

**ORDER OF THE MINISTER OF WATER, LAND AND RESOURCE
STEWARDSHIP**

Forest and Range Practices Act

Ministerial Order No.

I, Eric Valdal, a designated signatory of Randene Neill, Minister of Water, Land and Resource Stewardship, being satisfied that the following described areas contain habitat that is necessary to meet the habitat requirements for bull trout (*Salvelinus confluentus*) and westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) and that the habitat requires special management that is not otherwise provided for under the *Government Actions Regulation* (GAR) or another enactment, order that: Wildlife Habitat Areas (WHAs) and Specified Areas 4-281, 4-282, 4-283, 4-284, 4-285, 4-286, 4-287, 4-288, 4-306, and 4-307 in the Rocky Mountain Forest District and 4-312 in the Selkirk Forest District, hereafter referred to as: 4-281 to 4-288, 4-306, 4-307 and 4-312, are established as set out in Schedule A and managed as provided in Schedule B.

March 13th, 2025

Date



Authorized Signatory of Water, Land and
Resource Stewardship

Eric Valdal, Area Executive Director

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Regulation and section: Government Actions Regulation (B.C. Reg. 582/2004) ss. 9(1), 9(2) and 10(1)

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Schedule A – Wildlife Habitat Areas 4-281 to 4-288, 4-306, 4-307 and 4-312 Maps

Schedule B

Part 1: Definitions

1. Unless otherwise specified, words and expressions not defined in this order have the meaning given to them under the *Forest and Range Practices Act* (FRPA) and the regulations made under it.
2. In this order and the schedules to this order:
 - a. **Core Area – Mainstem:** The area designated on the Schedule A map.
 - b. **Core Area – Tributary:** The area designated on the Schedule A map.
 - c. **Enhanced Riparian Management Area:** The riparian area to be managed, including the Enhanced Riparian Reserve Zone and Enhanced Riparian Management Zone as indicated in Tables 2, 3 and 4. The Enhanced Riparian Management Area replaces the Riparian Management Area identified in the *Forest Planning and Practices Regulation* but does not replace the backcountry river corridors identified in the *Southern Rocky Mountain Management Plan* (Ministry of Sustainable Resource Management 2003).
 - d. **Enhanced Riparian Management Zone:** The area indicated in Tables 2, 3 and 4 within which primary forest activities are allowed with conditions. The Enhanced Riparian Management Zone replaces the Riparian Management Zone identified in the *Forest Planning and Practices Regulation* but does not replace the backcountry river corridors identified in the *Southern Rocky Mountain Management Plan* (Ministry of Sustainable Resource Management 2003).
 - e. **Enhanced Riparian Reserve Zone:** The area indicated in Tables 2, 3 and 4 within which forest harvest is prohibited. The Enhanced Riparian Reserve Zone replaces the Riparian Reserve Zone identified in the *Forest Planning and Practices Regulation* but does not replace the backcountry river corridors identified in the *Southern Rocky Mountain Management Plan* (Ministry of Sustainable Resource Management 2003).
 - f. **Gully:** An incised, confined area formed by water that contains a stream where:
 - i. the overall channel gradient is $\geq 25\%$; and
 - ii. from the fan apex (where the transport zone meets the fan) to the top of the headwall, at least one reach greater than 100 m in length has:
 - I. a channel gradient $> 20\%$;
 - II. a sidewall greater > 3 m; and
 - III. a sidewall slope $> 50\%$.
 - g. **Herbicide:** A chemical product represented, sold, used, or intended to be used to manage or eliminate unwanted vegetation.

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- h. **High Water Mark:** Where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the waterbody a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself.
- i. **Hydrological Connection:** outflow of wetlands and lakes into watercourses (continuous or non-continuous) that can transport water above ground to downstream S1 to S6 streams.
- j. **Hydrophytic Vegetation:** Plants that preferentially grow in wet areas under continuous or periodic flooding.
- k. **Instream Works:** Activities carried out within the stream channel, which includes the bed and banks of the stream, both above and below the natural boundary and whether or not the channel has been modified, and which includes side channels of the stream.
- l. **Livestock Attractant:** A substance or structure that draws in livestock, including salt/minerals, supplements, water troughs and cattle oilers.
- m. **Machine Free Zone:** an area adjacent to a waterbody (including streams, wetlands, lakes and non-classified features) in which primary forest activities may occur, but machines used to facilitate primary forest activities may not tread or disturb the soil.
- n. **Non-classified Drainage:** A stream not meeting the criteria for stream classes S1 through S6 as described in the *Forest Planning and Practices Regulation*.
- o. **Non-classified Lake:** A lake not meeting the criteria for lake classes L1 through L4 as described in the *Forest Planning and Practices Regulation*.
- p. **Non-classified Wetland:** A wetland not meeting the criteria for wetland classes W1 through W5 as described in the *Forest Planning and Practices Regulation*.
- q. **Pesticide:** A micro-organism or material that is represented, sold, used or intended to be used to prevent, destroy, repel or mitigate a pest, and includes:
 - i. a plant growth regulator, plant defoliator or plant desiccant;
 - ii. a pest control product as defined in the *Pest Control Products Act* (PCPA) (Canada); and
 - iii. a substance that is classified as a pesticide by regulation under the PCPA, but does not include micro-organisms, materials, substances or control products excluded from this definition by regulation under the PCPA.
- r. **Qualified Professional:** An individual registered with a regulatory body, as defined in Schedule 1 of the *Professional Governance Act*, acting within the individual's area of expertise.
- s. **Specified Area:** The area outside the **Core Area – Mainstem** and **Core Area – Tributary** designated on the Schedule A map within which waterbodies have not been spatially identified. Waterbodies (including streams, wetlands, lakes and non-classified features) within the Specified Area are to be identified and classified by

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field practitioners, with Enhanced Riparian Management Zones and Enhanced Riparian Reserve Zones applied as indicated in Tables 2, 3 and 4, including Enhanced Riparian Management Zones for the spatially defined Core Area – Mainstem and Core Area – Tributary.

3. Where there is an overlap between this order and any other order established under the *Government Actions Regulation*, the provisions of the order that provide the most restrictive measures necessary to achieve the management objectives shall apply.

Part 2: Establishment of Wildlife Habitat Areas

1. With respect to Wildlife Habitat Areas (WHAs) 4-281 to 4-288, 4-306, 4-307 and 4-312:
 - a. The areas shown in the maps set out in the attached Schedule A (WHAs 4-281 to 4-288, 4-306, 4-307 and 4-312) and contained in the WHA spatial layer stored in the BC Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY) are WHAs 4-281 to 4-288, 4-306, 4-307 and 4-312 for bull trout and westslope cutthroat trout. The centre points of the lines on the attached Schedule A are what establish the WHA boundaries.
 - b. The maps in Schedule A delineate the Core Area – Mainstem, Core Area – Tributary and Specified Area of the WHAs.
 - c. If there is a discrepancy between the areas shown on the maps attached as Schedule A and the WHA spatial layer stored in the British Columbia Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY), the areas as detailed in the WHA spatial layer will take precedence.

Part 3: General Wildlife Measures (GWMs)

The following measures are established for WHAs 4-281 to 4-288, 4-306, 4-307 and 4-312.

Measures 1 through 5 apply within the **Core Area – Mainstem**.

Harvest

1. Forest harvest is not permitted.

Access

2. Do not construct new roads, trails or stream crossings.
3. During maintenance or replacement of existing crossings, instream works must occur within the timing windows shown in Table 1, unless:
 - a. the stream is dry or frozen to the channel bottom for the duration of instream works.

Range

4. Do not use livestock attractants.

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Chemical Applications

5. Do not use pesticides, except for herbicide applications through stem injection, cut and paint, foliar wipe, or other direct plant application, to control invasive plants or noxious weeds.

Measures 6 through 10 apply within the **Core Area – Tributary**.

Harvest

6. Forest harvest is not permitted, except as needed to accommodate activities described in GWM 8.

Access

7. Minimize the number of stream crossings by using existing roads or trails where available.
8. For construction, upgrade, maintenance or replacement of stream crossings, roads or trails, the following conditions must be met:
 - a. on fish-bearing streams, crossing structures must be open-bottomed structures which retain the natural stream bed and be designed by a Qualified Professional;
 - b. on all streams (fish-bearing and non-fish-bearing), crossing structures must be designed by a Qualified Professional and account for anticipated climate change effects on peak-flow discharge such that crossing structures are sized to:
 - i. not constrict the channel during anticipated high discharge events; and
 - ii. allow for passage of sediment and debris during anticipated high discharge events.
 - c. on fish-bearing streams, the slope of the final streambed gradient must maintain the natural streambed gradient and morphology of the adjacent reaches for 50 m upstream and downstream of the crossing;
 - d. minimize the length, width, surface, cut and fill slopes, and overall exposed right-of-way area of the road or trail;
 - e. along new or upgraded roads or trails, ditch lines must not discharge directly into the stream channel; and
 - f. on fish-bearing streams, instream works must occur within the timing windows shown in Table 1, unless:
 - i. the stream is dry or frozen to the channel bottom for the duration of instream works.

Range

9. Do not use livestock attractants.

Chemical Applications

10. Do not use pesticides, except for herbicide applications through stem injection, cut and paint, foliar wipe, or other direct plant application, to control invasive plants or noxious weeds.

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Measures 11 through 19 apply within the **Specified Area**.

The minimum **Enhanced Riparian Management Area** width, **Enhanced Riparian Reserve Zone** width and **Enhanced Riparian Management Zone** width, on each side of the stream, are as defined in Table 2.

The minimum **Enhanced Riparian Management Area** width, **Enhanced Riparian Reserve Zone** width and **Enhanced Riparian Management Zone** width for wetlands and lakes are as defined in Tables 3 and 4.

Harvest

11. Forest harvest is not permitted within the **Enhanced Riparian Reserve Zones** adjacent to streams as identified in Table 2, except as needed to accommodate the construction of a stream crossing as described in GWM 17.
12. Forest harvest is not permitted within the **Enhanced Riparian Reserve Zones** adjacent to wetlands and lakes as identified in Tables 3 and 4 unless no hydrological connection exists between the feature(s) and downstream S1 to S6 streams.
13. Forest harvest activities within the **Enhanced Riparian Management Zones** identified in Tables 2, 3 and 4 must:
 - a. be planned and conducted in a manner that minimizes the potential for windthrow within the **Enhanced Riparian Reserve Zones**, including completion of a Windthrow Hazard Assessment (Appendix A);
 - b. retain a minimum of 50% of:
 - i. basal area, or
 - ii. the total **Enhanced Riparian Management Zone** area within the net area to be reforested for each stream side; and
 - c. fall, yard and skid timber away from all streams, wetlands and lakes, where practicable.
14. For S6 or S6-N/E streams (as defined in Table 2) located within a gully, forest harvest is prohibited from the stream edge to the gully slope-break, and the **Enhanced Riparian Reserve Zone** and **Enhanced Riparian Management Zone** widths specified in Table 2 do not apply.
15. Forest harvest activities along each side of non-classified drainages and S6-N/E streams (Table 2) must:
 - a. establish a 7 m machine free zone that retains all non-merchantable canopy and understory vegetation; and
 - b. fall, yard and skid timber away from all non-classified drainages and S6-N/E streams, where practicable.

Access

16. Minimize the number of stream crossings by using existing roads or trails where available.
17. For construction, upgrade, maintenance or replacement of stream crossings, roads or trails within the **Enhanced Riparian Management Areas** identified in Tables 2, 3 and 4, the following conditions must be met:
 - a. on fish-bearing streams, crossing structures must be open-bottomed structures which retain the natural stream bed and be designed by a Qualified Professional;
 - b. on all streams (fish-bearing and non-fish-bearing), crossing structures must be designed by a Qualified Professional and account for anticipated climate change effects on peak-flow discharge such that crossing structures are sized to:

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- i. not constrict the channel during anticipated high discharge events; and
 - ii. allow for passage of sediment and debris during anticipated high discharge events.
- c. on fish-bearing streams, the slope of the final streambed gradient must maintain the natural average slope and morphology of the adjacent reaches for 50 m upstream and downstream of the crossing;
- d. minimize the length, width, surface, cut and fill slopes, and overall exposed right-of-way area of the road or trail;
- e. along new or upgraded roads or trails, ditch lines must not discharge directly into the stream channel; and
- f. on fish-bearing streams, instream works must occur within the timing windows shown in Table 1, unless:
 - i. the stream is dry or frozen to the channel bottom for the duration of instream works; or
 - ii. a Qualified Professional is on site to identify and mitigate any impacts to fish and fish habitat.

Range

18. Do not use livestock attractants within the **Enhanced Riparian Management Areas** identified in Tables 2, 3 and 4.

Chemical Applications

19. Do not use pesticides, except for herbicide applications through stem injection, cut and paint, foliar wipe, or other direct plant application, to control invasive plants or noxious weeds within the **Enhanced Riparian Management Areas** identified in Tables 2, 3 and 4.

Table 1: Timing Windows During Which Instream Works Can Occur in Fish-Bearing Streams

WHA Tag	WHA Name	Fish Species Present	Timing Window
4-281, 4-282, 4-283, 4-284, 4-285, 4-286, 4-287, 4-307	White, North White, Schofield, Wigwam, Bighorn, Lodgepole, Flathead, Sandown (all elevations)	Bull Trout, Westslope Cutthroat Trout	August 20 – August 31
4-288, 4-306	Buhl, Skookumchuck (all elevations)	Westslope Cutthroat Trout	August 20 – October 15
4-312	Silverton (<1100 m elevation)	Bull Trout, Westslope Cutthroat Trout	July 16 – August 31
4-312	Silverton (>1100 m elevation)	Bull Trout, Westslope Cutthroat Trout	August 20 – August 31

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Table 2: Enhanced Riparian Management Area Requirements for Streams

Spatially Defined Area or Riparian Stream Class ^a	Total Enhanced Riparian Management Area Width ^b (m)	Enhanced Riparian Reserve Zone		Enhanced Riparian Management Zone	
		Width (m)	Retention (%)	Width (m)	Retention (%)
Core Area – Mainstem	Variable	Variable – spatially defined	100	50	50
Core Area – Tributary	Variable	Variable – spatially defined	100	30	50
S1-A	100	50	100	50	50
S1-B	70	50	100	20	50
S2	70	30	100	40	50
S3	50	30	100	20	50
S4	50	30	100	20	50
S5	40	20	100	20	50
S6 ^c	40	20	100	20	50
S6-N/E ^d	15	n/a ^e	n/a ^e	15 ^e	50

Note: n/a = not applicable.

- ^a Stream classes as defined in the *Forest Planning and Practices Regulation*, unless otherwise noted.
- ^b To be applied on each side of stream from edge of stream channel, as defined in the *Water Sustainability Act*, or from edge of active flood plain, as defined in the *Forest Planning and Practices Regulation*, whichever is greater.
- ^c S6 stream sections within the cutblock harvest area with an average cardinal slope direction from E to NW (90° to 315°).
- ^d S6 stream sections within the cutblock harvest area with a dominant northern to eastern aspect, or average cardinal slope direction from NW to E (315° to 90°).
- ^e A 7 m machine free zone located from the edge of stream channel is included within the 15 m Enhanced Riparian Management Zone.

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Table 3: Enhanced Riparian Management Area Requirements for Wetlands and Lakes with a Hydrological Connection within the Specified Area of Wildlife Habitat Area 4-287 (Flathead, West Flathead, East Flathead, North Flathead)

Wetland or Lake Class ^a	Total Enhanced Riparian Management Area Width ^b (m)	Enhanced Riparian Reserve Zone		Enhanced Riparian Management Zone	
		Width (m)	Retention (%)	Width (m)	Retention (%)
W1	100	80	100	20	50
W2	100	70	100	30	50
W3	100	70	100	30	50
W4	100	50	100	50	50
W5	100	80	100	20	50
L1-A	100	80	100	20	50
L1-B	100	70	100	30	50
L2	100	70	100	30	50
L3	100	60	100	40	50
L4	100	50	100	50	50

^a Wetland and lake classes as described in the *Forest Planning and Practices Regulation*.

^b **For wetlands:** to be applied from the outer edge of the wetland where hydrophytic vegetation and subhydric or hydric soils are not present. **For lakes:** to be applied from the high-water mark, which includes areas that are seasonally inundated by floodwater.

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Table 4: Enhanced Riparian Management Area Requirements for Wetlands and Lakes with a Hydrological Connection within the Specified Areas of All Wildlife Habitat Areas

Wetland or Lake Class ^a	Total Enhanced Riparian Management Area Width ^b (m)	Enhanced Riparian Reserve Zone		Enhanced Riparian Management Zone	
		Width (m)	Retention (%)	Width (m)	Retention (%)
Non-classified Wetland	40	20	100	20	50
Non-classified Lake	40	20	100	20	50

^a Wetland and lake classes as described in the *Forest Planning and Practices Regulation*.

^b **For wetlands:** to be applied from the outer edge of the wetland where hydrophytic vegetation and subhydric or hydric soils are not present. **For lakes:** to be applied from the high-water mark, which includes areas that are seasonally inundated by floodwater.

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Appendix A

The following information is provided for context and support to the Order establishing Wildlife Habitat Areas (WHAs) 4-281, 4-282, 4-283, 4-284, 4-285, 4-286, 4-287, 4-288, 4-306, 4-307 and 4-312. Private land, federal land, parks and protected areas are excluded from the application of the general wildlife measures. This appendix is not part of the order.

A1. Spatial Relationships among the Core Area – Mainstem, Core Area – Tributary, Specified Area, and Mapped Watercourses at the Watershed Scale (Figure A-1)

True locations of waterbodies (including streams, wetlands, and lakes) within the Specified Area need to be determined by field practitioners on the ground, and Enhanced Riparian Management Area requirements (including Enhanced Riparian Management Zones for the Core Area – Mainstem and Core Area – Tributary) must be met as indicated in the General Wildlife Measures (GWMs) for the Specified Area.

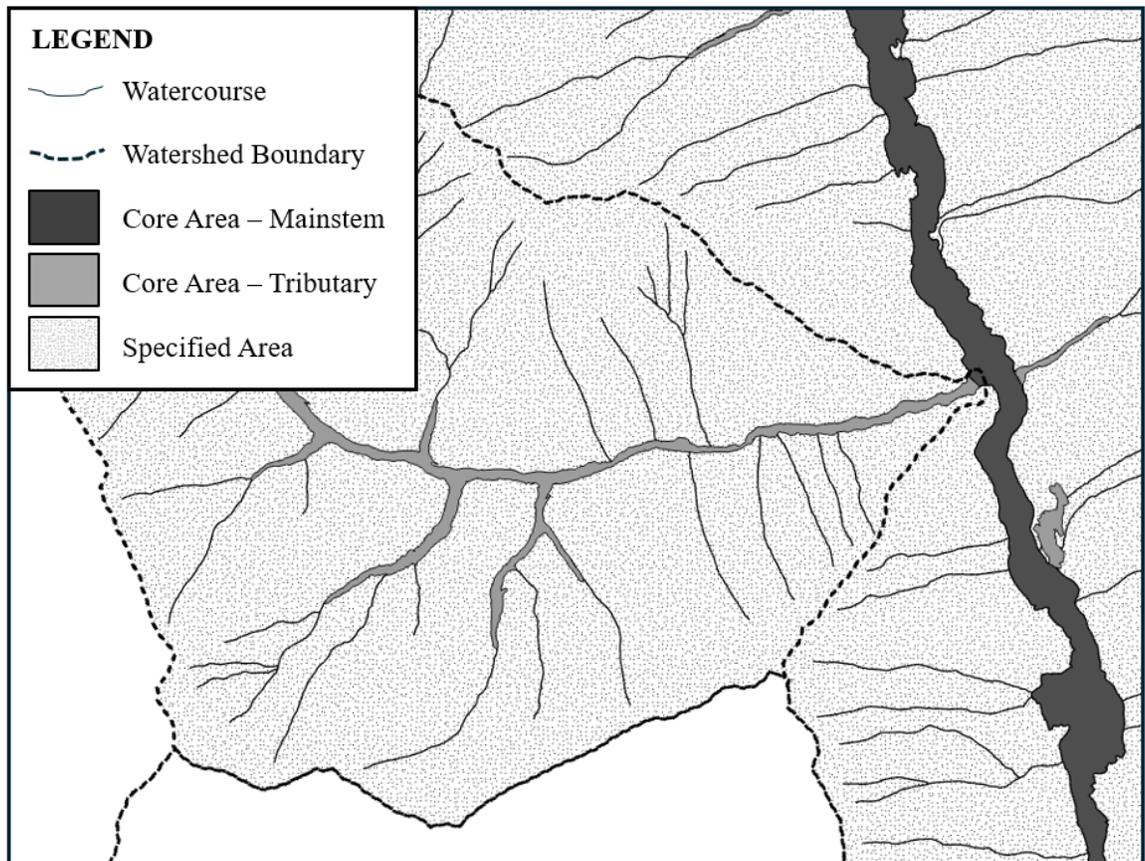


Figure A-1: Schematic Showing the Spatial Relationships Among the Core Area – Mainstem, Core Area – Tributary, Specified Area and Mapped Watercourses at the Watershed Scale

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A2. Riparian Management for Bull Trout and Westslope Cutthroat Trout

General Wildlife Measures (GWMs) for forest harvest (i.e., GWMs 1, 6, and 11-15) and access (i.e., GWMs 2-3, 7-8, and 16-17) are intended to manage two key objectives for bull trout and westslope cutthroat trout: water temperature and sediment delivery to streams. As cold-water specialists, both trout species are susceptible to increases in stream water temperature, which can lead to recruitment failure, stress-induced morbid effects, population fragmentation and risk of invasion by other species (Bennett 2004; Hammond 2004). Recruitment success and productivity of both species can also be reduced by introduction of fine sediment to stream benthic substrates (Bennett 2004; Hammond 2004).

A3. GWM 13(a): Forest Management to Avoid Windthrow

Stream temperature is best regulated by preserving riparian vegetation in closest proximity to the stream, as this acts to intercept solar radiation and provide effective shading across the stream channel. Management actions should use the Enhanced Riparian Management Zones to create a windfirm buffer to protect the integrity of Enhanced Riparian Reserve Zone vegetation.

Examples of operational prescriptions that can contribute to/achieve windfirmness include:

- feathering of harvest edges or topping of mature edge trees;
- retaining multi-layered understory vegetation;
- minimizing the size and number of harvest openings within the Enhanced Riparian Management Zone; and
- aligning Enhanced Riparian Management Zone boundaries along topographic features (e.g., breaks of slope or rock bluffs).

To minimize the risk of windthrow, block design should follow the principles included in the *Windthrow Handbook for British Columbia Forests* (Stathers et al. 1994). A Windthrow Hazard Assessment similar to the example included in Appendix 1 of the *Windthrow Handbook for British Columbia Forests* (Stathers et al. 1994) should be completed prior to designing the Enhanced Riparian Management Zone.

A4. GWM 13(b)(ii): Enhanced Riparian Management Zone Retention Targets – Total Area

As an alternate retention requirement metric within Enhanced Riparian Management Zones, forest practitioners may use total area instead of basal area. This alternative is intended to give forest practitioners the option to locate Enhanced Riparian Management Zone boundaries along windfirm topographic features, while allowing for increased harvest opportunity in areas with higher windthrow risk. If total area is used to satisfy the retention requirement instead of basal area, the Enhanced Riparian Management Zone for each stream must retain 50% of the total Enhanced Riparian Management Zone area that falls within the cutblock harvest area (i.e., net area to be reforested), calculated independently for each side of the stream.

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A5. GWM 15 and Table 2: S6-N/E Stream Classification and Riparian Management

Streams classified as S6-N/E do not require the establishment of Enhanced Riparian Reserves Zones as streams on north- to east-facing aspects may have reduced exposure to direct solar radiation compared to streams on other aspects, and thus may be less susceptible to heating associated with removal of riparian vegetation. While these streams do allow for a higher level of harvest compared to other stream classifications, harvest prescriptions should retain vegetation that provides a shading effect, such as deciduous species, understory canopy and broadleaf shrubs. Riparian management on S6-N/E streams must also incorporate a 7 m machine free zone within the Enhanced Riparian Management Zone to avoid soil disturbance immediately adjacent to the stream, as referenced in GWM 15.

A6. Managing for Sediment Delivery during Post-wildfire Salvage Logging

The following generic best management practices for post-wildfire salvage logging should be considered to reduce potential negative impacts to trout habitat. However, since best management practices may depend on specific site factors, forest licensees should contact regional Ecosystems staff to discuss options and alternative approaches.

When best management practices are not followed, post-wildfire salvage logging can contribute considerable amounts of sediment to streams in burned watersheds, which can negatively impact trout habitat. In a study of the impacts of post-wildfire salvage logging in headwater areas of the eastern slopes of the Rocky Mountains, sediment production was nine times higher in burned catchments than unburned catchments, and 37 times higher in salvage-logged watersheds than unburned areas, with effects persisting more than a decade after salvage logging (Silins et al. 2009; Silins et al. 2016). The potential negative effects of post-fire salvage on some ecosystem values may be difficult to remediate, may require long timelines for remediation (i.e., decades) or may be irreversible in the context of forest management time horizons (Nicholls and Ethier 2018).

To mitigate the effects of post-wildfire salvage logging on bull trout and westslope cutthroat trout habitat, the following management practices should be considered:

- forest harvest for the purpose of fire salvage should not be carried out within the Enhanced Riparian Management Zones identified in Tables 2, 3 and 4 of the Order;
- to minimize disturbance to sensitive burned soils:
 - use aerial cable harvest systems; or
 - conduct harvest under frozen conditions where there is sufficient snowpack to avoid soil disturbance;
- skid bridges (e.g., temporary bridge decks, logs, rig mats) should be used on all temporary stream crossings;
- coarse woody debris pieces >10 cm diameter should be distributed across cutblock slopes and aligned perpendicular to slope direction to minimize velocity of surface water after salvage harvesting;
- sediment control measures (e.g., catch-basins, sediment socks, debris in ditch-lines) should be utilized on new and existing permanent access stream crossings and cross-drains within the burned areas, where appropriate;
- sediment control measures should be inspected prior to freshet for the first five years following fire to ensure they are functioning correctly; and

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- all in-block roads and trails should be fully rehabilitated upon completion of salvage harvest activities.

References

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