

Roadside Vegetation Management

5.10 Roadside Vegetation Management

Roadside vegetation management activities include mowing, brushing, and landscape maintenance activities undertaken to maintain clear sight lines for highway users, control noxious weeds, facilitate effective drainage, and reduce possible fire hazards.



Highway Maintenance Specification Sections

4-350 Roadside Vegetation Control

Available at:

http://www.th.gov.bc.ca/BCHighways/contracts/maintenance/Schedule_21_Maintenance_Specifications.pdf



Environmental Issues

Primary environmental issues relating to routine roadside vegetation management activities are summarized in the following table. It should be noted that site-specific conditions might present additional issues you will need to address in planning and undertaking your works.

Work Activity	Potential Environmental Impacts	Performance Standards and Legal Requirements
Brushing	May disturb riparian vegetation (upland fish habitat)	No harmful alteration, disruption or destruction of fish habitat without authorization (<i>Fisheries Act</i> , Section 35(1)).
	May expose erodible soils and promote sediment discharge or cause erosion of watercourse banks if riparian buffer zones along watercourses are cleared	No harmful alteration, disruption or destruction of fish habitat without authorization (<i>Fisheries Act</i> , Section 35(1)). No alteration of a stream unless authorized by an approval, licence, or order (<i>Water Act</i> , Section 9), or through a Notification (<i>Water Act</i> Regulation, Part 7).
	May disturb birds and their nests	No injury, molestation or destruction of a bird, its egg, and occupied nest, or the nest of an eagle, Peregrine Falcon, Gyrfalcon, Osprey, heron, or Burrowing Owl, unless the species is listed under Schedule C as exempt from this protection (<i>Wildlife Act</i> , Section 34). No killing, capturing, injuring, taking or disturbing migratory birds or damaging, destroying, removing or disturbing their nests, unless permitted under the <i>Act</i> (<i>Migratory Birds Convention Act</i>)

Work Activity	Potential Environmental Impacts	Performance Standards and Legal Requirements
Mowing	May disturb riparian vegetation (upland fish habitat)	No harmful alteration, disruption or destruction of fish habitat without authorization (<i>Fisheries Act</i> , Section 35(1)).
	May disturb birds and their nests May contribute to spread of invasive plants	No injury, molestation or destruction of a bird, its egg, and occupied nest, or the nest of an eagle, Peregrine Falcon, Gyrfalcon, Osprey, heron, or Burrowing Owl, unless the species is listed under Schedule C as exempt from this protection (<i>Wildlife Act</i> , Section 34). No killing, capturing, injuring, taking or disturbing migratory birds or damaging, destroying, removing or disturbing their nests, unless permitted under the <i>Act (Migratory Birds Convention Act)</i> Control of Noxious Weeds (<i>Weed Control Act</i>)
Noxious Weed / Invasive Plant Control	May contribute to the spread of noxious weeds if the removed material is improperly handled and may displace native vegetation	No dispersal of noxious weeds or their seeds (<i>Weed Control Act</i> , Weed Control Regulation)
	May introduce sediment or other deleterious substances to a watercourse when control methods are implemented	No harmful alteration, disruption or destruction of fish habitat without authorization (<i>Fisheries Act</i> , Section 35(1)). No alteration of a stream unless authorized by an approval, licence, or order (<i>Water Act</i> , Section 9), or through a Notification (<i>Water Act</i> Regulation, Part 7).
	May displace desirable riparian vegetation (upland fish habitat) Noxious weeds can adversely affect animal and public health, e.g., skin burns from Hog Weed	No harmful alteration, disruption or destruction of fish habitat without authorization (<i>Fisheries Act</i> , Section 35(1)).



Environmental Best Practices

The following BPs are provided as guidelines to help you ensure your routine works are completed in compliance with the performance standards and environmental legislation. Please note that the general BPs provided apply for most work activities within this category; if BPs specific to the activity are available they are also noted below.

Regulatory Agency Contact

- Work with your local regulatory agencies to establish a protocol for vegetation removal in your area.
- Meet with the appropriate regulatory agency contact, as listed in Section 8, to discuss site-specific environmental protection measures. Refer to Section 7 for information on the Memorandum of

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Understanding with MoE and the recommended protocol for maintaining regular communications with regulatory agencies.

- For invasive plant control work this will involve meeting with the local invasive plant coordinator and/or weed control contractors to review proposed vegetation control work.

Timing of Works

- Be aware that vegetation clearing can negatively impact nesting birds in spring and early summer. Inspect your work area for any occupied bird nests, eggs, or nests of species protected under the *Wildlife Act* and *Migratory Bird Convention Act* during this period.

Site Management

- Keep cut vegetation out of the watercourse. Move debris away from the bank to prevent its movement into the channel.
- If your works create areas of exposed soils and there is the potential for sediment to be transported to a watercourse, install appropriate erosion and sediment controls. Areas of exposed soils should be stabilized through reseeding or some other manner.

Brushing and Mowing

- Establish an annual brushing/mowing schedule in collaboration with the regional invasive plant committee coordinator and, whenever possible, schedule the route so that activities start in un-infested areas and move toward infested area.
- Implement thorough and effective mowing, where practical, around riparian areas, wells, and other areas where herbicides cannot be applied.
- Prior to beginning your vegetation management activities, identify sensitive habitat areas, including watercourses—streams, lakes and marine foreshores—found within your work area.
- Avoid mowing grasses and vegetation lower than 15cm above ground level—this is particularly important for steep slopes where erosion potential is high.
- Determine how much impact your required works will have on the identified areas—are you required to remove a sight distance obstruction on an inside curve above a watercourse crossing? Are you required to mow vegetation within a drainage ditch that may constitute fish habitat? By asking these questions, you should be able to identify planned works that may be of concern to regulatory agencies.
- Maintain established riparian buffer zones, which should be visible from past vegetation removal activity. If no clear buffer zone is visible, determine the width of the buffer required for the watercourse. Typical widths may range from 15-50m, but the required width will vary

Riparian Buffer Widths

The width of vegetation you are required to protect on each bank of a watercourse can vary greatly depending on the specific conditions of the site.

Contact your local regulatory agencies to discuss what buffer widths are applied in your area.

depending on factors including the type and size of the watercourse and its fisheries value. Consultation with DFO is highly recommended at this stage, as is the assistance of appropriately qualified and experienced professionals.

- Identify the appropriate required buffer width from each watercourse bank (i.e., on either side of each stream and along lake and marine foreshores). This applies also to watercourses or foreshores that parallel a highway. In the case of a watercourse or water body paralleling a highway, the required buffer might include all roadside vegetation and preclude any removal activities. In this case, discussion will be needed with your local MoE Habitat or Conservation Officers and DFO Habitat Management staff.
- Stop brushing or mowing once the buffer is reached. Move past the watercourse and recommence at the end of the opposing buffer zone.
- If vegetation removal activities are required within the buffer zone (e.g., to remove sight distance obstructions on curves, intersections or watercourse banks parallel to the highway; to reduce winter icing problems, or to permit access to structures):
 - Limit the area of clearing.
 - Consider limbing or topping the vegetation to the required height versus complete removal.
 - Ensure root structures and bank stability is maintained.
 - Use hand-tools where possible.
 - Ensure all tools and equipment is clean and well maintained.
 - Consider installing slower-growing plant species along areas of the right-of-way where regular maintenance is required (e.g., sight-lines, access to infrastructure) to reduce the need for frequent cutting.
 - Refer to the T.I.P.S. publication referenced for mowing best practices as they relate to invasive plant management, including proper timing, cutting technique and planning of work.
- Do not brush or mow within 7 days of an herbicide treatment. Encourage herbicide application contractors to visibly mark treatment areas along roadways.

Invasive Plant Control

- Ensure all chemical control of noxious weeds/invasive plants is done under a valid Pest Management Plan and/or Permit from MoE.
- Contractors should coordinate manual/mechanical controls with other agencies carrying out herbicide work on invasive plants.

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- Ensure all noxious weed/invasive plant materials are disposed of in accordance with the *Weed Control Act* Regulations and any local area protocols.
- When transporting noxious weeds/invasive plant or their seeds use a covered container.
- Ensure that any vehicle or equipment used in the removal of noxious weed/invasive plants is free of noxious weed/invasive plant and seed-containing materials when it leaves the work area.
- Prior to removing invasive plant species refer to methods outlined in the T.I.P.S. publications created by the Invasive Plant Council of British Columbia.
- Ensure that noxious weed/invasive plant removal or control methods which chemically or physically modify habitat are in accordance with the *Integrated Pest Management Act* & Regulations, Section 9 of the *Water Act*, and Section 35(1) of the *Fisheries Act*.



Key Information Sources

The documents and websites listed below are recommended resources for roadside vegetation management. They can provide examples of existing protocols and management strategies, as well as additional information on specific operational BPs (e.g., erosion and sediment control techniques).

MoT Technical Circulars:

Roadside Development Landscape Policy – MoT Technical Circular T-9/91

This and all other Technical Circulars are available at:

http://www.th.gov.bc.ca/Publications/Circulars/Current_technical.asp

Locally Developed BPs

(Provide any locally-developed BPs):

- Brushing – Skeena BMPs for Road Maintenance. Ministry of Transportation. 2003.
http://www.th.gov.bc.ca/publications/eng_publications/best_practices/bp.pdf
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Other Resources:

T.I.P.S.: Targeted Invasive Plant Solutions. Invasive Plant Council of British Columbia. 2008.

<http://www.invasiveplantcouncilbc.ca/resources/targeted-invasive-plant-solutions-tips>

Maintenance of Riparian Vegetation in Existing Rights-of-Way – Pacific Region Operational Statement. 2008. Fisheries and Oceans Canada (DFO).

http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/os-riparian_veg_maint_e.htm

Riparian Management Area Guidebook. Forest Practices Code. Ministry of Forests. 1995.

<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/riparian/Rip-toc.htm>

BC Weed Control Act: Noxious Weeds in BC Website. Pest Management, Ministry of Agriculture and Lands.

<http://www.agf.gov.bc.ca/cropprot/noxious.htm>

Roadside Vegetation Management Website. US Department of Transportation, Federal Highway Administration

<http://www.fhwa.dot.gov/environment/vegmgt/>

“Dangerous Travelers” Invasive Plant Control Video

<http://www.fs.fed.us/invasivespecies/prevention/dangeroustravelers.shtml>

Invasive Plant Strategy for British Columbia. Undated. Invasive Plant Council of BC.

www.invasiveplantcouncilbc.ca/publications/invasive-plant-strategy.pdf

A Legislative Guidebook to Invasive Plant Management in BC. Invasive Plant Council of BC. 2007.

www.invasiveplantcouncilbc.ca/publications/ipcbc-reports/IPC3-Legislative-Guidebook.pdf

Ministry of Environment, Riparian Area Regulation

http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/RAR_Pamphlet.pdf



Checklist for Environmental Protection Requirements

- Is your proposed work considered a “routine” maintenance activity? If not, approvals or permits may be required. Contact your local municipal, provincial, or federal regulatory agency staff.
- Has this project been discussed with local environmental regulatory staff? In addition to the BP information presented, other site-specific conditions may apply.
- Have site-specific environmental protection requirements been identified? List below:
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 - _____
 - _____