since its opening. The site must be left in conditions conducive to the rapid establishment of the natural regeneration.

1

Objectives

- To avoid contaminating the forest
- To ensure that the site is restored to its former condition

Additional information

The site must be left in a condition conducive to the rapid establishment of natural regeneration. Consequently, in some cases, the soil must be refurbished by the addition of organic matter and topsoil.

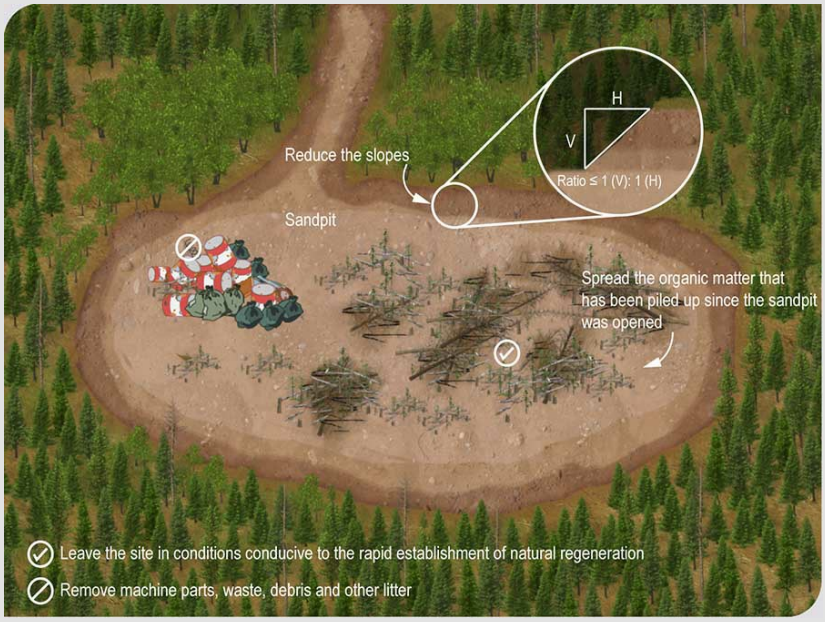


Figure 120 Restoration of a sandpit before expiry of the lease to mine surface mineral substances

Chapter V – Roads, sandpits and forest infrastructures Division V - Sandpits §2. Sandpit operating area and organic matter storage area

Section 121

A sandpit may not be opened or operated within 35 m from a numbered public road appearing on the official map of the Ministère des Transports, within 150 m from a dwelling on public or private land, within 150 m from a developed campground with at least 8 campsites or within 1,000 m from a municipal water intake.

1

Objectives

- To preserve the integrity of a particular place or territory
- To contribute to the quality of the experience in the forest

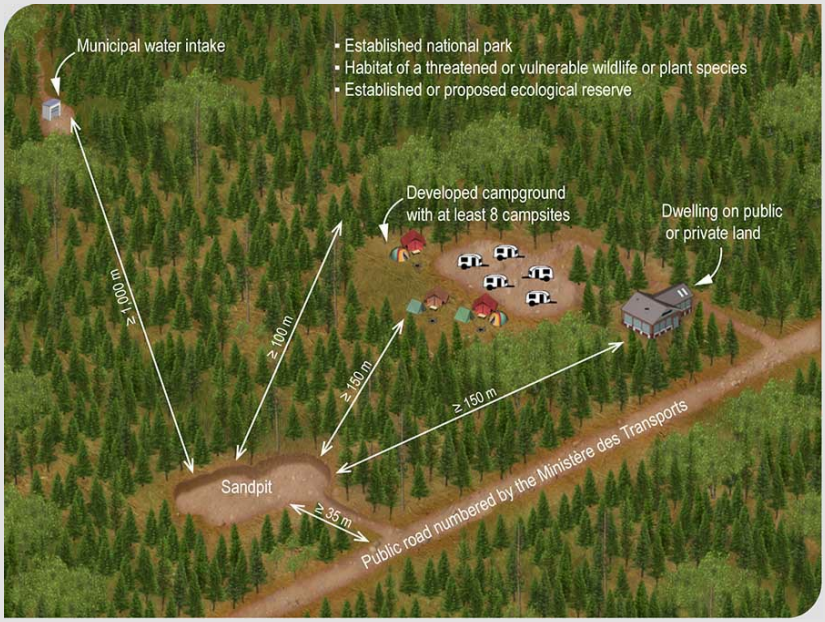


Figure 121 Distance between a sandpit and different places or territories

Chapter V – Roads, sandpits and forest infrastructures Division V - Sandpits §2. Sandpit operating area and organic matter storage area

Section 122

A minimum distance of 100 m must be kept between a sandpit operating area and the boundaries of an ecological reserve established under the Natural Heritage Conservation Act (chapter C-61.01), a proposed ecological reserve referred to in that Act or a national park established under the Parks Act (chapter P-9). The distance must also be maintained between a sandpit operating area and the boundaries of the habitat of a threatened or vulnerable wildlife or plant species identified under the Act respecting the conservation and development of wildlife (chapter C-61.1) or the Act respecting threatened or vulnerable species (chapter E-12.01).

1

Objectives

- To preserve the integrity of a particular place or territory
- To contribute to the quality of the experience in the forest

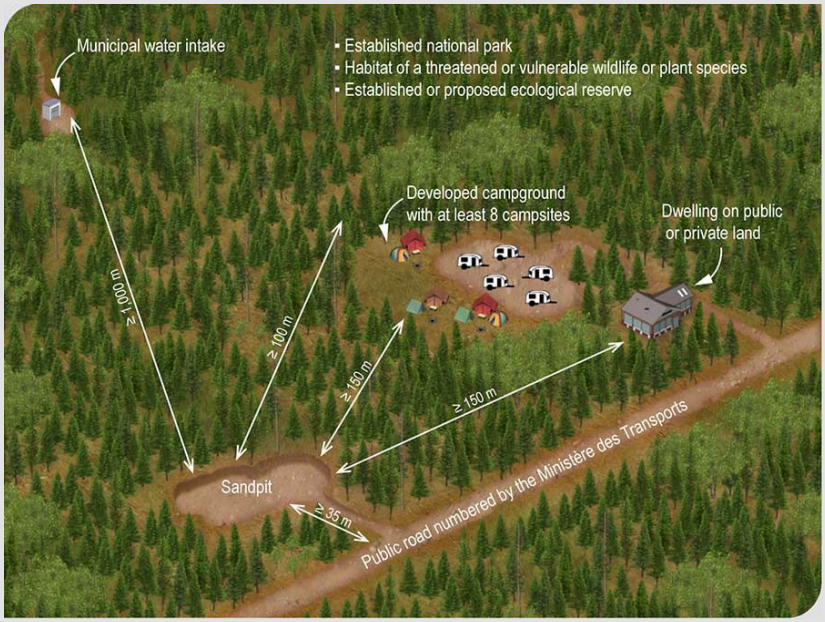


Figure 121 Distance between a sandpit and different places or territories

Chapter V – Roads, sandpits and forest infrastructures Division V - Sandpits §2. Sandpit operating area and organic matter storage area

Section 123

The bottom of the sandpit must be above the level of groundwater at all times.

1

Objective

- To avoid disturbing the water regime



Figure 123 Operation of a sandpit above the level of groundwater

Chapter V – Roads, sandpits and forest infrastructures
Division VI - Piling areas, forest camps and facilities used to operate a sugar bush
§1. Piling area

Section 124

The setting up of a piling area is prohibited on a 30-m strip located along a road corridor and in its right-of-way.

1

Objectives

- To contribute to the quality of the experience in the forest
- To ensure the safety of forest road users

Additional information

In some specific situations, notably due to the topography or low volumes, the setting up of a piling area in a 30-m strip along a road corridor may be warranted. In these situations, an agreement may be made with the management unit in charge to stockpile wood in the right-of-way of a road designated as a road corridor or in the 30-m strip along this corridor. However, the following conditions must be met:

- Work must be done over a limited period of time (from harvest to transportation)
- Work must be performed during periods of low usage
- Adequate and effective road signs must be in place and maintained throughout the duration of the work
- Agreement from the main users must be obtained
- Users must be notified of the potential danger by appropriate means (public notices, sign at the ZEC's gatehouse, etc.)

Any other conditions that address regional issues identified by the management unit in charge.

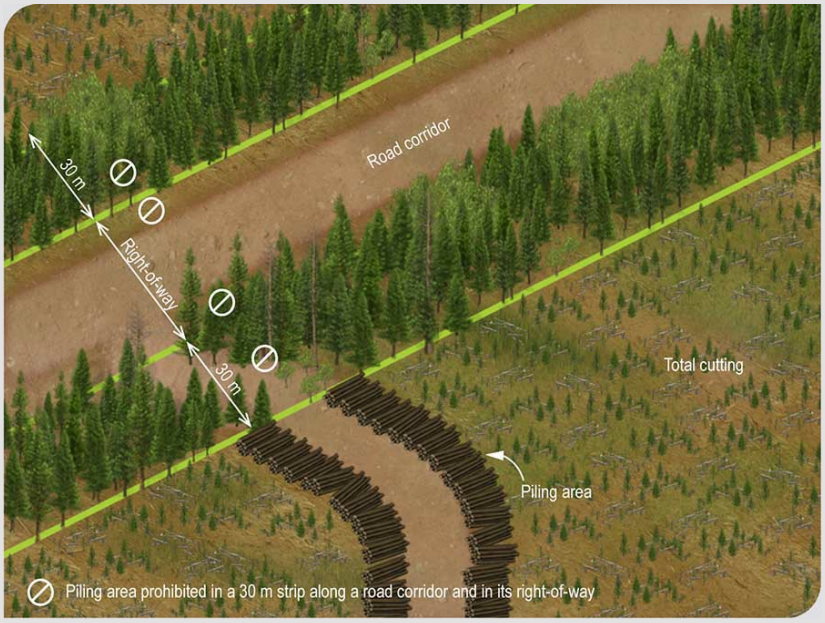


Figure 124A Distance between a piling area and a road corridor

The setting up of a piling area is also prohibited within 20 m of an open peat bog, a swamp, a riparian shrub marsh, a lake or a watercourse.

2

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment

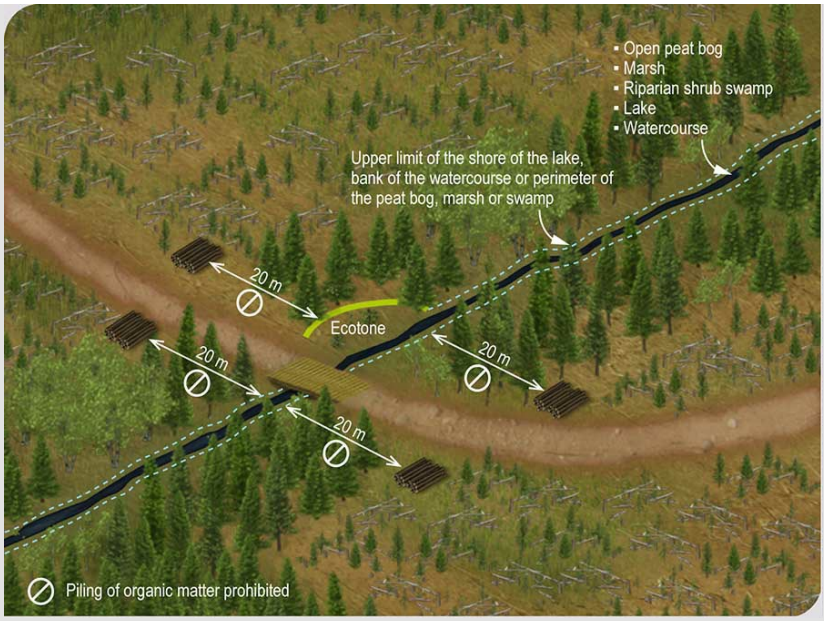


Figure 124B Distance between a piling area and a wetland or aquatic environment

The organic matter from the scraping of soil for the laying out of a piling area must be piled more than 20 m from an open peat bog, a swamp, a riparian shrub marsh, a lake or a watercourse for its reuse. Runoff from a piling area must be diverted to a vegetation area located more than 20 m from those environments.

3

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve organic matter in order to recreate conditions conducive to regeneration

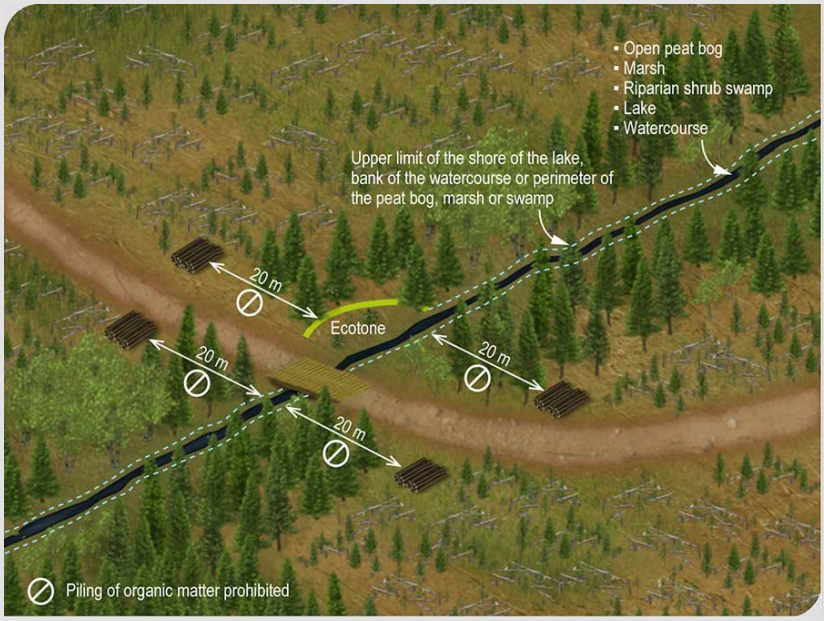


Figure 124B Distance between a piling area and a wetland or aquatic environment

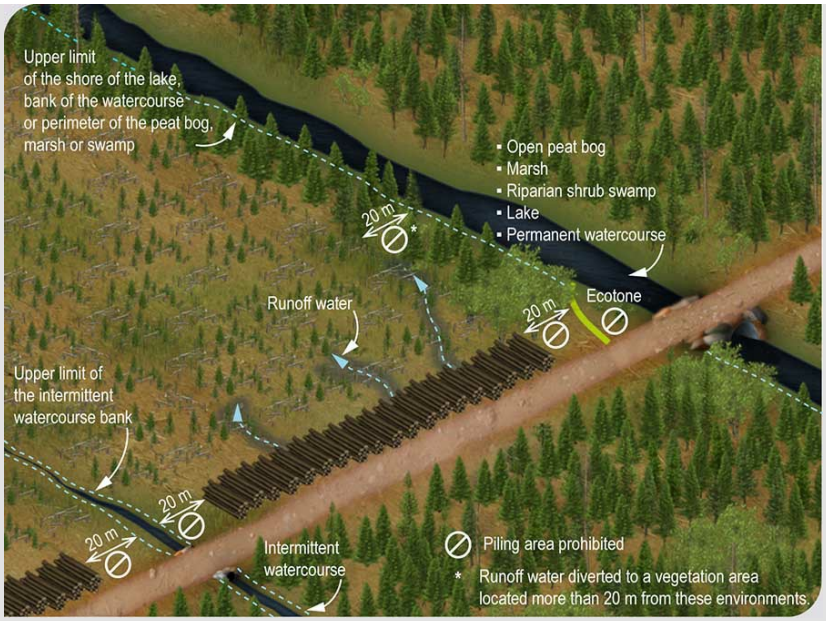


Figure 124C Diversion of runoff water from a piling area

The distance of 20 m referred to in the second and third paragraphs is measured from the perimeter of the peat bog, swamp or marsh or from the upper limit of the shore of the lake or bank of the watercourse. In the presence of a riparian ecotone, the measurement is made from the limit of the ecotone farthest from the environment to be protected.

4

Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State

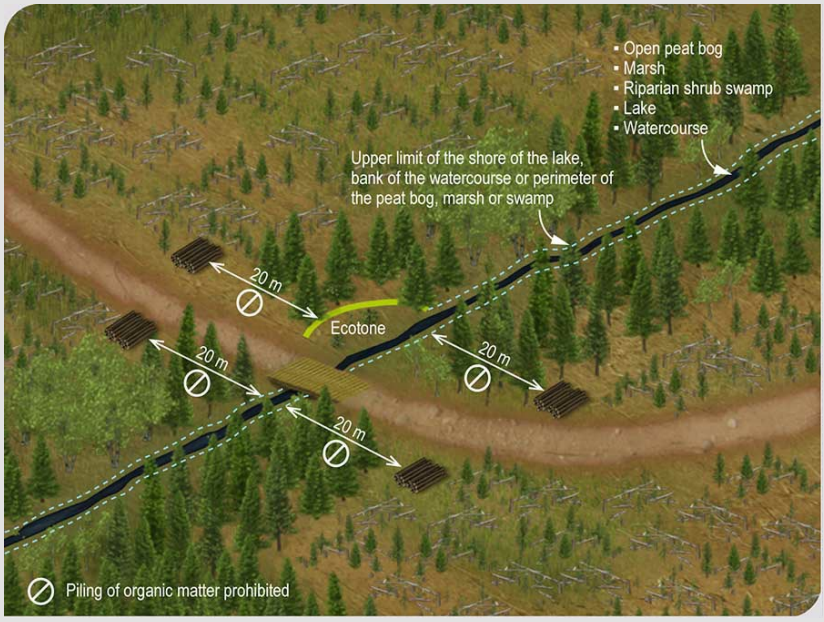


Figure 124B Distance between a piling area and a wetland or aquatic environment

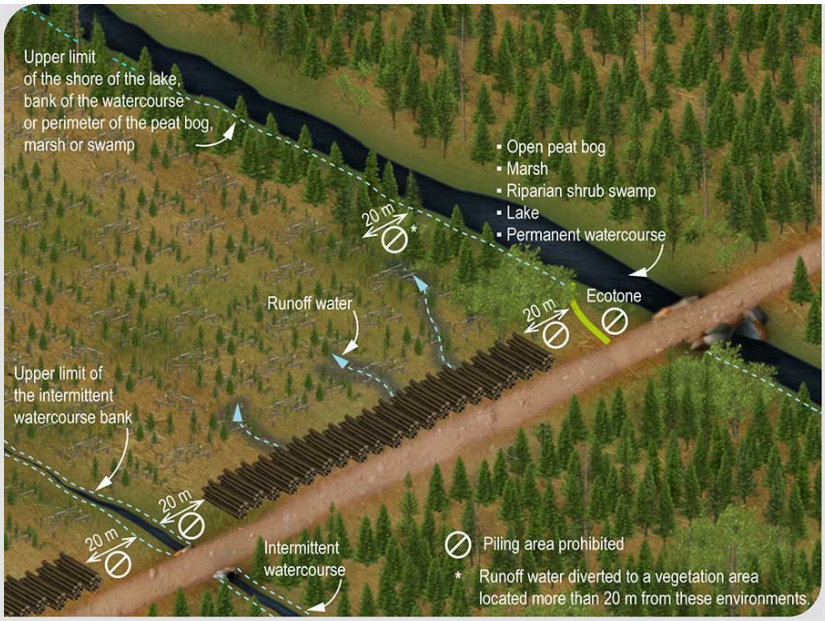


Figure 124C Diversion of runoff water from a piling area

Chapter V – Roads, sandpits and forest infrastructures Division VI - Piling areas, forest camps and facilities used to operate a sugar bush §1. Piling area

Section 125

In the case of a partial cutting or a harvesting passage by total cutting that maintains a forest cover equivalent to the cover of a partial cutting, the person carrying out the cutting must ensure that the total length of the piling areas set up on the side of a road does not exceed 25% of the length of the side of the road in front of the cutting area or 20% where the cutting area is within the limits of a white-tailed deer yard. The depth of the piling area may not exceed 30 m. It is measured from the foot of the embankment of the road bordering on it.

1

Objective

- To reduce loss of productive forest areas
- To promote natural regeneration
- To ensure the return to forestry production of the premises

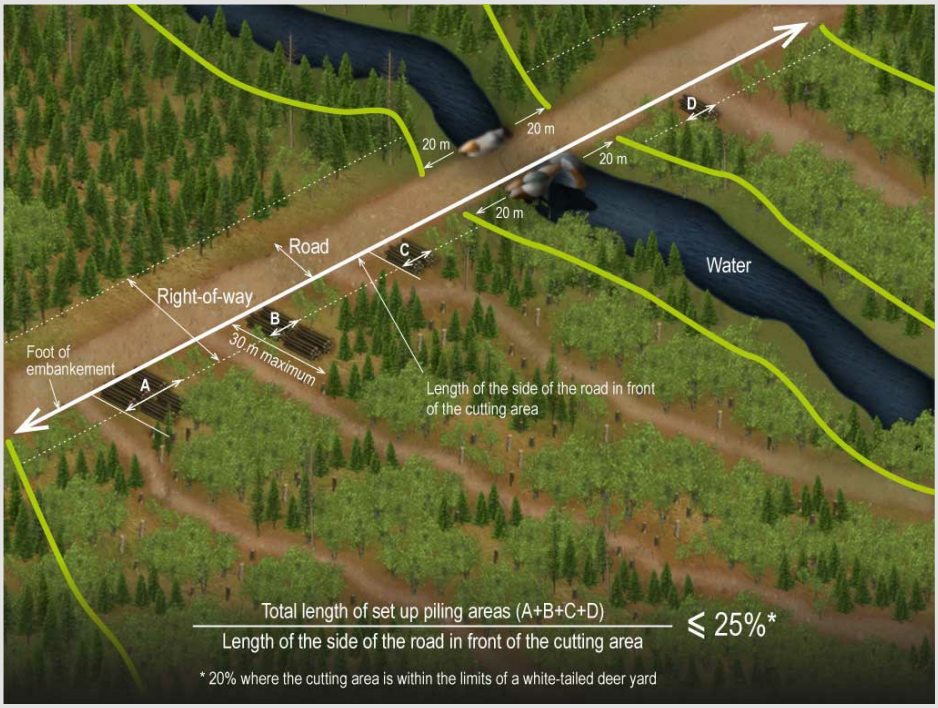


Figure 125 Limit on the size of piling areas along roads

Additional information

- This section marks the establishment of piling areas outside the right-of-way of a road facing a partial cutting section.
- Reuse of the previous piling areas or natural forest aisles should be encouraged when choosing the location of the piling areas.
- The length of the roadside facing the cut includes the area of riparian forest strip located in the cutting area.
- Logging and skidding trails are not part of the calculation of the piling area surface. The considered width of these trails is 5 m maximum.
- The management of piling areas can be done on the cumulation of the two sides of the path when partial cutting is carried out on both sides of the road.
- On an ad hoc basis, the harvest requirements are such that the permitted piling area is not sufficient. This is particularly the case when total cuts are made behind a partial cut adjacent to the road by which all the wood in these areas is unloaded and piled. In these cases, in order to avoid building road sections leading to the total cut, an agreement can be made with the management unit in charge to determine the permitted piling area.

Chapter V – Roads, sandpits and forest infrastructures
Division VI - Piling areas, forest camps and facilities used to operate a sugar bush
§1. Piling area

Section 126

In the case of a total cutting of whole trees, the person who carries out the cutting must aggregate logging residues in windrows over an area that does not exceed 30% of the total area of the piling area or spread the logging residues evenly over the entire cutting area so that the residues decompose quickly and do not affect the pre-established regeneration.

1

Objective

- To reduce loss of productive forest areas
- To promote natural regeneration
- To ensure that forest production is resumed on the site

Additional information

The method used to calculate the size of a piling area is shown in the fourth paragraph of this section. The total area of the piling area is calculated by multiplying the length of the piling area facing the road by the maximum depth of 30 m permitted by the Regulation. The entire zone of the cutting area facing the road is considered the length of the piling area.

Where logging residues are spread over the entire cutting area, they may be placed on felling or hauling trails to increase the ground's carrying capacity.

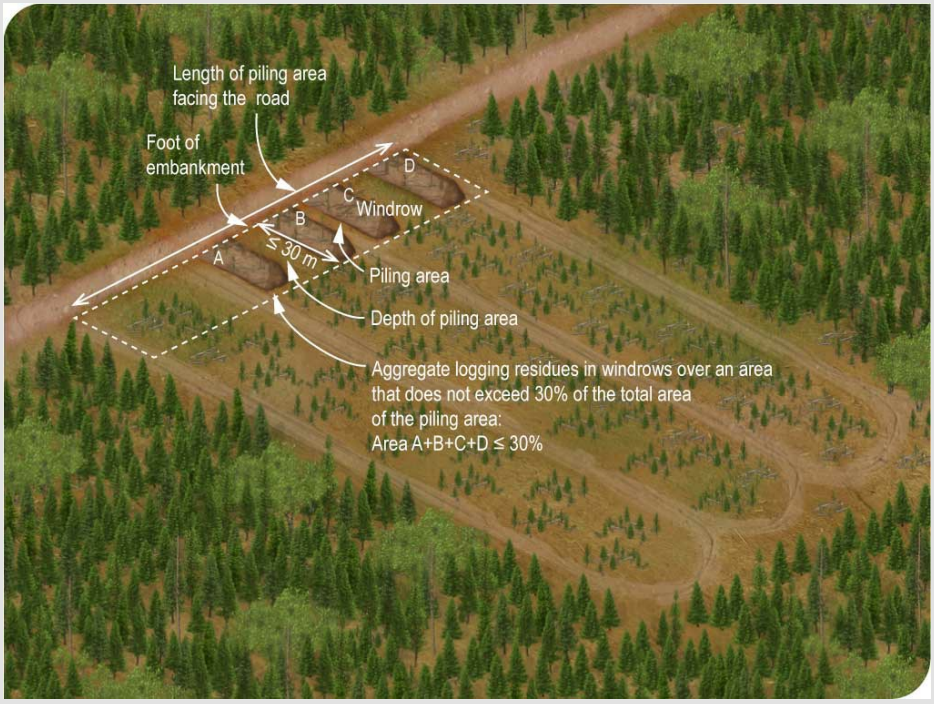


Figure 126 Windrowing or spreading of logging residues during total cutting of whole trees

Windrowing of logging residues in the piling area or the spreading of the logging residues over the cutting area must be carried out before 1 September following the harvest year. Where the recovery of forest biomass is authorized in the cutting area, windrowing of logging residues in the piling area or the spreading of the logging residues over the cutting area must be performed after the recovery.

2

Objective

- To obtain the operational flexibility required for certain forest development activities

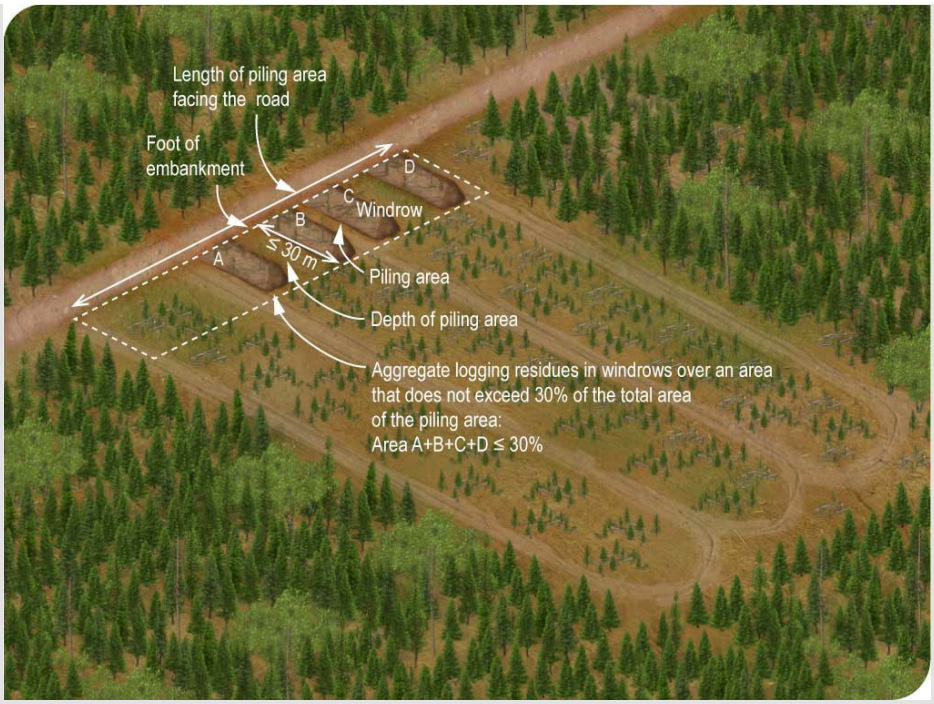


Figure 126 Windrowing or spreading of logging residues during total cutting of whole trees

Windrowing of logging residues in the piling area must not affect the visibility and the safety of the users of the road.

3

Objective

- To ensure the safety of forest road users

The total area of the piling area is calculated by multiplying the length of the piling area facing the road by its depth. The depth of the piling area, which may not exceed 30 m, is measured from the foot of the embankment of the road bordering on it.

4

Objective

- To reduce loss of productive forest areas

Explanations

The fourth paragraph of this section explains how to calculate the size of the piling area. The calculation is needed to determine the area over which windrowing of logging residues is permitted in the piling area. The area in question cannot be more than 30% of the total size of the piling area pursuant to the first paragraph.

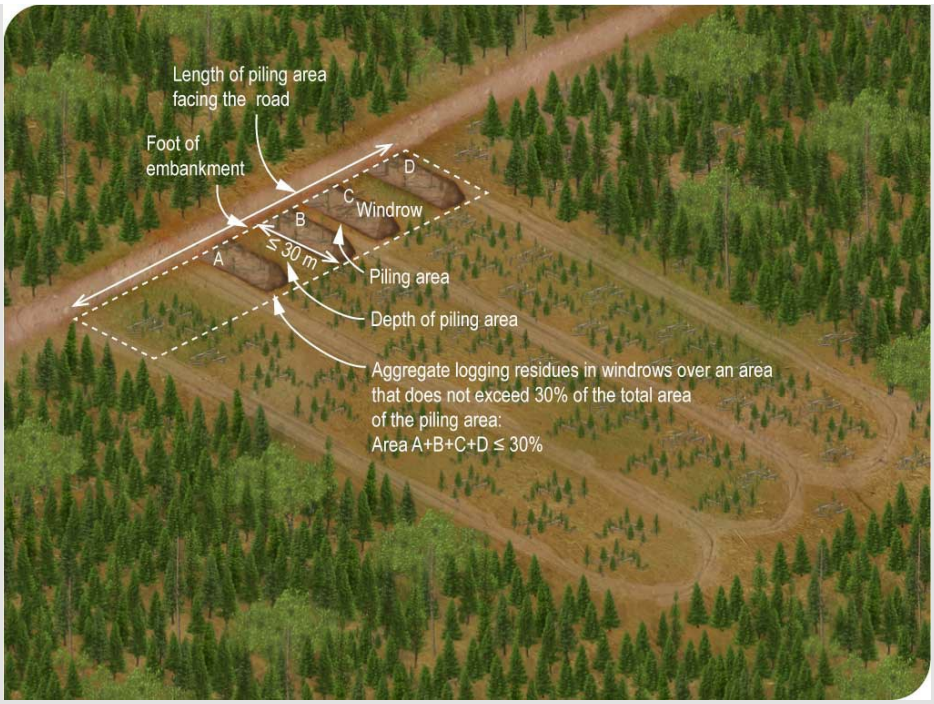


Figure 126 Windrowing or spreading of logging residues during total cutting of whole trees

Chapter V – Roads, sandpits and forest infrastructures Division VI - Piling areas, forest camps and facilities used to operate a sugar bush §1. Piling area

Section 127

A person who has carried out the timber cutting and has set up a piling area must, before 1 September following the harvest year, spread over the piling area the organic matter piled during the laying out and leave the site in conditions conducive to the rapid establishment of the natural regeneration. This section does not apply to a piling area referred to in section 125 where it is planned that the area will be used again within a period of 25 years or less.



Objectives

- To ensure that forest production is resumed on the site
- To promote natural regeneration

Additional information

The site must be left in a condition conducive to the rapid establishment of natural regeneration. Consequently, in some cases, the soil must be refurbished by the addition of organic matter and topsoil. The piling area referred to in section 125 is a piling area created along a road during partial cutting or total cutting with maintenance of a forest canopy equal to that left by partial cutting.

Chapter V – Roads, sandpits and forest infrastructures Division VI - Piling areas, forest camps and facilities used to operate a sugar bush §2. Forest camps

Section 128

A forest camp area may not be set up within 30 m of an open peat bog, a swamp, a riparian shrub marsh, a lake or a watercourse. Organic matter from the setting up of a forest camp area must be piled more than 20 m from those environments for its reuse. The distances are measured from the perimeter of the peat bog, the swamp or the marsh or from the upper limit of the shore of the lake or the bank of the watercourse. In the presence of a riparian ecotone, the measurement is made from the limit of the ecotone farthest from the environment to be protected.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid carrying sediment into an aquatic, wetland or riparian environment
- To preserve organic matter in order to recreate conditions conducive to regeneration

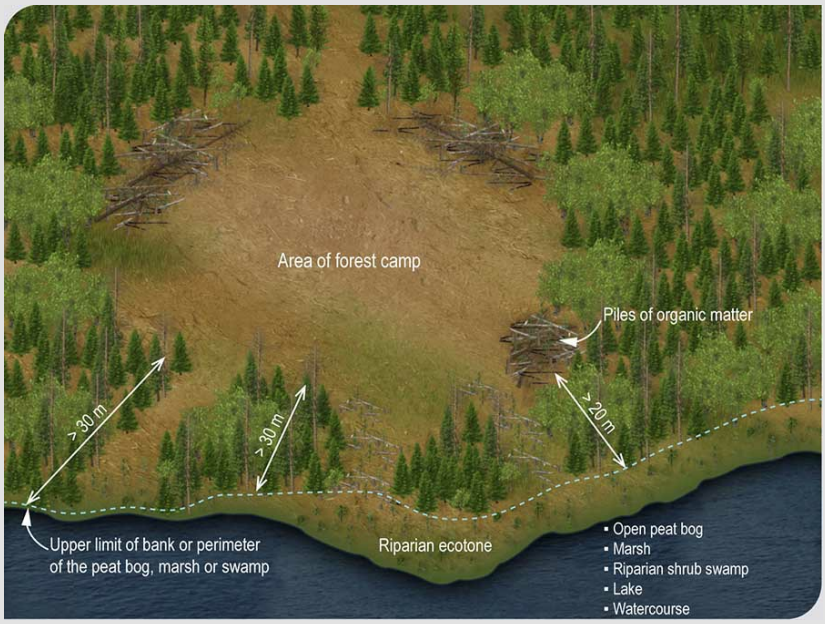


Figure 128 Distance between the area of a forest camp and a wetland or aquatic environment

Chapter V – Roads, sandpits and forest infrastructures Division VI - Piling areas, forest camps and facilities used to operate a sugar bush §2. Forest camps

Section 129

The area of a forest camp must be cleaned at the end of its use by removing all the installations, equipment, debris and waste found there. The organic matter piled must also be spread over the area. The site must be left in conditions conducive to the rapid establishment of the natural regeneration.

1

Objectives

- To promote natural regeneration
- To ensure that forest production is resumed on the site
- To avoid contaminating the forest
- To reduce loss of productive forest areas

Additional information

The site must be left in a condition conducive to the rapid establishment of natural regeneration. Consequently, in some cases, the soil must be refurbished by the addition of organic matter and topsoil.

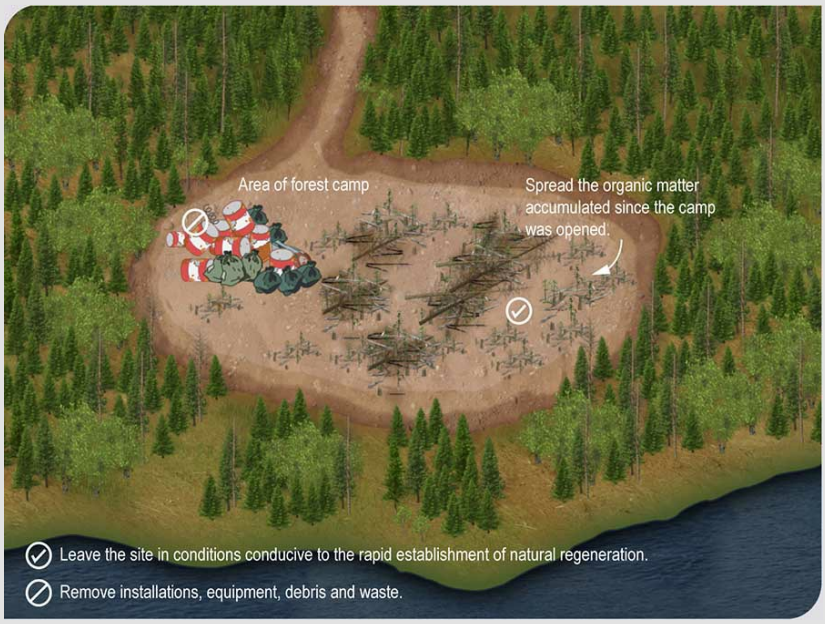


Figure 129 Restoration of the area of a forest camp after use

Chapter V – Roads, sandpits and forest infrastructures Division VI - Piling areas, forest camps and facilities used to operate a sugar bush §3. Facilities used to operate a sugar bush

Section 130

The installation of a building and the motorized equipment necessary for the cultivation and operation of a sugar bush is prohibited within 30 m from an open peat bog, a swamp, a riparian shrub marsh, a lake or a watercourse. The distance is measured from the perimeter of the peat bog, swamp or marsh or the upper limit of the shore of the lake or the bank of the watercourse. In the presence of a riparian ecotone, the measurement is made from the limit of the ecotone farthest from the environment to be protected.

1

Objectives

- To preserve the integrity of an aquatic, wetland or riparian environment
- To avoid contaminating the forest

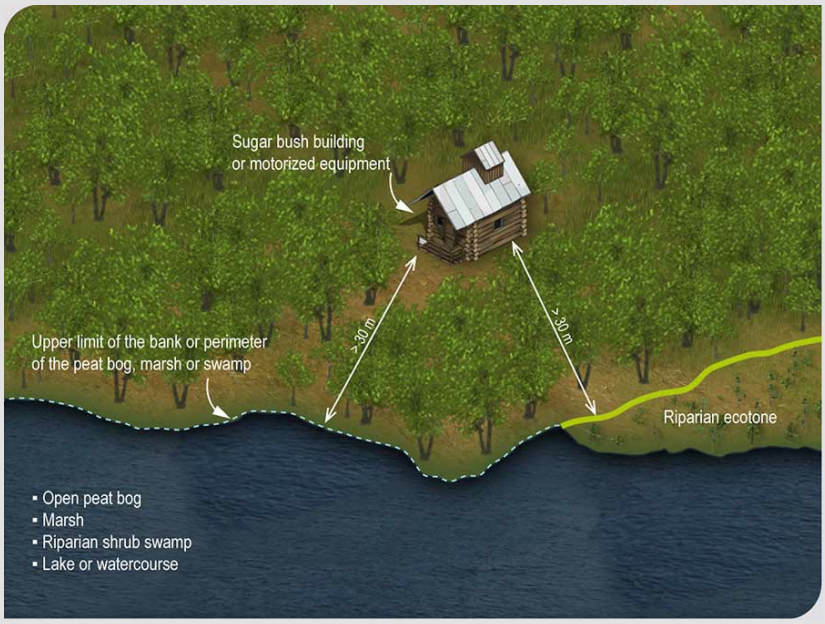


Figure 130 Distance between a sugar bush building or motorized equipment necessary for the cultivation and operation of a sugar bush, and a wetland or aquatic environment

Chapter VI - Allocation of forest operations and residual forest

Division I - General provisions applicable to the bioclimatic domains of the sugar bush, the balsam fir forest and the spruce-moss forest

- Section 131. Productive forest area in residual forest
- Section 132. Deforestation of a road giving access to another territorial reference unit

Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest

§1. Total cutting

- Section 133. Size of total cutting areas in the maple bioclimatic domain
- Section 134. Size of total cutting areas in the balsam fir bioclimatic domain
- Section 135. Limits on the application of sections 133 and 134

§2. Total cutting other than block cutting

- Section 136. Strip of woodland between two cutting areas
- Section 137. Cutting and deforestation of a road in the strip of woodland between two cutting areas

§3. Block cutting

- Section 138. Size and shape of cutting areas
- Section 139. Characteristics of the residual forest
- Section 140. Maintenance of the residual forest
- Section 141. Strip of woodland on the perimeter of a cutting area
- Section 142. Forest development activities in the residual forest
- Section 143. Minimum annual percentage of total cutting areas in block cutting

Division III - Special provisions applicable to the bioclimatic domain of the spruce-moss forest

- Section 144. Aggregated cut blocks and timber stands
- Section 145. Residual forest in aggregated cut blocks
- Section 146. Percentage and distribution of timber stands

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Chapter VI – Allocation of forest operations and residual forest Division I - General provisions applicable to the bioclimatic domains of the sugar bush, the balsam fir forest and the spruce-moss forest

Section 131

A minimum of 30% of the productive forest area in residual forest of 7 m or more in height must be maintained at all times in a territorial reference unit where harvesting is carried out. Where the limits of a territorial reference unit are changed, in particular following a change of the limits of a development unit, the first paragraph applies to the new territorial reference unit.

1

Objectives

- To distribute cutting areas and residual forest areas in space and over time
- To maintain the components of the forest cover that provide shelter for wildlife
- To provide access to the territory

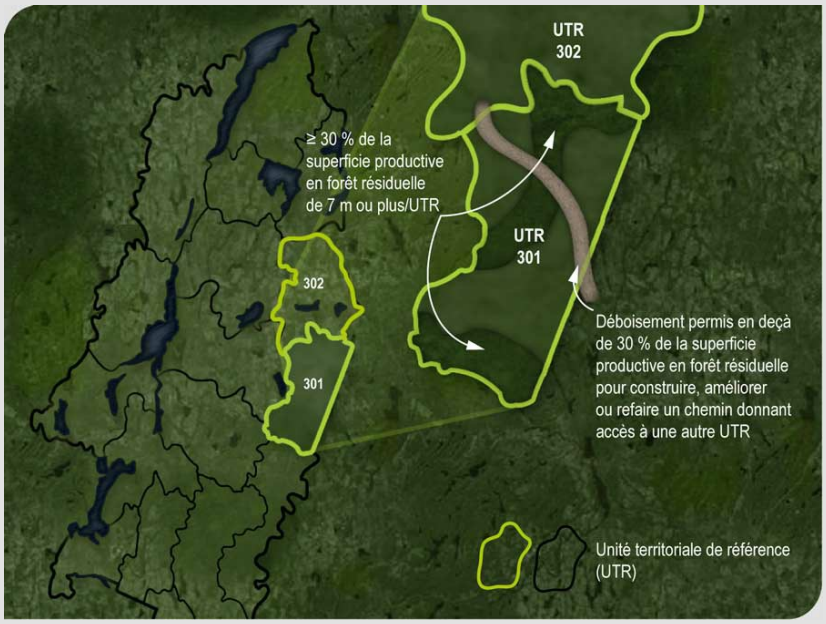


Figure 131 Percentage of residual forest of 7 m or more in height to be maintained in a territorial reference unit

Chapter VI – Allocation of forest operations and residual forest Division I - General provisions applicable to the bioclimatic domains of the sugar bush, the balsam fir forest and the spruce-moss forest

Section 132

The provisions of section 131 do not prevent deforestation carried out in order to build, improve or repair a road giving access to another territorial reference unit.

1

Objective

- To provide access to the territory

Explanations

Deforestation may be carried out to build, improve or repair a road giving access to another territorial reference unit without complying with the provisions of section 131 , which provides that at least 30% of productive forest area must be maintained in a residual forest of 7 m or more in height, at all times, in a territorial reference unit.

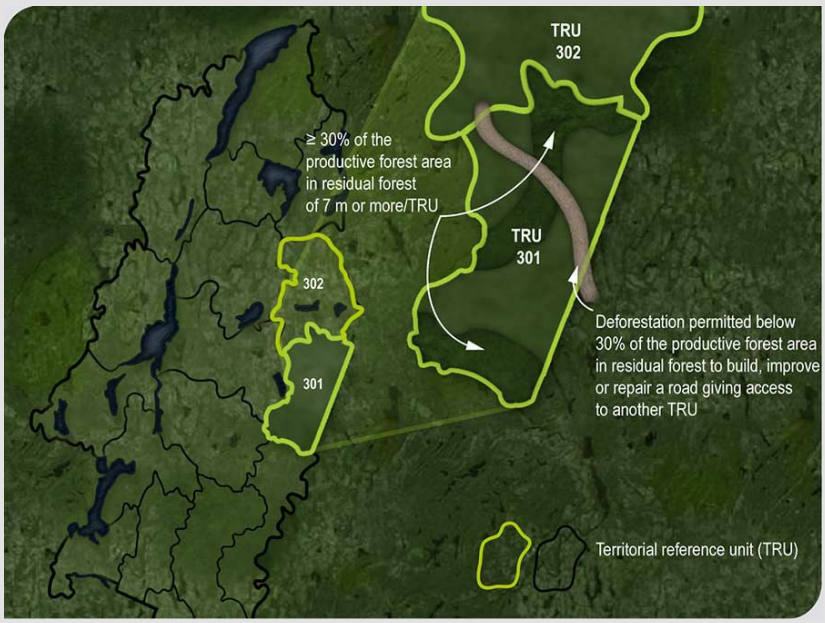


Figure 131 Percentage of residual forest of 7 m or more in height to be maintained in a territorial reference unit

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §1. Total cutting

Section 133

In the development units or in the territorial reference units located in the bioclimatic domains of the sugar bush referred to in Schedule 1, the total cutting areas must:

1. have a size less than or equal to 25 ha over at least 70% of the harvested area for that type of cutting;
2. have a size less than or equal to 50 ha over at least 90% of the harvested area for that type of cutting;
3. have a size less than or equal to 100 ha over 100% of the harvested area for that type of cutting.



Objectives

- To reconcile the various activities that take place in the forest
- To distribute cutting areas and residual forest areas in space and over time
- To limit the size of total cutting areas in a single block

Additional information

The total cutting areas covered by this section are, as specified in section 135, those indicated in the integrated forest development plan and whose planned harvest is carried out during a harvest year. These total cutting areas may be part of a block cutting or other type of total cutting.

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §1. Total cutting

Section 134

In the development units or in the territorial reference units located in the bioclimatic domains of the balsam fir stand referred to in Schedule 1, the total cutting areas must:

1. have a size less than or equal to 50 ha over at least 70% of the harvested area for that type of cutting;
2. have a size less than or equal to 100 ha over at least 90% of the harvested area for that type of cutting;
3. have a size less than or equal to 150 ha over 100% of the harvested area for that type of cutting.



Objectives

- To reconcile the various activities that take place in the forest
- To distribute cutting areas and residual forest areas in space and over time
- To limit the size of total cutting areas in a single block

Additional information

The total cutting areas covered by this section are, as specified in section 135, those indicated in the integrated forest development plan and whose planned harvest is carried out during a harvest year.

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §1. Total cutting

Section 135

The total cutting areas to which sections 133 and 134 apply are those indicated in the integrated forest development plan and whose planned harvest is carried out during a harvest year.



Objective

- To clarify the scope of the Regulation respecting the sustainable development of forests in the domain of the State

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §2. Total cutting other than block cutting

Section 136

A strip of woodland in a single block must be maintained between the total cutting areas other than block cutting, until the regeneration of the cutting areas has reached an average height of 3 m. The strip of woodland between 2 cutting areas must be at least 60 m wide where each cutting area covers an area of less than 100 ha or at least 100 m wide where one of the cutting areas covers an area of 100 to 150 ha. The strip of woodland must be composed of trees, shrubs or brush over 3 m in height and must be used as a visual screen and a corridor for the movement of wildlife.

1

Objective

- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest

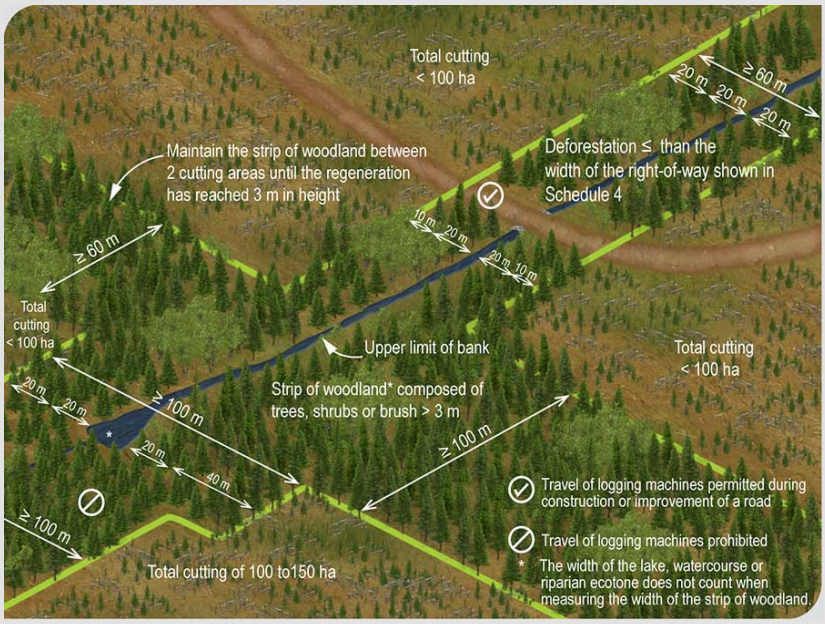


Figure 136 Strip of woodland between two total cutting areas other than block cutting

The travel of logging machines is prohibited in that strip of woodland, except during the construction or improvement of a road.

2

Objective

- To allow certain forest development activities in or near a particular place

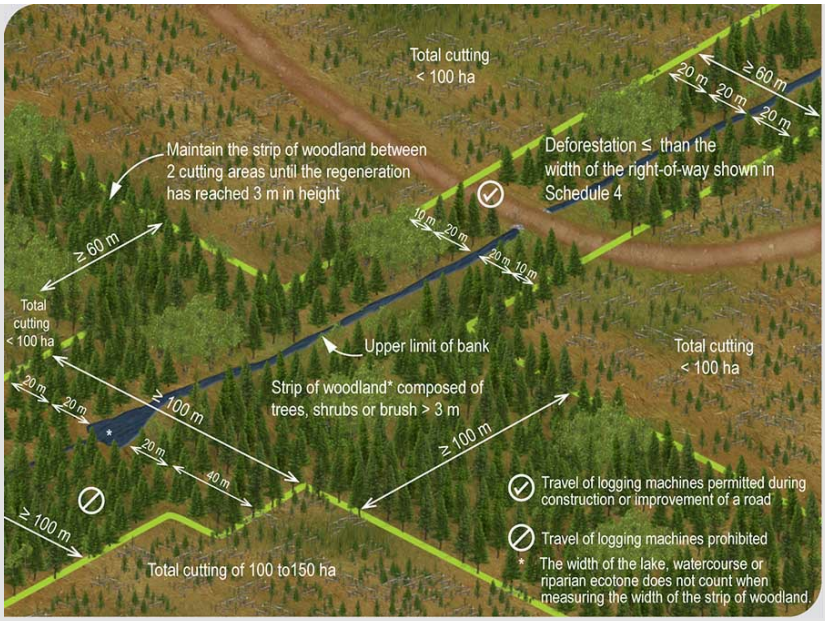


Figure 136 Strip of woodland between two total cutting areas other than block cutting

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §2. Total cutting other than block cutting

Section 137

Any total cutting is prohibited in the strip of woodland referred to in section 136 until the regeneration is established in the cutting areas in accordance with the first paragraph of that section.

1

Objectives

- To maintain the components of the forest cover that provide shelter for wildlife
- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest

Explanations

Any total cutting is prohibited in the strip of woodland between total cutting areas until the regeneration in the cutting areas has reached an average height of 3 m.

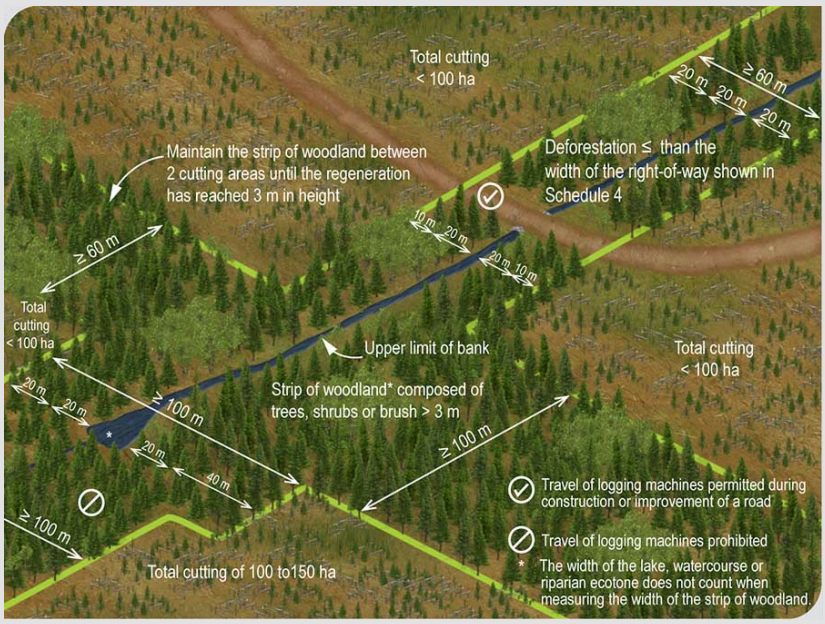


Figure 136 Strip of woodland between two total cutting areas other than block cutting

Partial cutting is allowed on 25% of the total length of the strips of woodland referred to in section 136 included in a management unit or in another forest territory in the domain of the State. However, the strip of woodland that is partially cut between 2 total cutting areas must be at least 75 m wide where each cutting area covers an area less than 100 ha or a minimum width of 125 m where one of the cutting areas covers an area of 100 to 150 ha. After partial cutting, the strip of woodland, that must be used as a visual screen and a corridor for the movement of wildlife, must be composed, per hectare, of not less than 1,500 standing live trees of commercial species having a diameter of 2 cm or more, as measured at 1.3 m above the highest ground level. For carrying out the partial cutting referred to in the second paragraph, the deforestation of felling or hauling trails must be carried out over a width less than 1.5 times the width of the logging machine used.

2

Objectives

- To allow certain forest development activities in or near a particular place
- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest
- To allow for the harvesting of timber

The construction or improvement of a road crossing the strip of woodland is allowed to the extent that the deforestation carried out for that purpose does not exceed the width of the right-of-way provided for in Schedule 4 for the class of road to which it belongs.

3

Objective

- To allow certain forest development activities in or near a particular place

Additional information

For road classes 1 to 5 and for unclassified roads, the maximum right-of-way width is established according to the width of the roadway and road shoulders. To determine the maximum right-of-way width, i.e., the maximum width that may be cleared, refer to Schedule 4. The schedule sets out right-of-way widths for winter roads, motorized all-terrain vehicle trails and trails for other uses. Other than right-of-way, roadway and shoulder width, all other characteristics given in Schedule 4 are for information only and are not provisions to observe in the application of this section.

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §3. Block cutting

Section 138

The cutting areas of a block cutting must be of variable size and form.



Objective

- To distribute cutting areas and residual forest areas in space and over time

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §3. Block cutting

Section 139

The residual forest of a block cutting must have the following characteristics:

1. have, inside the limit of the block cutting harvest site, an area at least equivalent to the area of the cutting areas of a block cutting;
2. have a width of at least 200 m;
3. be composed of forest stands 7 m or more in height over at least 80% of its area and forest stands of at least 4 m in the remaining area;
4. be composed of stands having a forest cover density greater than 40% over at least 80% of its area and from 25 to 40% over its remaining area. It may also be composed of stands having a forest cover density of 25 to 40% over more than 20% of its area, provided that that proportion is equal to or less than the proportion of the stands with such a density that are located in forests 7 m or more in height of the block cutting harvest site before the operation;
5. be composed of forest stands that can produce in commercial species a volume of mature rough merchantable timber of at least 50 m^3/ha or, where they cannot produce such a volume, be composed of forest stands equivalent in composition and in area to those harvested;
6. be composed of forest stands belonging in a proportion of at least 20% to the same type of forest cover as those harvested;
7. not have been the subject, in the last 10 years of harvesting, of a commercial harvest other than a sylvicultural treatment referred to in the second paragraph of section 142.

1

Objectives

- To distribute cutting areas and residual forest areas in space and over time
- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest
- To maintain the components of the forest cover that provide shelter for wildlife

Additional information

Subsection 7 The residual forest of a block cutting must not have been the subject of a commercial harvest in the last 10 years of harvesting, unless the commercial harvest was carried out using a sylvicultural treatment referred to in the second paragraph of section 142, namely:

1. a commercial thinning or selection cutting carried out according to the applicable sylvicultural prescriptions;
2. a partial cutting in a mature tree stand or in a stand that will reach maturity in less than 15 years where not more than 35% of the marketable basal area of the stand is harvested, provided that after harvesting, a marketable basal area of at least 15 m^2/ha of well-spaced trees composed of species and proportions similar to those of the initial stand, is maintained.

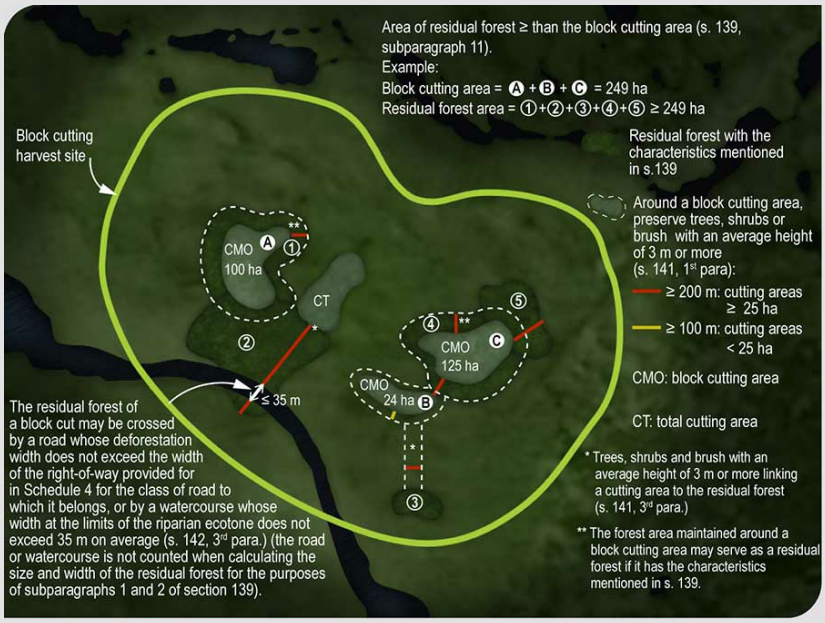


Figure 139 Size and composition of the residual forest at a block cutting harvest site

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §3. Block cutting

Section 140

Each block cutting harvest site must be indicated in the integrated forest development plan. The foregoing also applies to the residual forest of a block cutting. Once indicated in the plan, the residual forest of a block cutting may not be used again as residual forest for as long as the harvesting cannot be carried out in accordance with the first paragraph of section 142.

1

Objectives

- To distribute cutting areas and residual forest areas in space and over time
- To maintain the components of the forest cover that provide shelter for wildlife
- To allow for regulatory compliance to be checked

Additional information

Second paragraph The residual forest of a block cutting may be used again as residual forest if the following two conditions are met:

- A period of ten years has elapsed from the date on which the block cutting took place.
- The regeneration has grown to an average height of 3 m in the cutting areas on the block cutting harvest site.

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §3. Block cutting

Section 141

A forest area composed of trees, shrubs or brush having an average height of 3 m or more must be preserved on the perimeter of a cutting area of a block cutting. Its width must be at least 200 m or at least 100 m if the cutting area is less than 25 ha. The first paragraph does not apply to the part of the perimeter of a cutting area adjacent to a strip of woodland preserved along a lake or a watercourse whose width, measured at the level of the upper limit of the shores or banks, exceeds 35 m.

1

Objectives

- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest
- To maintain the components of the forest cover that provide shelter for wildlife

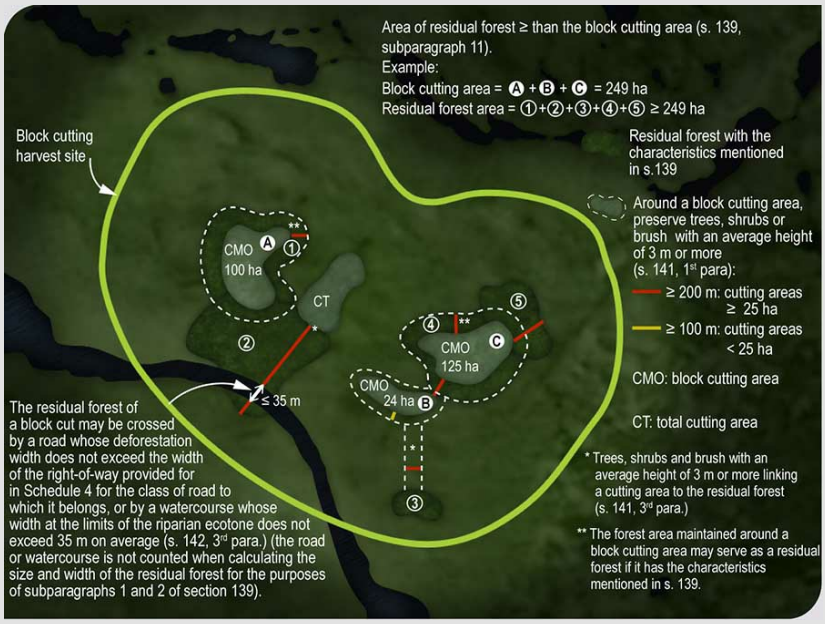


Figure 139 Size and composition of the residual forest at a block cutting harvest site

A forest area composed of trees, shrubs or brush having an average height of 3 m or more that is at least 200 m wide must also be preserved between a residual forest and the cutting areas of a block cutting and between a residual forest and the other total cutting areas in order to be used as a corridor for the movement of wildlife.

2

Objectives

- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest
- To maintain the components of the forest cover that provide shelter for wildlife

Additional information

A forest area that is at least 200 m wide, prescribed by this section on the perimeter of a cutting area of a block cutting, may be considered to be a residual forest if it satisfies all the residual forest characteristics specified in section 139.

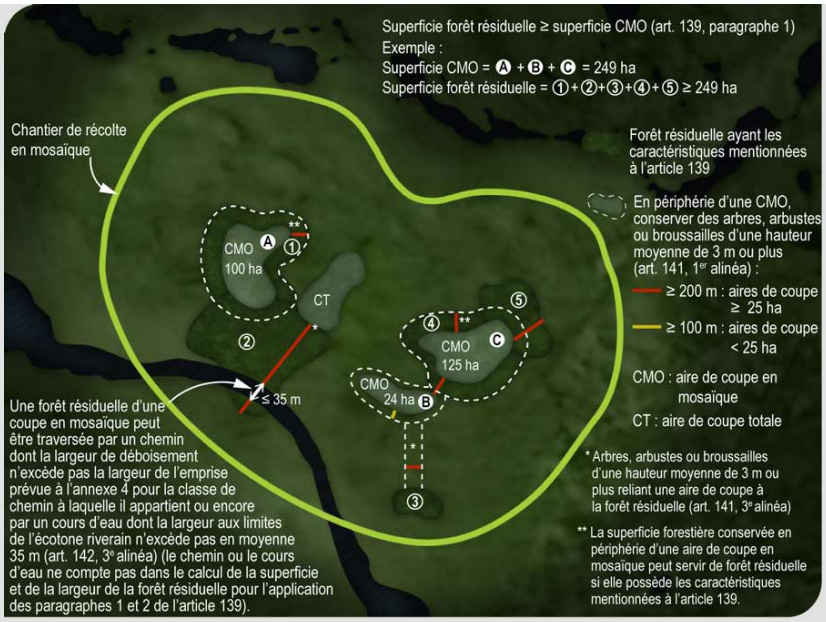


Figure 139 Size and composition of the residual forest at a block cutting harvest site

The forest areas referred to this section must be preserved until the regeneration in the block cutting areas reaches an average height of 3 m or more.

3

Objectives

- To distribute cutting areas and residual forest areas in space and over temps
- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest
- To maintain the components of the forest cover that provide shelter for wildlife

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §3. Block cutting

Section 142

The residual forest of a block cutting must be preserved inside the limit of the harvest site until it may be harvested. It may be harvested only on the expiry of a 10-year period after the date on which block cutting was carried out or, if the regeneration has not yet reached after that period the average height of 3 m, until that regeneration has reached such a height.

1

Objectives

- To distribute cutting areas and residual forest areas in space and over time
- To allow wildlife to move around by maintaining connectivity between its habitat and the neighbouring residual forest
- To maintain the components of the forest cover that provide shelter for wildlife

The first paragraph does not apply to the following sylvicultural treatments carried out in a residual forest:

1. a commercial thinning or selection cutting carried out according to the applicable sylvicultural prescriptions;
2. a partial cutting in a mature tree stand or in a stand that will reach maturity in less than 15 years where not more than 35% of the marketable basal area of the stand is harvested, provided that after harvesting, a marketable basal area of at least 15 m^2/ha of well-spaced trees composed of species and proportions similar to those of the initial stand, is maintained.

2

Objective

- To allow for the harvesting of timber

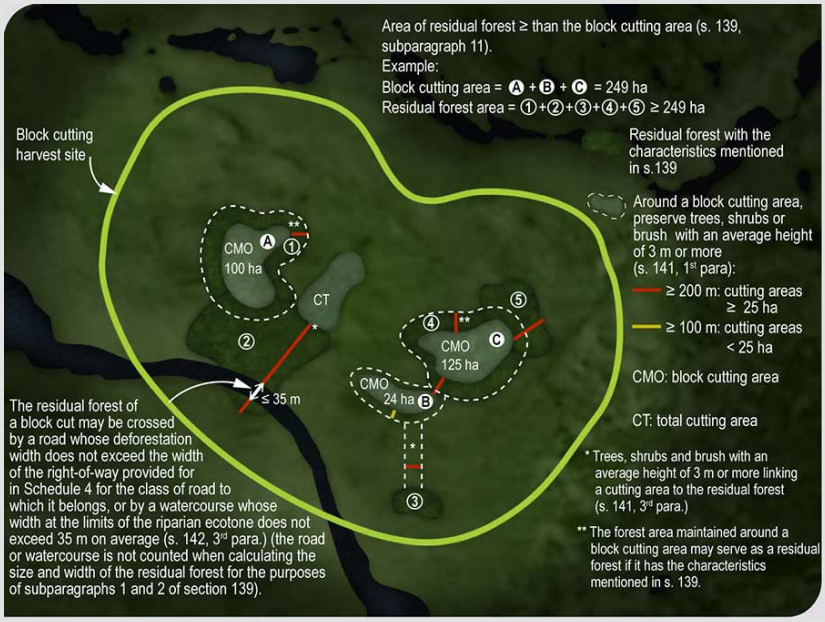


Figure 139 Size and composition of the residual forest at a block cutting harvest site

A residual forest of a block cutting may be crossed by a road whose deforestation width does not exceed the width of the right-of-way provided for in Schedule 4 for the class of road to which it belongs or by a watercourse whose width at the limits of the riparian ecotone does not exceed on average 35 m. At the time of indicating a residual forest in the integrated forest management plan, neither the area nor the width of the road or the watercourse may be considered in calculating the area and the width of the residual forest for the purposes of paragraphs 1 and 2 of section 139.

3

Objective

- To allow certain forest development activities in or near a particular place

Additional information

For road classes 1 to 5 and for unclassified roads, the maximum right-of-way width is established according to the width of the roadway and road shoulders. To determine the maximum right-of-way width, i.e., the maximum width that may be cleared, refer to Schedule 4. The schedule sets out right-of-way widths for winter roads, motorized all-terrain vehicle trails and trails for other uses. Other than right-of-way, roadway and shoulder width, all other characteristics given in Schedule 4 are for information only and are not provisions to observe in the application of this section. Subsections 1 and 2 of section 139 state that the residual forest of a block cutting must have the following characteristics:

1. have, inside the limit of the block cutting harvest site, and area at least equivalent to the area of the cutting areas of a block cutting;
2. have a width of at least 200 m.

Chapter VI – Allocation of forest operations and residual forest Division II - Special provisions applicable to the bioclimatic domains of the sugar bush and the balsam fir forest §3. Block cutting

Section 143

During a harvest year, at least 60% of the total area of the total cutting areas of a development unit or other forests in the domain of the State must be planned and carried out in accordance with the provisions of this Regulation applicable to block cutting.



Objective

- To distribute cutting areas and residual forest areas in space and over time

Chapter VI – Allocation of forest operations and residual forest Division III - Special provisions applicable to the bioclimatic domain of the spruce-moss forest

Section 144

In the development units or in the territorial reference units located in the bioclimatic domain of the spruce-moss stand referred to in Schedule 1, forest operations are carried out on the basis of an approach including aggregated cut blocks and timber stands.

1

Objective

- To contribute to ecosystem-based forest development

Additional information

Forest operations carried out using an approach including aggregated cut blocks and timber stands are designed to achieve ecosystem-based development (in French only) of forests in the spruce-moss bioclimatic domain.

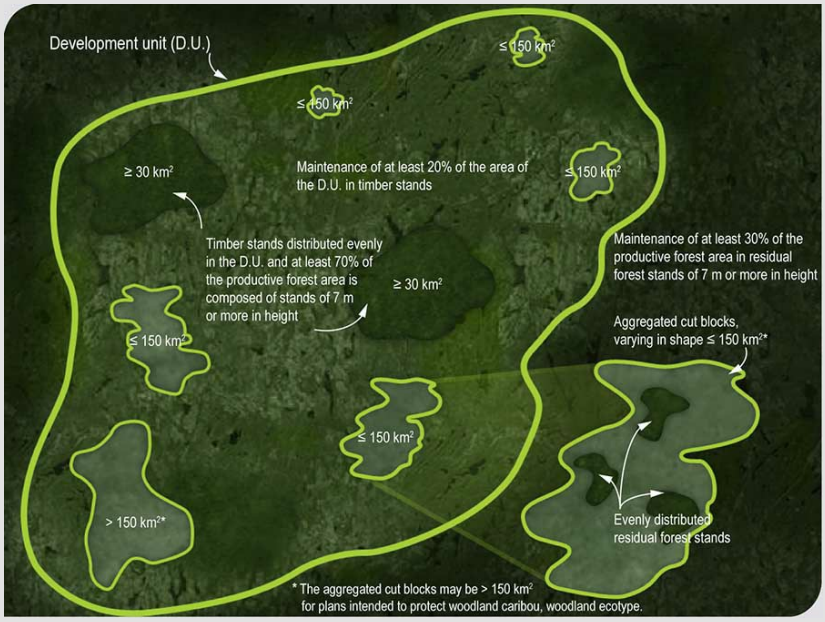


Figure 144 Forest operations carried out using an approach including aggregated cut blocks and timber stands

Chapter VI – Allocation of forest operations and residual forest Division III - Special provisions applicable to the bioclimatic domain of the spruce-moss forest

Section 145

A minimum of 30% of the productive forest area in residual forest stands 7 m or more in height must be maintained at all times in an aggregated cut block where the trees are harvested. That area must be well distributed in the cut block.

1

Objectives

- To contribute to ecosystem-based forest development
- To reproduce the effects of the natural disturbances to which species have adapted

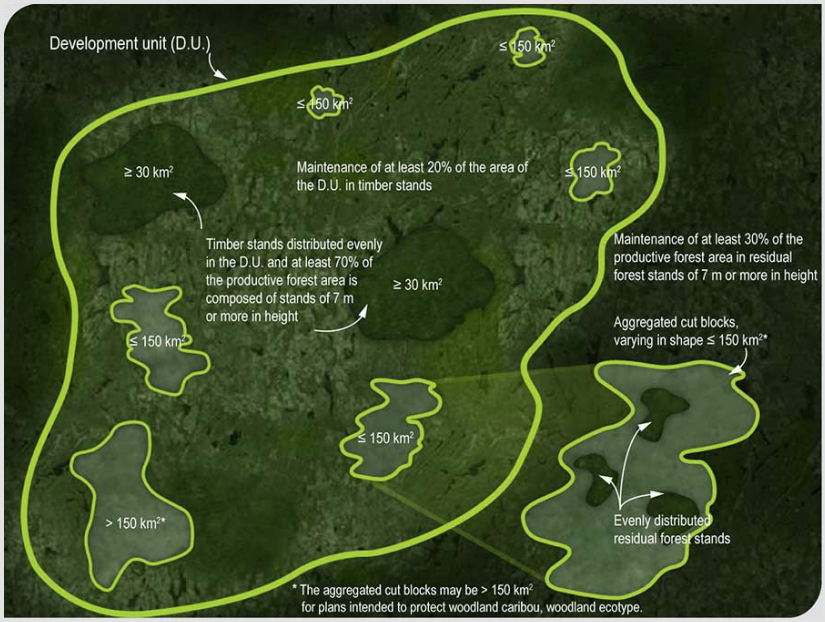


Figure 144 Forest operations carried out using an approach including aggregated cut blocks and timber stands

Chapter VI – Allocation of forest operations and residual forest Division III - Special provisions applicable to the bioclimatic domain of the spruce-moss forest

Section 146

Timber stands must occupy at least 20% of the area of a development unit and be well distributed in the unit.

1

Objectives

- To contribute to ecosystem-based forest development
- To reproduce the effects of the natural disturbances to which species have adapted

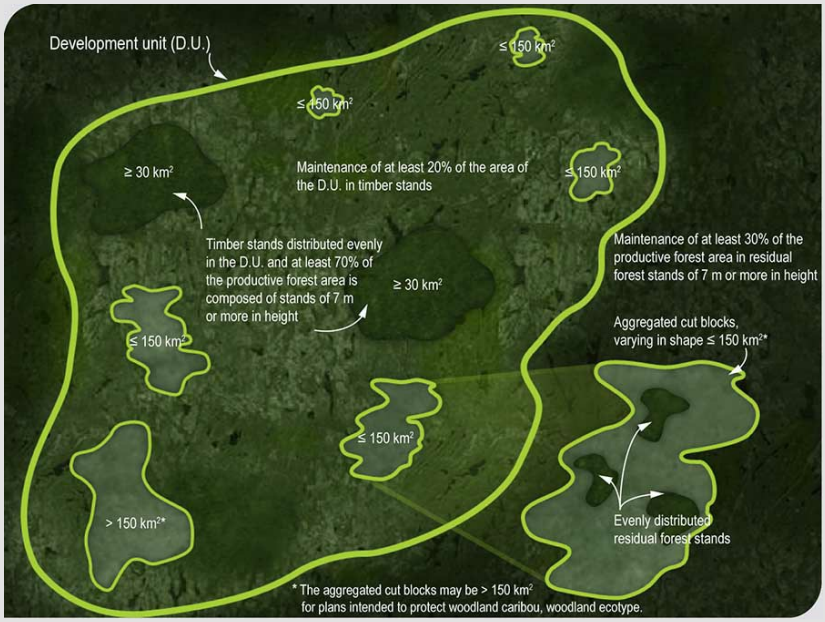


Figure 144 Forest operations carried out using an approach including aggregated cut blocks and timber stands

Chapter VII - Harvest optimization, forest regeneration and soil protection

Division I - Harvest and optimum use of ligneous matter

- Section 147. Stump height
- Section 148. Requirement to harvest
- Section 149. Marker’s skills
- Section 150. Tree stems to be harvested in partial cutting
- Section 151. Harvesting of usable ligneous matter
- Section 152. Salvaging of usable ligneous matter

Division II - Protection of forest regeneration and soils and preparatory work for forest production

- Section 153. Protection of regeneration and soils during cutting
- Section 154. Conditions conducive to natural regeneration after public utility works
- Section 155. Monitoring of forest regeneration

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Chapter VII – Harvest optimization, forest regeneration and soil protection
Division I - Harvest and optimum use of ligneous matter

Section 147

Tree cutting must be carried out at a height not exceeding 25 cm above the highest ground level.

Where snow depth on the ground reaches a height equivalent to a column of water at least 20 cm high, the maximum height of the stumps must not exceed 45 cm.

1

Objectives

- To avoid wasting wood
- To obtain the operational flexibility required for certain forest development activities

Additional information

The map of recent climate data observations (in French only), gathered through Québec's Climate Monitoring Program, can be consulted for details of snow depth on the ground.

We recommend that you contact the regional office of the Ministère des Forêts, de la Faune et des Parcs (in French only) to agree on the time from which the depth of snow on the ground is sufficient to cut trees at a height of more than 25 cm, but less than 45 cm, above the highest ground level, based on a column of water at least 20 cm high.

On an ad hoc basis, snow accumulates very significantly. When a snowfall reaches a column of water height of over 25 cm, an agreement can be made with the management unit in charge to increase the permitted stump height to 60 cm. This agreement will specify the date on which 60 cm stump heights are permitted, the site or harvesting area involved, and the mechanism for determining when a return to normal stump heights will be required.

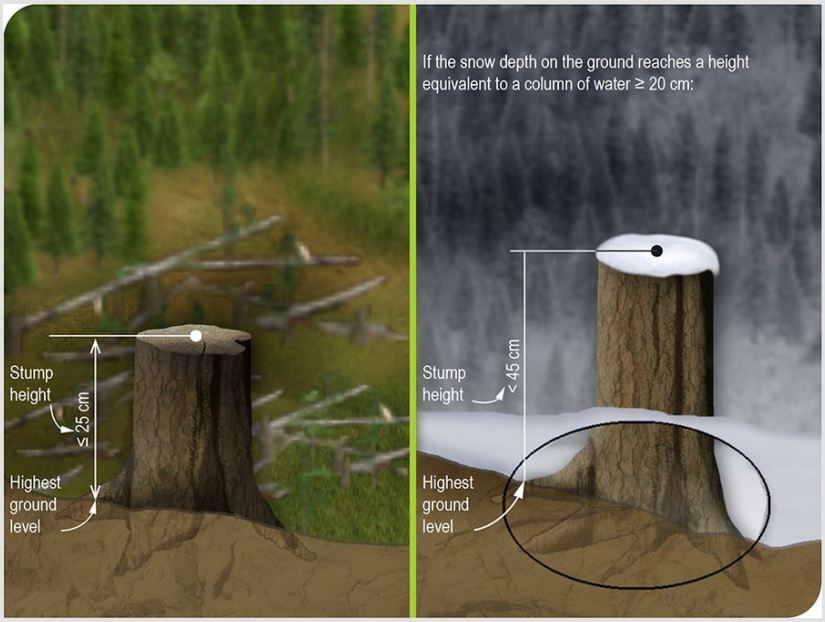


Figure 147 Maximum stump height

Chapter VII – Harvest optimization, forest regeneration and soil protection
Division I - Harvest and optimum use of ligneous matter

Section 148

During the construction, improvement or repair of a road, the construction of a power transmission line, the setting up of a piling area, the installation of a forest camp or the setting up or expansion of a sandpit, the trees that have the characteristics indicated in the forestry permit, the sylvicultural prescription or other document authorizing the activity must be harvested.

1

Objective

- To avoid wasting wood

Additional information

It should be noted that even though repairs to and maintenance of a road do not form part of the work (construction, improvement or closure of a multiple use road) that must be authorized pursuant to the Sustainable Forest Development Act, prior authorization under the Act is nevertheless required to harvest merchantable trees from the right-of-way during repairs or maintenance.

Chapter VII – Harvest optimization, forest regeneration and soil protection Division I - Harvest and optimum use of ligneous matter

Section 149

For all sylvicultural treatments requiring marking according to the requirements of the sylvicultural prescription, the marking must be carried out by a person whose skills are recognized by the Minister.

1

Objective

- To ensure the quality of marking

Additional information

The selection and marking (in French only) of trees are key steps not only in carrying out selection cutting but also for all partial cutting work for which marking is required. The MFFP is responsible for the markers' trade recognition program, and publishes the provincial register (in French only) of apprentice markers and forestry markers on its website.

Chapter VII – Harvest optimization, forest regeneration and soil protection Division I - Harvest and optimum use of ligneous matter

Section 150

During a partial cutting, only the tree stems covered by the sylvicultural treatment or prescription may be cut.



Objective

- To ensure compliance with the sylvicultural prescription

Division I - Harvest and optimum use of ligneous matter

Section 151

The usable ligneous matter from trees or parts of trees of a species or group of species indicated in the forestry permit, the harvest agreement or in a contract entered into under the Sustainable Forest Development Act (chapter A-18.1) must be harvested by taking into account section 152, including previously felled trees, lodged or overturned trees and trees affected by fire, insects or disease. The usable ligneous matter from a tree is the ligneous matter found at least 15 cm above the highest ground level that must be harvested according to the criteria relating to the harvesting diameter, the species or the minimum usable diameter of the stems indicated in the forestry permit, the harvest agreement or a contract entered into under the application of the Sustainable Forest Development Act.



Objective

- To avoid wasting wood

Division I - Harvest and optimum use of ligneous matter

Section 152

In a piling area, a forest operations zone having an area less than 4 ha or in any portion in a single block of 4 ha or more included in a forest operations zone, the volume of usable ligneous matter left on the ground or not harvested that exceeds 3.5 m^3/ha in the case of a total cutting or that exceeds 1 m^3/ha in the case of a partial cutting must be recovered on each of those areas before 1 September following the harvest year.

1

Additional information

- For ligneous matter to be considered recovered, it must be transported out of the forest.

Where the sylvicultural prescription associated to the treatment to be carried out provides for a recovery standard different from that provided for in the first paragraph for the purposes of maintaining biodiversity, the threshold above which the volume of usable ligneous matter left on the ground or not harvested must be recovered is that provided for in the sylvicultural prescription.

For the purposes of this section, the volumes of commercial species that may be left on the cutting area according to the Minister's directions and deadwood and rejected wood are excluded from the volume of usable ligneous matter.

Deadwood is quality m wood.

Rejected wood is a log or part of a log of a merchantable size that contains such a quantity of defects that it no longer has any value for the forest product industry, except for the development of forest biomass. Logs or parts of logs that meet the criteria provided for in Schedule 13 are deemed to have no value.

2

Objective

- To avoid wasting wood

Division II - Protection of forest regeneration and soils and preparatory work for forest production

Section 153

Any cutting without regeneration and soil protection is prohibited. During harvest, measures limiting injury to the forest regeneration in place and stems that are not harvested must be taken to ensure that they are adequately protected. This section does not apply where the sylvicultural prescription provides for special management procedures adapted to the cutting sector with a view to ensuring forest regeneration.

1

Objectives

- To protect natural forest regeneration
- To avoid disturbing the soil
- To promote forest regeneration
- To ensure that forest production is resumed on the site

Additional information

Cutting with protection of regeneration and soils helps preserve young tree shoots and avoids deterioration of the soil. This requires the use of work techniques and types of logging machines that are adapted to the prevailing conditions in the cutting area – for example, by choosing the best period of the year to carry out harvesting on more fragile soils and adapting to weather conditions (e.g. harvesting in winter and not harvesting when the soil is very wet). The impact of logging machines in the cutting sector must also be reduced by placing cutting and hauling trails as far apart as possible. In some cases, forestry companies are not required to implement measures to protect regeneration and soils. Where this is the case, the sylvicultural prescription may provide for a treatment that consists in shaping the forest soil so that the forest environment is physically adapted to germination, survival and growth of the desired seeding species. Treatments such as these may be used, for example, to counter problems such as soil paludification.

Division II - Protection of forest regeneration and soils and preparatory work for forest production

Section 154

Where forest development activities are carried out by the holder of a forestry permit issued for public utility works, the permit holder must remove waste, debris and other litter from the surface of the site./ The site must be left in conditions conducive to the rapid establishment of the natural regeneration./



Objective

- To avoid contaminating the forest



Objectives

- To promote forest regeneration
- To ensure that forest production is resumed on the site

Additional information

The site must be left in conditions conducive to the rapid establishment of the natural regeneration. Consequently, in some cases, the soil must be refurbished by the addition of organic matter and topsoil.

Division II - Protection of forest regeneration and soils and preparatory work for forest production

Section 155

The follow-up of the forest regeneration after the operations must be carried out in accordance with the sylvicultural prescriptions.



Objective

- To monitor forest regeneration

Chapter VIII - Offences

- Section 156. Fine (amount per tree)
- Section 157. Fine (amount per m³)
- Section 158. Fine (amount per ha)
- Section 159. Fine (amount per offence)
- Section 160. Fine (amount per offence)

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Chapter VIII – Offences
Division II - Protection of forest regeneration and soils and preparatory work for forest production

Section 156

Every person authorized to harvest timber in the forests in the domain of the State or a third person to whom the person has entrusted the harvesting work who contravenes any of sections 7 to 9, section 19, except the first paragraph, sections 27 and 28, the first paragraph of sections 31 and 33, sections 35 and 51, the first and third paragraphs of section 52, the first paragraph of sections 54 and 55, sections 56 and 57, section 136, except the third paragraph, sections 137, 147 and 148 commits an offence and is liable to the fine provided for in paragraph 1 of section 245 of the Sustainable Forest Development Act (chapter A-18.1).

Every holder of a mining right referred to in section 30 who contravenes the first paragraph of that section also commits an offence and is liable to the same fine as that referred to in the first paragraph.

Chapter VIII – Offences

Section 157

Every person authorized to harvest timber in the forests in the domain of the State who contravenes section 152 commits an offence and is liable to the fine provided for in paragraph 2 of section 245 of the Sustainable Forest Development Act (chapter A-18.1).

Chapter VIII – Offences

Section 158

Every person authorized to harvest timber in the forests in the domain of the State or a third person to whom the person has entrusted the harvesting work who contravenes any of sections 45 and 46, the first and second paragraphs of section 58, sections 150 and 153 commits an offence and is liable to the fine provided for in paragraph 3 of section 245 of the Sustainable Forest Development Act (chapter A-18.1).

Chapter VIII – Offences

Section 159

Every person who contravenes any of the first paragraph of sections 3 and 5, section 17, the first paragraph of section 19, sections 20 to 22, 25, 26 and 32, the first paragraph of section 34, sections 38 to 40, 42, 43 and 47, the first paragraph of section 48, section 50, the second paragraph of sections 52, 54 and 55, sections 59 and 66, the first and second paragraphs of section 67, section 68, the first paragraph of section 70, sections 87, 88, 89, 124 and 128 to 130, and the third paragraph of section 136, commits an offence and is liable to the fine provided for in paragraph 4 of section 245 of the Sustainable Forest Development Act (chapter A-18.1). The following persons also commits an offence and are liable to the same fine as the fine referred to in the first paragraph:

1. every person referred to in the second paragraph of section 3, the first paragraph of section 4, sections 64, 65, 86, 93, 94, 97 and 98, the fourth paragraph of section 99, section 100, the second paragraph of section 101, sections 109, 115 and 116, the first and second paragraphs of section 117, and sections 125 to 127 who contravenes any provision of those sections concerning the person;
2. every person having the right to carry out a forest development activity or the third person to whom the person has entrusted the carrying out of that activity who contravenes any provision of sections 10, 12 to 16 and 18, the second and third paragraphs of section 31, the second paragraph of sections 33 and 34, sections 36 and 44, the second and third paragraphs of section 48, the third paragraph of section 54, the section 60, the first paragraph of section 61, sections 63, 71 to 77, 79 to 83, 90, 92, 95 and 96, the first, second and third paragraphs of section 99, the first paragraph of section 101, sections 102 to 106, 108, 110 to 114, 131, 133, 134, 141 to 143, 145, 146 and 149;
3. every holder of a forestry permit referred to in the second paragraph of section 29 and sections 84, 85 and 154 who contravenes any provision of those sections concerning the permit holder;
4. every holder of a mining right referred to in section 30 who contravenes the second paragraph of that section;
5. every owner of logging machines who contravenes section 41;
6. every person opening or operating a sandpit referred to in section 118 who contravenes any of sections 119 and 121 to 123;
7. every holder of a a lease to mine surface mineral substances referred to in section 140 of the Mining Act (chapter M-13.1) who contravenes section 120.

Chapter VIII – Offences

Section 160

Every person who contravenes the third paragraph of section 117 commits an offence and is liable to the fine provided for in paragraph 3 of section 244 of the Sustainable Forest Development Act (chapter A-18.1).

Chapter IX - Transitional and final

- Section 161. Existing sandpit near an intermittent watercourse
- Section 162. Existing sandpit near a dwelling located on private land
- Section 163. Existing sandpit near certain territories protected by law
- Section 164. Regulatory concordance
- Section 165. Date on which the Regulation respecting the sustainable development of forests in the domain of the State begins to govern forest development activities
- Section 166. Replacement of the Regulation respecting standards of forest management for forests in the domain of the State by the Regulation respecting the sustainable development of forests in the domain of the State
- Section 167. Coming into force of the Regulation respecting the sustainable development of forests in the domain of the State

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Chapter IX – Transitional and final

Section 161

Despite section 119, the holder of a lease to mine surface mineral substances may continue to operate at a distance of 30 m or less from an intermittent watercourse a sandpit referred to in section 118 opened before 1 April 2018, as long as the lease has not expired.

Chapter IX – Transitional and final

Section 162

Despite section 121, the holder of a lease to mine surface mineral substances may continue to operate at a distance of 150 m or less from a dwelling located on private land a sandpit referred to in section 118 opened before 1 April 2018, as long as the lease has not expired.

Chapter IX – Transitional and final

Section 163

Section 122 does not apply to a sandpit referred to in section 118 opened before 1 April 2018 that, on that date, is the subject of a lease to mine surface mineral substances, as long as the lease has not expired. Despite the foregoing, a minimum distance of 100 m must be kept between the operation area of a sandpit referred to in the first paragraph and the limits of an ecological reserve or a proposed ecological reserve.

Chapter IX – Transitional and final

Section 164

Unless the context indicates otherwise, a reference in a regulation to the Regulation respecting standards of forest management for forests in the domain of the State (chapter A-18.1, r. 7) or any of its provisions is deemed to be a reference to this Regulation or the corresponding provision of this Regulation.

Chapter IX – Transitional and final

Section 165

This Regulation governs forest development activities after 31 March 2018.

Chapter IX – Transitional and final

Section 166

This Regulation replaces the Regulation respecting standards of forest management for forests in the domain of the State (chapter A-18.1, r.7).

Chapter IX – Transitional and final

Section 167

This Regulation comes into force on 1 April 2018.

Schedules

Schedule 1. Vegetation areas and bioclimatic domains of Québec

Schedule 2. Commercial species

Schedule 3. Sites having long-term soil fertility problems

Schedule 4. Characteristics of roads according to their classification

Schedule 5. Periods during which the work between the banks will be carried out (excavation, installation of a conduit, backfilling, slope stabilization and work concerning, bridge piers)

Schedule 6. Peak flow calculation method for drainage basins whose area is equal to or less than 60 km^2

Schedule 7. Calculation method for the peak flow of a drainage basin of an area greater than 60 km^2

Schedule 8. Diameter required for round conduits according to the peak flow[a] (Q_{10}; $Q_{1,20}$), the type of intake and the burial

Schedule 9. Conditions to meet for a culvert with a round conduit where free flow of fish must be ensured

Schedule 10. Conditions to be met for a culvert with a conduit having outlets where the conditions provided for in Schedule 9 for the layout of a culvert with a round conduit may not be met

Schedule 11. Conditions to be met when constructing, improving or repairing wooden culverts

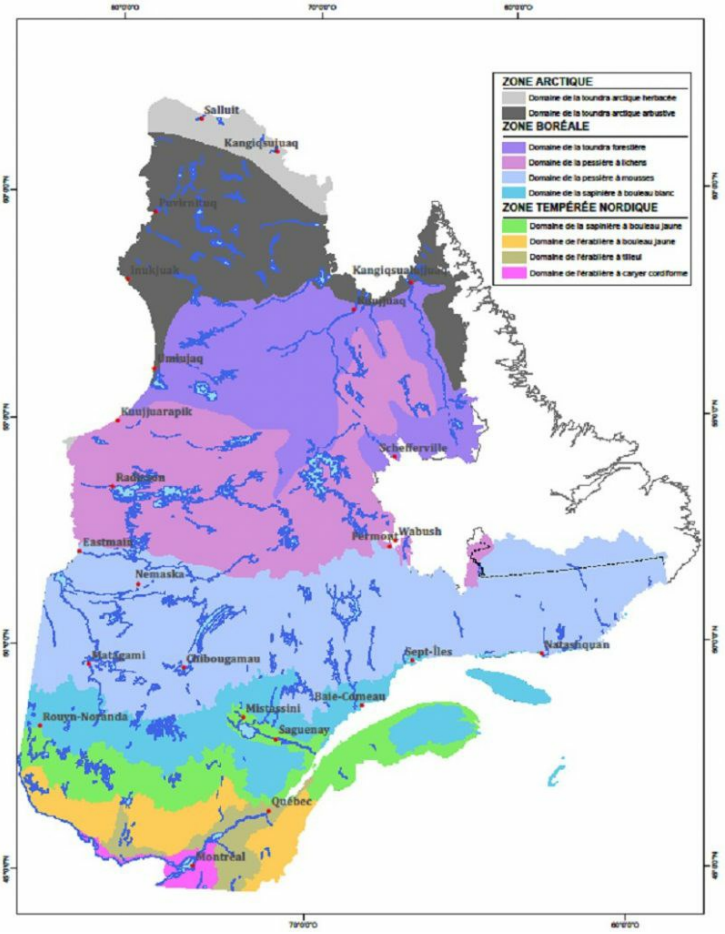
Schedule 12. Conditions to be met when constructing, improving or repairing bridges

Schedule 13. Rejected wood

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Schedule 1

Vegetation and bioclimatic domains of Québec



Schedule 2

Commercial species

Part A

- **Softwood species**
  White spruce Black spruce Red spruce Norway spruce Tamarack Jack pine Canadian hemlock Fir White cedar
- **Hardwood species**
  White birch Balsam poplar Big-toothed aspen Trembling aspen Other poplars

Part B

- **Softwood species** White pine Red pine
- **Hardwood species** Yellow birch Hickory Red oak Black cherry Burr oak Swamp white oak White oak Silver maple Sugar maple Red maple Black maple Ash American beech Walnut American elm Slippery elm Ironwood Basswood

Schedule 3

Sites having long-term soil fertility problems

In forest stands belonging to the ecological sub-regions and ecological types indicated in the table below, branches must be left in the felling areas, near the stumps, in order to prevent a long-term loss of soil fertility.

Ecological sub-region	Ecological type	Type of potential vegetation
2aT	FC10	Red oak forest on very shallow soil
2bT, 4cT	FE30	Sugar maple-yellow birch forest
3aS, 4bT, 4cM, 4dT	FE31	
4cM	FE35	
4dM	FE40	
2bT	FE42	Sugar maple, yellow birch, beech forest
2bT	FE50	Sugar maple-ironwood forest on very shallow soil
2aT, 3cM	FE60	Sugar maple, red oak forest on very shallow soil
1aT	FO14	Elm, black ash forest
3aM, 3bM	FO18	
1aT, 2aT, 3cT	MF14	Black ash, fir forest
3cS, 3cT, 4aT	MJ11	Yellow birch, fir, sugar maple forest
3cT	MJ14	
4dM	MS11	Yellow birch, fir forest
4cT	MJ26	
3cM, 4bT	MJ21	Fir, yellow birch forest
3cM	MS20	Fir, white birch forest
3aM, 6dT	MS21	
3bM	RC38	White cedar, fir forest on organic soil
3cS	RE24	Black spruce, feathermoss, ericaeous forest
1aT, 2aT, 2bT, 2cT, 3aM, 3aS, 3aT, 3bM, 3bT, 3cM, 3cS, 3cT, 3dM, 3dT, 4aT, 4bM, 4bS, 4bT, 4cM, 4cT, 4dM, 4dT, 4eT, 4fS, 4fT, 4gT, 4hT, 5aT, 5bT, 5cM, 5cS, 5cT, 5dM, 5dT, 5eS, 5eT, 5fS, 5fT, 5gT, 5hT, 5jT, 6aT, 6bT, 6cT, 6dT, 6eT, 6fT, 6gT, 6hT, 6iS, 6iT, 6jS, 6jT, 6kT, 6iT, 6mT, 6nT, 6pT	RE39	Black spruce, sphagnum forest on ombrotrophic, hydric, organic soil
2aT	RP14	White or red pine forest
3cM	RS11	Fir, white cedar forest
3cT	RS14	
1aT, 2aT, 2bT, 2cT, 3aM, 3aS, 3aT, 3bM, 3bT, 3cM, 3cS, 3cT, 3dM, 3dT, 4aT, 4bM, 4bS, 4bT, 4cM, 4cT, 4dM, 4dT, 4eT, 4gT, 4hT, 5aT, 5bT, 5cM, 5cS, 5cT, 5dM, 5dT, 5eT, 5fS, 5fT, 5gT, 5hT, 5iS, 5iT, 5jT, 6aT, 6cT, 6dT, 6eT, 6fT, 6gT, 6hT, 6iS, 6iT, 6jS, 6jT, 6kT, 6iT, 6mT, 6nT, 6pT	RS39	Fir, black spruce, sphagnum forest on ombrotrophic, hydric, organic soil
3cS	RT10	Hemlock forest
3cM	RT11	
3cS	RT12	

Source: Ouimet, R, et L. Duchesne. 2009. Évaluation des types écologiques forestiers sensibles à l'appauvrissement des sols en minéraux par la récolte de biomasse. MRNF, Direction de la recherche forestière. Rapport hors série. 26 p.

Schedule 4

Characteristics of roads according to their classification

	Classes of road								
	Unclassified	1	2	3	4	5	Path intended for motorized all-terrain vehicles	Path not intended for motorized all-terrain vehicles	Winter road
Design criteria									
Duration of use	50 years	25 years	25 years	10-15 years	3-10 years	1-3 years	Variable	Variable	3 months
Speed posted	70 km/h	70 km/h	60 km/h	50 km/h	40 km/h	20 km/h	–	–	–
Minimal stopping sight distance (design)	170 m	110 m	85 m	65 m	45 m	30 m	–	–	–
Dimensions of the road									
Right of way	35 m	35 m	30 m	30 m	25 m	20 m	less than 10 m	less than 3 m	20 m
Roadway	9.1 m or more	8.5 m to < 9.1 m	8 m to < 8.5 m	7.5 m to < 8 m	5.5 m to < 7.5 m	4 m to < 5.5 m	–	–	–
Shoulder (each side)	1.0 m	1.0 m	1.0 m	1.0 m	0.75 m	0.5 m	–	–	–
Vertical and horizontal alignment									
Horizontal curve (minimum radius)	340 m	190 m	130 m	90 m	50 m	50 m	–	–	–
Maximum adverse slope	4%	6%	7%	8%	10%	–	–	–	–
Maximum favourable slope	6%	9%	11%	14%	16%	–	–	–	–
Material used									
Foundation	Natural gravel	Natural gravel	Natural gravel	Mineral soil	Mineral soil, organic soil (thin layer) and plant residue	Mineral soil, organic soil (thin layer) and plant residue	–	–	Material in place (mineral soil, organic soil or wood debris)
Road surface	Rock chips	Rock chips or screened gravel	Natural gravel	Natural gravel	Mineral soil	Mineral soil	–	–	Compacted snow
Works allowed									
Type	Bridge[1] and culvert	Bridge[1] and culvert	Bridge[1] and culvert	Bridge[1] and culvert	Bridge[1] and culvert	Bridge[1] and culvert	Bridge[1] and culvert	Culvert and rudimentary structure	Removable structure

[1] usable width of the bridge = 4.3 m

1

Additional information

For road classes 1 to 5 and for unclassified roads, the maximum right-of-way width is established according to the width of the roadway and road shoulders. To determine the maximum right-of-way width, i.e., the maximum width that can be cleared, refer to this schedule. It also provides right-of-way widths for winter roads, motorized all-terrain vehicle trails and trails for other uses. Other than right-of-way, roadway and shoulder width, all other characteristics given in Schedule 4 are for information only and are not provisions to observe in the application of sections 71, 137 and 142 of this Regulation.

For class 4, 5 and winter roads, during construction or improvement work, the right-of-way can be cleared to a maximum width of 30 m. However, for all other forest management activities (including maintenance and repair of a road, bridge or culvert), the width of right-of-way provided for in Schedule 4 must be respected. The maximum width of the right-of-way of all roads located inside the limits of a sugar bush operated for acericultural purposes, or with such production potential, or of a white-tailed deer containment area is 20 m.

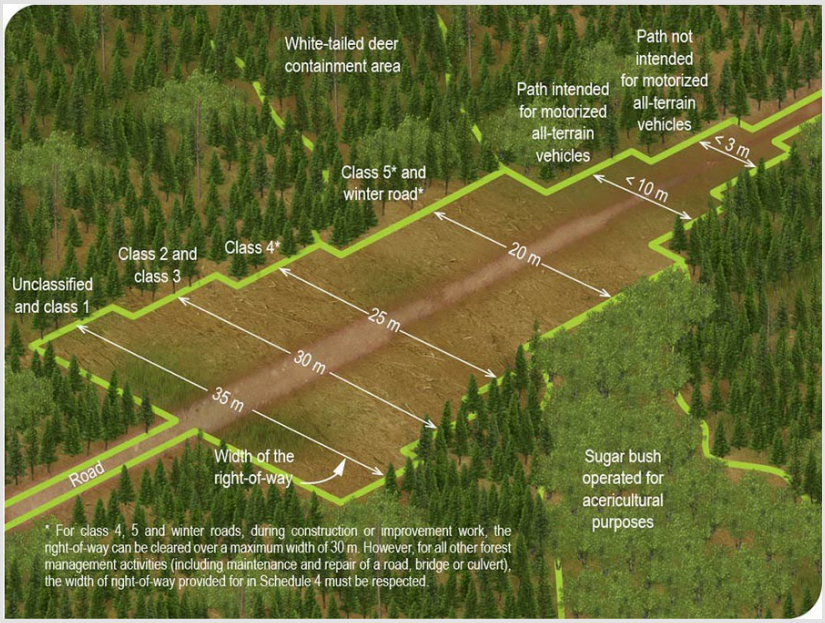


Figure 71 Width of right-of-way by class of road

Schedule 5

Periods during which the work between the banks will be carried out (excavation, installation of a conduit, backfilling, slope stabilization and work concerning, bridge piers)

Region	Species of interest[1]	Presence of salmonids[2]	Salmon or ouananiche[3]	Occurrence of threatened or vulnerable species [4]
1	1 June to 31 March	1 June to 30 September	1June to 30 September	Work is prohibited, subject to the third paragraph of section 92 of this Regulation
2	15 July to 15 April	1 June to 15 September	1 July to 15 September	
3	15 July to 15 April	15 June to 15 September	1 July to 15 September	
4	15 July to 31 March	1 June to 15 September	15 June to 15 September	
5	15 June to 31 March	15 June to 15 September	15 June to 15 September	
6	1 August to 31 March	15 May to 15 September	15 May to 15 September	
7	15 July to 31 March	1 June to 30 September	1 June to 30 September	
8	15 June to 15 April	15 May to 30 September	1 January to 31 December	
9	1 August to 15 April	1 June to 15 September	1 July to 15 September	
10 (south of the 55th parallel)	15 July to 15 April	1 June to 15 September	1 July to 31 July	
10 (north of the 55th parallel)	15 July to 15 April	1 July to 31 July	1 July to 31 July	
11	1 July to 30 April	1 June to 15 September	1 August to 30 September	
12	1 July to 31 March	15 June to 15 September	15 June to 15 September	
13	1 August to 31 March	15 May to 15 September	15 May to 15 September	
14	15 July to 31 March	1 June to 15 September	1 June to 15 September	
15	1 July to 31 March	1 June to 30 September	1 June to 31 August	
16	1 August to 31 March	15 May to 15 September	1 January to 31 December	
17	15 July to 31 March	1 June to 15 September	15 June to 30 September	

[1] Presence of the following species of interest: smallmouth bass, walleye, sand pike, rainbow smelt, northern pike, muskellunge, yellow perch [2] Presence of the following salmonids: lake whitefish, brook trout, lake trout [3] Presence of salmon and/or ouananiche [4] Location of an occurrence of a fish species—registered in the list of wildlife species designated threatened or vulnerable or likely to be designated as such—in the proposed work area or in the first 100 metres downstream from the area. For the purposes of this Regulation, occurrence designates a territory (point, line or map polygon) sheltering or having sheltered a species designated threatened or vulnerable or likely to be designated as such. The occurrence may correspond to a single map polygon (or observation point) or a group of nearby polygons. The information on species designated threatened or vulnerable or likely to be designated as such, in particular the information on occurrences, is available from the Minister responsible for the administration of the Act respecting the conservation and development of wildlife (chapter C-61.1). Note: Where there is the presence of species of interest and salmonids in the watercourse, the period for carrying out the work to meet corresponds to the time period that covers the two periods indicated in the table above for the species. In the case where the person who intends to carry out the work is unable to meet that period, the person must obtain from the Minister the authorization to carry out the work outside that period as provided for in the third paragraph of section 92 of this Regulation. In this case, the period for carrying out the work for one species over the other could be prioritized and the period determined on the basis of the characteristics of the environment and knowledge on the watercourses in the region concerned.

Schedule 6

Peak flow calculation method for drainage basins whose area is equal to or less than 60 km^2

The so-called rational method is used to calculate the 10-year interval peak flow. The method was validated for drainage basins whose area is less than 25 km^2. Thus, where the area of the drainage basin covers between 25 and 60 km2, the result must be validated in the field by looking for signs indicating the water level reached by the floods of previous years or by establishing a relationship with basins that were measured on the same territory or near it.

Steps in calculation

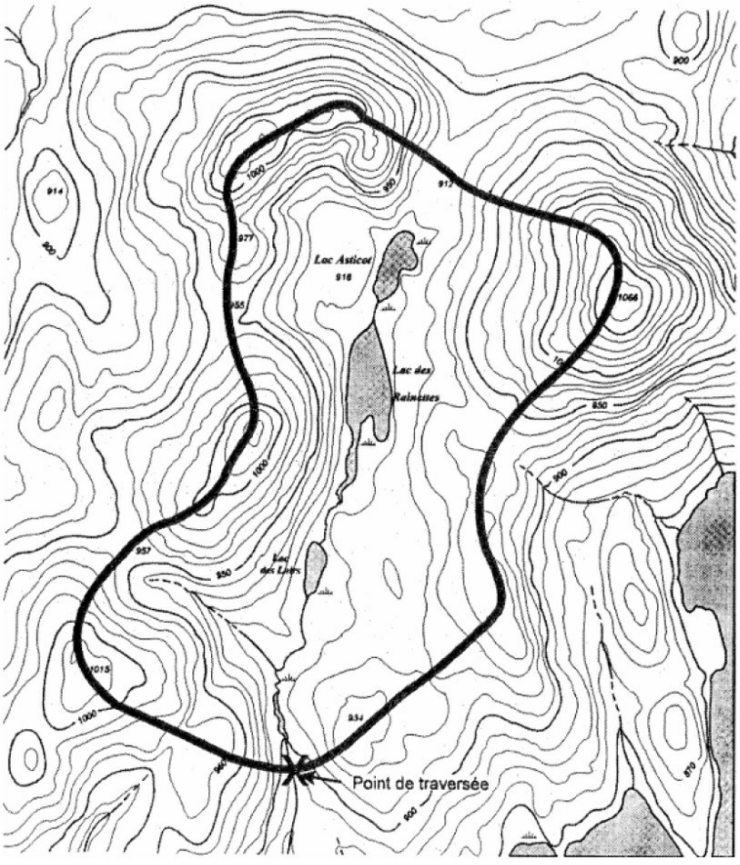
1. Delimitation of the drainage basin;
2. Calculation of the average slope of the drainage basin;
3. Identification of the use of the territory and of the surface deposits in the drainage basin;
4. Calculation of the total area of the basin, of the proportion of each type of surface deposits per land use type and of the percentage of the basin covered by lakes and bare and semi-bare wetlands;
5. Determination of the watercourse's length and calculation of the "85-10" slope of the watercourse;
6. Calculation of the weighted runoff coefficient of the drainage basin;
7. Calculation of the drainage basin's concentration time;
8. Determination of rainfall intensity;
9. Calculation of the correction coefficient for rainfall intensity;
10. Determination of the reduction coefficient for peak flow;
11. Calculation of the 10-year interval peak flow.

Explanation of the steps to be followed with an example

Step 1 - Delimitation of the drainage basin

The drainage basin that supplies the watercourse with water at the crossing point is delimited using a topographic map at a scale of 1: 20 000. Figure 1 shows, as an example, the delimitation of a drainage basin under study.

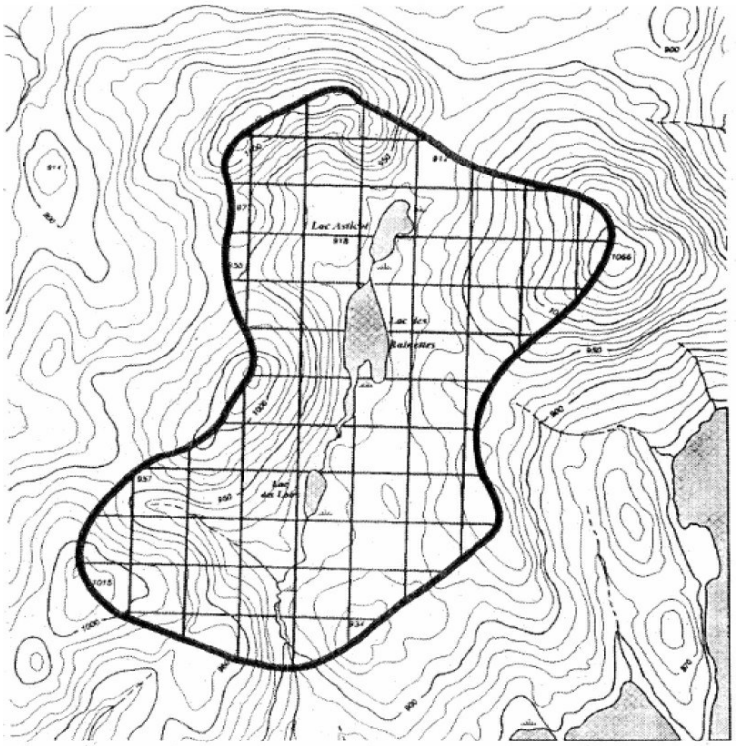
Figure 1. Delimitation of a drainage basin at the crossing point of a watercourse



Step 2 - Calculation of the average slope of the drainage basin (S_b)

The average slope is calculated using a grid (1 cm X 1 cm) superimposed on the drainage basin. The number of times each horizontal and vertical line of that grid crosses a contour line must be determined. The length of those lines is also recorded. The calculation made to determine the average slope of the drainage basin under study is given in figure 2.

Figure 2. Calculation of the average slope of the drainage basin (Sb)



$$S_b = \frac{(N_h + N_v) \times Eq}{(L_h + L_v)}$$

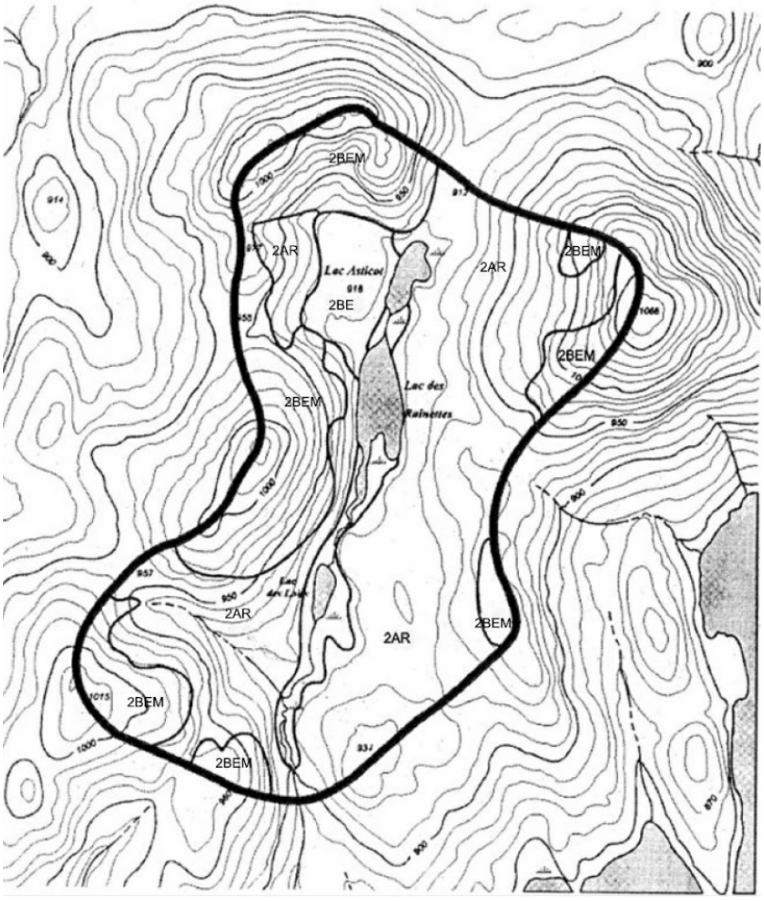
S_b : Pente moyenne du bassin versant
$N_{h,v}$: Nombre de fois que les lignes horizontales, verticales coupent une courbe de niveau
Eq : Équidistance des courbes de niveau (m)
$L_{h,v}$: Longueur des lignes horizontales, verticales (m)

$$S_b = \frac{(180 + 111) \times 10}{(16\,450 + 16\,410)} = 0{,}089 \text{ ou } 8{,}9\%$$

Step 3 - Identification of the use of the territory and of the surface deposits in the drainage basin

With the help of the surface deposit maps, the forest maps and knowledge of the territory, **the use of the lands comprised within the drainage basin must be identified**. They may be woodlands, pasturelands or croplands. Then the surface deposits for each land use type must be identified. **Bare and semi-bare wetlands must also be located**. Figure 3 identifies the surface deposits and locates the bare and semi-bare wetlands in the drainage basin under study, which is completely wooded.

Figure 3. Identification of surface deposits in the drainage basin and location of lakes and bare and semi-bare wetlands



Step 4 - Calculation of the total area of the basin, of the proportion of each type of surface deposits per land use type and of the percentage of the basin covered by lakes and bare and semi-bare wetlands

In the case of the basin under study, according to figure 3, the results are the following:

Land use type	Identification	Proportion of drainage basin	Hydrological classification	Slope of drainage basin (S_B)	Runoff coefficient (C)
Woodlands	2AR	57%	B	-	0.26
Woodlands	2BEM	31%	B	> 8%	0.26
Woodlands	2BE	5%	AB	-	0.18
Lakes and bare/semi-bare wetlands		7%	-	-	0.05

[1] **Identification of surface deposits and location of lakes and bare and semi-bare wetlands**

Step 5 - Determination of the watercourse's length (L_C) and calculation of the "85-10" slope of the watercourse (S_C)

The length of the watercourse is measured from the crossing point, following the course of the main watercourse extended to the watershed divide, that is, to the most distant point in the drainage basin determining the longest route a drop of water must travel to reach the crossing point. **The "85-10" slope of the watercourse** is defined as the average slope of the section of the watercourse between 2 points located respectively 10% upstream from the crossing point and 15% downstream from the farthest limit of the drainage basin. Figure 4 locates the line determining the length of the watercourse (Lc) and figure 5 shows the calculation method for the “85-10” slope of the watercourse (Sc) for the drainage basin under study.

Figure 4. Determination of the watercourse's length (Lc)

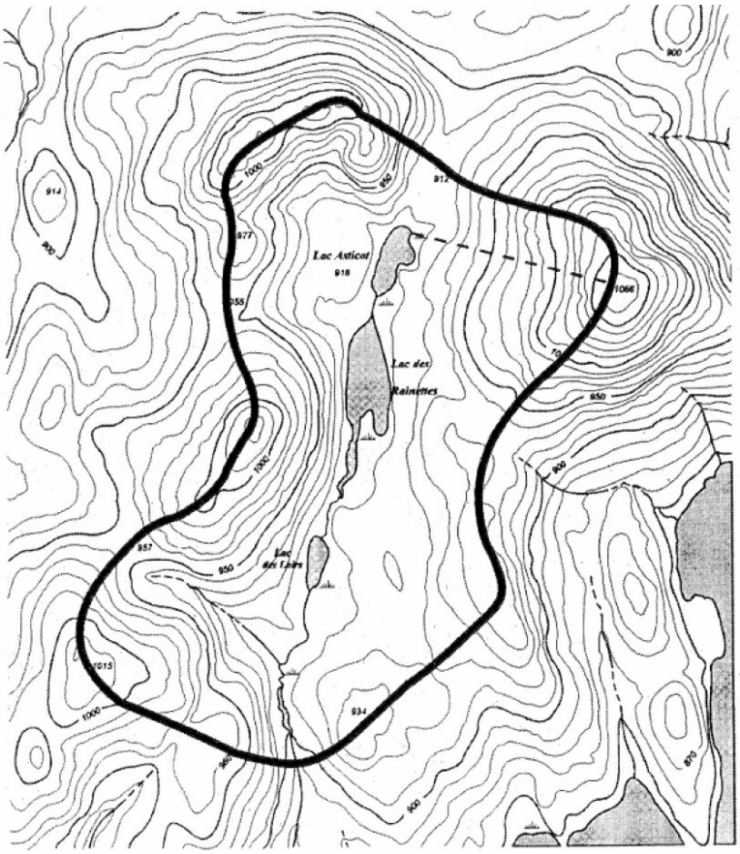
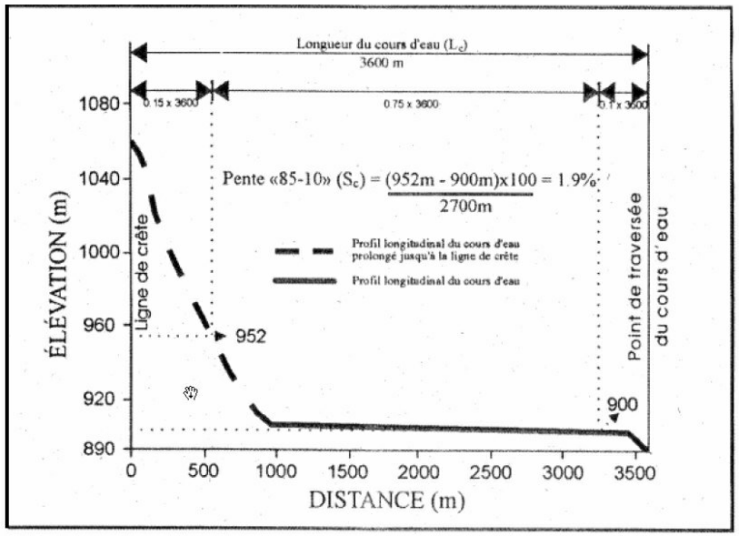


Figure 5. Calculation of the "85-10" slope of the watercourse (Sc)



Step 6 - Calculation of the weighted runoff coefficient of the drainage basin (C_p)

Firstly, using table 1, the various types of surface deposits in the drainage basin are classified on a hydrological basis.

Table 1: Hydrological classification of surface deposits

Types of surface deposits (designation)	Hydrological classification
1AB-1BF-1BG-1BI-1BN-1BP-1BPY-1BR-1BT-1P-2-2A-2AE-2AK-2AT-2B-2BD-2BE-2BP-3AC-4GS-5S-6-6A-8AP-8APM-8APY-8AY-8AYP-8CM-8CY-8E-8F-8M-8P-8PM-8Y-9-9A-9R-9S	AB
1A-1AD-1B-1BC-1BD-1BDY-1BIM-1BIY-2AM-2AR-2AY-2BEM-2BER-2BEY-2BR-3-3A-3AN-3ANY-4P-6S-6SM-6SR-6SY-8A-8AC-8AL-8ALM-8ALY-8AM-8AR-8AS-8ASY-8C-8PY-9SM-9SY-M6S-M8A-M8AP-M8C-M8PY	B
3AE-3D-3DD-3DE-4-4A-4GSM-4GSR-4GSY-5SM-5SR-5SY-6AM-6AY-6R-8-8G	BC
1AA-1AAM-1AAR-1ADY-1AM-1AR-1ASY-1AY-1AYR-1M-1Y-2BDY-4AR-4AY-4GA-4GAM-4GAY-4GAR-4GD-5A-5L-5R-5Y-M1-M1A-M1AA-R1-R1A-R1BD-R2A-R2AK-R2BE-R3AN-R4-R4GS-R5S-R6-R6S-R8A-R8AP-R8C-R8E-R8P-R9S-RS	C
1AAY-5AM-5AR-5AY-5G-5GR-R-R1AA-R4GA-R5A	CD
7-7E-7L-7R-7T-7TM-7TY-AN-M7T-R7-R7T	n.a.

Note: Type 7 deposits are classified as bare and semi-bare wetlands.

Note: Type 7 deposits are classified as bare and semi-bare wetlands. When the hydrological classification of surface deposits is completed, the runoff coefficient for each type of deposit is determined using table 2 based on land use and the average slope of the drainage basin.

Table 2: Runoff coefficients(C)

Land use type	Average slope of drainage basin (S_b)	Hydrological classification of surface deposits				
		AB	B	BC	C	CD
Croplands	< 3%	0.30	0.36	0.41	0.47	0.51
	3 to 8%	0.34	0.43	0.51	0.59	0.67
	> 8%	0.43	0.51	0.61	0.67	0.73
Pasturelands	< 3%	0.12	0.17	0.25	0.34	0.43
	3 to 8%	0.17	0.25	0.33	0.43	0.51
	> 8%	0.22	0.39	0.47	0.56	0.64
Woodlands	< 3%	0.09	0.15	0.21	0.29	0.37
	3 to 8%	0.12	0.19	0.26	0.34	0.43
	> 8%	0.18	0.26	0.34	0.43	0.51
Lakes and bare/semi-bare wetlands		0.05				

Then the weighted runoff coefficient for the drainage basin may be calculated (C_p). In the case of the basin under study, the data and calculations are the following:

Land use type	Identification	Proportion of drainage basin	Hydrological classification	Slope of drainage basin (S_b)	Runoff coefficient (C)
Woodlands	2AR	57%	B	-	0.26
Woodlands	2BEM	31%	B	> 8%	0.26
Woodlands	2BE	5%	AB	-	0.18
Lakes and bare/semi-bare wetlands		7%	-	-	0.05

Weighted runoff coefficient (C_p) = (57% X 0,26)+(31% X 0,26)+(5% X 0,18)+(7% X 0,05)=0,24

Step 7- Calculation of the drainage basin's concentration time (t_c)

The concentration time of the drainage basin is determined using one of the following 2 formulas: **If C_p < 0,40** t_c = (3,26 (1,1 - C_p) L_c0,5)/S_c0,33 where : t_c : concentration time (minutes) C_p : weighted runoff coefficient for the basin L_c : length of watercourse (m) S_c : "85-10" slope of the watercourse (%)
if C_p ≤ 0,20, S_c minimum to be used = 0,1% if 0,20 < C_p < 0,40, S_c minimum to be used = 0,5% t_c minimum = 10 minutes
If C_p ≥ 0,40 t_c = (0,057 L_c)/(S_c ^{0,2} A_b ^{0,1}) where: t_c : concentration time (minutes) L_c : length of watercourse (m) S_c : "85-10" slope of watercourse (%) Ab : area of drainage basin (ha) tc minimum = 10 minutes In the case of the basin under study, the C_p is equal to 0.24. Consequently, the first formula must be used. t_c = (3,26 (1,1 - 0,24) x 3 600 $^{0,5)}$/1,9 ^{0,33}= 136 minutes

Step 8 - Determination of rainfall intensity (I)

Rainfall intensity is determined using figures 6 and 7. In figure 6, average total rainfall of a 1-hour duration for the basin under study is indicated by the contour line closest to that basin.

Figure 6. Isohyet of the average total rainfall (mm) of a 1-hour duration

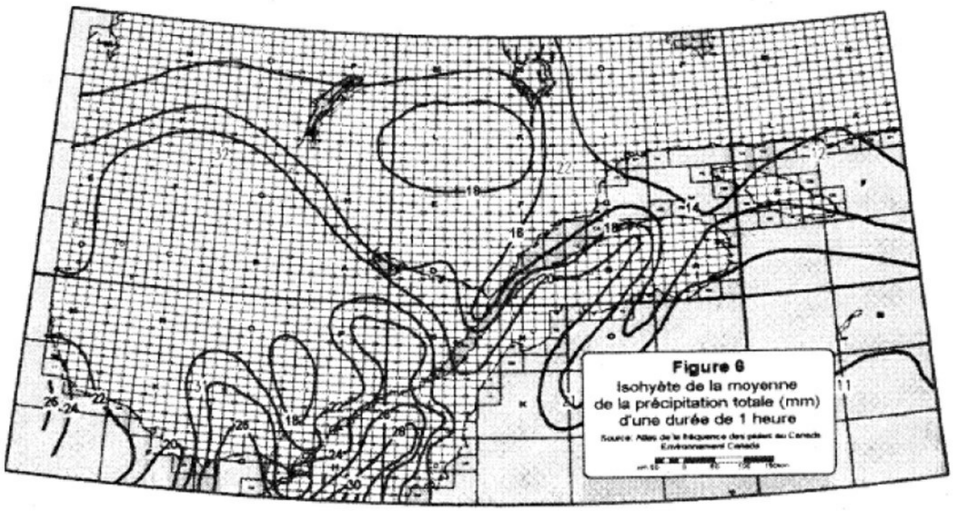
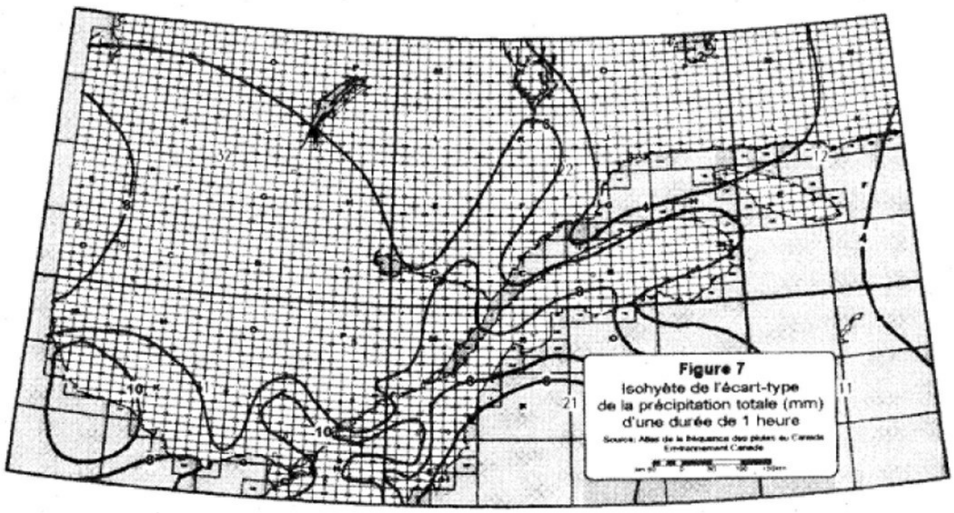


Figure 7 indicates the standard deviation for the total rainfall of a 1-hour duration.

Figure 7. Isohyet of the standard deviation for total rainfall (mm) of a 1-hour duration



The rainfall intensity applicable to the drainage basin is determined as follows: I = average total rainfall of a 1-hour duration + (1.305 X standard deviation for total rainfall of a 1-hour duration). In our example, which is located on sheet 21M/6 N.E., the average is 22 mm/hour and the standard deviation is 8 mm/hour. The rainfall intensity applicable to that drainage basin is therefore 32.4 mm/hour, that is, 22 + (1.305 X 8).

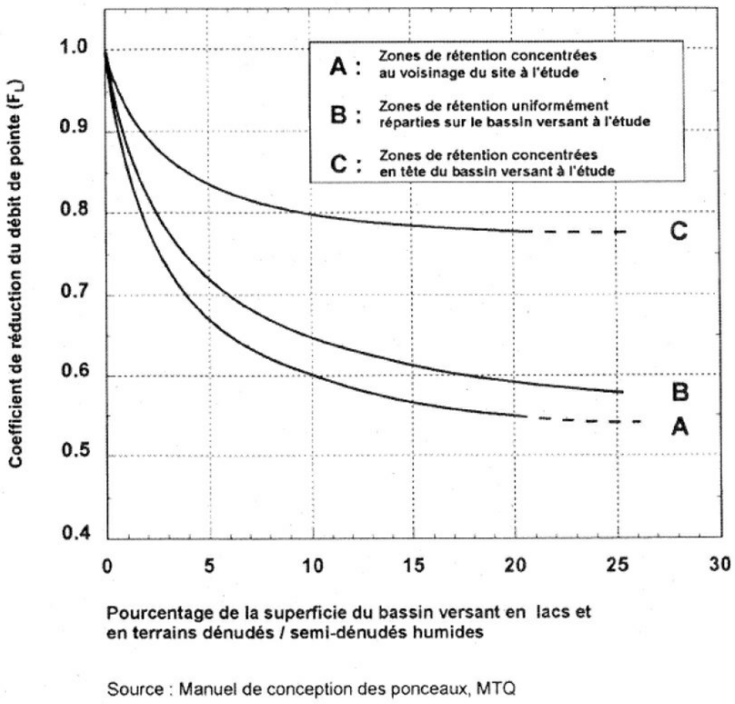
Step 9 - Calculation of the correction coefficient for rainfall intensity (Fi)

Depending on the concentration time of the drainage basin, the correction coefficient for rainfall intensity is calculated using one of the following 2 formulas: $F_i = 12{,}25/t_c^{0{,}612}$ for 10 minutes ≤ t_c < 60 minutes $F_i = 17{,}07/t_c^{0{,}693}$ for $t_c \geq 60$ minutes where: t_c: temps de concentration (minute) In the case of the basin under study, the second formula must be used (tc = 136 minutes). $F_i = 17{,}07/136^{0{,}693} = 0{,}567$

Step 10 - Determination of the reduction coefficient for the peak flow (F_L)

The retention zones such as lakes and bare and semi-bare wetlands entail a significant reduction in the peak flow. The reduction coefficient for peak flow is evaluated using the proportion of lakes and bare and semi-bare wetlands calculated at step 4 and figure 8. In the case of the basin under study, that coefficient is 0.69 (curve B, 7% covered by lakes and bare and semi-bare wetlands).

Figure 8. Routing effect of lakes and bare and semi-bare wetlands



Source : Manuel de conception des ponceaux, MTQ

Step 11 - Calculation of the 10-year interval peak flow (Q_{10})

That flow is calculated using the following formula: Q_{10} (m³/s) = (C_p F_i I A_b F_L)/360 where: C_p = Weighted runoff coefficient for the drainage basin F_i = Correction coefficient for rainfall intensity I = Rainfall intensity (mm/hour) A_b = Area of the drainage basin (ha) F_L = Reduction coefficient for peak flow For the basin under study: Q_{10} = (0,24 X 0,567 X 32,4 X 414 X 0,69)/360 Q_{10} = 3,5 m³/s A weighted factor of at least 5% is then applied to the flow obtained in order to take into account exceptional climatic events. Ex : 3,5 m³/s X 1,05 = 3,67 m³/s

Schedule 7

Calculation method for the peak flow of a drainage basin of an area greater than 60 km^2

The HP-40 statistical method is used to calculate the 20-year interval maximum daily flow. The method was validated for drainage basins whose area is greater than 150 km^2. Thus, where the area of the basin covers between 60 and 150 km^2, the result must be validated in the field by looking for signs indicating the water level reached by the floods of previous years or by establishing a relationship with basins that were measured on the same territory or near it. **Steps in calculation**

1. Delimitation of the drainage basin with a topographic map at a scale of 1:20 000;
2. Calculation of the drainage basin's area;
3. Calculation of the "85-10" slope of the watercourse;
4. Calculation of the proportion of the basin covered by lakes and bare and semi-bare wetlands;
5. Calculation of the 20-year interval maximum daily flow.

The delimitation of a drainage basin is shown as an example in step 1 of Schedule 6. The calculation method for the "85-10" slope of the watercourse is the same as that used for drainage basins of 60 km^2 or less (Schedule 6 — step 5). The 20-year interval maximum daily flow (Q1.20) is determined using the following formula: $Q_{1,20}(m^3/s) = (0,7882 (A_b/100)^{0,93} (Sc)^{0,30})/S_t 0,24$ where: A_b = area of the drainage basin (ha) S_c = "85-10" slope of the watercourse (%) S_t = percentage of the area of the drainage basin covered by lakes and bare and semi-bare wetlands (%) Exemple : A_b = 75 km^2

$Q_{1,20} = (0,7882 (75)^{0,93} (1)^{0,30})/ (5)^{0,24} = 29,7 m^3/s$ where: S_c = 1% S_t = 5% A weighted factor of at least 5% is then applied to the flow obtained in order to take into account exceptional climatic

events. i.e. : 29,7 m³/s X 1,05 = 31,2 m³/s

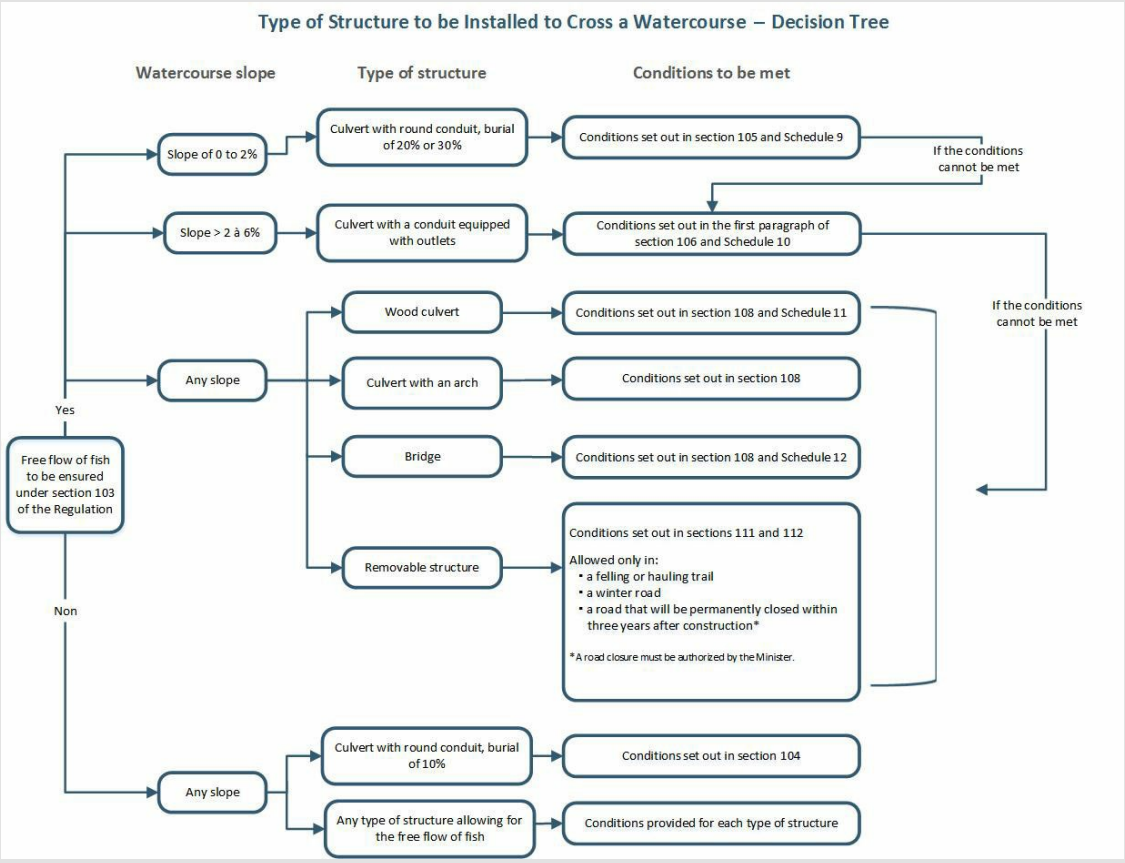
Schedule 8

Diameter required for round conduits according to the peak flow[a] (Q_{10}; $Q_{1,20}$), the type of intake and the burial

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Additional information

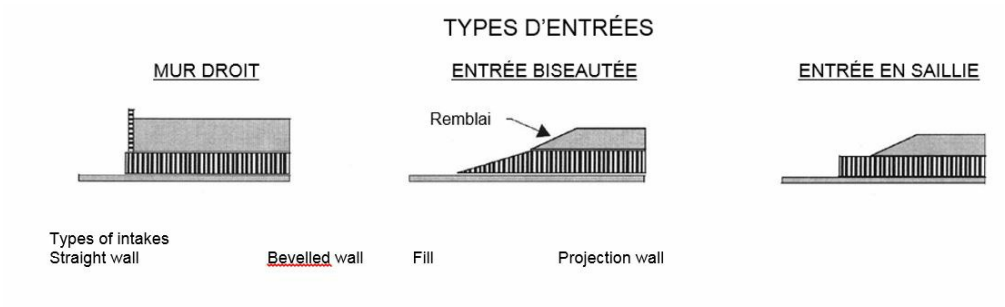
The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



		Round conduit (0% ≤ slope ≤ 2%)										Round conduit with outlets (2% < slope ≤ 6%)			
		Burial 10%				Burial 20%				Burial 30%					
	Type of intake	Projection		Bevelled or straight		Projection		Bevelled or straight		Projection		Bevelled or straight		Projection		Bevelled or straight	
	Diameter of conduit (mm)	Flow classes (m^3/sec)[b]													
Round conduits	450	0.00	0.13	0.00	0.15	–	–	–	–	–	–	–	–	–	–	–	–
	500	0.14	0.17	0.16	0.19	–	–	–	–	–	–	–	–	–	–	–	–
	600	0.18	0.27	0.20	0.30	–	–	–	–	0	0.19	0	0.22	–	–	–	–
	700	0.28	0.40	0.31	0.44	–	–	–	–	0.20	0.25	0.23	0.28	–	–	–	–
	750	0.41	0.47	0.45	0.52	0.00	0.32	0.00	0.35	0.26	0.32	0.29	0.35	–	–	–	–
	800	0.48	0.56	0.53	0.62	0.33	0.39	0.36	0.43	0.33	0.39	0.36	0.43	–	–	–	–
	900	0.57	0.75	0.63	0.83	0.40	0.56	0.44	0.62	0.40	0.53	0.44	0.60	–	–	–	–
	1,000	0.76	0.97	0.84	1.08	0.57	0.76	0.63	0.85	0.54	0.69	0.61	0.78	–	–	–	–
	1,125	0.98	1.30	1.09	1.44	0.77	1.08	0.86	1.20	0.70	0.93	0.79	1.04	–	–	–	–
	1,200	1.31	1.53	1.45	1.70	1.09	1.29	1.21	1.44	0.94	1.10	1.05	1.23	0	0.82	0	0.82
	1,400	1.54	2.25	1.71	2.49	1.30	1.93	1.45	2.15	1.11	1.61	1.24	1.80	0.83	1.51	0.83	1.51
	1,500	2.26	2.67	2.50	2.96	1.94	2.29	2.16	2.55	1.62	1.91	1.81	2.14	1.52	1.95	1.52	1.95
	1,600	2.68	3.14	2.97	3.48	2.30	2.69	2.56	3.00	1.92	2.25	2.15	2.52	1.96	2.46	1.96	2.46
	1,800	3.15	4.21	3.49	4.67	2.70	3.61	3.01	4.02	2.26	3.15	2.53	3.52	2.47	3.68	2.47	3.68
	2,000	4.22	5.48	4.68	6.08	3.62	4.70	4.03	5.24	3.16	4.31	3.53	4.81	3.69	5.21	3.69	5.21
	2,200	5.49	6.96	6.09	7.71	4.71	5.97	5.25	6.64	4.32	5.70	4.82	6.35	5.22	6.88	5.22	7.07
	2,400	6.97	8.65	7.72	9.59	5.98	7.42	6.65	8.26	5.71	7.32	6.36	8.15	6.89	8.72	7.08	9.28
	2,700	8.66	11.61	9.60	12.87	7.43	10.20	8.27	11.35	7.33	10.20	8.16	11.35	8.73	12.04	9.29	12.83
	3,000	11.62	15.12	12.88	16.76	10.21	13.69	11.36	15.21	10.21	13.69	11.36	15.21	12.05	15.92	12.84	16.98
	3,300	15.13	19.17	16.77	21.26	13.70	17.77	15.22	19.74	13.70	17.77	15.22	19.74	15.93	20.44	16.99	21.85
	3,600	19.18	23.83	21.27	26.43	17.78	22.51	19.75	25.00	17.78	22.51	19.75	25.00	20.45	25.58	21.86	27.45
Structural plates	3,670	23.84	25.01	26.44	27.74	22.52	23.72	25.01	26.35	22.52	23.72	25.01	26.35	25.59	26.88	27.46	28.95
	3,990	25.02	30.82	27.75	34.18	23.73	29.71	26.36	32.98	23.73	29.71	26.36	32.98	26.89	33.33	28.96	35.92
	4,300	30.83	37.16	34.19	41.22	29.72	36.30	32.99	40.29	29.72	36.30	32.99	40.29	33.34	40.39	35.93	43.57
	4,610	37.17	44.25	41.23	49.03	36.31	43.72	40.30	48.45	36.31	43.72	40.30	48.45	40.40	48.24	43.58	52.07
	4,920	44.26	52.05	49.04	57.72	43.73	51.93	48.46	57.59	43.73	51.93	48.46	57.59	48.25	57.00	52.08	61.51
	5,230	52.06	61.01	57.72	67.64	51.94	61.01	57.60	67.64	51.94	61.01	57.60	67.64	57.01	66.62	61.52	71.83
	5,540	61.02	70.97	67.65	78.53	61.02	70.97	67.65	78.53	61.02	70.97	67.65	78.53	66.63	77.10	71.84	83.08
	5,850	70.98	81.89	78.54	90.52	70.98	81.89	78.54	90.52	70.98	81.89	78.54	90.52	77.11	88.62	83.09	95.43
	6,160	81.90	93.72	90.53	103.46	81.90	93.72	90.53	103.46	81.90	93.72	90.53	103.46	88.63	101.05	95.44	108.74
	6,470	93.73	106.51	103.47	117.45	93.73	106.51	103.47	117.45	93.73	106.51	103.47	117.45	101.06	114.46	108.75	123.12
	6,780	106.52	120.33	117.46	132.54	106.52	120.33	117.46	132.54	106.52	120.33	117.46	132.54	114.47	128.92	123.13	138.60

a: calibrated so that the height of the water in the conduit is always less than or equal to 85% of the clearance after burial of the conduit;
b: the numbers correspond to the flow interval (class) in which a conduit, having a given size and characteristics, discharges optimally up to the maximum capacity of the class.

Source: Plamondon, André P. Février 2013. *Capacité d'écoulement des conduits circulaires enfouis et munis de déversoirs – Application au milieu forestier*. 88 p. Unpublished report.



Schedule 9

Conditions to meet for a culvert with a round conduit where free flow of fish must be ensured

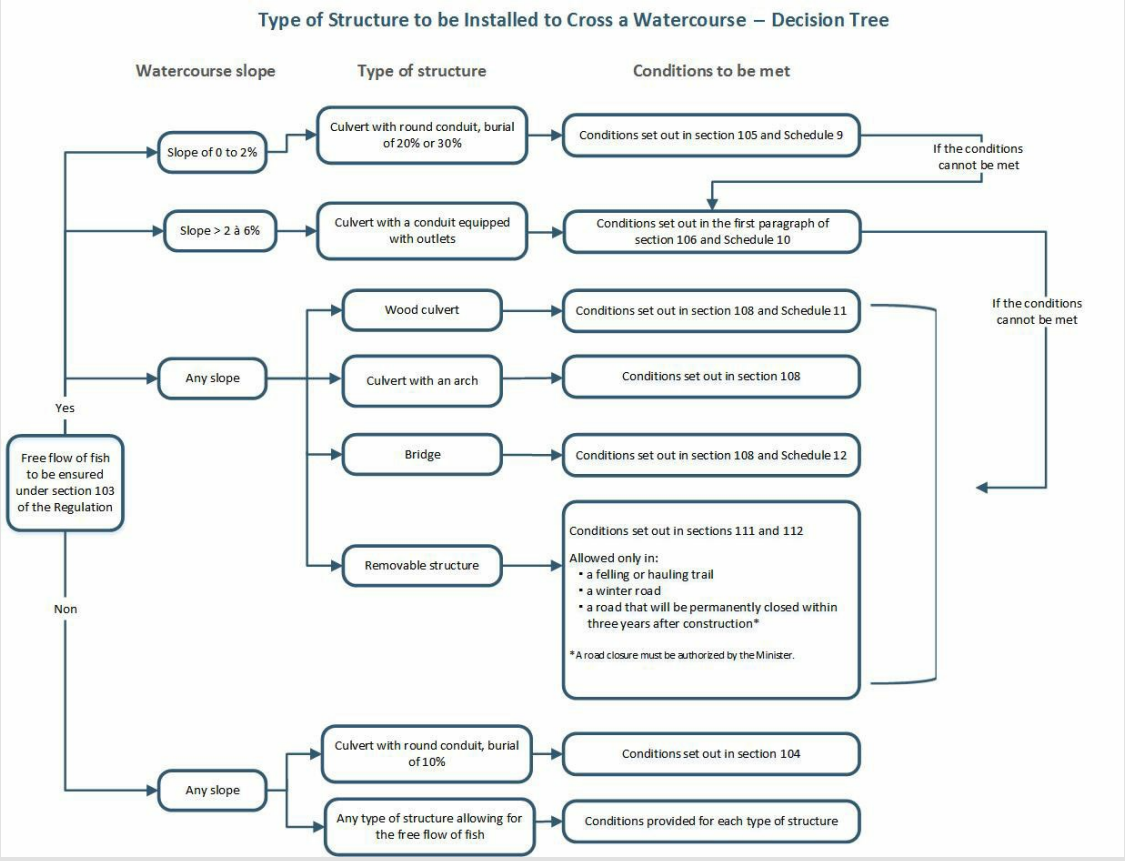
1

Explanations

All the conditions (width, slope, burial, narrowing, etc.) indicated in Schedule 9 must be complied with when installing a culvert with a circular conduit in a watercourse where the free circulation of fish must be ensured. If it is not possible to comply with a given condition (e.g. if it is difficult to comply with burial conditions due to the presence of rock), another type of structure (arch, bridge, etc.) must be installed instead.

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



Length of conduit (L)	Maximum slope of watercourse at the site of crossing[1]	Minimum diameter of conduit (mm)	Burial of conduit over its entire length [2]			Maximum narrowing of the width of the watercourse[4]	
			Proportion of diameter	Minimum	Maximum	Slope[5] upstream > 1%	Slope[5] upstream ≤ 1%
0 < L ≤ 9 m	2%	600	30%	250 mm[3]	500 mm	20%	50%
9 < L ≤12 m	2%	750	30%	250 mm	500 mm	20%	50%
12 < L ≤ 18 m	1%	750	20%	250 mm	500 mm	20%	20%
18 < L ≤ 24 m	0.5%	750	20%	250 mm	500 mm	20%	20%

[1] The slope is the inclination of the section of the watercourse included between the first natural thresholds not touched by the work (excavation, installation of conduit, rockfill, etc.) and located upstream and downstream of the culvert. It is measured from the thalweg of each threshold.

2

Additional information

The slope of a watercourse is measured between two natural thresholds unaffected by the work (excavation, conduit installation, riprap, etc.). A threshold is an elevation of substrate across a watercourse that is not necessarily perpendicular to its axis and that is situated between the two deepest sections. In a watercourse with a standard profile (no thresholds, channels or rapids), the slope may be measured from arbitrary points on the watercourse thalweg. The slope of a watercourse must be assessed using a device that is sufficiently accurate. For example, a preliminary estimate may be made using a clinometer, but more accurate instruments, such as a precision sight level or an integrated set of measuring instruments that automatically measure both angles and distances during a land survey, are needed at the culvert installation stage.

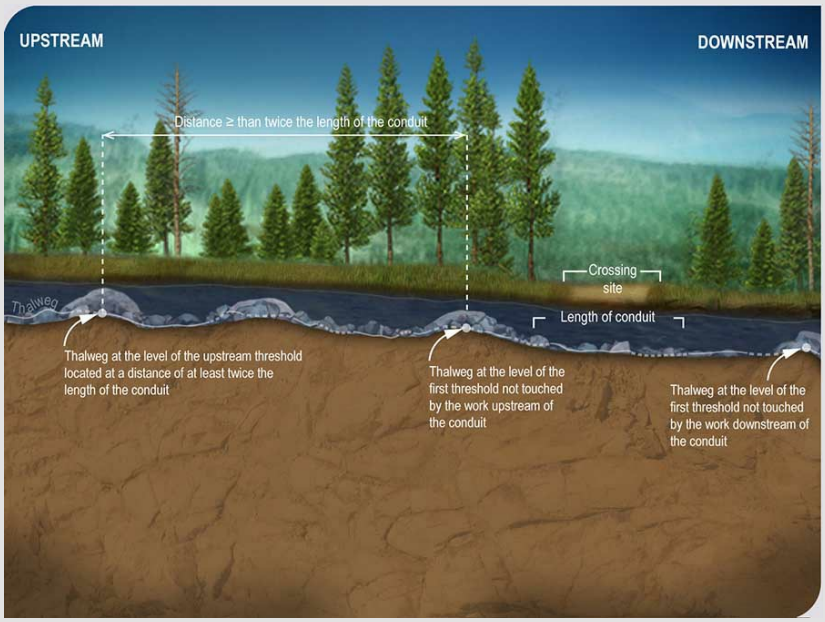


Figure Schedule 9A Placement of thresholds used to measure the slope of a watercourse

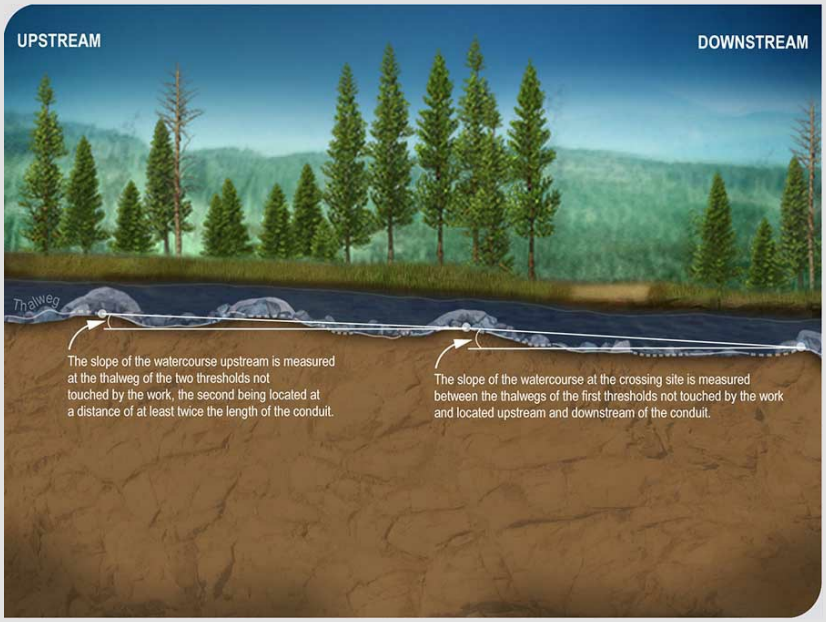


Figure Schedule 9B Measuring the slope of a watercourse

[2] The depth of the burial to the invert downstream is measured with relation to the thalweg of the threshold of the natural bed of the watercourse, located at a distance of over three times the diameter

3

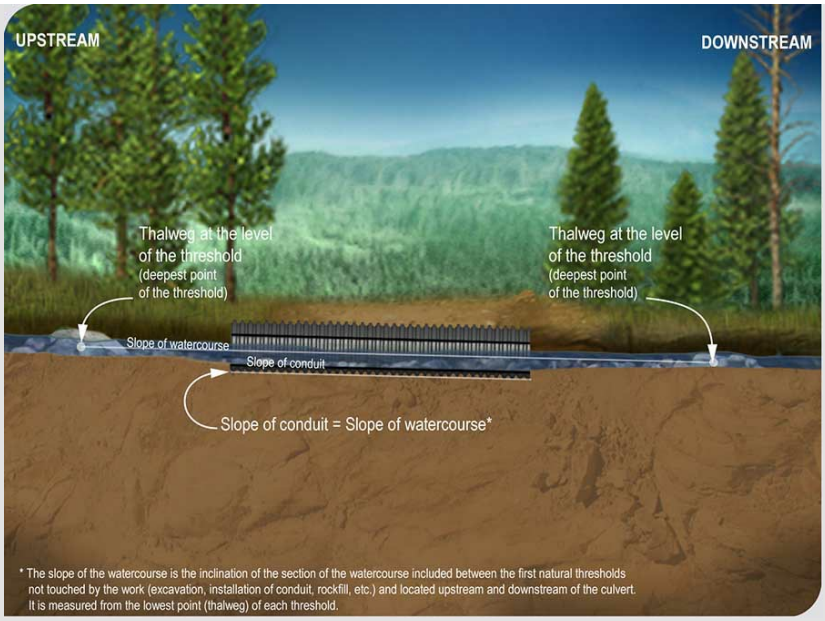


Figure Schedule 9C Burial of a conduit following the slope of the watercourse

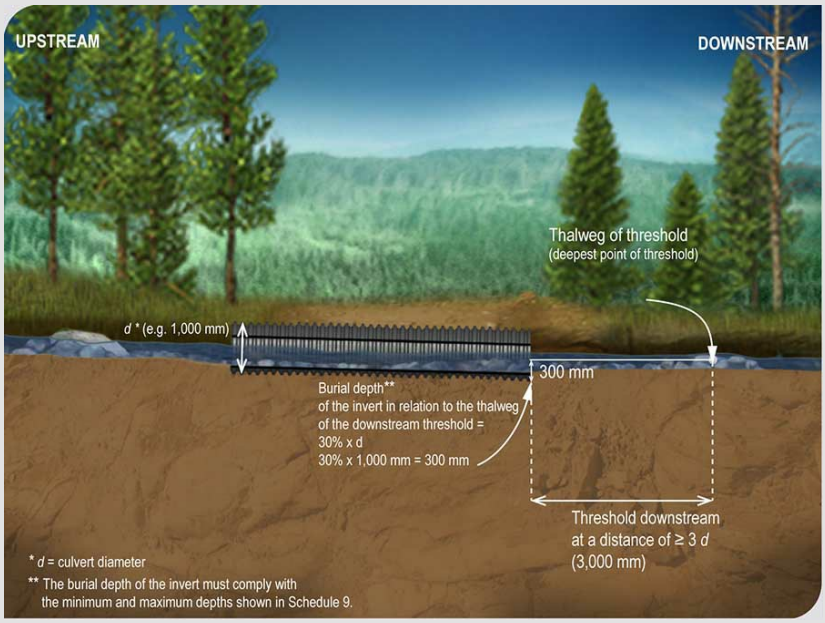


Figure Schedule 9D Burial depth for a conduit

[3] Of the conduit downstream. The slope of the conduit will be the same as the slope of the watercourse. Except 600 mm diameter conduits that must be buried at a depth of 180 mm. [4] The width of the watercourse is measured at the level of the upper limit of the banks.

4

Additional information

The distance between the conduits of a culvert with parallel conduits must be considered when calculating the narrowing of the natural width of the watercourse by the culvert. The minimum distance between the conduits is one metre, as specified in section 102 of this Regulation.

[5] Corresponds to the slope of a watercourse measured between two natural thresholds that are not touched by the work and are located upstream at a distance equivalent to twice the length of the conduit.

Schedule 10

Conditions to be met for a culvert with a conduit having outlets where the conditions provided for in Schedule 9 for the layout of a culvert with a round conduit may not be met

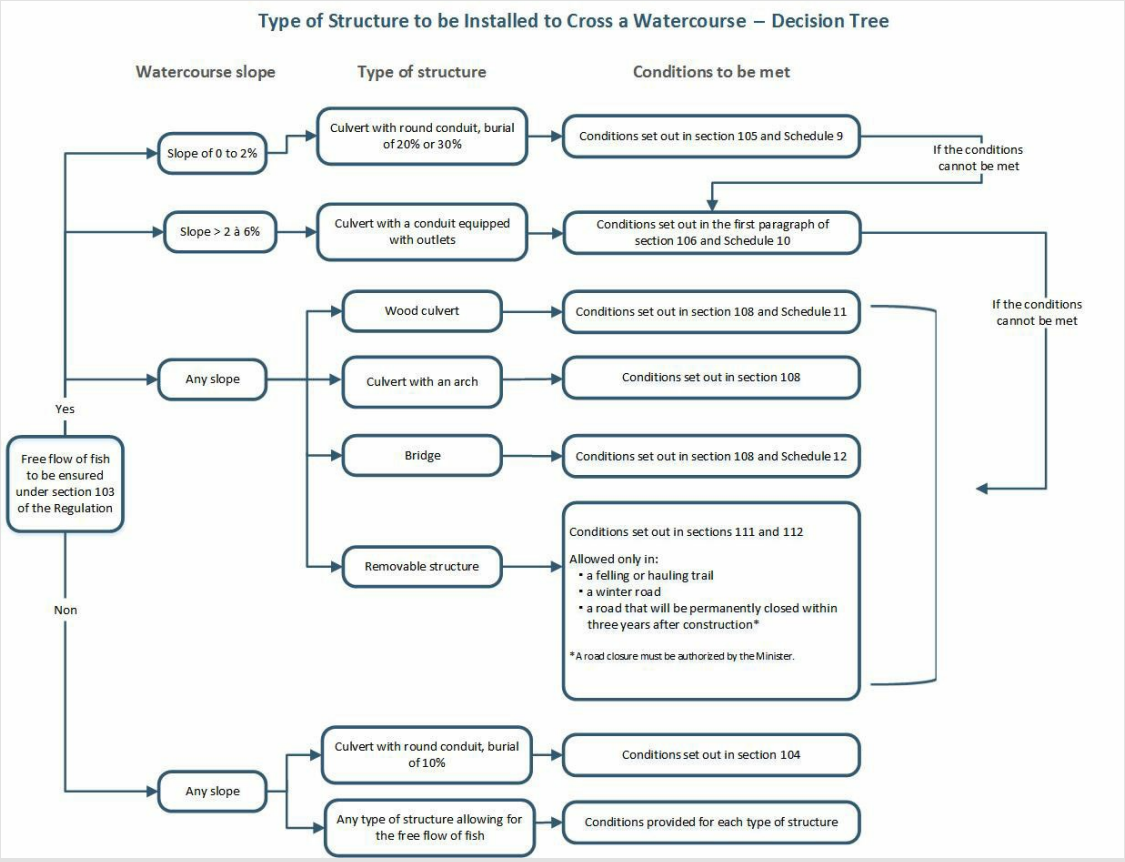
1

Explanations

The outlets create a series of thresholds and basins in the culvert so that the water speed and depth are sufficient to ensure the free flow of fish. All the conditions indicated in Schedule 10 must be complied with when installing a culvert with outlets. If it is not possible to comply with a given condition (e.g. if it is difficult to comply with burial conditions due to the presence of rock), another type of structure (arch, bridge, etc.) must be installed instead.

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



Slope of watercourse

Conduits with outlets must be installed in watercourses whose slope is greater than 2%. In addition, the slope of the watercourse may not exceed the percentage appearing in table 1, which varies on the basis of the length of the conduits.

Table 1. Maximum slope of the watercourse on the basis of the length of the conduits

Length of the conduit (m)	Maximum slope of the watercourse (%)[1]
Less than 15	5
Equal to or greater than 15	6

2

Additional information

The slope of a watercourse is measured between two natural thresholds unaffected by the work (excavation, conduit installation, riprap, etc.). A threshold is an elevation of substrate across a watercourse that is not necessarily perpendicular to its axis and that is situated between the two deepest sections. In a watercourse with a standard profile (no thresholds, channels or rapids), the slope may be measured from arbitrary points on the watercourse thalweg. The slope of a watercourse must be assessed using a device that is sufficiently accurate. For example, a preliminary estimate

may be made using a clinometer, but more accurate instruments, such as a precision sight level or an integrated set of measuring instruments that automatically measure both angles and distances during a land survey, are needed at the culvert installation stage.

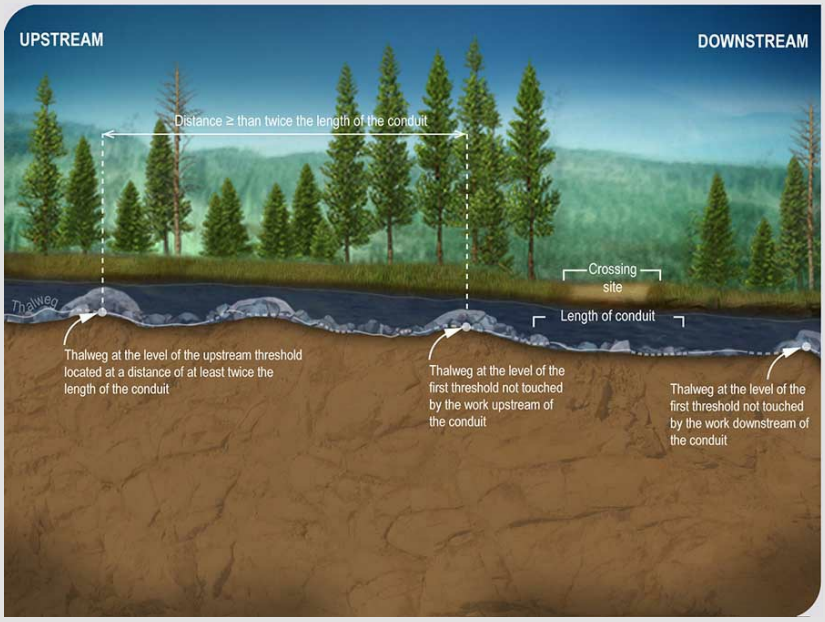


Figure Schedule 9A Placement of thresholds used to measure the slope of a watercourse

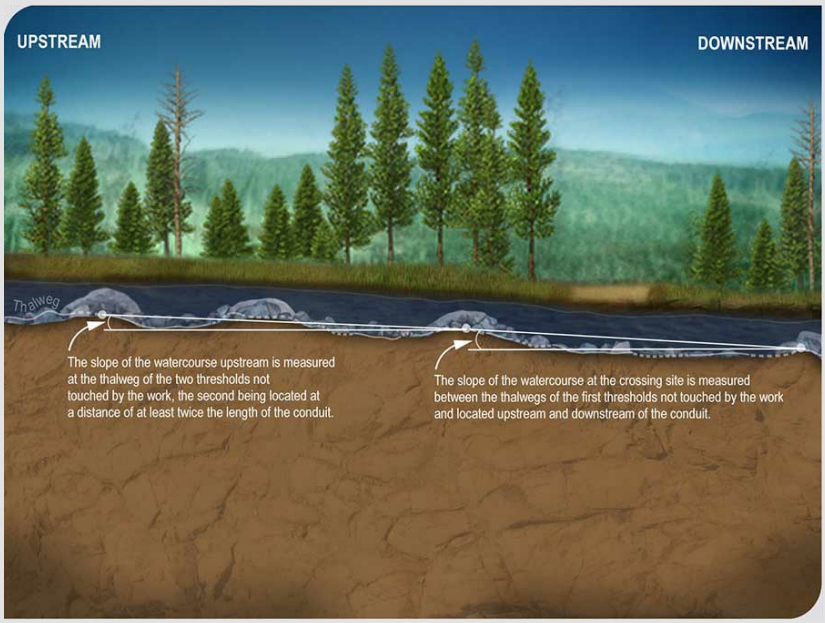


Figure Schedule 9B Measuring the slope of a watercourse

Narrowing and widening of the watercourse

Maximum narrowing of the width of the watercourse: 20% Widening of the watercourse: where required by the calculation of the flow

3

Additional information

How is the width of a watercourse measured?The width of a watercourse is calculated using the average of at least four representative measurements of the natural watercourse taken upstream and downstream of the crossing site. If there are signs of narrowing or widening, the section in question (e.g. area disturbed by a beaver dam) must be excluded. The width is measured at the level of the upper limit of the banks. The method used to identify the upper limit is shown in the definition of “bank”. The distance between the conduits of a culvert with parallel conduits must be considered when calculating the narrowing of the natural width of the watercourse by the culvert. The minimum distance between the conduits is one metre, as specified in section 102 of this Regulation.

Dimensions of conduits

Minimum diameter of the conduits: 1,200 mm Minimum length of the conduits: 9 m Maximum length of the conduits: 24 m

Design of outlets

Characteristics of outlets The outlets must be manufactured to remain in good working order and be functional for the expected life of the conduit. The outlets must not reduce the expected life of the conduit. The outlets must have a height of 500 mm or more and dull edges. They must be equipped with abutments. The material of the outlets must be corrosion resistant. The outlets must not be inclined by more than 9 degrees in relation with the transverse axis of the conduit. The joints between the outlets and the conduit must be leakproof. The number of outlets and their location in the conduits must comply with the standards in table 2, which vary according to the length of the conduit.

Table 2. Number and location of the outlets in relation with the length of the conduit

Length of the conduit (m) [1]	Number of outlets	Distance between outlets (mm)	Distance of the first and the last outlets in relation to the ends of the conduit (mm)
6	3	2,000	1,000
9	5	1,800	900
12	6	2,000	1,000
15	8	1,900	900

[1] Conduits greater than or equal to 12 m in length may be obtained by connecting conduits with a lesser length presented in table 2.

4

Additional information

Outlet materials must be corrosion-resistant. For example, the welded joints must be galvanized to prevent rusting.

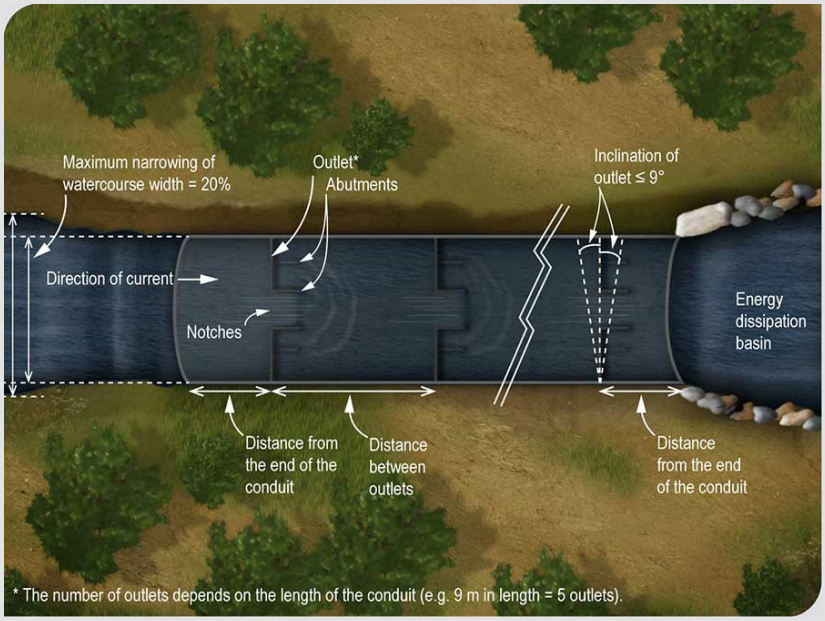


Figure Schedule 10A Location of outlets in a conduit

Characteristics of notches in outlets Notches in outlets must be rectangular with dull edges. Notches may be located in the centre of the outlets or off-centre alternating from one outlet to the other. The dimensions of the notches in the outlets must comply with the standards in table 3, which vary according to the diameter of the conduit.

Table 3. Dimensions of notches in outlets according to the diameter of the conduit

Diameter of the conduit (mm)	Dimensions of notches	
	Width (mm)	Height (mm)
Less than 2,200	150	200
2,200 to < 2,700	200	250
2,700 to < 3,300	250	300
3,300 to < 3,600	300	300
3,600 and over	400	300

5

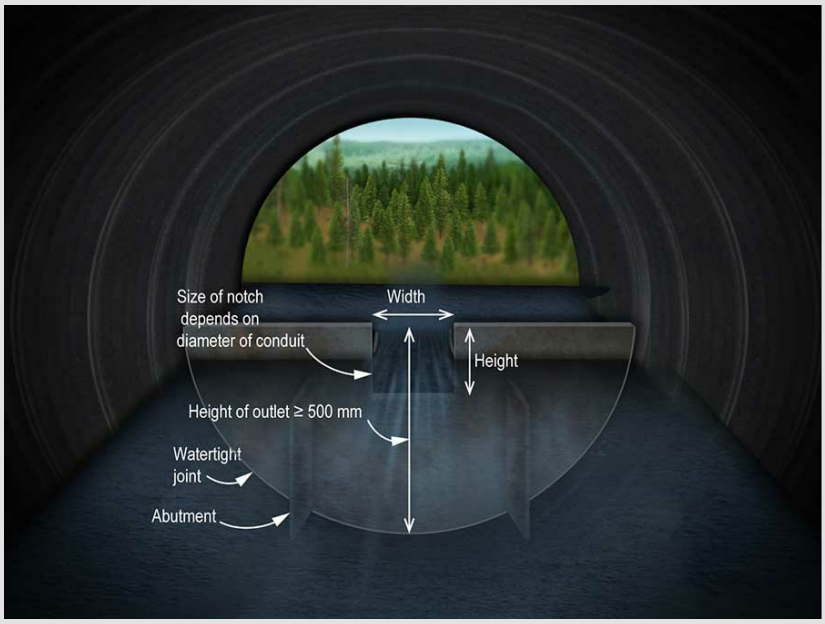


Figure Schedule 10B Characteristics of outlets in a conduit

Procedure for installation Burial depth of downstream invert

6

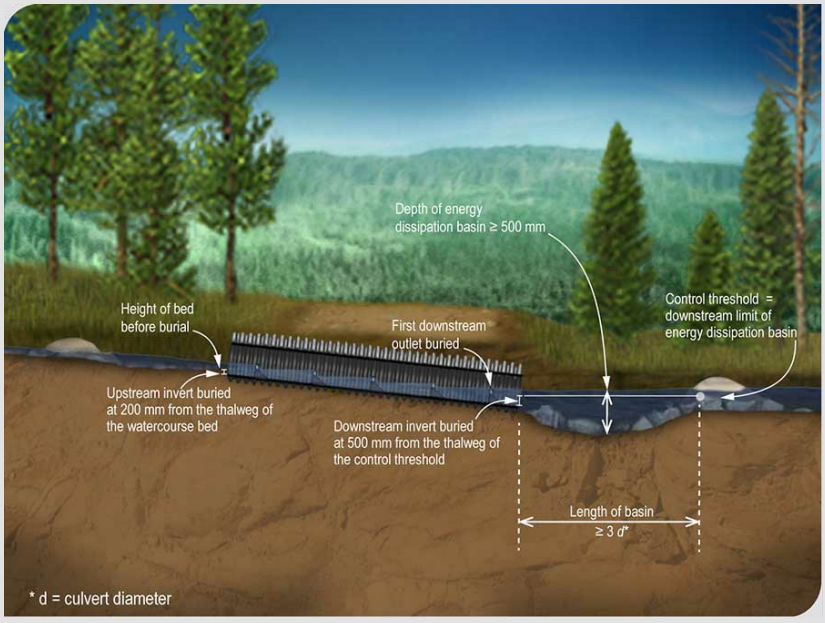


Figure Schedule 10C Burial depth of a conduit equipped with outlets compared to the thalweg and characteristics of the energy dissipation basin

The downstream invert of the conduit must be buried at a depth of 500 mm in relation with the thalweg of the control sill not touched by the work. The control sill is located downstream of the energy dissipation basin at a distance equal to or greater than three times the diameter of the conduit. The first outlet downstream of the culvert will be submerged. **Burial depth of the upstream invert**

7

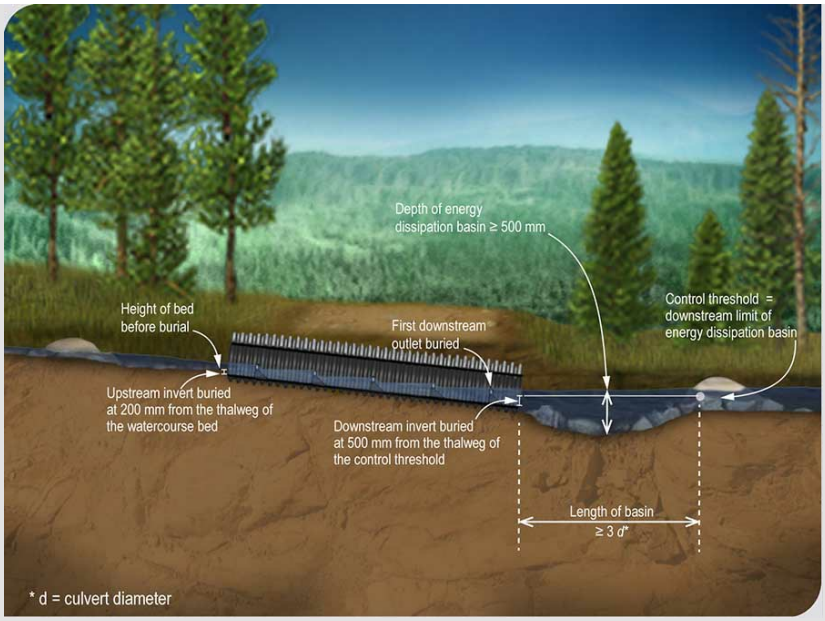


Figure Schedule 10C Burial depth of a conduit equipped with outlets compared to the thalweg and characteristics of the energy dissipation basin

The upstream invert of the conduit must be buried at a depth of 200 mm in relation with the thalweg of the bed of the watercourse before the installation. **Energy dissipation basin** An energy dissipation basin is required downstream of the conduit. The downstream limit of the energy dissipation basin must be the control sill not touched by the work located at a distance equal to or greater than three times the diameter of the conduit. The depth of the energy dissipation basin must be ≥ 500 mm.

8

Additional information

The energy dissipation basin absorbs the energy and turbulence of the water leaving the culvert and provides a rest area for fish. If there is no natural basin downstream of the conduit, one must be created by excavating the watercourse bed. The bottom and sides of the basin must be stable, to avoid scouring. Where necessary, they must be stabilized with riprap. The geotextile membrane must be placed on the sides of the basin, anchored under the riprap, not under the riprap at the bottom of the basin. The space occupied by the riprap must therefore be considered when digging the energy dissipation basin, so as not to reduce its volume. The control threshold at the basin exit must not be altered by the work.

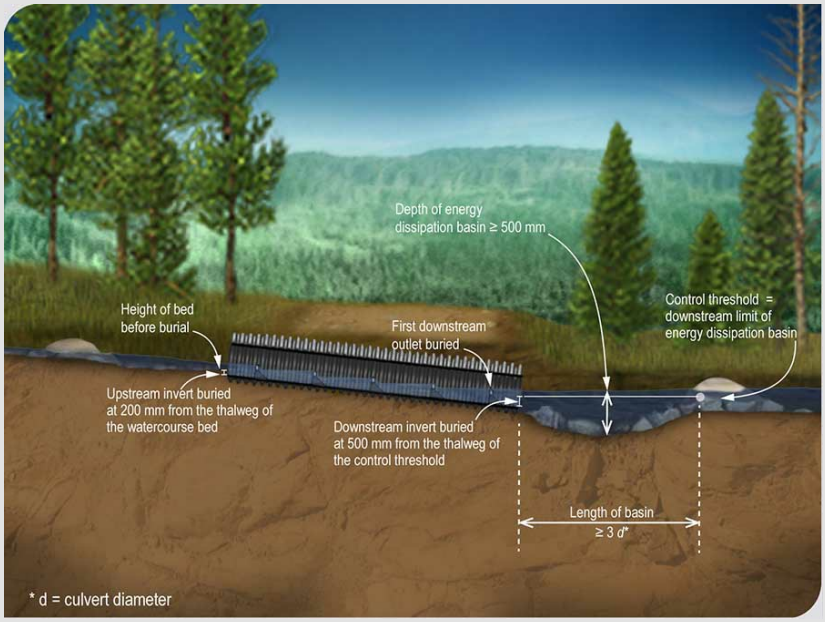


Figure Schedule 10C Burial depth of a conduit equipped with outlets compared to the thalweg and characteristics of the energy dissipation basin

Slope for the installation of the conduit The slope for the installation of the conduit depends on the slope of the watercourse, the length of the conduit and the burial depth of the upstream and downstream inverts. The installation slope must therefore be greater than the slope of the watercourse.

9

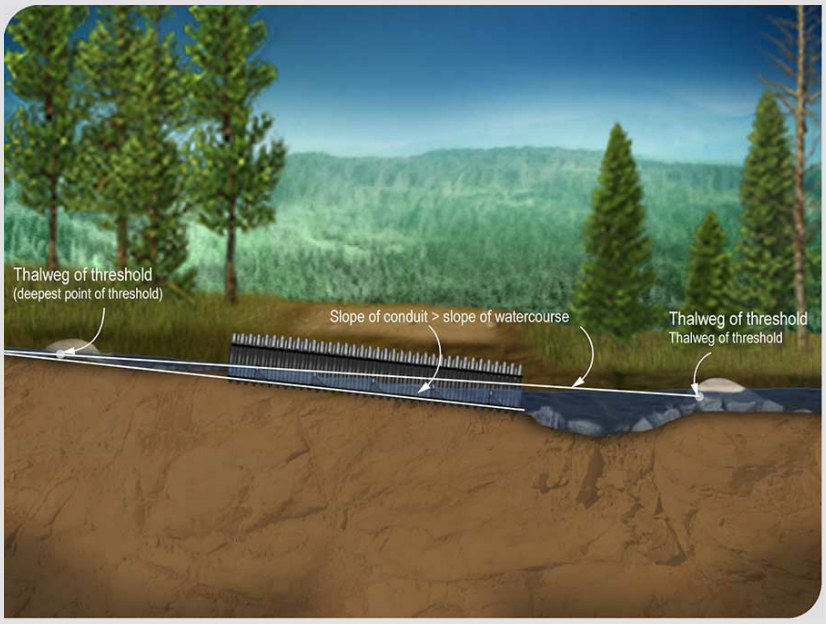


Figure Schedule 10D Installation slope of a conduit equipped with outlets

Culvert with parallel conduits If outlets are installed in both conduits, the inverts of the conduits must be buried at the same depth. If outlets are installed in only one conduit, the invert of the conduit without outlet must be located 500 mm higher than the invert of the conduit with outlets.

10

Additional information

If the conduit with no outlets is placed higher than the conduit with outlets, the water is concentrated in the conduit with outlets during low flow periods. This ensures an adequate water level in the conduit with outlets. The outlets create a series of thresholds and basins in the culvert to maintain a fast enough flow and sufficient depth of water to ensure the free flow of fish.

Prohibited practices

The following practices are prohibited:

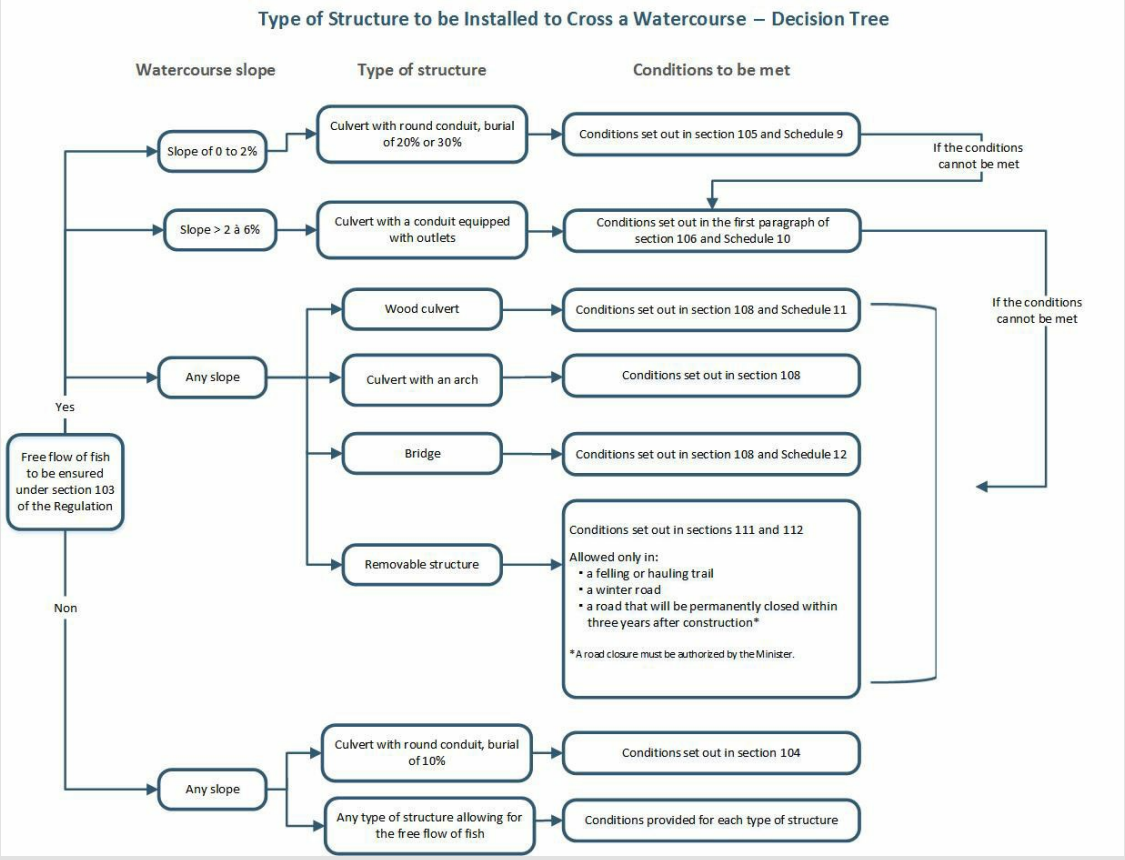
- on-site welding;
- torch cutting of steel elements;
- cutting holes with a torch.

Schedule 11

Conditions to be met when constructing, improving or repairing wooden culverts

Additional information

The conditions set out in Schedule 11 allow for the design of a wooden culvert able to support the legal load of 60 tons required for a CF3E truck. Where a wooden culvert must be able to bear a higher load, the promoter must design it in accordance with conditions suited to that load. Because it is a culvert, it is not necessary to post the structure's maximum load on a sign. However, according to the Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST), all roads must be built in such a way as to ensure that all vehicles can travel on them safely. The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



Conditions to be met		Span of wooden culvert	
		≤ 1,000 mm	> 1,000 mm and ≤ 2,000 mm
Upper part[1] of the arch	Dimension of wooden parts	200 mm x 200 mm	250 mm x 250 mm
	Length of nails	350 mm	400 mm
	Assembly	• Wooden parts forming the upper part of the arch are placed one beside the other and nailed to each wall. Each wooden part must exceed the outside sides of the walls by at least 100 mm. • A strip of wooden parts, a total width of 1 000 mm and a minimum thickness of 38 mm, is nailed on the top at the centre of the arch, transversally to wooden parts forming the upper part of the arch.	
Walls[2], tie beams and anchoring walls	Dimension of wooden parts	200 mm x 200 mm	
	Length of nails	350 mm	
	Assembly	• Both walls of the arch skirt the watercourse; they are made of wooden parts nailed together to form a full surface. • Each wall is linked to an anchoring wall by tie beams placed perpendicularly to the beams. Tie beams are nailed to the wall and the anchoring wall. • Tie beams and wooden parts of the anchoring wall are alternated so that the tie beams of two consecutive rows are not directly one above the other. • Tie beams have a minimal length of 1,200 mm and are spaced over the length of the wall by not more than 2,000 mm. • For grounds having a low bearing capacity (loam, clay, organic soils and loose alluvions), the walls and anchoring walls must be installed on a granular blanket at least 400 mm thick.	
Clearance of arch		From 800 to 2 000 mm	
Fill material		Sand or gravel (particles from 0 to 20 mm in diameter)	
Thickness of fill[3]		From 300 to 1 000 mm	
Width of road		The width of the road above the culvert may not be reduced.	

1. The wooden parts of the upper part of the arch are no. 1 quality and of a species recognized in standard CAN/CSA-S6-06 (pine, hemlock, spruce, fir or tamarack).
2. The wooden parts of the walls are no. 1 or 2 quality and of one of the species recognized in standard CAN/CSA-S6-06 (pine, hemlock, spruce, fir or tamarack).
3. A geotextile membrane is placed on the top of the arch and on the outside side of the walls before filling all the wooden parts of the culvert.

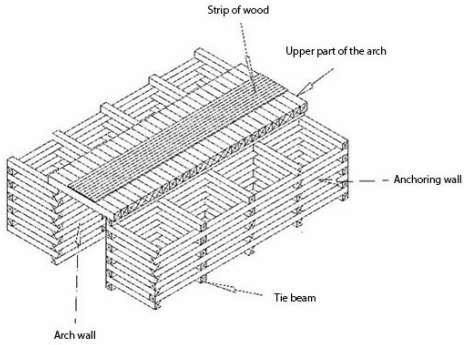


Figure Schedule 11A Wooden culvert

2

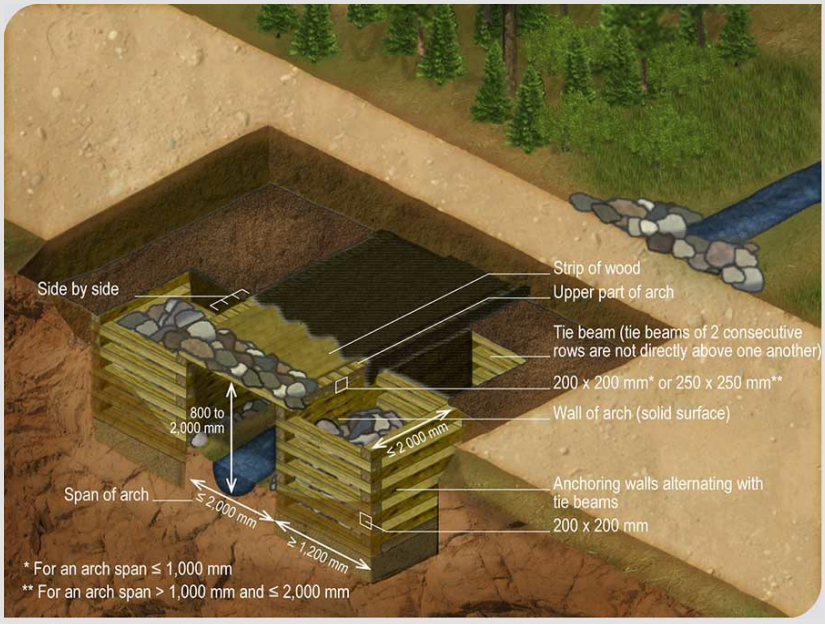


Figure Annexe 11B Structure of a wooden culvert

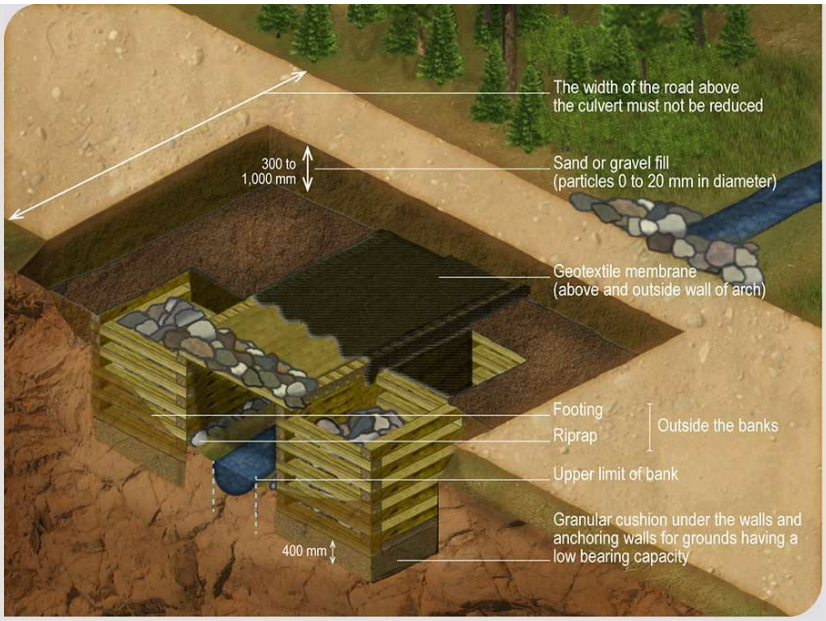


Figure Annexe 11C Conditions for installation of a wooden culvert

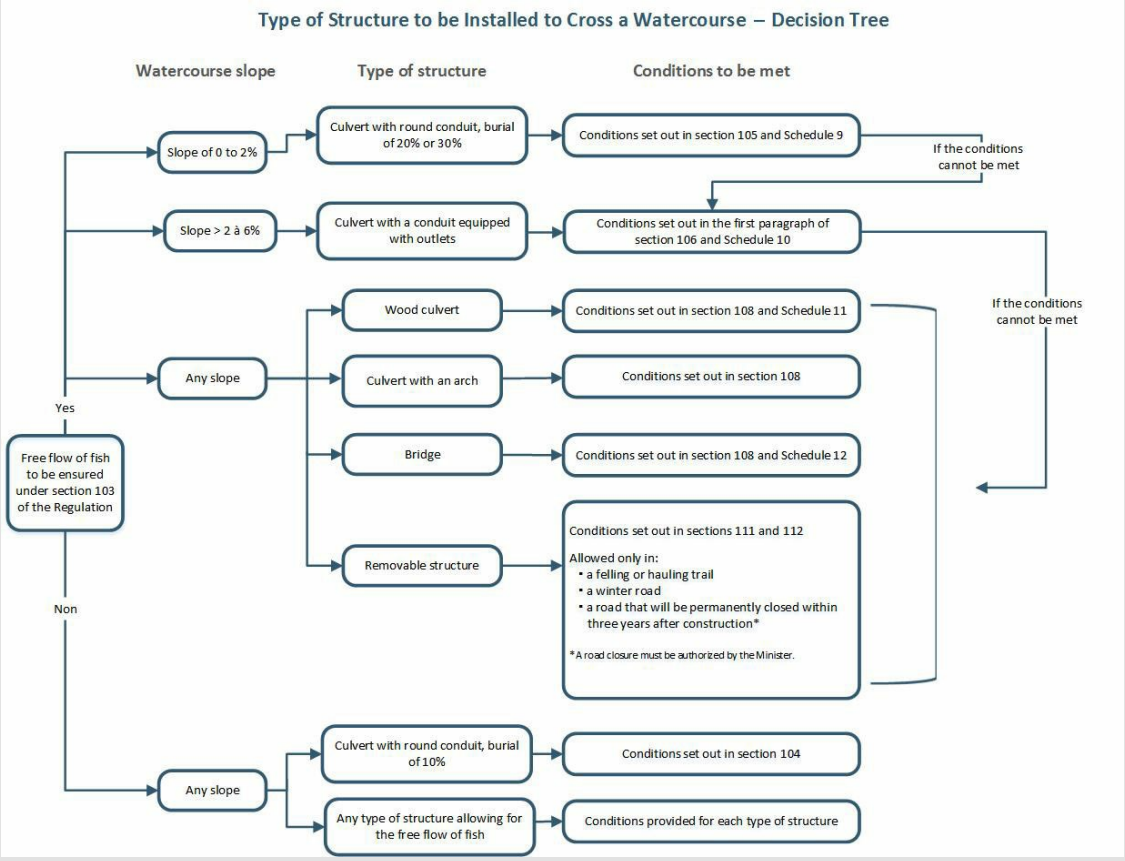
Schedule 12

Conditions to be met when constructing, improving or repairing bridges

1

Additional information

The decision tree below can be used to decide on the type of structure that must be installed to cross a watercourse.



General requirements

Every intervention on bridges must comply with standard CAN/CSA-S6, Canadian Highway Bridge Design Code, that applies at the time the work is carried out.

Plan and specifications

Before the work:

For every construction, improvement and repair of bridges in forests, the design plans and specifications must be given to the department. The design plan contains the location map, the overall plan, the structure and foundation unit detailed plans, the geotechnical investigation (if the engineer or forest engineer who drew up the design deems it necessary or if the department so requires) and the topographical plan of the site. The drawing rules are those in the Manuel de conception des structures of the Ministère des Transports.

The design plans and specifications of bridges must be signed and sealed by an engineer or a forest engineer and, in the case of the bridges mentioned below, signed and sealed by an auditor (engineer or forest engineer):

- steel-concrete;
- with reinforced beams;
- with beams including splices;
- continuous span;
- on a bed of piles;
- Bailey;
- bowed structure;
- with laminated-glued beams.

The shop plans must also be signed and sealed by an engineer or forest engineer and given to the department before the start of the work.

During the work :

All the plans and specifications of provisional works (cofferdam, timbering, erection system, temporary bridge, formwork, assemblies, etc.) must be signed and sealed by an engineer or forest engineer. The plans must be provided on request from the Minister.

After the work:

The final plan sealed, signed and dated by the engineer or forest engineer in charge of the work follow-up is given to the department. The plan represents the works as they are immediately after their carrying out.

The posting notice indicating the maximum load that a bridge may support and bearing the seal and signature of an engineer or forest engineer (and auditor if required), for CL3-W, CL2-W and CF3E-W trucks, must be provided to the department. The calculation notes must be provided on request to the Minister.

The final plan and the posting notice must be given to the department not later than 30 days following the end of the work and before posting on site.

Geometry

The minimum usable width measured between the curbs is 4,300 mm for a bridge with one traffic lane.

The vertical clearance of a bridge, measured from the upper limit of the bank, is at least 1,000 mm.

For wooden bridges and steel-wood bridges with only one traffic lane

1. a three-beam system is allowed for the CF3E-W configuration with a load less than or equal to 750 KN;
2. a four-beam or more system must be used for the CF3E-W configuration with a load greater than 750 KN.

The dimensions of the abutments comply with the Manuel de conception des structures of the Ministère des Transports.

The construction of skeleton abutments is allowed for the CF3E-W configuration with a load less than or equal to 750 KN.

For the CF3E-W configuration with a load greater than 750 KN, the abutments are closed on three sides, except in the back, and they are constituted at least of 200 mm x 200 mm parts and at least 4 supports of 200 mm x 200 mm for the supports of the beams.

Loads considered and calculation parameters

The design and evaluation load configurations used are CL3-W, CL2-W and CF3E-W.

2

Objectives

- Ensure the sustainability of a road, bridge or culvert
- Ensure the safety of the forest road network users

Additional information

The loads associated with the different configurations are as follows:

- CL3-W : 30 tons
- CL2-W : 48 tons
- CF3E-W : 60 tons

The impact factor on the bridge may not be reduced by considering a reduced speed posting or a mandatory stop.

Laminated-glued wood beams are calculated considering the resistance in wetlands.

3

Objectives

- Ensure the sustainability of a road, bridge or culvert
- Ensure the safety of the forest road network users

Explanations

Glued laminated timber beams can be considered, with the agreement of the Minister, in “semi-humid environment” (refer to CAN/CSA-S6, table 9.14), if the deck is designed in a ”semi-waterproof manner”. The term “semi-waterproof” implies that the beams are not exposed to conditions of continuous humidity.

In a non-exhaustive manner, a “semi-waterproof” deck can be characterized by:

- Protection of the beams top with a waterproofing membrane;
- The installation of a support device cutting the rising of humidity;
- The extension of the tread without backfill to above the abutments.

The limits for the allowable deflections to be used are L/400 for the calculation of wood-wood bridges, L/600 for steel-wood bridges (determined under standard CAN/CSA-S6-88) and L/800 for all other types of bridges.

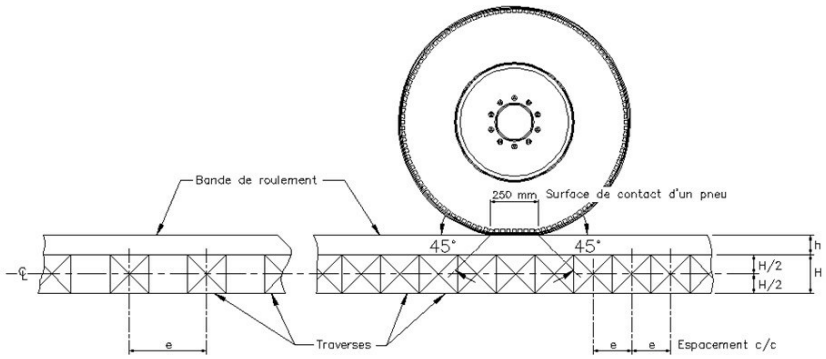
The number of wood stretchers taking part in the stress under a tire is calculated using the following method:

Number of stretchers taking part in the stress under a tire= (250 + 2h + H)/e

h = height of the running strips

H = height of the stretchers

e = space between the stretchers (measured centre to centre)



A stretcher may be added to the calculation obtained where 25% or more of the stretcher is used. See example in table 1..

Table 1 - Number of stretchers to be used

Number of stretchers obtained by calculation	Number of stretchers to be used
3.25	4
2.56	3
2.17	2
1.63	2
1.08	1

Material

The wood used for the construction of the abutments, piers and restraint system of a bridge is Eastern or Western hemlock, grey or red pine, spruce, tamarack or Douglas fir.

The wooden parts constituting the various elements of the bridge must meet the following requirement:

1. foundation units (abutments and piers) are constructed using quality 1 and 2 wood parts, whatever the proportion.
2. the floor joists are always made of quality 1 Eastern hemlock;
   All the wooden parts constituting the floor joists are stamped (engraved stamp) at one end to recognize the quality, even when wooden parts are treated.
3. the running strip, curbs and guard rails are constructed with quality 1 and 2 parts, namely, 65% minimum quality 1 parts and 35% maximum quality 2 parts.

The use of used steel in good condition is allowed if there is a quality control that determines its resistance. The minimum resistance allowed is 230MPa.

The beams and plates are made of 350 AT or 350 W steel.

The bracing angles are made of 300W steel.

Assembly bolts, rings and nuts are type A-325.

Construction

The wood or steel abutments and piers loaded with rocks must be buried at least 600 mm under the upper limit of the bank, except in the presence of rock. If the ground is very hard (cannot be excavated by a backhoe), it may be used as bankseat. No wood abutment may have less than 8 rows from the bottom to the level of the supports of the beams.

All the bases of the reinforced concrete foundation units, except those on solid rock, must be extended under the frost level (minimum depth of 1.5 m).

The natural ground (mineral) used as the seat of the foundation unit must not be disturbed or reworked.

The curbs, at a height at least 400 mm above the running strip, include a minimum of 200 mm x 200 mm continuous wooden parts supported on support blocks 300 mm x 300 mm x 600 mm long. The blocks are at a maximum distance of 1,800 mm (distance centre-to-centre). The curbs are attached by bolts having a diameter of 19 mm.

The running strip is full width and composed of wooden parts 100 mm high X 200 mm wide.

For a deck made of wood parts, at least one stretcher out of three is attached to the beams.

If the bridge requires piers in the watercourse, a ballast is required all around to counter underwashing.

The ripraps or ballasts are made of rocks and pebbles of various sizes of a minimum of 200 mm placed in locations indicated in the plans and on the sand and gravel bank. The ripraps at the abutments must protect the embankment up to a minimum height of one metre above the banks.

Prohibited material and practices

The material and practices listed below are prohibited:

1. beam reinforcements, splices, braces and stiffeners attached by on-site welding;
2. structures without braces;
3. vehicle chassis (trailer, railway car, etc.);
4. railroad tracks;
5. reclaimed riveted beans;
6. reclaimed lattice girders;

7. overlapping decks;
8. torch cutting of steel elements (girder, brace, etc.);
9. holes cut using a torch.

Bridges located on trails for all terrain vehicles

Bridges located on trails for motorized all terrain vehicles must meet the preceding conditions, subject to the following:

The maximum load capacity is posted on all bridges. The notice bearing the seal and signature of an engineer or forest engineer (and auditor where required) for the CL3-W configuration is provided to the department at the end of the work. The calculation notes are provided on request to the Minister.

The design and evaluation load configuration used is CL3-W.

Wood or steel abutments and piers loaded with rocks must extend at least 300 mm under the natural land where the abutments are installed. If the ground is very hard (cannot be excavated by a backhoe), it may be used as bank.

A bridge located on a trail for motorized all terrain vehicles will have to be designed for a minimum load of 10 tonnes for the CL3-W configuration.

The running strip must be full width and made of wooden parts at least 50 mm thick. A space may be left between the wooden parts without exceeding 75 mm.

Schedule 13

Rejected wood

Description
Rejected wood is a log or part of a log of a merchantable dimension that has such a quantity of defects that it no longer has value for the forest industry, except for forest biomass conversion. A log or part of a log is deemed to be worthless and is rejected when the reduction of the cut of one or both ends is caused by rot in the proportion provided for in the following table:

Criteria for the rejection of a log or part of a log

End of the log or part of the log affected by rot	Proportion of the surface of each cut reduced by rot	
	Softwood	Hardwood and white cedar
Both ends	50% and more (≥ 1/2)	66.7% and more (≥ 2/3)
Only one end	66.7% and more (≥ 2/3)	75% and more (≥ 3/4)

Every log longer than 3.74 m that is not rejected on the basis of the rejection criterion for "both ends" but that would be rejected on the basis of the criterion for "only one end", must be bucked in two separate parts, including one 2.50 m containing the part affected by rot that will be considered rejected wood.