

Forest Operations Standard

(Effective Date: July 08, 2020)

Harvest Block Boundaries

- 1-1** (1) Prior to harvesting and in accordance with an approved operating plan, the licence holder shall:
- (a) ribbon the entire harvest block boundary using a consistent colour scheme and at a height and position that is clearly visible from one tie point to another, unless:
 - (i) the harvest block boundary is a distinguishable linear corridor identified on the ground and is identified in the approved operating plan; or
 - (ii) the block boundary adjacent to the harvest block has a height difference of 10 metres or more; or
 - (b) identify and upload the approved geo-spatial harvest block boundary data file, representing the entire harvest block boundary, into their harvesting equipment's Global Positioning System (GPS); or
 - (c) use a combination of (a) and (b).
- (2) The licence holder shall use legal title descriptions or legal descriptions as found in legislation when ribboning or using a GPS to delineate the boundaries for areas adjacent to any proposed harvest block boundaries, including:
- (a) private land;
 - (b) Indian reserves and Treaty Land Entitlement selections;
 - (c) park land as defined in *The Parks Act*;
 - (d) ecological reserves as defined in *The Provincial Lands Act, 2016*;
 - (e) other exclusions from provincial forest lands; and
 - (f) exclusions from licence area.
- (3) Areas identified in the approved operating plan that will be excluded from harvesting shall be delineated as per subsection (1).
- (4) Where clause (1)(a) is applied, ribboning shall remain post-harvest to easily distinguish the harvest block boundary.
- (5) Where clauses (1)(b) and (c) are applied, the licence holder shall, upon the request of the inspecting officer, provide the geo-spatial GPS track files for a harvest block in which felling operations are occurring or have occurred within the current operating year.
- (6) Subject to subsection (7), harvest block boundaries identified in an approved operating plan are the legal boundary of the harvest block.
- (7) Where the riparian buffer or no-harvest zone forms the boundary or a portion of the boundary of an approved harvest block, the boundary shall be determined in accordance with section 1-13.

Harvest Block Boundary Deviation Allowance

- 1-2** (1) For the purpose of this section, “**continuous boundary deviation**” means an apparent delineation of a polygon outside the perimeter of an approved harvest block boundary with no identifiable start or end point, with the exception of the entry or exit of:
- (a) an inter-block road; or
 - (b) a watercourse or water body.
- (2) For forest management agreement and area-based term supply licence holders, harvest block boundaries may vary up to a maximum of 100 metres perpendicular from the approved planned boundaries subject to the following conditions:

- (a) the area of deviation does not exceed the lesser of:
 - (i) 10 percent of the approved harvest block; or
 - (ii) for harvest blocks less than or equal to 50 hectares, a cumulative area of five hectares; and
 - (iii) for harvest blocks greater than 50 hectares, a cumulative area of 10 hectares;
- (b) the boundary deviation does not result in the creation of a continuous boundary deviation;
- (c) a qualified person has assessed and documented the rationale for the deviation prior to harvesting the area associated with the deviation; and
- (3) An approved plan amendment shall be required prior to harvesting any area located beyond the limits set out in clauses (2)(a) and (b).
- (4) Deviation allowances set out in subsection (2) and (3) do not apply to the boundaries:
 - (a) identified in subsections 1-1(2), (3) and (7); and
 - (b) established pursuant to section 1-13 respecting:
 - (i) the riparian buffer system as set out in Table 2; or
 - (ii) the variable retention system as set out in Table 3.

Extra work spaces

1-3 For the purpose of this standard, “**extra work space**” means an area immediately adjacent to a right of way that is required for the purpose of:

- (a) extracting soil, including aggregate material, that:
 - (i) is used as fill material when constructing, maintaining, or upgrading a road;
 - (A) results in a surface disturbance of less than 0.5 hectares in size; and
 - (B) results in the total displacement of less than 350 cubic metres of fill material; or
- (b) staging salvaged timber and the piling of slash, stumps, rocks or organic soils generated from the clearing of the right of way, that:
 - (i) is not stumped;
 - (ii) does not exceed 0.5 hectares in size; and
 - (iii) does not result in the establishment of more than three extra work spaces within a one kilometer range; or
- (c) piling and burning of slash.

Road Locations

- 1-4** (1) The licence holder shall locate roads as identified in an approved operating plan.
- (2) Prior to road construction or upgrade, the centreline of all approved class 1, 2 or 3 inter-block roads shall be delineated by GPS waypoints or clearly marked by field ribboning.
- (3) The centerline of a class 1, 2 or 3 road shall not deviate more than 100 metres from the centerline approved in an operating plan.
- (4) Deviations or additions to class 4 road locations do not require approval.

Road Construction and Driving Surface Maintenance

- 1-5** (1) When constructing or upgrading an active or proposed road identified in an approved operating plan, the licence holder may undertake the clearing of forest products and the displacement of earthen and aggregate fill material within the right of way.
- (2) When constructing or upgrading a road, the licence holder shall:

- (a) conform to the road class approved in the operating plan;
- (b) adhere to the specifications set out in Table 1 for the approved road class;
- (c) manage surface slash, stumps, soils and rocks from right of ways for future rollback during road driving surface and right of way reclamation;
- (d) progressively stabilize areas within right of ways that are susceptible to erosion by:
 - (i) constructing cut and fill slopes in accordance with Table 1;
 - (ii) re-establishing vegetation with species that are representative of pre-harvest site conditions; and
 - (iii) installing erosion and sediment control measures and water diversion structures within the right-of-way to:
 - (A) maintain, manage and protect natural surface drainage patterns;
 - (B) minimize the ponding of water; and
 - (C) divert water flow into adjacent vegetation as directly as possible;

Information Note

Activities undertaken to manage surface water outside of a right of way require an authorization pursuant to *The Environmental Management and Protection Act, 2010*.

- (e) at every approach of a class 1 or 2 road that connects to a provincial highway or municipal road, install a sign that indicates:
 - (i) the road name;
 - (ii) the licence holder's company name or logo;
 - (iii) if applicable:
 - (A) speed limits;
 - (B) road is not maintained for non-industrial use; and
 - (C) road is not a through road; and
- (f) post a sign indicating the road is subject to closure or reclamation on all class 1, 2 and class 3 roads that:
 - (i) are constructed or upgraded following the effective date of this standard; and
 - (ii) have a projected life expectancy of greater than 2 years.
- (3) Every licence holder shall, unless otherwise specified in a licence or approved operating plan:
 - (a) post road kilometer markers at a minimum of every two kilometres, visible from both directions, on all class 1, 2 and 3 roads and arterial class 4 roads greater than two kilometres in length that are within or accessing harvest blocks in which active harvesting or hauling operations are occurring;
 - (b) post markers or other devices that denote directional travel on class 3 and class 4 roads at intersections where traffic is expected to travel in a specific direction;
 - (c) prior to the commencement of any forest operations on provincial forest lands, for the purpose of ensuring safety, provide
 - (i) all haul radio frequencies with their corresponding channel names to the Ministry of Environment; and
 - (ii) permission to the Ministry of the Environment to use the frequencies and channel names established pursuant to subclause (i).
 - (d) post the radio channel names, visible and readable when travelling on a driving surface in a vehicle, at the beginning of all main access roads other than provincial highways on which active harvesting or hauling operations are occurring.

- (4) A forest product permit or an amendment to an operating plan shall be obtained prior to harvesting forest products from a borrow pit if the location of the borrow pit has not been approved in an operating plan.
- (5) Extra work spaces in which an excess of 350 cubic metres of soil or aggregate is to be extracted or having a disturbance greater than 0.5 hectares and all borrow pits shall require a disposition pursuant to *The Crown Resource Land Regulations, 2019*.
- (6) All extra work spaces and borrow pits shall, upon completion of each road segment, be progressively reclaimed by:
 - (a) back sloping the inactive sides of the excavated area to a slope of 2:1 or as set out as a term of a disposition granted pursuant to *The Crown Resource Land Regulations, 2019*; and
 - (b) re-establishing vegetation and reforesting the disturbed area with species that are representative of pre-harvest site conditions and stand types.

Right of Way Vegetation Management

- 1-6** (1) On an active or proposed right of way approved in an operating plan, the licence holder may undertake the clearing of forest products to control vegetation.
- (2) The licence holder shall:
- (a) monitor the road and road right of way and take mitigative measures to ensure maintenance activities undertaken by the licence holder or employees, helpers, contractors and agents acting on behalf of the licence holder do not result in:
 - (i) sedimentation from entering any waterbody;
 - (ii) the introduction and establishment of prohibited, noxious and nuisance weeds as defined in *The Weed Control Act* and any exotic plant designated by the minister; or
 - (iii) safety issues on roads and right of ways that have not been closed pursuant to the Act or regulations;
 - (b) obtain appropriate authorizations prior to applying a pesticide treatment;
 - (c) post notifications prior to pesticide applications in areas to be treated; and

Information Note

Pesticide application is subject to *The Pest Control Products (Saskatchewan) Act*.

- (d) unless otherwise authorized, only utilize fill material and slash originating from within the right of way or extra work spaces for improvements and maintaining soil stability.

Road Closures

- 1-7** (1) A licence holder who, in accordance with an approved operating plan or subsection (2), closes a road in accordance with *The Forest Resources Management Act* shall:
- (a) subject to subclause (b)(ii), prevent vehicle travel within the right of way;
 - (b) install a sign, approved by the minister, indicating:
 - (i) the road is closed;
 - (ii) upon the approval or request of the minister, the class or classes of vehicle(s) exempted from the closure and the purpose of the exemption; and
 - (c) if a gate is installed, attach reflective markings or devices that are clearly visible from both approaches to the gate; and

- (d) install signs warning of the closure, if the closure signage:
 - (i) is not installed at an intersection with the closed road and another road; or
 - (ii) is not visible:
 - (A) from the intersection of the closed road and another road; or
 - (B) within at least 200 metres from the actual road closure.
- (2) A licence holder may close a class 4 road or access to a temporary work camp subject to the following conditions:
 - (a) the road or access to a temporary work camp begins and terminates within a single harvest block;
 - (b) is not part of a road or trail with pre-existing vehicle use; and
 - (c) a notification of the road closure is provided to the area forester by the licence holder in the weekly update report.

Reclamation

- 1-8** (1) A licence holder who reclaims a road shall:
- (a) return right of ways to a condition that re-establishes pre-existing hydrological functions and site productivity;
 - (b) reclaim watercourse crossings in accordance with the requirements set out in the Aquatic Habitat Protection Permit.
 - (c) contour the sides of all gravel pits, borrow pits, cuts, fills and extra work spaces to a 2:1 slope, meaning that for every horizontal distance of 2 metres the corresponding vertical distance is one metre;
 - (d) prevent vehicle travel within the right of way including the rolling back slash, stumps, rocks and soils originating from the road construction or upgrade throughout the right of way;
 - (e) ensure slash load and equipment generated mulch do not impede reforestation or regeneration success;
 - (f) regenerate right of ways of non-class 4 roads, including road driving surfaces by re-establishing vegetation and reforesting the disturbed area with species that are representative of pre-harvest site conditions and stand types;
 - (g) unless otherwise authorized pursuant to *The Environmental Management and Protection (General) Regulations*, reclaim sites, where water diversion structures were installed, by:
 - (i) removing associated construction materials from the sites; and
 - (ii) stabilizing and re-contouring the sites to their pre-development gradient, contour, drainage, productivity, elevation and alignment; and
 - (h) ensure permanent sediment and erosion controls are achieving the intended purpose.
- (2) A licence holder who upgrades a road for temporary use shall reclaim the road following the cessation of activities in accordance with the approved operating plan, unless otherwise specified by the minister.
- (3) Unless otherwise specified in an operating plan, a licence holder who reclaims a road where construction, use or maintenance has occurred during non-frozen conditions or soil types which are comprised of less than 50 percent sand shall decompact the driving surface:
- (a) at spacing intervals averaging 1.2 metres; and
 - (b) to a depth averaging 30 centimetres.
- (4) Unless otherwise approved in an operating plan, reclamation of:
- (a) class 4 roads, segments of other road classes and extra work spaces associated with an individual harvest block, shall be completed by the end of the second operating year following the end of the operating year in which felling was concluded; and

- (b) all roads, extra work spaces and borrow pits within a harvest event not reclaimed pursuant to clause (a) shall be completed by the end of the second operating year following the end of the operating year in which felling was concluded in the last approved harvest block in the harvest event.
- (5) Except where specifically provided in clause (4)(b), reclamation of all other class 1, class 2, and class 3 roads shall be completed:
 - (a) as per the reclamation requirements specified in an approved operating plan; and
 - (b) by the end of the second operating year following the end of the operating year in which the reclamation of the roads were approved in an operating plan.
- (6) In harvest blocks planned for tree planting or slash burning, a trail down the class 4 road may be left un-reclaimed to only accommodate access for all terrain vehicles, as defined in the *All Terrain Vehicles Act*, and snowmobiles, as defined in *The Snowmobile Act*.
- (7) Access trails left for all terrain vehicle and snowmobiles established pursuant to subsection (6) shall:
 - (a) not exceed two metres in width; and
 - (b) have a termination point that is a minimum of 200 metres away from the closest point on the harvest block boundary when measured in the same direction of travel as the trail.

Information Note

Environmentally impacted sites shall be assessed and reclaimed in accordance with *The Environmental Management and Protection Act, 2010* and the Saskatchewan Environmental Code.

Record of Reclamation

- 1-9** (1) A licence holder who is not required to submit data as per the Forest Data Submission Chapter and Standard shall complete a record of reclamation for all roads constructed or upgraded by the licence holder within 60 days of completion of the reclamation activities and make the records available to the inspecting officer upon request.
- (2) A record of reclamation shall include:
- (a) updated maps using the appropriate features as set out in the Forest Operating Plan Standard;
 - (b) site photos of pre-reclamation and post-reclamation; and
 - (c) a description of the reclamation activities undertaken.

Watercourse and Wetland Crossings

- 1-10** The licence holder shall construct, maintain and reclaim watercourse crossings and report on crossings in accordance with the licence holder's approved operating plan and Aquatic Habitat Protection Permit (AHPP).

Visual Resource Management

- 1-11** For visually sensitive areas, the licence holder shall undertake their forest operations in accordance with the visual quality objectives described in an approved land use, forest management or operating plan.

Slash Management

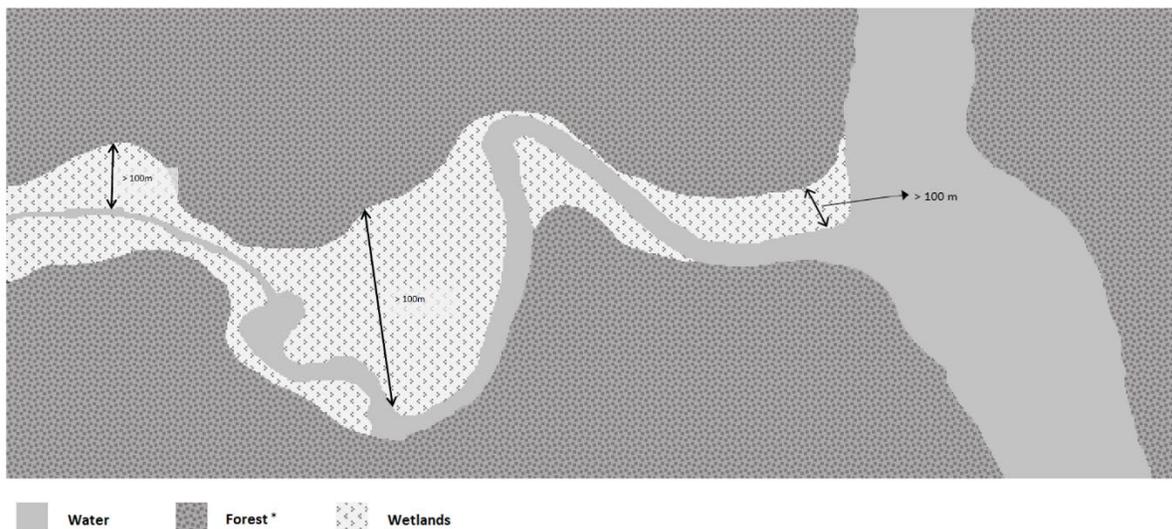
- 1-12** (1) For the purpose of this section "**unburned slash pile**" means a slash pile in which more than 25 percent of the pre-burn footprint of the pile remains unburned.

- (2) Unless otherwise approved by an area forester, all slash management activities within a harvest block including the spreading or burning of slash, or a combination thereof, shall be completed by the end of the second operating year following the end of the operating year in which felling was concluded.
- (3) Slash piles in which less than 25 percent of the pre-burn footprint of the pile remains unburned do not require re-ignition.
- (4) A maximum of 10 percent of the total number of slash piles may be left unburnt within a harvest block including piles that failed to burn, missed piles and piles left to accommodate documented stakeholder requests.

Riparian Management

1-13 (1) For the purpose of this section, “**riparian management system**” means:

- (a) the riparian buffer system as set out in Table 2; or
 - (b) the variable retention system as set out in Table 3.
- (2) The holders of forest management agreements and area-based term supply licences shall implement and be subject to the conditions associated with the riparian management system used to determine the harvest volume schedule for their respective licence areas.
 - (3) All other licence holders that are not required to complete a forest management plan shall implement and be subject to the conditions associated with the riparian buffer system, unless the use of the variable retention system is approved in an operating plan.
 - (4) Pursuant to clause (1)(b):
 - (a) in cases where variable retention categories meet, the variable retention category providing the highest level of protection shall take precedence;
 - (b) for harvest blocks subject to multiple variable retention categories and associated zone restrictions, the variable retention category providing the highest level of protection may be applied throughout the entire harvest block; and
 - (c) in cases where two or more variable retention categories overlap, if the distance between the edge of the waterbody or watercourse to the edge of the overstorey tree species is greater than 100 metres, the variable retention category associated with the edge of the overstorey tree species shall be applied throughout the entire area of the overlap as illustrated in Figure 1.



* The forest boundary line adjacent to the creek represents where the first overstorey tree species is present.

Figure 1

- (5) In accordance with subsection 1-1(1), the licence holder shall ribbon or GPS all riparian management areas within or forming part of the harvest block boundary:
 - (a) as identified on the licence holder's approved operating plan maps; or
 - (b) discovered during forest operations.
- (6) Except in accordance with an authorization issued pursuant to *The Environmental Management and Protection (General) Regulations*, licence holders shall not alter or cause to be altered the bed, bank or boundary of any river, stream, lake, creek, marsh or other watercourse or water body.
- (7) Mechanical site preparation shall not be undertaken within no equipment zones or riparian buffers.
- (8) Unless otherwise approved in an operating plan, roads or landings shall not be constructed or established in riparian management areas or riparian buffers.
- (9) Unless otherwise established in a forest management plan the variable retention system shall be applied as follows:
 - (a) residual trees shall be representative of pre-harvest stand types and size classes in limited harvest zones;
 - (b) a minimum volume of 20 percent shall be retained within the limited harvest zone in each harvest block;
 - (c) subject to clause (b), the percentage of volume retained within the limited harvest zone shall not:
 - (i) include the volume retention within the no harvest zone; and
 - (ii) be included as part of the volume retention within the non-riparian management portion of the harvest block;
 - (d) widths are determined by slope distance measured perpendicular to the bed, bank, or boundary of the watercourse or waterbody (see Figure 2);

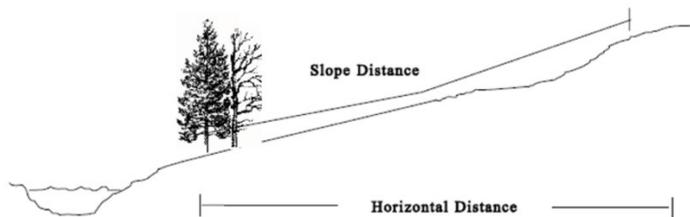


Figure 2. Illustration of "Slope Distance" (not to scale).

- (e) measurement of slope distance shall be from the stems of the overstory trees closest to the bed, bank, or boundary of the watercourse, wetland or waterbody to the upslope point prescribed in the applicable zone restrictions of Tables 2 and 3;
- (f) the exposure of organic or mineral soil is prohibited in no-equipment zones; and
- (g) rutting shall not exceed 1% of the harvested area of the limited harvest zone.

Rutting

1-14(1) For the purpose of this section:

- (a) "rut" means an area other than a road or landing where:
 - (i) soil has been displaced; and
 - (ii) the length and depth of the soil displacement is:
 - (A) continuous irrespective of a tire or track popup over a stump, rock or an intersection with another rut; and

- (B) five metres or greater in length and 15 centimetres or greater in depth not including the LFH layer comprised of forest litter at various stages of decomposition
- (b) **“rutting disturbance area”** means any area other than a road or landing:
 - (i) where each individual rut may not be distinguishable; and
 - (ii) when measured by multiplying its length by its width, the area exceeds 5 square metres (e.g. 1 metre by 5 metres).
- (2) Rutting into any soil type, as a cumulative tally of individual ruts or from the calculation of one or more rutting disturbance area, shall not occupy more than one percent of any survey plot measuring four hectares in size.
- (3) Unless otherwise approved by an area forester, rutting caused by any forest operations shall not be permitted in the:
 - (a) [Churchill River Upland Ecoregion](#); or
 - (b) [Athabasca Plain Ecoregion](#).

Soil disturbance

- 1-15** (1) For the purpose of this section, **“soil disturbance”** means an area in which forest floor vegetation and/or tree stumps are removed exposing organic or mineral soil:
- (a) the construction, upgrade, or maintenance of road right-of-ways including road driving surfaces, road drains, and ditches;
 - (b) portions of extra work spaces that have been stumped;
 - (c) borrow pits;
 - (d) gravel pits; and
 - (e) portions of landings that have been stumped.
- (2) Subject to subsection (1), the cumulative area of soil disturbance shall not exceed five percent of any harvest block equal to or greater than 20 hectares.

Site Preparation

- 1-16** (1) Unless otherwise approved in an operating plan, alteration of mineral soil from:
- (a) continuous forms of site preparation, shall not exceed an average depth of 15 centimetres to a maximum of 20 centimetres; and
 - (b) discontinuous forms of site preparation, shall not exceed an average depth of 20 centimetres with a maximum depth of 30 centimetres.
- (2) Subject to section 1-14, rutting by prime movers in any soil types, as a cumulative tally of individual ruts or from the calculation of one or more rutting disturbance area, shall not occupy more than one percent of any survey plot measuring four hectares in size.

Dwarf Mistletoe Management

- 1-17** (1) In this section:
- (a) **“non-susceptible tree species”** means spruce, balsam fir, larch and hardwoods;
 - (b) **“sanitation”** means the harvesting of all living trees that are infected or susceptible to infection, including all advanced regeneration greater than one metre in height; and
 - (c) **“susceptible tree species”** means jack pine and lodgepole pine.
- (2) Sanitation of dwarf mistletoe infected harvest blocks found during forest operations, and not previously identified in an approved operating plan as being infected, shall require an operating plan notification upon discovery.
- (3) Any approved harvest blocks infected with dwarf mistletoe that a licence holder intends to:
- (a) leave to renew naturally, shall be sanitized upon harvest completion; or

- (b) scarify or plant, shall be sanitized prior to the completion of renewal activities.
- (4) Green tree retention in harvested dwarf mistletoe infected blocks or portions of infected blocks that are harvested shall only consist of non-susceptible species.
- (5) Dwarf mistletoe infections within riparian areas and visually sensitive areas shall be managed in accordance with the approved operating plan.
- (6) Subject to riparian and visual management restrictions specified in the licence, approved plan or code, susceptible tree species shall be:
 - (a) removed; or
 - (b) killed;
- (7) In a harvest block that contains susceptible species resulting from natural processes or silvicultural treatments, a licence holder shall:
 - (a) establish a buffer that is a minimum of 20 metres in width (see to Figures 3 to 6):
 - (i) along any segment of a harvested block boundary that borders an unharvested adjacent stand infected with dwarf mistletoe;
 - (ii) along the boundary that separates the un-harvested and harvested portions of an infected harvest block; and

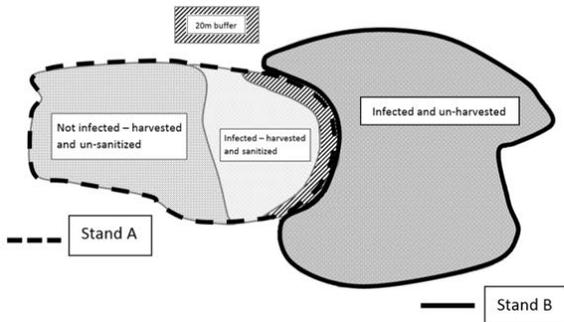


Figure 3

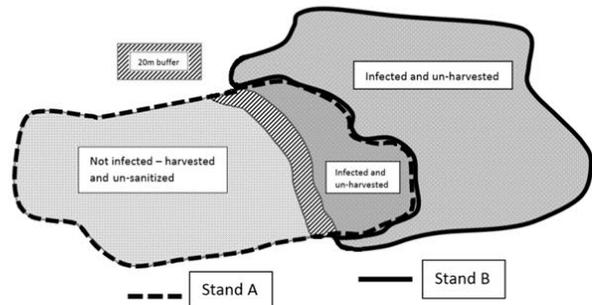


Figure 4

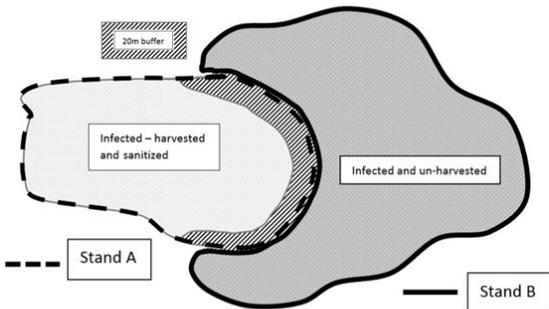


Figure 5

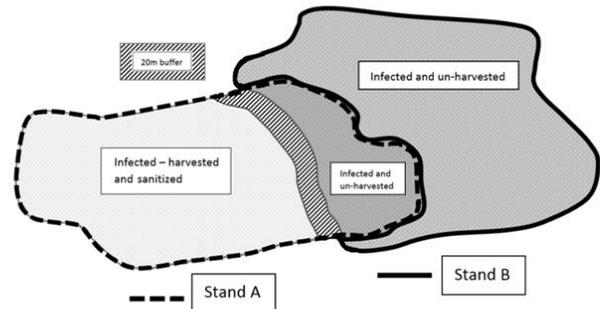


Figure 6

- (b) not undertake any treatments or activities that propagates or promotes the growth of susceptible tree species within the buffer referenced in clause (a).

Operations and Notifications

- 1-18** (1) Unless otherwise approved in an operating plan, harvesting activities in a block shall be completed by the end of the second operating year following the operating year in which felling activities commenced.
- (2) The portion of a harvest block where harvesting activities have not been completed in accordance with subsection (1) shall be delineated as a separate polygon and assigned a unique identifier.
- (3) The licence holder shall provide the following reports in a manner acceptable to the area forester:
- (a) weekly forest operations reports detailing the locations and status of active forest operations;
 - (b) unless otherwise reported pursuant to The Forest Data Submission Chapter and Standard, annual cutover summary reports for the licence holder's activities submitted by May 31st, which include volumes by species and the areas harvested by forest cover type.
- (4) Inspection shall be completed and documented by the licence holder or their representative following completion of each harvest block and made available at the request of an officer.
- (5) The licence holder or their representative shall notify the area forester or inspecting officer by e-mail or letter following their discovery and verification of a non-compliance.
- (6) A notice required pursuant to subsection (5) shall include:
- (a) the location of the non-compliance;
 - (b) the circumstances related to the non-compliance; and
 - (c) the actions taken or proposed to be taken to stop and correct the non-compliance.

Salvage Harvesting

- 1-19** The following requirements are applicable to all license holders conducting forest operations in areas not subject to an approved forest management plan:
- (a) salvage harvesting activities shall be subject to tree retention criteria set out in section 1-20 to promote the ecological integrity of regenerating stands;
 - (b) a single contiguous area covering at least 20 percent of each natural disturbance event shall be identified and reserved from all harvesting activities, such that the area reserved from harvest shall be:
 - (i) free of roads, trails and skid trails; and
 - (ii) be composed of tree species representative of merchantable timber burned or damaged;
 - (c) burned or damaged timber shall be used where there are insufficient live residuals to meet tree retention targets;
 - (d) upon approval in an operating plan, alternate spatial arrangements may:
 - (i) be comprised of multiple discrete areas adding up to 20 percent of the disturbance area; and
 - (ii) vary from tree residual targets, for reasons of forest health; and
 - (e) all salvage activities shall occur within two operating years following the operating year in which the natural disturbance occurred, unless otherwise approved in an operating plan.

Tree retention

- 1-20** (1) The tree retention criteria set out in subsections (2) to (4) shall apply to all licence holders conducting forest management activities:
- (a) in areas that are not subject to an approved forest management plan; or
 - (b) not associated with dwarf mistletoe sanitation operations.

- (2) For the purpose of this section “**insular retention**” means standing merchantable timber, representative of the tree species within a given area, retained within an approved harvest block in the form of:
 - (a) dispersed individual trees;
 - (b) clumped residual trees; and
 - (c) islands of residual trees.
- (3) Tree retention:
 - (a) for each respective harvest block shall be comprised of a minimum of 6 percent insular retention; and
 - (b) may also be comprised of trees within the approved harvest block that are:
 - (i) located on steep slopes; and
 - (ii) residuals retained to protect understorey spruce.
- (4) Upon approval from the Forest Service Branch, exceptions to tree retention requirements may be authorised for the achievement of other objectives to address:
 - (a) ecological considerations;
 - (b) forest health concerns; and
 - (c) social values.

Renewal Obligations

1-21 The licence holder that is responsible for renewal shall complete all harvest block renewal treatments by the end of the third operating year following the end of the operating year in which felling was concluded unless alternative timelines have been approved in an operating plan or a forest management plan.

Additional Safety and Warning Signage

1-22 (1) A licence holder may request the minister to provide the licence holder with official signage warning other forest users:

- (a) of active operations currently being undertaken in the area by the licence holder; or
- (b) that hunting within 500 metres of the licence holder’s active operations is prohibited.

Information Note

Warning signs and no hunting signs posted pursuant to this standard for the purpose of maintaining a safe work area do not restrict access to the area. In addition, licence holders are not allowed to prevent other forest users from accessing the area as it remains public land.

- (2) The licence holder shall install and maintain the official signage:
 - (a) pursuant to clause (1)(a):
 - (i) in a visible location at the beginning of all access routes;
 - (ii) identifying the:
 - (A) road name and kilometre location of the operations; and
 - (B) commencement and completion dates of the operations.
 - (b) pursuant to clause (1)(b):
 - (i) so that it remains visible from all access routes; and
 - (ii) ensuring its placement at a distance of 500 metres from active operations.
- (3) All official signage installed pursuant to subsections (1) and (2) shall be removed immediately upon the completion of operations.

Information Note

A “No Hunting” sign prohibits everyone from hunting within the area. This includes licensees, their staff, and contractors.

Glossary

All Terrain Vehicles

An all terrain vehicle as defined in *The All Terrain Vehicles Act*.

Back slope

The slope of the cut or fill expressed as the ratio of horizontal distance to vertical distance measured from the boundary of the right of way to the bottom of the ditch. (e.g. a 2:1 back slope indicates that for every horizontal distance of 2 metres, the corresponding vertical distance is one metre).

Bank

Bank as defined in *The Environmental Management Protection Act, 2010*.

Bed

Bed as defined in *The Environmental Management Protection Act, 2010*.

Bog

Peatlands that receive water only through precipitation. Bogs are nutrient poor and isolated from groundwater and surface run-off. Bogs are stagnant, non-flowing systems and have low plant diversity due to low nutrient availability. The surface of a bog is typically dry, but the thick peat below is saturated with water like a wet sponge. All bogs have a thick ground cover of sphagnum mosses. Some bogs contain stunted black spruce and low-lying shrubs (Ducks Unlimited Canada. 2015. Field Guide of Boreal Wetland Classes in the Boreal Plains Ecozone of Canada. Version 1.1).

Boundary

Boundary as defined in *The Environmental Management Protection Act, 2010*.

Borrow pit

An area in which soil, sand or gravel is excavated and extracted outside of a right of way for the purpose of constructing, upgrading, or maintaining:

- (a) roads;
- (b) right of ways; and
- (c) surface water crossings.

Closure

The temporary restriction of vehicle travel on a road that is demarcated by the placement of a sign and is accompanied by a form of physical closure including but not limited to the installation of a gate, construction of an earthen barricade or rollback of slash, stumps, rocks and soil.

Ephemeral watercourse

A watercourse that flows briefly, only in direct response to precipitation in the immediate locality and whose channel is at all times above the water table.

Fen

Peatlands that receive water from a combination of precipitation, surface runoff and ground water. They are more nutrient rich than bogs because of surface and groundwater inputs and have greater plant diversity. Fens can be nutrient rich or nutrient poor depending on water sources and nutrient availability. Nutrient-poor fens more closely resemble bogs, while nutrient-rich fens have more diverse and robust vegetation. Fens have a complex hydrology with high water tables, and can transport large volumes of water and nutrients across the landscape often connecting wetland systems over large distances (Ducks Unlimited Canada. 2015. Field Guide of Boreal Wetland Classes in the Boreal Plains Ecozone of Canada. Version 1.1).

Fish

Fish as defined in *The Fisheries Act (Canada)*.

Fish Habitat

Fish habitat as defined in *The Fisheries Act (Canada)*.

Frozen conditions

The soil in the affected area is frozen solid enough that vehicles or equipment used would not make a noticeable impact on the soil.

Harvest block

A unique polygon that is defined by the operating year(s) in which timber harvesting is to be undertaken or has occurred. A harvest block does not include inter-block roads.

Harvest Events

Planned harvest activities comprising one or more harvest blocks, together with undisturbed forest within and between harvest blocks. Harvest events are further defined as the gross area described by a collection of proposed harvest blocks that are no more than 500 metres from each other and harvested within a 10-year period. Harvest blocks beyond 500 metres from each other are considered to be in separate events.

In-block road

A road constructed by a licence holder and designed in accordance with the specifications set out in Table 1 of this standard that originates and terminates within a harvest block.

Inter-block road

A road constructed by a licence holder, which connects operating areas and harvest blocks.

Intermittent watercourse

An intermittent watercourse as defined in *The Environmental Management and Protection (General) Regulations*.

Lake

A general term referring to all bodies of standing water without regard to size.

Landing

The area directly adjacent to a road used for the decking of timber.

Limited harvest zone

The portion of a variable retention category in which a predetermined area of merchantable trees is retained subsequent to harvest.

Marsh

Often a transition between open water and shorelines. Marshes receive water from precipitation and associated run-off, groundwater and stream inflow and fluctuate seasonally. They have mineral based soils with shallow organic deposits. Marshes dry out periodically, exposing them to oxygen resulting in a nutrient rich area (Ducks Unlimited Canada. 2015. Field Guide of Boreal Wetland Classes in the Boreal Plains Ecozone of Canada. Version 1.1).

No equipment zone

The portion of a variable retention category in which all equipment and mechanical devices shall not travel or otherwise come into contact with the ground cover, and which is subject to the retention requirements identified in the adjacent limited harvest zone.

No harvest zone

The portion of a variable retention category in which no disturbance from forest operations is allowed.

Operating area

A defined unit of land within a management unit of a licence area that forms the basis for planning and management purposes for implementation of forest management activities at the operating plan level.

Operating year

A period from April 1 to the following March 31.

Overstory tree species

Species that form a continuous canopy forest of any age or size class with a minimum crown closure of 10 percent density.

Pesticide

A pesticide as defined in *The Pest Control Products (Saskatchewan) Act* and includes herbicides.

Qualified person

A qualified person means:

- (a) a Registered Professional Forester; or
- (b) a Registered Professional Forest Technologist, who is in good standing with the Association of Saskatchewan Forest Professionals established under *The Forestry Professions Act*.

Right of way

A defined boundary delineated by a measured distance extending outward from each side of the centerline of a proposed or pre-existing road or road segment.

Riparian areas

An area of transition between terrestrial and aquatic “ecosystems” that is discernible by differences in gradients in environmental conditions, ecological processes, and vegetative species composition.

Road

For the purpose of this standard, means the portion of a right of way designed and intended for use by vehicles required to be registered pursuant to *The Traffic Safety Act* to travel on public highways.

Scarification

Is one form of site preparation which involves the mechanical disturbance of the forest floor (duff, litter, soils) to create better seedbed conditions for the germination of seeds derived from standing trees or slash (Dunster, J.A. 1996. Dictionary of Natural Resource Management. UBC Press: Vancouver).

Shallow open water

Wetlands that have a water depth of less than two metres yet are too deep for emergent plants such as cattails and rushes to become established. Open water wetlands receive water from precipitation, run-off, groundwater and streams. They look like shallow lakes with pond-lily or submerged aquatic vegetation in more nutrient rich settings. They are generally permanently flooded but may fluctuate seasonally resulting in exposed mudflats (Ducks Unlimited Canada. 2015. Field Guide of Boreal Wetland Classes in the Boreal Plains Ecozone of Canada. Version 1.1).

Side slope

The slope of the cut or fill expressed as the ratio of horizontal distance to vertical distance measured from the top of the driving surface of a road to the bottom of the ditch. (e.g. a 2:1 side slope indicates that for every horizontal distance of 2 metres, the corresponding vertical distance is one metre).

Site preparation

Any action taken in conjunction with a reforestation effort (natural or artificial), to create an environment favourable for the survival of acceptable trees. This environment can be created by altering the ground cover, soil, or microsite conditions, using biological, mechanical, or manual clearing, prescribed burns, herbicides, or a combination of methods (Dunster, J.A. 1996. Dictionary of Natural Resource Management. UBC Press: Vancouver).

Slash

The residue left on the ground as a result of forest and other vegetation being altered by forest operations.

Soils

The naturally occurring unconsolidated mineral or organic material at least 10 centimetres thick that occurs at the earth’s surface and is capable of supporting plant growth.

Swamp

Mineral wetlands that may have deeper peat soils in some settings. Swamps receive water from run-off, precipitation and groundwater. Water movement ranges from stagnant to dynamic. They are commonly recognized as shoreline areas of streams, lakes and floodplains. Swamps have fluctuating water tables and are seasonally flooded. They have fertile soils that periodically dry out supporting a diversity of trees, shrubs and other plants. Swamps are distinguished from other wetlands and from upland forests by hummocky ground that may contain pools of water and by a tall dense canopy of water tolerant

shrubs or trees (Ducks Unlimited Canada. 2015. Field Guide of Boreal Wetland Classes in the Boreal Plains Ecozone of Canada. Version 1.1).

Top of slope

The first bench that occurs perpendicular to the no equipment zone that is less than 15 percent for a minimum of 10 metres.

Upgrade

Approved enhancements to the condition of the driving surface, ditches, surface water crossing structures and water diversion structures by a licensee within an existing right of way.

Visually sensitive areas (VSAs)

A physiographic area composed of land, water, biotic, and cultural elements that are visible from communities, public recreation areas and major travel corridors, including roadways and waterways, and any other significant viewpoint identified through the planning process.

Visual quality objectives (VQOs)

Resource management objectives identified in a Land Use Plan, Forest Management Plan or Operating Plan that reflect the desired level of protection of visually sensitive areas within the management area.

Waterbody

An accumulation of surface water this is not the result of an activity conducted by the licence holder.

Watercourse

A watercourse as defined in *The Environmental Management and Protection (General) Regulations*.

Water diversion structure

A structure constructed within a right of way for the purpose of diverting water, including:

- (a) a cross-drain culvert;
- (b) an excavated swale;
- (c) a berm; or
- (d) a combination of (b) and (c).

Wetlands

Areas of land inundated by surface water or groundwater, which normally supports a prevalence of vegetative or aquatic life that require saturated or seasonally saturated soil conditions for growth and reproduction. In the Canadian Wetland Classification, the wetland classes are: bog, fen, marsh, swamp and shallow open waters (Dunster, J.A. 1996. Dictionary of Natural Resource Management. UBC Press: Vancouver).

Appendix

Table 1. Road Construction and Maintenance Specifications

	Road Class			
	1	2	3	4
Access	All Weather Primary access roads to multiple operating areas containing long-term timber supplies	Winter or Summer Typically accessing one or more operating areas	Winter or Summer Typically accessing one or more harvest blocks in an operating area	In block Originates and terminates within the same harvest block
Life Expectancy	Permanent	5 - 20 years	1 - 15 years	< 2 years
Maximum Right-of-Way Width ¹	40 m	40 m	30 m	20 m
Road Driving Surface Width (Grade)	8.0 m – 10.0 m	7.0 – 8.0 m	≤ 7.0 m	≤ 7.0 m
Travel Surface	Gravel	Gravel Winter Road – Existing Soil Option – Gravel/Clay/Sand capping ²	Existing Soil Option – Gravel/Clay/Sand capping ²	Existing Soil Option – Gravel/Clay/Sand capping ²
Minimum Road Side Slope	2:1	2:1	Licensee to provide adequate erosion control protection ⁴	Licensee to provide adequate erosion control protection ⁴
Minimum Ditch Back Slope	2:1	2:1	Licensee to provide adequate erosion control protection ⁴	Licensee to provide adequate erosion control protection ⁴
Maximum Vegetation Control Width	40 m	40 m ³	30 m ³	N/A

¹ To achieve cut and fill requirements necessary to meet the specified road and ditch slopes, right-of-way widths may be widened to address site specific environmental and safety concerns on a case-by-case basis, as approved by the area forester.

² If sand, clay or gravel capping is used on winter roads de-compaction of road surface is required.

³ Shall not exceed the maximum right of way width constructed.

⁴ Road side slopes and ditch back slopes are at the licensee's discretion except where the slopes are specified in an authorization to construct approaches to wetland and watercourse crossings.

Table 2. Riparian Buffer System

Riparian Buffer Category	Description	Fish / Fish Habitat Implications	Riparian Buffers
RB 1 Permanent Fish Bearing Lake or Large Permanent Stream	<u>Permanent Fish Bearing Lake:</u> Large body of water with recreation. Fish present or capable of supporting stocked fish. Water present all year.	Yes	Forest operations not permitted within 90 m of the boundary or bank ¹ .
	<u>Large Permanent Stream:</u> Non-vegetated channel width greater than 5 m. With the exception of drought conditions, water is present all year.		
RB 2 Seasonal Fish Bearing Lake	<u>Seasonal Fish Bearing Lake:</u> Large body of water with little recreation. Water present all year. Fish present seasonally.	Yes	Forest operations not permitted within 30 m of the boundary or bank ¹ .
RB 3 Small Permanent Stream	Non-vegetated channel width less than 5 m. Water present all year. Supports fish / fish habitat.	Yes	Forest operations not permitted within 30 m of the boundary or bank ¹ .
	Non-vegetated channel width less than 5 m. Water present all year. Does not support fish / fish habitat.	No	Forest operations not permitted within 15 m of the boundary or bank ¹ .
RB 4 Intermittent Stream	Distinct channel, usually non-vegetated. Water present during spring runoff or major storms. Supports fish / fish habitat.	Yes or No	If yes, forest operations not permitted within 15 m of the boundary or bank ¹ . If no, forest operations not permitted within the boundary.
	Distinct channel, usually non-vegetated. Water present during spring runoff or major storms. Does not support fish / fish habitat.		

Information Note

Recent amendments to *The Fisheries Act (Canada)* have included revisions to the terms ‘**Fish**’, ‘**Fish habitat**’ and expands on the terms and conditions associated with **Designated projects**.

For further information regarding federal fisheries requirements, refer to *The Fisheries Act (Canada)* or the Department of Fisheries and Oceans.

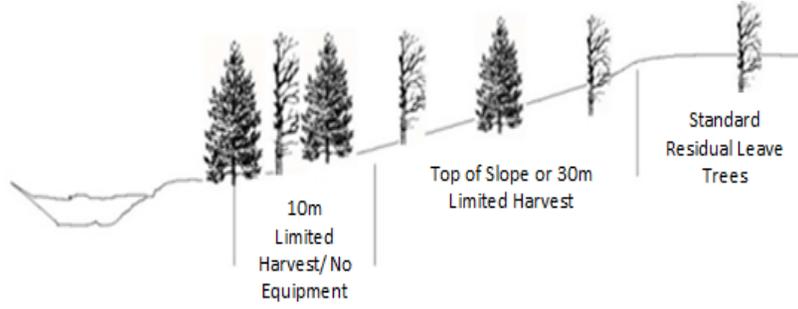
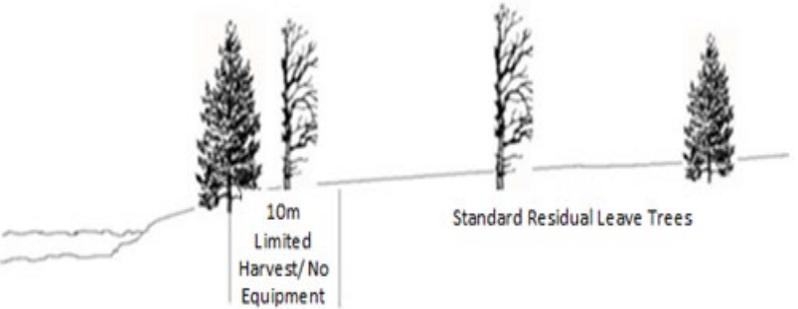
<p>RB 5 Non-Fish Bearing Lake, Water Source Area, Floodplain, Ephemeral Stream or Wetland</p>	<p><u>Non-fish Bearing Lake:</u> Body of water with no fishery or recreational potential. Water present all year.</p>	<p>Yes or No</p>	<p>If yes, forest operations are not permitted within 15 m of the boundary or bank¹.</p> <p>If no, forest operations are not permitted within the boundary, with the exception of ephemeral streams where harvesting operations:</p> <ul style="list-style-type: none"> • are conducted under frozen conditions; • do not create an impediment to surface or subsurface water flow; and • do not alter or cause to be altered the bed, bank or boundary.
	<p><u>Water Source Area or Floodplain:</u> Saturated soil or surface soils, seepages. With the exception of drought conditions, water is present all year, may or may not freeze in the winter.</p>		
	<p><u>Ephemeral Stream:</u> Vegetated channel. Water present during or immediately after rainfall or snowmelt.</p>		
	<p><u>Fen:</u> Slow, lateral water flow. Water levels at or near the surface.</p>		
	<p><u>Bog:</u> Stagnant – no water flow. Isolated from groundwater. Dry surface. Peat soils >40cm.</p>		
	<p><u>Swamp:</u> Vertical and horizontal water movement. Seasonal water table fluctuation. Oxygenated root</p>		

	zone. Pools of water and/or hummocky ground.		
	<u>Marsh:</u> Significant water table fluctuation. Water at or above the surface. Bulrush, sedge, or cattail present.		
	<u>Shallow Open Water:</u> Depth <2m. Standing open water. Mudflat or aquatic bed.		

¹ The riparian buffer shall be measured from the bank only when the boundary is not well defined.

Table 3. Variable Retention System

Variable Retention Category	Description	Zone Restrictions	Visual Reference
VR 1 Large Lakes, Rivers and Streams	Applies to lakes >5 ha in area, rivers and streams, as evident on 1:15,000 forest vegetation inventory maps, aerial photographs, or harvesting operations.	10 m no harvest/ no equipment zone measured from the stems of the overstory trees closest to the bed, bank, or boundary. This must be clearly delineated as per subsection 1-1(1). Limited harvest zone extending 30 m from the upslope edge of the 10 m no harvest zone.	<p>The diagram illustrates a cross-section of a riparian buffer. On the left, a water body is shown. A line of trees marks the boundary. A vertical line indicates the start of the '10m No Harvest/ No Equipment' zone. Another vertical line further up the slope indicates the start of the '30m Limited Harvest Zone'. To the right of the 30m zone, a line of trees is labeled 'Standard Residual Leave Trees'.</p>

Variable Retention Category	Description	Zone Restrictions	Visual Reference
VR 2 High Slope Areas on Small Lakes or Ponds	Between 0.5 and 5 ha waterbody surface area as evident on 1:15,000 forest vegetation inventory maps, aerial photographs, or harvesting operations. A high slope is defined as a slope greater than 15% within 20 m measured from the beginning of the overstory tree species.	A limited harvest zone to the top of the slope, or a maximum distance of 40 m measured from the stems of the overstory trees closest to the bed, bank, or boundary. The limited harvest zone includes a 10 m no equipment zone from the stems of the overstory trees closest to the bed, bank, or boundary. This line must be clearly delineated as per subsection 1-1(1).	
VR 3 Low Slope Areas on Small Lakes or Ponds	Between 0.5 and 5 ha waterbody surface area as evident on 1:15,000 forest vegetation inventory maps, aerial photographs or harvesting operations. Have a slope less than 15%	10 m limited harvest/ no equipment zone measured from the stems of the overstory trees closest to the bed, bank, or boundary. This line must be clearly delineated as per subsection 1-1(1).	

Variable Retention Category	Description	Zone Restrictions	Visual Reference
	within 20 m measured from the beginning of the overstory tree species.		
VR 4 Intermittent Streams	Intermittent streams as evident on 1:15,000 forest vegetation inventory maps, aerial photographs, identified during pre-harvest site assessments, or harvesting operations.	No impediment to surface or subsurface water flow (interflow). Single leave trees and clumps of leave trees shall be left adjacent to the stream. The operation of the equipment shall not alter, or cause to be altered the bed, bank or boundary. Harvesting equipment may cross intermittent streams on frozen ground or using appropriate crossing structures in accordance with an approved AHPP.	
VR 5 Small Waterbodies, Ephemeral Streams, and Wetlands	Waterbodies <0.5 ha, ephemeral streams, bogs, fens, swamps, marshes and shallow open waters.	No impediment to surface or subsurface water flow. No equipment in the waterbody/stream/wetland unless approved to operate in frozen conditions. The operation of the equipment shall not alter, or cause to be altered the bed, bank or boundary of the stream, wetland or waterbody.	