

Parks Canada National Best Management Practices

Campground and Day Use Area Maintenance and Modification

Parks Canada National Best Management Practices for Campground and Day Use Area
Maintenance and Modification

Approved by

Original signed by Nadine Crookes

Nadine Crookes, Director Natural Resource Conservation Branch

Original signed by Ed Jager

Ed Jager, Director Visitor Experience Branch

August 4, 2016

Date

Contents

Introduction.....	4
Scope of Application.....	4
Exceptions.....	5
Approved geographic area of application.....	6
Components of the environment that may be affected.....	6
Mitigation Measures.....	7
1. Common Activities.....	8
Work Site Conditions/Staging/Laydown.....	8
Equipment Operations.....	9
Construction Materials and Practices.....	9
Invasive Alien Species.....	10
Waste.....	10
Hazardous Material.....	11
Wildlife.....	11
Vegetation.....	12
Erosion and Sediment Control.....	14
Visitor Safety and Experience.....	15
Cultural Resources.....	15
2. Building Maintenance and Modification.....	15
General.....	15
Application of Paint, Sealant or End Cut Treatments.....	16
3. Bridge, Boardwalk and Culvert Maintenance.....	16
4. Trenching and Excavation.....	17
5. Demolition.....	18
6. Rehabilitation.....	18
7. Supplementary Mitigations.....	19
References.....	20
Appendix 1 – Proper Pruning Method.....	22

Introduction

The Best Management Practice (BMP) pathway is applied when there is a suite of routine, repetitive projects or activities, with well understood and predictable effects. This fulfils Park's Canada's obligations under the *Canadian Environmental Assessment Act 2012* as a manager of federal land (see the [Guide to the Parks Canada EIA Process](#)). The BMP maximizes efficiency through creation of a pre-approved impact assessment for the defined suite of projects, to which standard mitigation and environmental management measures can be applied.

National BMPs can be applied in the following ways:

- Direct application: Use as is as long as the proposed project falls within the scope of the BMP(s) and its application will ensure there are no significant residual adverse environmental effects.
- Application along with supplemental mitigations: *This will likely be the case when using a National BMP.* Slight modifications will likely be required to ensure all potential impacts are mitigated and to provide project-specific clarifications (e.g., critical timing windows, contact information, SAR considerations, which mitigations apply to the project and which ones do not apply).
- Application as part of a Basic Impact Analysis (BIA) or Detailed Impact Analysis (DIA): where one or more BMPs may not address all the potential adverse environmental effects of a proposed project, Field Units can apply the BMP(s) as part of a BIA or DIA.
- Develop a Field Unit specific BMP: use the National BMP as a resource to create a BMP to address site-specific needs (i.e., *rip off and duplicate*). In this case, the new BMP must be signed off and approved by the Field Unit Superintendent.

The impact assessment officer (IAO) will review a proposed project and advise the functional manager of the project if and how this BMP should be applied. The IAO's advice will be based on whether the project falls within the scope of the BMP, and whether application of the mitigation measures in the BMP will adequately address potential adverse effects of the project. The IAO will also be responsible for adding any required supplemental mitigations to ensure site specific considerations are addressed.

Project Managers are responsible to ensure all mitigation measures applicable to the project are added to the terms and conditions of any permits or contracts issued for the project.

The IAO must ensure the project, EIA pathway applied and determination are recorded in the Parks Canada National Impact Environmental Assessment [Tracking System](#).

Scope of Application

This BMP applies to the maintenance and modification of existing campground and day use areas within national parks and national historic sites, including historic canals.

These facilities are an opportunity to engage and enhance visitor experience and include campsites, playgrounds, kitchen shelters, washroom and shower facilities, kiosks, outdoor theatres, interpretive venues and outdoor sports fields at parks with townsites.

General activities addressed in this BMP include:

- routine maintenance and repair of infrastructure (e.g., fencing, dirt roads, Class B pedestrian bridges¹, culverts) Note: bridge and culvert maintenance in non-fish bearing waterbodies only.
- burial of overhead lines, electrification of campgrounds or campsites, installation of electrical and water outlets
- maintenance and repair of utility lines (e.g., water, sewer)
- reconfiguration of campsites (e.g., tent-pads for tent-specific sites, pull-through RV sites)
- campsite renewal (e.g., gravel fill, cribbing, site delineation, levelling and widening, improved sight-lines, flow and drainage)
- modification, maintenance, repair and/or demolition of buildings and structures (e.g., washroom facilities, kiosks, kitchen shelters, outdoor theatres, fire wood storage, signs, interpretive and information panels)
- non-asphalt parking lot expansion (e.g., additional parking for walk-in sites)
- modification, maintenance and repair of playgrounds
- vegetation management for improved sight-lines, natural screens, hazardous trees, wildlife attractants and wildfire management (e.g., clearing and grubbing, trimming, re-vegetation)
- wildlife management (e.g., fencing)
- earthworks (e.g., trenching, excavation, implementation of sediment and erosion control measures)
- material transportation, handling and storage
- waste management (e.g., material collection and disposal, recycling)
- equipment operations (e.g., hand machinery, vehicles such as ATVs, excavators)

Exceptions

This BMP does NOT apply to the following:

- New campground, building or day use area construction projects in a natural, previously undisturbed area or in a re-established ecosystem.
- Modifications to existing campground, building or day use areas greater than 10%² of the land use footprint.
- Work below the High Water Mark³ of a fish bearing waterbody.

¹ Class B bridges are not suspension bridges, truss bridges nor viewing platforms or towers. They have a drop in elevation between the walking surface and the adjacent surface or streambed of 2.4 metres or less. They do not have a dangerous site condition such as: Fast flow during all or part of the year; Deep water; Hazardous streambed; The adjacent surface within 1.2m of the walking surface being of a slope of more than 1 in 2; or Any other condition deemed as being dangerous by the Parks Canada Professional Engineer having jurisdiction. Class B bridges have low risk of injury due to collapse or if a person should fall from the bridge. Source: Parks Canada, *Design, Construction and Inspection of Vehicular and Pedestrian Bridges* (2008)

² This number is intended as a guideline; if the BMP addresses the natural and cultural resource impacts, consider its use.

³ High Water Mark is the usual or average level to which a body of water rises at its highest point and remains for a sufficient time so as to leave a mark on the land (Fisheries and Oceans, 2016). Upper Controlled Water Elevation (UCWE) is used as a definition of High Water Mark in managed waterways.

- The use of explosives near a fish bearing waterbody.
- Projects sited in an unstable environment that could affect the structure, such as a landslide zone, floodplain or area vulnerable to storm surge and sea level rise.
- Maintenance or modification of bridges that are NOT Class B pedestrian bridges (as defined in the Parks Canada [Design, Construction and Inspection of Vehicular and Pedestrian Bridges](#)); consult the [National BMP for Roadway, Highway, Parkway and Related Infrastructure](#).
- New onsite wastewater management systems, such as septic fields and grey water pits, or major modification of an existing one.
- Re-paving of an existing parking lot, re-surfacing with asphalt or paved roadway work; consult the [National BMP for Roadway, Highway, Parkway and Related Infrastructure](#).
- Geotechnical investigations; consult the [National BMP for Geotechnical Investigations](#).
- Projects located within Zone I (Special Preservation).
- Work which may adversely impact heritage buildings.
- Work which may adversely impact any potential or established Aboriginal and Treaty rights or traditional use.
- If the project has the potential to have residual adverse effects on an individual or a residence of a listed species at risk (endangered, threatened, or extirpated status) or any adverse effects on the Critical Habitat of a listed species at risk.

Should any of the above conditions apply, the project will require use of another applicable BMP or combination of BMPs to fulfill impact assessment requirements or consideration of another environmental impact analysis pathway i.e., Basic Impact Analysis (BIA) or Detailed Impact Analysis (DIA). Some or all of the mitigation measures in this BMP may be used to prepare a BIA or DIA.

NOTE: Consult with the relevant Field Unit or national Parks Canada specialists (e.g., environmental impact analysis, species at risk, cultural resources, indigenous consultation, wildfire risk reduction, and visitor experience) for guidance as required.

Approved geographic area of application

This BMP is intended for use in all Parks Canada administered protected heritage places.

Components of the environment that may be affected

Soil/Land Resources:

- Soil compaction and rutting
- Soil erosion, loss of topsoil and exposure of subsoils
- Soil contamination from waste (e.g., garbage, litter, sewage, fuel)
- Increase in anthropogenic footprint

Air/Noise Quality:

- Temporary decreased ambient air quality (e.g., dust, equipment emissions)
- Temporary increased levels of CO₂ and other pollutants
- Increased ambient noise levels

Water Quality:

- Surface and groundwater contamination from waste (e.g., garbage, litter, sewage, fuel)
- Sedimentation, causing increased turbidity
- Changes in temperature regime and natural drainage patterns

Vegetation:

- Damage to and removal of vegetation; disturbance of adjacent natural areas; root exposure, resulting in physiological stress and, in the case of trees susceptibility to windfall
- Introduction of invasive alien species, or expansion of existing populations
- Impacts on valued and sensitive vegetation features
- Habitat destruction and mortality from wildfire

Wildlife:

- Wildlife disturbance during construction and ongoing use causing displacement/preferred habitat avoidance
- Wildlife habituation/attraction to artificial food sources from garbage or litter
- Damage to nests/dens/roosts and disruption of nesting/denning/roosting animals
- Loss of food sources and habitat
- Introduction of invasive alien species, or expansion of existing populations
- Habitat destruction and mortality from wildfire

Visitor Experience:

- Reduced quality of visitor experience due to noise and presence of construction equipment
- Increased visibility of human disturbance on the landscape and decreased aesthetic
- Reduced accessibility to portions of the site where work is taking place
- Hazard to visitors and staff due to construction activities (e.g., heavy equipment and hand tool operation, helicopter use, tree removal)
- Loss of educational opportunities

Cultural Resources:

- Adverse effects on the heritage value or character-defining elements of a cultural resource or a heritage place, including:
 - Impacts to archaeological resources (known or potential) from displacement or destruction resulting in loss of heritage value
 - Adverse effects on cultural landscapes or landscape features of heritage value
 - Wildfire risk

Mitigation Measures

This BMP includes a broad range of mitigation measures and as such, the IAO must review the document carefully to determine which apply to the project. To use this document efficiently and reduce the overall size and scope of the mitigations to present to contractors and project managers, follow the recommendations below:

Step 1) Go to the Microsoft Word toolbar and select the View tab, then check the Navigation Pane box. This allows you to see all the headings and will allow for efficient editing. For

example, if a whole section does not apply, simply right click on it in the Navigation Pane and choose delete.

Step 2) Section 1. Common Activities includes mitigation measures which should, in most part, apply to all campground and day use area maintenance and modification projects. Review this section and delete the mitigation measures that may not apply to the project.

Step 3) Review Sections 2 to 6; keep relevant sections and delete those that do not apply. Review relevant sections and delete mitigation measures that do not apply to the project.

Step 4) Add any supplementary mitigation measures to Section 7. Supplementary Mitigations. For example, reference to “designated Parks Canada staff” is made through this BMP; details on site and project specific contacts must be included in this section.

Step 5) Save the document as a pdf or print a paper copy and include with the EIA determination record.

1. Common Activities

Work Site Conditions/Staging/Laydown

1. All people working on the project must review the mitigation measures and any site specific considerations with designated Parks Canada staff⁴ before work begins.
2. Staging and parking areas for material and equipment must be identified, including duration of use, within an existing disturbed footprint (e.g., roadway, gravel surface, previously disturbed area with high resiliency).
3. Material drop sites (via foot, vehicle, helicopter or boat) must be approved by designated Parks Canada staff.
4. When transporting material via helicopter:
 - Choose a drop point that is open and easily accessible from the construction site and that will minimize travel to and from the construction site.
 - Plan multiple drop sites at strategic locations to avoid doubling back to distribute materials.
5. Cover construction material with weighted tarps when appropriate. Minimise damage to adjacent plant material and rehabilitate if necessary.
6. Use existing roadways, trails, disturbed areas or other areas as approved by designated Parks Canada staff for site access, travel within the site and construction activities (e.g., sawing wood).
7. Clearly mark work site and restricted areas with stakes, biodegradable flagging tape or other means; remove when project is completed.
8. Keep disturbance footprint as small as possible and limit vehicle access to essential vehicles only.

⁴ The following applies wherever “designated Parks Canada staff” is referenced in this BMP: for National Historic Sites and Parks: the Resource Conservation Manager/staff; for the Historic Waterways: the Waterway Environmental Assessment Officer; and for Jasper, Banff, Lake Louise, Yoho and Kootenay National Parks: the Integrated Land Use Policy and Planning Manager, unless otherwise specified.

Equipment Operations

9. Equipment must be properly tuned, clean and free of contaminants, in good operating order, free of leaks (e.g., fuel, oil or grease), and fitted with standard air emission control devices and spark arrestors prior to arrival on site.
10. During construction, any required cleaning of tools and equipment must be done greater than 30 meters from waterbodies to prevent the release of wash water that may contain deleterious substances.
11. Equipment operators must be fully trained and experienced.
12. Select equipment appropriate to the nature of work being conducted (e.g., avoid using large scale machinery when hand tools or smaller scale machinery could be used).
13. The crossing of any waterbody by construction equipment, or the use of such equipment within waterbodies must be approved by designated Parks Canada staff. If approved:
 - Consult with designated Parks Canada staff prior to project start-up to determine single entry and exit points for any watercourse crossings.
 - Use small scale equipment when at all possible (e.g., mini excavator, ATV, Ditch Witch)
 - Use established/constructed fords when available.
 - Protect access points (e.g., swamp mats, pads).
14. When crossings are not required, operate machinery above the High Water Mark and minimise disturbance to the banks and waterbody.
15. Use low pressure/rubber tracked equipment or access matting where feasible to minimize soil compaction and ground disturbance.
16. Heavy equipment operating on paved surfaces should be equipped with street pads; damage to paved surfaces must be restored to original conditions.
17. Minimize idling of engines, contingent on operating instructions and temperature consideration.
18. Machinery (e.g., excavators, bobcats, chainsaws, generators) must be stored, maintained and refuelled on a flat surface, outside the drip line⁵ of trees and a minimum of 30 meters from waterbodies, as measured from the High Water Mark; increase the 30 meter buffer depending on level of risk and site specific conditions. Refueling must take place on a tarp or portable berm, or on compacted ground.
19. Consider using bio-degradable chain oil/vegetable oils in chain saws especially when working within 30 meters of a waterbody.
20. If operating chain saws directly over or adjacent to waterbodies is unavoidable, use measures such as tarps to trap and prevent debris from entering the waterbody as much as possible.
21. Gas generators must be secured to prevent movement during operation and set up on an impermeable fuel mat with a berm or within a container that can contain 150% of the volume of fuel in the generator.

Construction Materials and Practices

22. Ideally, use timber that contributes to sustainable practice, such as recycled old growth or certified materials (e.g., Forest Stewardship Council certification). Trees of significant importance to the landscape must not be used unless otherwise directed by designated Parks Canada staff.
23. When building with unfinished wood, consider using species native to the area as directed by designated Parks Canada staff.

⁵ The area defined by the outermost circumference of a tree canopy where water drips from and onto the ground.

24. Use natural material and environmentally-friendly finishes (e.g., paints and stains) and products whenever possible.
25. When practical, consider pre-fabrication at an approved off-site location to minimize on-site construction impacts.
26. When practical, treatment of wood products (e.g., preservatives, paints, stains) should be done at an approved location prior to transport to the site. Field treatments should be applied over tarps or in another approved contained area and not be applied over or within 30 meters of water. Treatments must be approved by designated Parks Canada staff.
27. Treated wood must be handled, installed, and disposed of according to the [Parks Canada Guide for the Use, Handling and Disposal of Pressure Treated Wood 2009](#) or contact the Parks Canada [Environmental Management Team](#) for advice.
28. Minimise the number of saw cuts made to treated wood in the field. If unavoidable, cut treated wood away from waterbodies and over tarps to catch debris; cuttings, sawdust and other treated wood waste material must not enter waterbodies.
29. All cuttings, sawdust and other treated wood waste material must be collected and disposed of at an approved disposal facility.
30. Treated wood must not be burnt or left onsite to decay.

Invasive Alien Species

31. Footwear, clothing, equipment and machinery coming into contact with the terrestrial or aquatic environment must be free of invasive alien species individuals, seeds, propagules (i.e., any other material that may cause the spread of the species) and pathogens. In particular:
 - Equipment from outside the protected heritage place must be washed/steam cleaned prior to arrival.
 - Ensure that footwear, clothing and equipment are free of invasive alien species (e.g., seeds, propagules) when travelling between invaded and uninvaded terrestrial and aquatic sites within the protected heritage place.
32. All soil, gravel, untreated construction lumber, erosion and sediment control products (e.g., hay, straw, mulch), or other applicable materials from outside the protected heritage place must be from a certified weed-free source.
33. Ensure that organic material (e.g., topsoil, borrow and fill material, gravel) taken from the construction site is free of invasive alien species before using in other parts of the protected heritage place.
34. Minimise ground disturbance and vegetation removal, as practical and within project requirements.
35. Minimise bare soil exposure (e.g., cover stockpiled material with tarps, plant native species, cover with natural mulch/ground coverings).
36. Stabilize and re-vegetate disturbed areas as soon as possible with native plants, soil and seed mix approved by designated Parks Canada staff. If there is insufficient time remaining in the growing season, stabilize the site to prevent erosion and vegetate the following spring.
37. Monitor disturbed and re-vegetated areas for several growing seasons to ensure that native vegetation is growing successfully and invasive alien species spread is prevented.

Waste

38. All wildlife attractants must be secured (e.g., petroleum products, human food, recyclable drink containers and garbage) within wildlife-proof containers, a secure building or

- vehicle. Keep food waste separate from construction waste and remove daily; if daily removal is not possible, secure until it can be removed.
39. Notify designated Parks Canada staff immediately should wildlife gain access to the above mentioned attractants.
 40. Contain and stabilize waste material (e.g., dredging spoils, construction waste and materials, vegetation) above the High Water Mark to prevent them from entering any waterbody.
 41. All construction materials must be removed from the site on project completion (e.g., refuse material, waste petroleum, unused concrete bases).
 42. Contain wastes and transport to an approved waste landfill site outside the Parks Canada protected heritage place, unless otherwise directed; cover waste loads during transportation.
 43. If required, portable sanitary facilities must be serviced on a regular basis and accumulated waste disposed at a sanitary waste disposal facility. The facilities must have sufficient capacity and be managed to ensure waste is not discharged to the receiving environment.

Hazardous Material

44. Prevent the release of hazardous substances into the environment, including but not limited to, petroleum products and their derivatives, antifreeze or solvents.
45. All on-site personnel must be briefed on reporting requirements for hazardous materials spills; spills must be reported immediately to designated Parks Canada staff.
46. All construction sites must be equipped with containers suitable for the secure, temporary storage of hazardous wastes, separated by type.
47. A spill contingency response kit including sorbent material and berms to contain 110% of the largest possible spill (i.e., fuel or other toxic liquids) related to the work must be available on site at all times. On-site personnel must be aware of its location and trained in its use. Any contaminants must be recovered at source and disposed according to applicable laws, policies and regulations.
48. Identify and handle all toxic/hazardous materials as required under the *Canadian Environmental Protection Act*, *Transportation of Dangerous Goods Act* and Workplace Hazardous Materials Information Service.
49. Petrochemical products, paints and chemicals must be stored a minimum of 30 meters away from waterbodies and secured overnight in a Parks Canada approved enclosed area under lock and key; increase the 30 meter buffer depending on level of risk and site specific conditions.
50. Any hazardous waste or contaminated material uncovered during excavation / construction, must be investigated, source identified, removed and disposed of outside the protected heritage place at an approved facility. Disposal documentation must be provided to designated Parks Canada staff.

Wildlife

51. On-site personnel must be made aware of and report any incidental sightings of species at risk immediately to designated Parks Canada staff.
52. Schedule operations to avoid critical wildlife life stages (breeding, nesting, denning, roosting, rearing, migration). Consult with designated Parks Canada staff to discuss site-specific wildlife concerns.
53. Follow [Reducing Risk to Migratory Birds](#) guidance from [Environment and Climate Change Canada](#), including avoiding vegetation clearing during site-specific migratory bird timing windows. Consult with designated Parks Canada staff for specific approaches to avoiding impacts on migratory birds (e.g., nest surveys, exclusion zones for located nests, area avoidance).

54. Should active nests, dens, roosts or calving areas be discovered, stop work and contact designated Parks Canada staff immediately for direction.
55. Conduct activities during daylight hours, avoiding critical foraging times (dusk and dawn).
56. Construct and erect fences in a manner that minimises impacts on wildlife movement. Consult with designated Parks Canada staff to determine appropriate fence design and location.
57. Minimize the time excavations remain open and cover or fence when left unattended to reduce the potential for wildlife injury.
58. Never approach or harass wildlife (e.g., feeding, baiting, luring).
59. If wildlife is observed at or near the work site, allow the animal(s) the opportunity to leave the work area and away from areas of potential conflict.
60. Designated Parks Canada staff must be alerted immediately to any potential wildlife conflict (e.g., aggressive behaviour, persistent intrusion), distress or mortality. In the case of aggressive behaviour or persistent intrusion, stop work and evacuate the area.
61. On site workers must receive any required wildlife awareness training, according to field unit policy.

Vegetation

General:

62. Apply Wildlife mitigations #52-54.
63. Vegetation management around infrastructure should follow FireSmart guidelines where applicable; consult with the local Parks Canada Fire Management Officer/Fire Operations Coordinator for site specific considerations. As a general rule:
 - Maintain mowed grass 10 meters around infrastructure.
 - Vegetation selection around infrastructure should favor deciduous trees instead of coniferous trees.
 - Dispose of vegetation slash and dead woody debris away from infrastructure and out of visitor sight.
 - Coniferous trees in a 30 meter radius around infrastructure should be limbed/pruned to 3 meters in height.
64. Burning is not permitted within the protected heritage place unless approved by Parks Canada.
65. Where re-vegetation is required, use weed-free topsoil, native plants and seed mix approved by designated Parks Canada staff.

Clearing and Grubbing:

66. Apply General mitigations (#62-64).
67. Protect trees and plant species of high ecological, heritage or cultural value; all clearing activities must be flagged and pre-approved by designated Parks Canada staff.
68. Retain a 30 meter vegetated buffer, from the High Water Mark of waterbodies and a 15 meter buffer from steep slopes. If clearing is required within the buffer zone, conduct minimal selective clearing by hand to ensure soil stability and prevent run off. In sloped areas, buffers should increase in width as the slope increases.
69. Clear minimum area necessary; trees should be removed only as necessary for project completion, visitor safety or wildfire risk reduction.
70. When felling trees, precautions must be taken to minimise damage to surrounding vegetation.
71. The felling of trees with obvious wildlife use (e.g., snags with cavity nests, trees with stick nests) must be avoided wherever possible; if unavoidable, designated Parks Canada staff approval is required.

72. Cut stumps as close to the ground as possible. If clearing is conducted during winter in snow cover, return to site after snow melt to flush cut stumps as required.
73. All cut wood is the property of Parks Canada; consult with designated Parks Canada staff to determine appropriate cutting methods, use and disposal of cut wood and other plant material.
74. If woody debris is chipped, spread thinly within the surrounding forest with space between the chips to ensure native vegetation can grow and re-establish; spreading too thick may result in growth suppression and fire hazard.
75. Where practical, clear trees in a phased approach provided timing windows for critical wildlife life stages can be respected. Ideally, trees should not be cut until construction reaches them, in case last-minute adjustments are necessary.
76. Salvage and replant small trees when appropriate or dispose as directed by designated Parks Canada staff.
77. When possible, conduct work when the ground is frozen or under a condition (such as snowfall) that limits ground compaction. If not possible, consider the use of rig mats or other appropriate measures to minimise impacts.
78. Protect roots of trees to drip line to prevent disturbance or damage. Avoid traffic, dumping or storage of materials over root zone.
79. When log ends or stumps are freshly cut and exposed within sight lines, rub exposed area with soil to reduce the brightness of fresh saw cuts.

Vegetation Maintenance:

80. Apply General mitigations (#62-65).
81. Stay within existing disturbed areas as much as possible when conducting maintenance activities.
82. Consult designated Parks Canada staff to determine appropriate methods for handling dangerous or fallen trees blocking or encroaching on campsites and day use areas and on the proper disposal methods.
83. Natural features (e.g., trees, shrubs, rocks) should be left undisturbed as close to the campsite or day use area as possible unless otherwise directed by designated Parks Canada staff.
84. Employ pruning techniques to minimise risk of tearing the bark and harming the tree; ensure that only branch tissue is removed and stem or trunk tissue is left undamaged (refer to Appendix 1-Proper Pruning Method).
85. Carry cut branches 30 meters away from infrastructure to avoid becoming a fire hazard. Spread branches out with cut ends facing away from view.

Riparian Vegetation Maintenance:

86. Apply General mitigations (#62-65).
87. Removal of riparian vegetation should be kept to a minimum and undertaken only when absolutely required. When practical, prune or top vegetation instead of grubbing/uprooting.
88. Combined maintenance activities (e.g., mowing, brushing, topping, slashing) will affect no more than one third of the total woody vegetation, such as trees and shrubs, within 30 meters of the High Water Mark in any given year.
89. Use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction.
90. Ensure canopy vegetation immediately adjacent to waterbodies is maintained unless deemed a hazard.

91. When practical, alter riparian vegetation by hand. If machinery must be used, operate on land and minimize disturbance to the banks of the waterbody.
92. Restore banks to original condition should any damage occur.
93. When altering a tree on the bank of a waterbody, ensure the root structure and stability are maintained.
94. Organic material and debris must not be allowed to enter waterbodies.
95. Minimize removal of natural woody debris, rocks, sand or other materials from the banks of waterbodies and avoid any disturbance below the High Water Mark.

Erosion and Sediment Control

96. Apply Invasive Alien Species mitigations as appropriate.
97. Schedule operations to avoid wet, windy and rainy periods or very dry periods that may increase erosion and sedimentation.
98. Wet down dry, exposed soils, to reduce dust.
99. In areas prone to erosion, install erosion and sediment control measures before starting work, especially within 30 meters of a waterbody.
100. Regularly inspect and maintain erosion and sediment control structures during all phases of the project and modify measures as necessary.
101. Select erosion and sediment control products that correspond with the nature and duration of the project.
102. Use erosion and sediment control products made of 100% biodegradable materials (e.g., jute, sisal or coir fiber) when possible. Ensure backing materials are also biodegradable.
103. Use of hay or straw in erosion and sediment control are potential wildlife attractants and may contain invasive species; use must be approved by designated Parks Canada staff.
104. Use sediment and erosion control products that reduce potential for wildlife entanglement⁶ when possible. These options include:
 - Net-less erosion control blankets made of excelsior or loose mulch and unreinforced silt fences.
 - Netting with a loose-weave wildlife safe design.
105. Limit duration of soil exposure; phase activities whenever possible and restore disturbed areas as soon as possible.
106. Avoid equipment operation on steep or unstable slopes and in areas prone to erosion such as sand dunes.
107. Manage water flowing onto the site as appropriate for the project:
 - Divert upland surface runoff away from exposed areas.
 - Filter water being pumped/diverted from the site; silt-laden water must not be pumped directly into a waterbody (e.g., pump/divert water to a vegetated area 30 meters from the waterbody, a constructed settling basin or other filtration system).
 - Minimise slope length and gradient of disturbed areas.
 - Cover erodible soils with mulch, vegetation, or rip-rap.
 - Construct check dams or similar devices in constructed swales and ditches.
108. Consider removing and maintaining sod mats for improved re-vegetation success and erosion control; disturbed areas should be reclaimed with topsoil.
109. Cover spoil piles with biodegradable mats or tarps or plant them with native grass or shrubs approved by Parks Canada.
110. Topsoil separation is required; stockpile topsoil away from subsoils and spoil material and more than 15 meters away from waterbodies, drainage features and/or the top of steep slopes.

⁶ [Wildlife-Friendly Plastic-Free Netting in Erosion and Sediment Control Products](#)

111. Store excavated soils on tarps to limit damage to underlying vegetation and cover with weighted tarps if left for an extended period of time.
112. Excess organic material will be distributed within the construction area or other existing un-vegetated areas.
113. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.
114. Remove temporary erosion and sediment control products, especially non-biodegradable materials, when they are no longer required.

Visitor Safety and Experience

115. If possible, schedule construction activities outside peak visitor season.
116. The work site will be closed and marked while active construction, repair or maintenance is underway; consider temporary detours or reroutes as appropriate.
117. If closing the area is not possible, maintain a safe working distance between work activities and visitors; consider the use of lookouts to manage traffic through the construction/hazard area.
118. As much as possible, schedule noisy activities to minimise impacts to visitors, especially around townsites, campgrounds and other high visitor use areas.
119. Secure and clearly mark unattended safety hazards (e.g., excavations, unsecured decking on a bridge, debris piles) with fencing, warning signs, area closures or combination thereof.

Cultural Resources

120. Apply any mitigation measures that may have been previously identified by a Parks Canada archaeologist, the Federal Heritage Buildings Review Office, and/or other conservation specialist (e.g., cultural landscapes or landscape features of heritage value) for the immediate area of work.
121. Avoid known and potential archaeological sites.
122. Stockpiled material must not be permitted to damage or bury known cultural resources.
123. If cultural resources are encountered, work must cease in the immediate area and designated Parks Canada staff notified.
124. Notify the site supervisor upon discovery of any archaeological resources. If features (i.e., structural remains and/or artifact concentrations) are encountered, leave in place, mark the location (e.g. with prominent flagging) and contact designated Parks Canada staff to take photographs and, if possible, depth measurements. The designated Parks Canada representative must provide the information immediately to the Terrestrial Archaeology section for an assessment of significance before work can resume.

2. Building Maintenance and Modification

General

125. Concrete mixing activities must take place over tarps and a minimum of 30 meters from waterbodies. Fresh, wet, uncured concrete and concrete dust must not come into contact with waterbodies.
126. Contain and remove any associated concrete waste to an approved disposal facility.
127. Fixtures and materials (e.g., benches, building material) should be reclaimed and considered for re-use if appropriate.

128. Ensure signs of construction on the surrounding environment (e.g., fresh saw or axe marks) are reduced or eliminated.
129. Maintain clean roofs and gutters on infrastructure for wildfire risk reduction.

Application of Paint, Sealant or End Cut Treatments

130. When practical, treatment of wood products (e.g., preservatives, paints, stains) should be done at an approved location prior to transport to the site. Field treatments should be applied over tarps or in another approved contained area and not be applied over or within 30 meters of water. Treatments must be approved by designated Parks Canada staff.
131. Use plastic drip tarps to capture and contain paint drips, spills and spray.
132. Transfer of paint or other sealants from storage and mixing containers into application containers or devices must be conducted over tarps; consider using secondary containment vessels with a minimum holding capacity of 110% of the paint containing vessel to minimize the risk of spillage.
133. Cleaning of painting equipment will be conducted in a location approved by Parks Canada; washwater must not be permitted to enter any waterbody.
134. All waste paint and paint-solvent solutions must be disposed of in accordance with applicable federal, provincial, and municipal legislation; no disposal of waste paint or paint-solvent mixtures is permitted at the project site.
135. If paint will be applied by spray, equipment must be adjusted to minimize spray drift.
136. On-site personnel will only carry minimum quantities of paints and solvents required in the work area.

3. Bridge, Boardwalk and Culvert Maintenance

This section includes mitigation measures for any activities taking place below the High Water Mark of a non-fish bearing waterbody.

137. This BMP excludes work below the High Water Mark of fish bearing waterbodies. However, when working in close proximity to fish bearing waterbodies or in/near waterbodies that feed directly into fish bearing waterbodies, respect [timing windows](#)⁷ to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
138. Minimise the extent and duration of work within watercourses and bank areas.
139. Conduct in-stream work during periods of low flow or at low tide and not when flows are elevated due to local rain events or seasonal flooding.
140. Locate crossings at straight sections of the watercourse, perpendicular to the bank, whenever possible. Avoid crossing on meander bends, braided streams, alluvial fans, or any other area that is inherently unstable and may result in the erosion or scouring of the bed.
141. Avoid crossing streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds.
142. Machinery fording of a flowing watercourse must be limited to a one-time event (i.e., over and back) and only if no alternative crossing method is available. In addition:
 - For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur.
 - Grading of the stream banks for the approaches should not occur.

⁷ <http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html>

143. Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of waterbodies below the High Water Mark. If material is removed, set it aside and return it to the original location once construction activities are completed.
144. Ensure contingencies are in place for occurrence of unexpected high flow conditions during the activity.
145. When rock material is used in or near a watercourse:
 - Use clean, durable, non-ore-bearing, coarse granular aggregate material that is appropriately sized to resist displacement during peak flood events.
 - Do not obtain rocks from below the High Water Mark of any watercourse.
 - Do not use acid-generating rock or rock that fractures and breaks down easily.
 - Install rock at a similar slope to maintain a uniform stream bank and natural stream alignment.
 - Ensure rock does not constrict the natural channel width.
146. When removal and application of protective coatings on bridges is required implement the following:
 - Remove paint or protective coatings in a manner that prevents paints, paint flakes, primers, solvents or other waste material from entering the watercourse.
 - When feasible, use tarps to trap and prevent falling debris, spills or drips from entering the watercourse.
 - Store, mix and transfer paints and solvents on land and not on the bridge to prevent spills into the watercourse.
 - Contain paint flakes, abrasives and other waste materials and dispose at an approved location; waste materials must not be deposited into watercourses or riparian areas.
147. When removal of debris is required within culverts and around bridge piers and abutments, implement the following:
 - Remove materials with hand tools when feasible. If machinery is required, operate from land and minimise damage to the bank of the watercourse.
 - Limit removal of accumulated material (e.g., branches, stumps, woody materials, garbage) to the area within the culvert, immediately upstream of the culvert and to that which is necessary to retain culvert function and water flow. For bridges, only remove debris necessary to protect piers and abutments.
 - Remove accumulated material and debris slowly to allow clean water to pass, to prevent downstream flooding and reduce amount of sediment-laden water going downstream.
148. Boardwalks should be high enough above the existing ground surface to allow grasses and native shrubs to re-vegetate around the structure and beneath deck boards.
149. Limit ground disturbance under boardwalks to the installation of staircase posts and sills.
150. Stabilize shoreline or banks disturbed by any activity associated with the project.
151. Restore bed and banks of the waterbody to the original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct the natural water flow should be restored.
152. If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, ensure rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.

4. Trenching and Excavation

153. Apply Erosion and Sediment Control mitigations as required.
154. Excavations must be drained (but not directly into a waterbody), back-filled and compacted as soon as possible.

155. Under thawed conditions, backfill material will be compacted prior to topsoil replacement; distribute topsoil evenly over the excavated area as per Parks Canada specifications.
156. Under frozen ground conditions, material will be sufficiently spread over the excavated site to allow for settlement under thawed conditions. Where practical, topsoil replacement will be postponed until the backfill has thawed, settled and dried out.
157. Re-vegetation must be undertaken in consultation with designated Parks Canada staff after excavations have settled and are level with surrounding landscape.
158. Dispose of overburden as directed by designated Parks Canada staff.

5. Demolition

159. Prior to commencement of demolition activities, all structures must be surveyed by experienced personnel from within or approved by Parks Canada for the presence of wildlife (e.g., roosting bats, nests, dens). Work should not take place during critical wildlife stages. Should wildlife be discovered, work will cease in the immediate area and designated Parks Canada staff contacted for further direction.
160. Prior to commencement of demolition activities, water and septic systems, lines and/or fields must be identified and precautions taken during the operation of heavy equipment to avoid damaging them.
161. Residual septic systems, water lines and wells of no further use must be removed, capped or decommissioned according to the appropriate federal or provincial legislation.
162. All salvageable, non-combustible and non-hazardous materials will be removed, reused and recycled to the greatest extent possible. Remaining material considered to be waste and demolition debris is to be disposed of at an approved disposal facility.
163. Any hazardous material (asphalt shingles, creosote treated wood, asbestos, lead paint, moulds, animal excrement, paints, automotive products, electrical equipment) and pollutants such as fuels and solvents found on-site will be separated and removed to an approved disposal facility.
164. Burning or burying of hazardous materials or any materials (e.g., plastics) which may be harmful to the environment is prohibited.
165. If undocumented contamination is found, cease work immediately and contact designated Parks Canada staff.
166. Ensure that well closures are completed as quickly as possible according to the appropriate federal or provincial legislation and are securely covered if left unattended.
167. Consult with designated Parks Canada staff to determine whether full excavation and removal of all subsurface infrastructure (e.g., pipes, cement structures, wires) is required. Backfill any excavation with clean, weed-free topsoil.
168. Ensure wastes from demolition activities do not enter waterbodies (e.g., use tarps to capture debris). Any waste that does fall into a waterbody will be immediately retrieved, provided worker safety is not compromised, and if removal can be done without excessive disturbance of bottom sediment.
169. Cover and contain fine particulate matter during transport to and from the site.

6. Rehabilitation

170. Use stockpiled topsoil from the site to facilitate rehabilitation activities.
171. Shape loosened soils to match the local terrain.
172. Ensure noticeable construction impacts (e.g., ruts, holes, depressions, compacted areas) are appropriately re-graded, back-filled with topsoil, re-contoured and capped in preparation for restoration.

173. Transplant shrubs and small trees displaced during clearing and construction activities, in accordance with FireSmart guidelines and in consultation with the local Parks Canada Fire Management officer or Fire Operations Coordinator.
174. All exposed soil, following completion of construction activities, will be stabilized and/or re-seeded as soon as possible using native plants, soils, seed mix and seed application approved by designated Parks Canada staff. If there is insufficient time remaining in the growing season, stabilize the site to prevent erosion and vegetate the following spring.
175. Reclaim eroded areas and ensure long term erosion control measures are identified and installed as required.

7. Supplementary Mitigations

In the application of National BMPs, supplementary mitigations will likely be required to ensure all potential impacts are mitigated. For example, a few site-specific mitigation measures may be needed to protect cultural resources or species at risk, to specify a critical timing window and to provide contact information. NOTE: if the number of supplementary mitigations is considerable in extent and nature, it should be determined whether a Field Unit specific BMP is better suited to address the impacts or another EIA pathway selected.

In this circumstance, the relevant BMP should be indicated in the EIA Requirement Checklist, with a note that application of the BMP will be supplemented through the addition of mitigation measures to address project or site-specific requirements. All relevant mitigations and project-specific clarifications should be included as terms and conditions in any permits and authorization documents (e.g., contracts) for the project.

Supplementary mitigation measures may be included here:

References

Environment Canada. *Reducing Risk to Migratory Birds*. Accessed January 2016.

Fisheries and Oceans Canada. *Self Assessment Criteria*. Accessed January 2016.

Parks Canada. 2015. *Basic Impact Analysis: Site Building Refurbishment*. Bar U Ranch National Historic Site.

Parks Canada. 2015. *Basic Impact Analysis: Sidney Island Day Use Area Rehabilitation*, Gulf Islands National Park Reserve.

Parks Canada. 2015. *Best Management Practice: Maintenance Building Installation and Demolition of Current One, Tekarra Lodge*, Jasper National Park.

Parks Canada. 2014. *Basic Impact Analysis: Infrastructure and Utility Service Upgrades to Green Point Campground*. Pacific Rim National Park Reserve of Canada.

Parks Canada. 2014. *Basic Impact Analysis: Shingle Bay Campsite Construction*, Gulf Islands National Park Reserve.

Parks Canada. 2013. *Cultural Resource Management Policy*.

Parks Canada. 2010. *Standards and Guidelines for the Conservation of Historic Places in Canada: A Federal, Provincial and Territorial Collaboration*. Second edition.

Parks Canada. 2010. *Environmental Assessment Report for Bennett Bay House Removal*, Gulf Islands National Park Reserve.

Parks Canada. 2009. *Parks Canada Guidelines for the Use, Handling and Disposal of Treated Wood*.

Parks Canada. 2008. *Design, Construction and Inspection of Vehicular and Pedestrian Bridges*.

Parks Canada. 2007. *Environmental Assessment Screening Report Form, Decommissioning of Fish Hatchery House*, Kejimikujik National Park and National Historic Site of Canada, N.S.

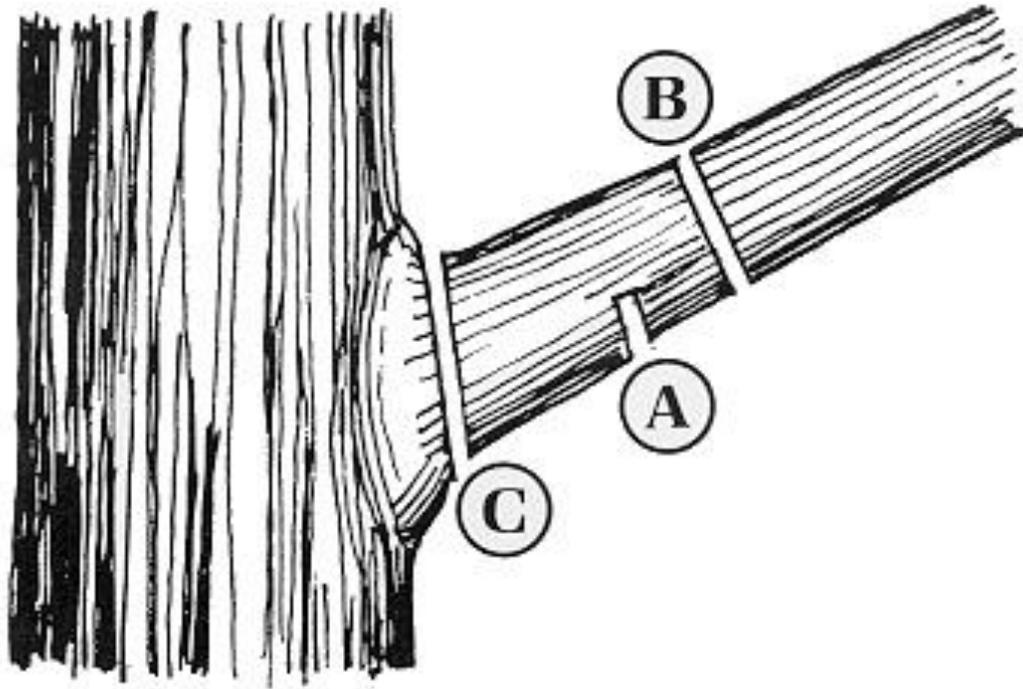
Parks Canada. 2006. *Environmental Assessment Report for Roesland Cabin Removal and Site Restoration Ella Bay, North Pender Island*, Gulf Islands National Park Reserve.

Parks Canada. 2005. *Guidelines for the Management of Archaeological Resources*.

Partners in Protection. 1999. *Firesmart, Protecting your Community from Wildfire*. ISBN 0-662-34064-7.

Last Update: June 13, 2016

Appendix 1 – Proper Pruning Method



To find the proper place to cut a branch, look for the branch collar, an often visible swelling that forms at the base of a branch where it is attached to its parent branch or to the tree's trunk. On the upper surface, there is usually a branch bark ridge that runs (more or less) parallel to the branch angle, along the stem of the tree. A proper pruning cut does not damage either the branch bark ridge or the branch collar.

A – The first cut is a shallow undercut to prevent bark tearing

B – The second cut completely removes the limb

C- The third cut removes the stub and is cut flush with the branch collar