

BRITISH COLUMBIA MINISTRY OF FORESTS: POST-WILDFIRE NATURAL HAZARD RISK ANALYSIS

LEVEL 2 RECONNAISSANCE REPORT – K51490 BALD RANGE

NOTE: This report is a preliminary reconnaissance assessment and is intended to identify potential post-wildfire natural hazards and risks that may require further investigation. It is not a detailed, site-specific risk assessment, and further work or additional information may alter the conclusions. Not all post-fire hazards, elements at risk, or fire-affected areas have been evaluated in detail. See Appendix A for important limitations and contact the author for more information.

FIRE NUMBER/STATUS: K51490 Bald Range; classified as being held August 28, 2026		FIRE YEAR: 2026	DATE OF FIELD REVIEWS: August 17 and September 20, 2026 DATE OF REPORT: October 9, 2026
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REPORT PREPARED FOR: Kamloops Fire Center (KFC)			
Fire Size: 25,163 ha as of September 16, 2026	Location: The fire is located on the west side of Okanagan Lake within and to the west of Summerland	Land Ownership: The fire is located on Penticton IR No. 1, Penticton IR No. 3A and provincial public lands	
POTENTIAL ELEMENTS AT RISK: - Private properties - First Nations Reserve lands at Penticton IR No. 1 and Penticton IR No. 3A - Highway 97 and other roads - Water licenses and points of diversion within or downslope of the fire perimeter			
WATERSHEDS AFFECTED:	TOTAL AREA (ha)	WATERSHED AREA BURNED	AGGREGATE BURNED AT MODERATE AND HIGH SEVERITY
Bearpaw Creek	2,305	30% (684 ha)	18% (407 ha)
Bull Creek	4,769	47% (2,233 ha)	34% (1,598 ha)
Darke Creek	7,766	38% (2,949 ha)	29% (2,274 ha)
Denike Creek	739	61% (454 ha)	37% (284 ha)
Eneas Creek	9,235	30% (2,812 ha)	18% (1,669 ha)
Isintok Creek	4,645	25% (1,150 ha)	17% (804 ha)
Liddell Creek	1,122	70% (787 ha)	46% (518 ha)
Prairie Creek	1,392	19% (271 ha)	9% (129 ha)
Riddle Creek	3,419	9% (302 ha)	2% (81 ha)
Shingle Creek	29,860	9% (2,567 ha)	4% (1,247 ha)
Trout Creek	74,645	21% (15,464 ha)	14% (10,329 ha)
OVERVIEW: The Bald Range Fire started on the afternoon of August 7, 2026, west of Summerland, BC, and grew rapidly towards the east, reaching Summerland and the east shore of Okanagan Lake later that evening. It was eventually classified as being held on August 28, 2026, during which time it burned a 20 km wide and 20 km long area encompassing 251 km ² .			

The eastern perimeter of the wildfire follows portions of Trout Creek, the western margin of the city of Summerland, Highway 97, and the western shore of Okanagan Lake. The northern fire perimeter extends across Mount Eneas and the foot of Mount Acland bordering two previous wildfire perimeters (2017; K52024 Finlay Fire and 2018; K51264 Mount Eneas Fire). The western fire perimeter extends roughly 15 km west of Faulder towards Isintok Mountain. The southern perimeter of the fire extended towards Shatford Creek and the lower, northern slopes of Blue Mountain.

Aerial reconnaissance of the Bald Range Fire was conducted on August 17, 2026, followed by a field assessment on September 20, 2026. The field assessment included accessing lower portions of the fire by vehicle including the western edge of Summerland and along the Princeton-Summerland Road. This preliminary reconnaissance report has been prepared on an expedited basis to support the timely initiation of a more detailed field-based assessment, now underway. The analysis for this report relies primarily on aerial observations, terrain interpretation, satellite imagery, LiDAR data, and available geospatial data. Accordingly, the hazard and risk ratings presented herein are preliminary in nature and will be further refined during the detail field-based assessment.

Several primary transportation corridors extend through or border fire-affected areas. The Princeton-Summerland Road extends from east to west through the fire perimeter, while Highway 97 extends from north to south along the western shore of Okanagan Lake. Fish Lake Road, Garnet Valley Road, Meadow Valley Road, and other local roads access residential and rural areas around Summerland. Resource roads branch off the Princeton-Summerland Road into many fire-affected watersheds.

SUMMARY OF TERRAIN CONDITIONS, THE EFFECTS OF THE FIRE, AND PREVIOUS FIRE ACTIVITY IN THE SURROUNDING AREA:

Terrain within the fire perimeter consists mainly of low rounded hills and ridges that grade into an upland plateau to the west of Summerland. Slopes within the fire perimeter are generally irregular in profile and short, typically between 300- 1,000 m in length, with gentle to moderate slope gradients. Moderately steep to steep slopes occur locally, particularly along the sidewalls of deeply incised stream valleys such as Trout Creek and on the east side of Mount Eneas Ridge, where slopes drop steeply to Highway 97 and Okanagan Lake.

The surficial materials in the area consist of glacial lake sediments (silt and sand bluffs) near Okanagan Lake, gravely glaciofluvial material associated with post-glacial meltwater features at lower elevations, colluvial deposits on rocky slopes with minor till deposits of varying thickness across higher elevations.

The attached K51490 Bald Range Fire Vegetation Burn Severity Map represents conditions as of August 24, 2026. Unless otherwise specified, references to burn severity in this report refer to vegetation burn severity derived from satellite imagery and reflectance data. Vegetation burn severity was moderate and high in the areas around Faulder and on the west side of the Garnet Valley and ranged from low to high elsewhere across the fire perimeter. Areas with denser forest cover generally burned more severely than areas of open grassland and sparse forest. Visual observations of vegetation burn severity were generally consistent with the mapped vegetation burn severity. Soil burn severity, which reflects field-observed changes in ground cover, soil structure, and water repellency, was not assessed in detail during this reconnaissance assessment. The burn severity ratings presented in this report are preliminary and may not fully represent conditions throughout the entire Bald Range Fire perimeter.

During the Eneas Mountain Fire in 2018, the wildfire burned 1,760 ha across Mount Eneas Ridge impacting the west side of the ridge that trends down towards the Garnet Valley, as well as impacts on the east side of the ridge on steep slopes above Highway 97. Vegetation burn severity during the 2018 fire generally consisted of low to moderate burn severities on the gentler, west-aspect slopes leading down into the Garnet Valley and moderate to high vegetation burn severities on the steeper, east-aspect slopes leading

down to Highway 97 and Okanagan Lake. No post-fire natural hazards appear to have occurred in wildfire affected areas following the Eneas Mountain Fire.

On October 22, 2003, within months of the start of the The Okanagan Mountain Park Fire south of Kelowna, intense rainfall triggered post-fire debris floods in Lebanon Creek and Rembler Creek. Substantial overland flow in fire-affected areas caused flooding and transported debris affecting several houses, roads, and culverts.

The area in and around Summerland has an extensive history of wildfire and natural hazards, including landslides and rockfall along the Highway 97 corridor, deep seated landslides along Trout Creek, post-fire debris flows and debris floods. Post-fire natural hazards across the wider area may be triggered by a variety of weather events throughout the year, including rapid snowmelt in the spring, rain-on-snow events during the winter, or rainfall during the spring, summer and fall months.

IMPACTED WATERSHED and FACE UNIT SUMMARY:

This section summarizes conditions within selected watersheds and face units affected by the Bald Range Fire and provides supporting rationale for the partial risk analysis presented in the following sections. It describes the post-fire hazards considered most relevant within each assessed area. Given the reconnaissance-level scope of the assessment, not all fire-affected areas or potential hazards have been assessed in detail. Other fire-related hazards may therefore exist, including those that could be locally significant but were not evaluated during this review.

Bearpaw Creek

Bearpaw Creek is a 23 km² tributary to Trout Creek in the northwestern corner of the fire perimeter, approximately ten kilometres upstream of Faulder. The fire burned 30% of Bearpaw Creek with 18% of the watershed burned at moderate or high severity. The watershed is largely undeveloped, with a modest road network that provides access to cutblocks of various ages. Bearpaw Creek is deeply incised within a gully, and no specific elements at risk were identified at its confluence with Trout Creek. During intense or prolonged rainfall or rapid snowmelt, the burned area in Bearpaw Creek may produce increased overland flow, hillslope erosion, and sediment transport increasing the likelihood of sediment laden flooding or a debris flood in the catchment. Because no specific elements at risk were identified in the assessed area, Bearpaw Creek it is not considered further in this report.

Bull Creek

Bull Creek is a 47.7 km² tributary to Trout Creek immediately east of Bearpaw Creek and approximately eight kilometres upstream of Faulder. The Bull Creek watershed is also largely undeveloped with a modest road network that accesses cutblocks of various ages. The fire burned 47% of Bull Creek with 34% of the watershed burned at moderate or high severity. The main creek channel is deeply incised in a gully and there no specific elements at risk were identified on the alluvial fan at the creek's confluence with Trout Creek. Due to the proportion of moderate and high VBS in the watershed elevated rates of hillslope erosion and sediment transport are anticipated in the event of intense or prolonged rain or rapid snowmelt, increasing the likelihood of sediment laden flooding or a debris flood in the catchment. Because no specific elements at risk were identified in the assessed area, Bull Creek it is not considered further in this report.

Darke Creek

Darke Creek is a 77.7 km² tributary to Trout Creek located approximately 7 km west of Summerland. It flows southeast from Darke Lake, outside the northwest fire perimeter, through Meadow Valley towards Faulder where it joins Trout Creek. The wildfire affected the lower Darke Creek watershed. Thirty-eight percent of the watershed burned and 29% of the watershed was burned at moderate or high vegetation burn severity.

The valley bottom from Meadow Valley to Faulder includes glaciofluvial meltwater channel deposits and a relatively wide, flat valley bottom that becomes increasingly narrow to the south. Valley sidewalls around Faulder and immediately west of Meadow Valley are short, steep and highly irregular in profile closely mirroring the underlying bedrock. On the east side of Meadow Valley sidewalls are planar to concave in profile with a series of closely spaced draws or swales with small alluvial or colluvial fans where they intersect gentle terrain in the valley bottom.

Much of the lower Darke Creek watershed in and around Faulder was burned at moderate or high severity. Due to the wildfire induced impacts to vegetation and soil on the hillslopes in the Darke Creek watershed the likelihood of post-wildfire runoff leading to erosion, shallow instability, and sediment laden floods which may transition to debris flows, is high. These events are anticipated to occur on valley sidewall slopes and reach the valley bottom, with the potential to impact private property and public roads. In areas where drainage is confined and accumulates in draws or gullies, the likelihood of in-channel initiating debris flows is increased.

The spatial impact likelihood to downslope properties, roads, and other elements varies depending on slope gradients and setback distances from the toe of the burned hillslopes, but is generally rated as moderate to high, until a more detailed field assessment can be completed to resolve spatial impact probability for individual properties or elements.

Eneas Creek (Garnet Valley)

Eneas Creek flows from Garnet Lake through the Garnet Valley and Summerland to Okanagan Lake. Mount Eneas and Wild Horse Mountain separate the Garnet Valley from Okanagan Lake immediately to the east. The watershed has a surface area of 92.5 km² of which 30% was burned during the Bald Range Fire and 18% of which was burned at moderate or high vegetation burn severity.

Terrain in the Garnet Valley is irregular in profile with strong bedrock control and moderate slope gradients overall that extend upslope for hundreds of metres to more than a kilometre. The hillslopes along either side of Garnet Valley were burned at varying severities. Slopes on the west side of the valley were generally burned at moderate or high severity, particularly where forest cover is denser, while slopes on the east side of the valley, which are predominantly open grassland with sparse conifers, were generally burned at low severity.

East and west valley sidewalls in the Eneas Creek watershed include several mapped stream courses, which likely carry their highest flows during spring runoff. The valley sidewall slopes have a dense network of draws and swales that extend to the valley bottom, most without substantial fans at their outlets. Although most of these draws and swales are likely dry for much the year, they may experience runoff or sediment laden flooding during post-fire conditions, particularly during periods of intense rainfall or rapid snowmelt. Where runoff becomes confined, erosion of the channel bed or sidewall failures can contribute enough sediment and debris for sediment laden floods to transition into debris flows.

Due to the wildfire induced impacts to vegetation and soil the likelihood of an elevated post-fire runoff response leading to erosion, shallow landsliding, sediment laden flooding or debris flows is rated high for slopes on the west side of the valley and low for slopes on the east side of the valley. The hazard likelihood is highest in areas with severely burned vegetation and soils, steeper slope gradients, and converging topography. There are areas on the west valley sidewall within the Garnet Valley where the post-fire hazard likelihood is lower, for example in the area around Handley Street where the vegetation burn severity is low and the topography is more subdued; however, until a more detailed site-specific assessment is completed the hazard likelihood for the post-fire processes throughout the Garnet Valley is rated as high for the western valley sidewall and low for the eastern valley sidewall.

The likelihood that wildfire related landslides, sediment laden floods or debris flows impact private property, residences, Garnet Valley Road and other smaller access roads varies from low to high depending on slope gradients and distance or set back from the toe of the steeper terrain. A detailed field assessment to resolve the hazard likelihood and spatial impact probability for each individual property or element is recommended.

Valley sidewall slopes along Trout Creek between Faulder and the Landfill

From Faulder to the landfill the vegetation burn severity along the north and south valley sidewall slopes, adjacent to the Princeton-Summerland Road and Bathville Road varies considerably. Vegetation burn severity is generally moderate or high around Faulder (e.g., around the Darke Creek and Trout Creek confluence) and decreases to low or moderate (particularly on the northern side of Trout Creek or on the south side approaching Penticton No. 1) to the southeast where the valley opens and slopes become gentler.

In areas where the vegetation burn severity is moderate or high, the likelihood of an elevated post-wildfire runoff response and erosion or sediment laden flooding is rated as high. Sediment laden floods may transition into debris flows where they become confined and the runoff is bulked by in channel erosion or sidewall failures along draws or gullies.

In areas where the vegetation burn severity is low and moderate (e.g., midway between Faulder and the landfill) the likelihood of an elevated runoff response and erosion or sediment laden flooding is rated as moderate. The spatial impact likelihood to downslope residences, properties and roads, including the Summerland-Princeton Road or Bathville Road, varies considerably depending on slope gradients and set back distances from the toe of the steeper hillslopes.

In the absence of a more detailed assessment, the probability of spatial impact is rated as high to the Princeton-Summerland Road and Bathville Roads and properties on located at or near the toe of steeper hillslopes, and moderate or low for those properties set back from steeper slopes out on the wide valley flat adjacent to Trout Creek. A detailed field assessment is required to resolve the hazard likelihood associated with individual properties (or other elements) and spatial impact likelihood at a site-specific level.

Face Unit slopes along Wildhorse Mountain Ridge above Highway 97

The wildfire burned an 8 km long section of east-facing slopes along Wildhorse Mountain Ridge mostly above Highway 97, but in some areas the fire crossed the highway and burned down to the lake shore where there are a series of narrow terraces of glaciofluvial or glaciolacustrine material, which are generally occupied by private property with residences or farms.

Terrain above the highway is irregular to concave in profile following the underlying bedrock surface profile closely with moderate to steep slope gradients. On the upper slopes there are areas of steep cliffs with coarse rubbly colluvium on the slopes below. In the past these slopes have been subject to rockfall, landslides and sediment laden flooding, as well as deeper bedrock instability, impacting Highway 97. Many shallow draws and swales extend downslope and intersect the highway.

Vegetation across the slopes is generally sparse consisting of a rather open forest. The wildfire appears to have moved rapidly through grass, brush and sparse timber, limiting the duration of soil heating. Overall, the vegetation and soil burn severity appears to be low to moderate. The highway is cut into bedrock for much of the alignment located within or downslope of the fire perimeter and it intercepts and diverts almost all surface flow and directs any runoff it receives into culverts. These culverts are not always in natural channel locations.

Wildfire related changes to vegetation and soil are expected to increase the potential for runoff, erosion, nuisance flooding and sediment laden flooding, particularly during rapid snowmelt or significant rainfall.

When overland runoff becomes concentrated within draws or channels, it can erode and pick up loose sediment. This process can transform relatively clear overland flow into a denser, sediment laden flow. The likelihood of post-fire rockfall, nuisance flooding or sediment laden flows is rated as moderate. The probability of spatial impact for Highway 97 and parcels of private property upslope of the highway is rated as high. In the absence of a more detailed, site specific assessment the probability of spatial impact for properties below the highway is rated as moderate; however, the likelihood may be higher for individual residences or properties located directly at or below the outlets of draws or streams along the Okanagan Lake shoreline.

Isintok Creek

Isintok Creek is a 46 km² tributary to Trout Creek located several kilometres west of Faulder, between Bull Creek and Liddell Creek. The fire burned the lower portions of the watershed, generally downslope of the Isintok-McNulty Forest Service Road where the creek channel is deeply incised in a wide draw. The Isintok Creek watershed is largely undeveloped with a modest road network accessing cutblocks of various ages. The fire burned 25% of the watershed with 17% of the watershed burned at moderate or high severity. The main creek channel is well incised in a deep gully and there are no specific elements at risk on the alluvial fan at the creek's confluence with Trout Creek. Due to the proportion of moderate and high VBS in the watershed elevated rates of hillslope erosion and sediment transport are anticipated in the event of intense or prolonged rain or rapid snowmelt, increasing the likelihood of sediment laden flooding or a debris flood in the catchment. However; due to a lack of specific elements at risk in portions of Isintok Creek affected by the wildfire, it is not considered further in this report.

Liddell Creek

Liddell Creek is located several kilometres upstream of Faulder on the south side of Trout Creek. Denike Creek flows into Liddell Creek roughly 1.3 km upstream of Liddell Creek's confluence with Trout Creek. The watershed includes a mix of private property with residences accessed off Bathville Road, crown land with resource development and a powerline transmission corridor. The wildfire burned 70% of the Liddell Creek watershed and 61% of the Denike Creek watershed. Forty six percent of the Liddell Creek watershed and 36% of the Denike Creek watersheds were burned at moderate or high severity. Terrain in the Denike Creek and Liddell Creek watershed is generally subdued, particularly in middle portions of the watershed. There are no specific elements at risk located at the outlet of Liddell Creek at the Trout Creek confluence. Due to a lack of specific elements at risk in portions of Liddell Creek affected by the wildfire, it is not considered further in this report.

Trout Creek

The Trout Creek watershed is substantial with a surface area over 746 km². Trout Creek flows east-southeast into Okanagan Lake and provides the primary water source for the District of Summerland. The Bald Range Wildfire burned 21% of the watershed's surface area and 14% of the watershed's area at moderate or high severity. Fire impacts are limited to the lower half of the watershed, downstream of Lost Chain Creek and much of the terrain impacted by the wildfire is located beneath 1,200 m in elevation and is expected to be completely or substantially snow free before peak freshet in the spring. The likelihood of incremental increases in peak flows and flooding during spring freshet is rated as low. The likelihood of incremental increases in peak flows and sediment transport in Trout Creek during intense rainfall across the burned area is moderate due to the substantial fire impacts in the lower watershed and a lack of attenuation.

SUMMARY OF POST-FIRE HAZARD AND RISK

1. Hazard = $P(H)$, the probability of occurrence of a hazardous event
2. Probability of spatial impact, $P(S:H)$, the probability of a hazard reaching or affecting an element at risk
3. Partial Risk, the probability of a hazard occurring and affecting an element at risk = $P(H) \times P(S:H)$
- 4: Location with the highest risk rating given; at other locations the risk may be lower

Debris flows or sediment laden floods impacting residences or private property along Fish Lake Road, around Faulder, and north along the valley sidewalls in the Darke Creek watershed towards Meadow Valley.

Hazard $P(H)^1$ = **High** Probability of Spatial Impact $P(S:H)^2$ = **Moderate to High**
Partial Risk^{3,4} = **High to Very High**

Due to the substantial proportion of moderate and high burn severity across many of the hillslopes surrounding Faulder and in the lower Darke Creek watershed, the probability of an elevated post-wildfire runoff response and erosion, sediment laden flooding, or debris flows is rated as high. For properties located on fans or at the toe of steeper hillsides on the east and west side of the valley in Faulder the probability of impact is rated as high. For small scale sediment laden floods and debris flows the probability of spatial impact for properties and residences set back from the toe of the slope (e.g., on the far side of Fish Lake Road) is rated as moderate. A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and probability of spatial impact.

Sediment laden floods or shallow instability on slopes along the north valley sidewall of Trout Creek, from Faulder towards the landfill, impacting residences, private property, or the Princeton-Summerland Road.

Hazard $P(H)^1$ = **Moderate to High** Probability of Spatial Impact $P(S:H)^2$ = **Moderate to High**
Partial Risk^{3,4} = **Moderate to Very High**

Along the north valley sidewall slope from Faulder to the landfill the vegetation burn severity adjacent to the Princeton-Summerland Road varies considerably. Vegetation burn severity is generally moderate or high around Faulder and decreases to low or moderate to the southeast where the valley opens and slopes become gentler.

In areas where the vegetation burn severity is moderate or high, the likelihood of an elevated post-wildfire runoff response and erosion or sediment laden flooding is rated as high. In areas where the vegetation burn severity is low and moderate (e.g., midway between Faulder and the landfill), the likelihood of an elevated runoff response and erosion or sediment laden flooding is rated as moderate.

The spatial impact likelihood to downslope residences, properties and the Summerland-Princeton Road varies considerably depending on slope gradients and set back distances from the toe of the face-unit slopes.

In the absence of a more detailed assessment, the probability of spatial impact is rated as high to the Princeton-Summerland Road and properties on the north (upslope) side of the road, and moderate or low to properties on the south side of the road approaching Trout Creek. A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and exposure at a site-specific level.

Sediment laden floods or shallow instability on valley sidewall slopes along the south side of Trout Creek from the Faulder area southeast towards the landfill impacting residences, private property, and Bathville Road.

Hazard $P(H)^1$ = **Moderate to High** Probability of Spatial Impact $P(S:H)^2$ = **Low to High**
Partial Risk^{3,4} = **Variable (Low to Very High)**

Along the south valley sidewall slope from Faulder to the landfill, the vegetation burn severity adjacent to Bathville Road also varies considerably. In areas where the vegetation burn severity is moderate or high (e.g., around the Darke Creek - Trout Creek confluence), the likelihood of an elevated post-wildfire runoff

response and erosion or sediment laden flooding is rated as high. In areas where the vegetation burn severity is low to moderate (e.g., to the southeast approaching Penticton No. 1) the likelihood of an elevated runoff response and erosion or sediment laden flooding is rated as moderate.

The spatial impact likelihood to downslope residences, properties and Bathville Road varies considerably depending on slope gradients and set back distances from the toe of the valley sidewall slopes. In the absence of a more detailed assessment, the probability of spatial impact is rated as high to Bathville Road and properties near steeper slopes and moderate or low for those properties set back from steeper slopes out on the wide valley flat adjacent to Trout Creek. A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and probability of spatial impact.

Nuisance flooding or sediment laden flooding on face-unit slopes above Deer Ridge impacting private property, residences, or various public roads including McLarty Place, Hermiston Drive, or Morrow Ave.

Hazard $P(H)^1$ = **Low** Probability of Spatial Impact $P(S:H)^2$ = **High to Low**

Partial Risk^{3,4} = **Moderate to Low**

On the north side of Prairie Valley, the south-aspect face unit slopes above the Deer Ridge neighborhood burned primarily at low or moderate severity. Several houses in the Deer Ridge neighborhood along McLarty Place and portions of Hermiston Drive are located at the toe of steeper, burned hillsides. Elsewhere in the neighborhood homes are, with a few exceptions, setback from the toe of the steeper hillslopes.

The likelihood of an elevated post-wildfire runoff response and nuisance overland flooding or sediment laden flooding initiating on the hillslopes above Deer Ridge is rated as low, due to the vegetation burn severity, slope gradients, and general lack of converging topography. The hazard likelihood declines to very low towards the cul-de-sac at the eastern end of Hermiston Drive where fire impacts on the hillslope above were limited, and to the west of Deer Ridge where slope gradients are gentle.

For private property and residences at the toe of steeper hillslopes, such as those in the northwest corner of McLarty Place and those near the intersection with Hermiston Drive, the spatial impact likelihood is rated as high due to their position with little to no setback from steeper hillslopes to the northwest. Properties at the southern end of McLarty Place, those along much of Morrow Ave, and Sutherland Place are rated to have a low probability of spatial impact due to their setback from the steeper terrain.

The resulting partial risk varies from high to low and is based on slope gradients, burn severity on the hillslopes above and setback from those hillslopes. A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and probability of spatial impact.

Nuisance flooding or sediment laden flooding on face-unit slopes above Denike Street on the north side of Prairie Valley impacting private property, residences or Denike St.

Hazard $P(H)^1$ = **Low** Probability of Spatial Impact $P(S:H)^2$ = **Moderate to Low**

Partial Risk^{3,4} = **Low to Very Low**

On the north side of Prairie Valley, the sparsely forested hillslope above Denike Street was burned primarily at low to moderate vegetation burn severity. Slope gradients are relatively gentle across much of this slope. There is a network of trails or roads that extend through the area, and the slope is dissected across its lower reaches by a series of draws or swales that extend to the valley bottom. Several parcels of private property with residences are located along Denike Street and some of these residences are located at near outlets of these draws or swales, where they intersect the valley bottom.

Due to the terrain characteristics and the low to moderate vegetation burn severity the likelihood of an elevated post-wildfire runoff response and nuisance overland flooding or sediment laden flooding across the slopes above Denike Street is rated as low. For private property and residences located at the outlet of the draws or swales in the valley bottom the spatial likelihood of impact is moderate. For those located away from any draws or swales and those set back from the base of the hillside the spatial likelihood of impact is estimated to decline to low. The resulting partial risk is low to very low.

A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and probability of spatial impact.

Nuisance flooding, sediment laden floods or shallow instability on hillslopes above the western edge of Summerland impacting residences, private property, and various public roads including Taylor Place, Cartwright Avenue, Jubilee Road West, and Durick Ave.

Hazard $P(H)^1$ = **Low to Very Low** Probability of Spatial Impact $P(S:H)^2$ = **Variable (Low to High)**
Partial Risk^{3,4} = **Variable (Very Low to Moderate)**

East-aspect hillslopes above the western edge of Summerland are only a few hundred metres in length and generally burned at a low or moderate severity. Fire induced impacts to soils generally appear to be low. The likelihood of an elevated post-wildfire runoff response and erosion or sediment laden flooding on the face unit slopes to the west of Cartwright Ave is rated as low, declining to very low towards the southern end of Taylor Place and Prairie Valley Road where fire severity appears to decrease.

The low hill separating Durick Ave from Cartwright Avenue has relatively short slopes (≤ 100 m in length), which are burned at low to moderate severity. The likelihood of an elevated post-wildfire runoff response and erosion or sediment laden flooding on this low hill is rated as low.

For private property along Taylor Place, Cartwright Avenue, Durick Avenue, and portions of Jubilee Road West the probability of spatial impact is rated as moderate to high due to their proximity to the steeper, burned slopes. For some properties on the east side of Cartwright Avenue the probability of spatial impact is estimated to decline to moderate, and for those along the Ganzeveld Avenue the spatial likelihood is rated as low. A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and probability of spatial impact.

Nuisance flooding or sediment laden flooding on face-unit slopes above the western edge of Summerland impacting residences, private property, and public roads including Herron Road, Strata Road S and Strata Road North.

Hazard $P(H)^1$ = **Moderate** Probability of Spatial Impact $P(S:H)^2$ = **Low to Moderate**
Partial Risk^{3,4} = **Moderate to Low**

Along the western edge of Summerland there are a cluster of houses at the terminal end of Cartwright Avenue along Herron Road, Strata Road S and Strata Road N. These homes are located at the foot of a rocky catchment that was burned at mixed severities with pockets of high burn severity in areas with denser forest cover and lower severity in open grassland.

The likelihood of an elevated post-wildfire runoff response and erosion or sediment laden flooding on the slopes above these residences is rated as moderate. For properties located toe of the steeper hillsides (e.g., those along the north side of Herron Road, or on the west side of Strata Road S) the spatial probability of impact is rated as moderate. For small scale sediment laden floods or nuisance flooding the probability of spatial impact for the remaining properties and residences set back from the toe of the slope (e.g., along Strata Road North) is estimated to decline to low, though a site-specific field assessment is recommended to confirm the spatial likelihood of impact for individual properties.

Nuisance flooding, sediment laden floods or debris flows affecting private property, Garnet Valley Road or other public roads in the Garnet Valley.

Hazard $P(H)^1$ = **Low to High** Probability of Spatial Impact $P(S:H)^2$ = **Moderate to High**
Partial Risk^{3,4} = **Variable (Low to Very High)**

Numerous parcels of private property are located throughout Garnet Valley, from Summerland north towards Garnet Lake. The wildfire effects on vegetation and soil vary considerably across the Eneas Creek watershed (Garnet Valley) with swaths of high vegetation burn severity on the west valley sidewall, where the forests were denser, contrasted with large areas of low vegetation burn severity on the eastern valley sidewall, where vegetation consists increasingly of open grassland with sparse forest cover.

Overall, the likelihood of an elevated post-fire runoff response resulting in erosion, sediment-laden flooding, or debris flows is rated as high for slopes on the west side of Garnet Valley and low for slopes on the east side of the valley. These are preliminary hazard ratings covering a broad area that are anticipated to be refined during a more detailed assessment supported by extensive fieldwork. There are areas on the west valley sidewall within the Garnet Valley where the post-fire hazard likelihood is lower, for example in the area around Handley Street where the vegetation burn severity is low and the topography is more subdued.

The likelihood that wildfire-related sediment-laden flooding or debris flows will affect private properties, Garnet Valley Road, or smaller access roads is rated as moderate to high because many properties are close to affected slopes or the at the outlet of potential post-fire runoff paths. Those elements which are situated beneath gentler slopes and/or setback from the toe of the slope have a lower spatial impact likelihood.

A detailed field assessment is required to resolve the hazard likelihood associated with an individual property (or other elements) and probability of spatial impact.

Rockfall, nuisance flooding, or sediment laden floods affecting private property, residences, or Highway 97 along the east side of Wildhorse Mountain Ridge.

Hazard $P(H)^1$ = **Moderate** Probability of Spatial Impact $P(S:H)^2$ = **Variable (Low to High)**
Partial Risk^{3,4} = **Variable (High to Low)**

The wildfire burned an 8 km long section of east-facing slopes along Wildhorse Mountain Ridge mostly above Highway 97, but in some areas the fire crossed the highway and burned down to the shore of Okanagan Lake. Wildfire related changes to vegetation and soil are expected to increase the potential for runoff, erosion, nuisance flooding or sediment laden flooding, particularly during rapid snowmelt or significant rainfall. Where runoff is concentrated within draws or channels, in channel erosion may allow overland flow to transition into sediment laden flows as they erode sediment from the base of draws or within channels.

Due to the pockets of moderate burn severity, steep slope gradients and history of terrain instability the likelihood of post-fire rockfall, nuisance flooding or sediment laden flooding along east-aspect slopes adjacent to Highway 97 is rated as moderate. The probability of spatial impact for Highway 97 and parcels of private property upslope of the highway is rated as high, resulting in a high partial risk. Until a more detailed field assessment is completed, the probability of spatial impact for properties downslope of the highway is rated as moderate. However, it may be higher for residences or properties directly adjacent to, or below, the outlets of confined draws, streams, or highway culverts. Partial risk therefore varies with a property's distance from the steeper burned slopes and its proximity to drainage features. Highway 97 and upslope properties have a high partial risk, while properties and other elements downslope of the highway generally have a moderate partial risk.

A detailed field assessment is required to resolve the hazard likelihood and probability of spatial impact associated with an individual property (or other elements).

Sediment laden flooding impacting private property on the west side of Cartwright Mountain.

Hazard $P(H)^1$ = **Moderate** Probability of Spatial Impact $P(S:H)^2$ = **High**
Partial Risk^{3,4} = **High**

One parcel of private property is located on the west side of Cartwright Mountain in a bowl accessed by McLennan Road. The slopes surrounding the property and across the property were burned at moderate or high severity. The topography surrounding the property is sufficiently steep to generate post-fire overland flow. The likelihood of an elevated post-fire runoff response resulting in erosion, nuisance flooding or sediment laden flooding is rated as moderate. The spatial impact probability for the parcel of private property is rated as high, resulting in a high partial risk.

FURTHER ACTIONS:

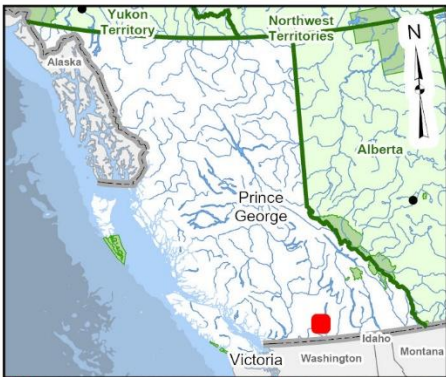
- A (Level 4) element-specific partial risk assessment for the Bald Range Fire is recommended. The results of that assessment will be made public and are anticipated to supersede the results of this assessment.
- MOTT should consider adding or updating existing signage along the various roads within or downslope of the Bald Range Fire notifying the public of potential post-wildfire hazards related to the fire, particularly in relation to the locations described above (i.e., along Highway #97, Garnet Valley Road, or along the Princeton Summerland Road).
- The owners and operators of the District of Summerland water system should be advised that post-fire increases in streamflow, sediment, and debris may affect water quality, intake structures and other infrastructure. They should review these potential effects and develop appropriate monitoring, operational, and response strategies, accordingly.
- The agencies responsible for local access roads in the fire-affected area should carry out an assessment of the roads and drainage infrastructure and implement any works necessary to improve the resilience of the road network to post-wildfire natural hazards.
- Water licensees should be advised of the potential impact of wildfire on water quality, including potential impacts to water intake structures from sediment and debris, and other water quality parameters associated with the wildfire.
- If any salvage logging is proposed within, or downslope of areas impacted by the Bald Range Fire, site specific post-wildfire natural hazard assessments that consider the cumulative impacts of harvesting and wildfire are recommended. Salvage operations within the fire perimeter (or downslope of fire affected areas) should include rainfall shutdown criteria commensurate with the post-wildfire natural hazard present to protect worker safety.

SIGNATURE, SEAL, FIRM PRACTICE #:

Reviewed by: Sarah Crookshanks, M.Sc., P.Geo.
Permit to Practice: 1003022

ATTACHMENTS:

1. K51490 Post Wildfire Natural Hazard Risk Assessment Overview Map, along with Assessment Maps 1, 2, and 3
2. K51490 Bald Range Fire Vegetation Burn Severity Map
3. Appendix A



K51490 Bald Range Fire Post Wildfire Natural Hazard Risk Assessment Overview Map

0 2,000 4,000 Meters

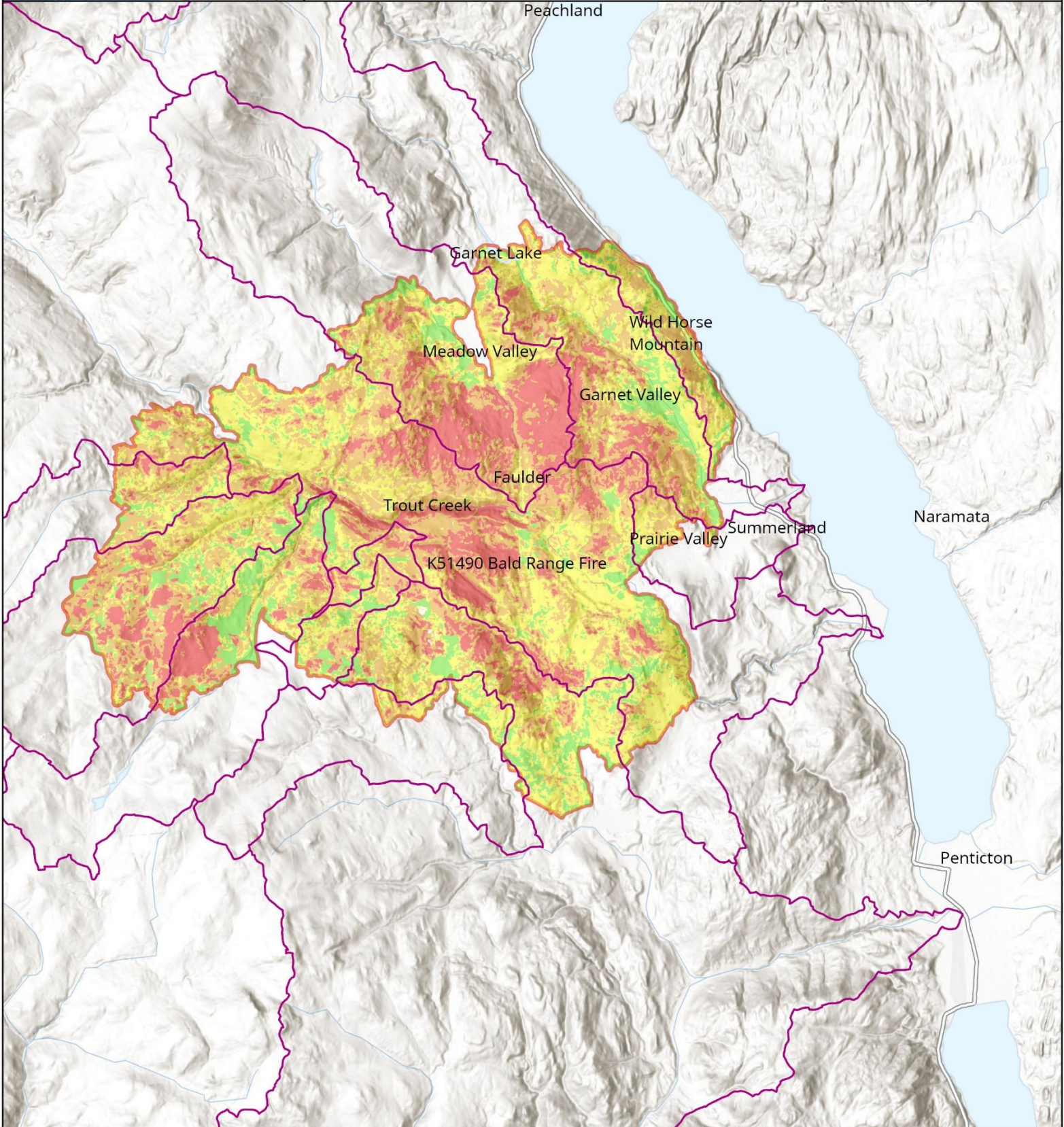
October 09, 2026 BC Environment Albers
World Terrain Base: Sources: Esri, TomTom, Garmin, FAO, NOAA,
USGS, © OpenStreetMap contributors, and the GIS User

Legend

- High
- Moderate
- Low
- Unburned
- Unknown
- Named Watersheds
- K51490 Bald Range Fire Perimeter

1:170,000

Drawn by GW, October 8, 2026





K51490 Bald Range Fire Post Wildfire Natural Hazard Risk Assessment Map 1

0 1,000 2,000 Meters

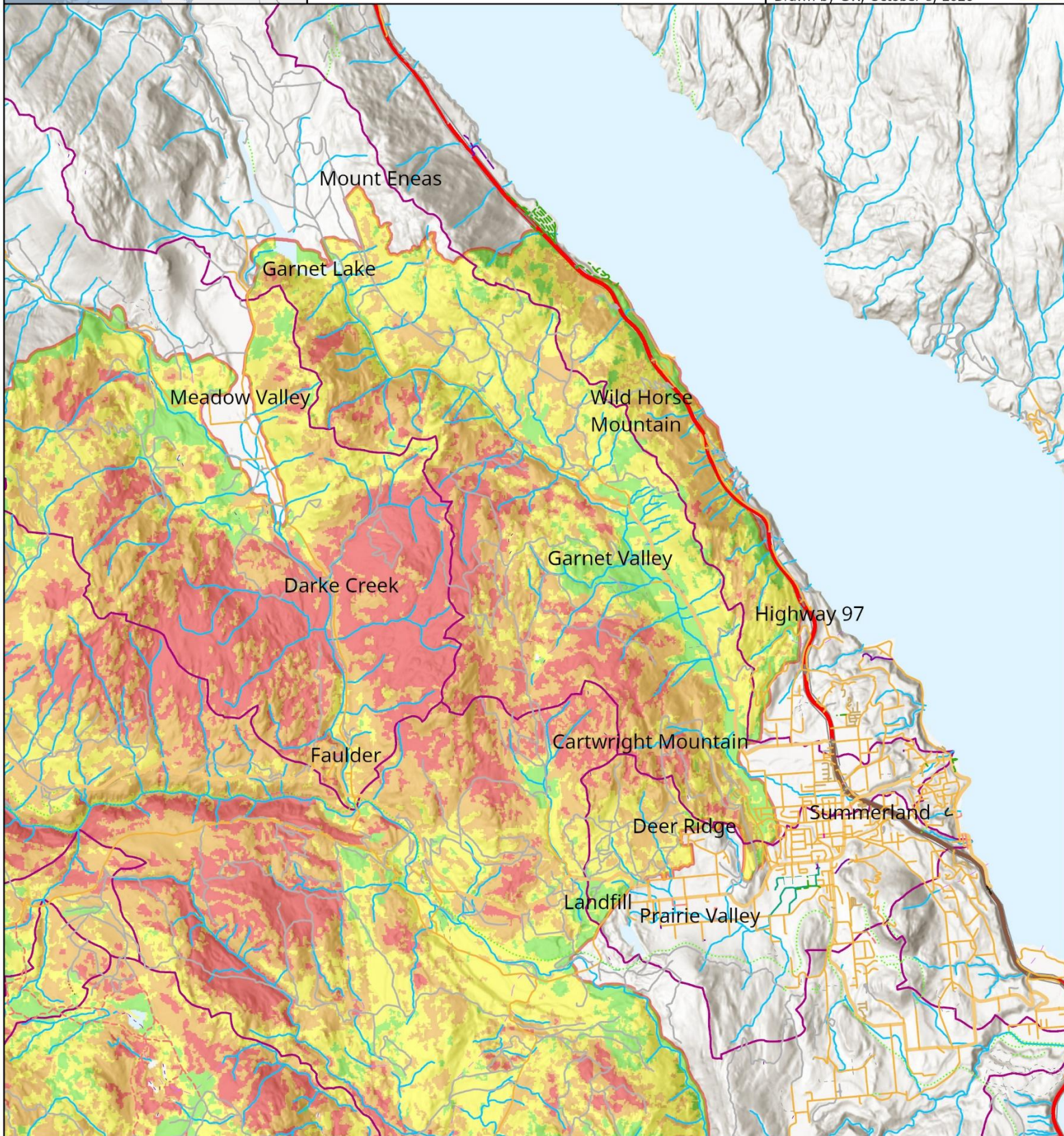
October 09, 2026 BC Environment Albers
World Terrain Base: Sources: Esri, TomTom, Garmin, FAO, NOAA,
USGS, © OpenStreetMap contributors, and the GIS User

Legend

- | | |
|----------------------------------|-----------|
| High | Stream |
| Moderate | Collector |
| Low | Highway |
| Unburned | |
| Unknown | |
| Named Watersheds | |
| K51490 Bald Range Fire Perimeter | |

1:80,000

Drawn by GW, October 8, 2026





K51490 Bald Range Fire Post Wildfire Natural Hazard Risk Assessment Map 2

0 1,000 2,000 Meters

October 09, 2026

BC Environment Albers

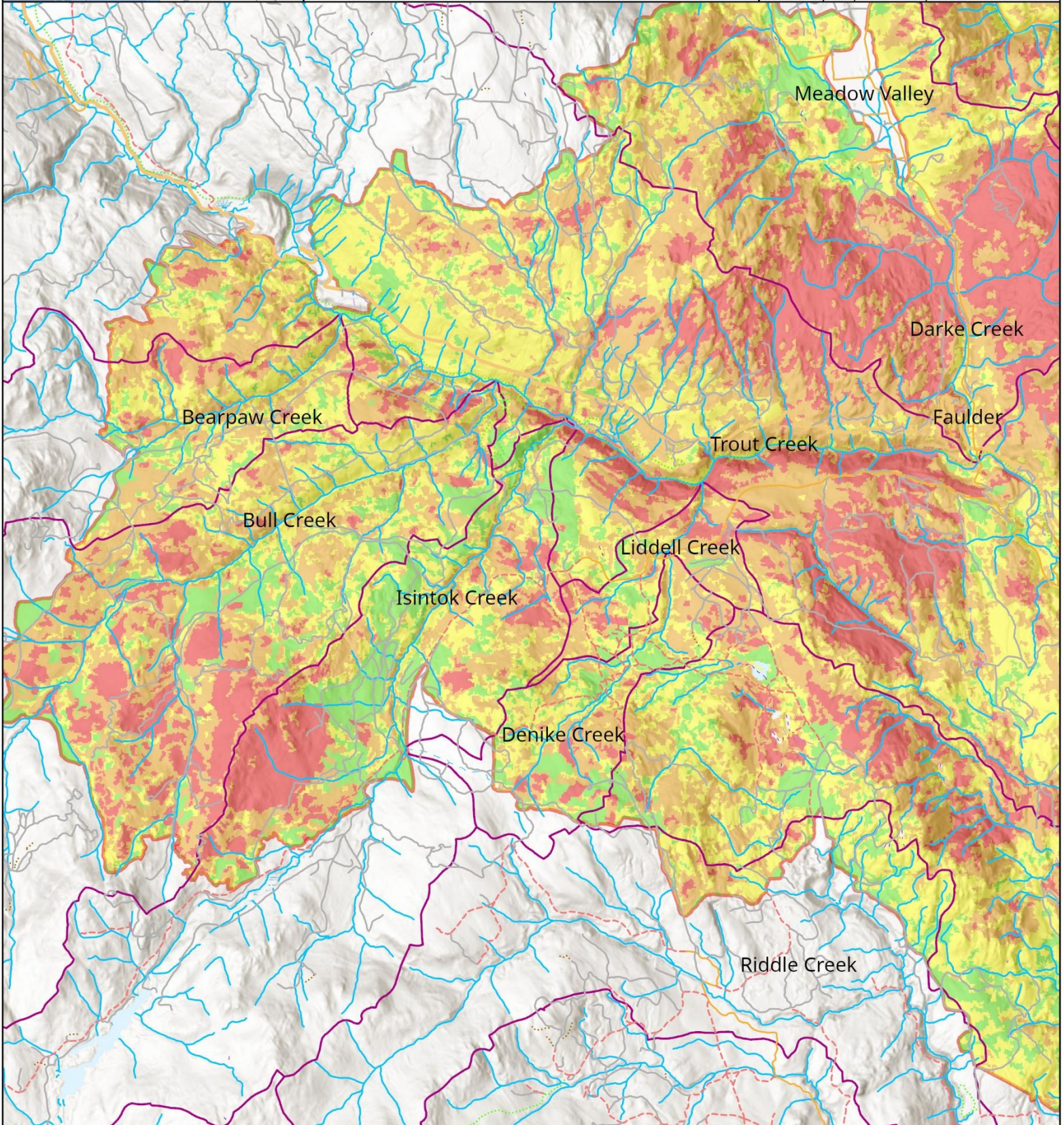
World Terrain Base: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User

Legend

- High
- Moderate
- Low
- Unburned
- Unknown
- Named Watersheds
- K51490 Bald Range Fire Perimeter
- Stream
- Collector
- Highway

1:80,000

Drawn by GW, October 8, 2026





K51490 Bald Range Fire Post Wildfire Natural Hazard Risk Assessment Map 3

0 1,000 2,000 Meters

October 09, 2026 BC Environment Albers

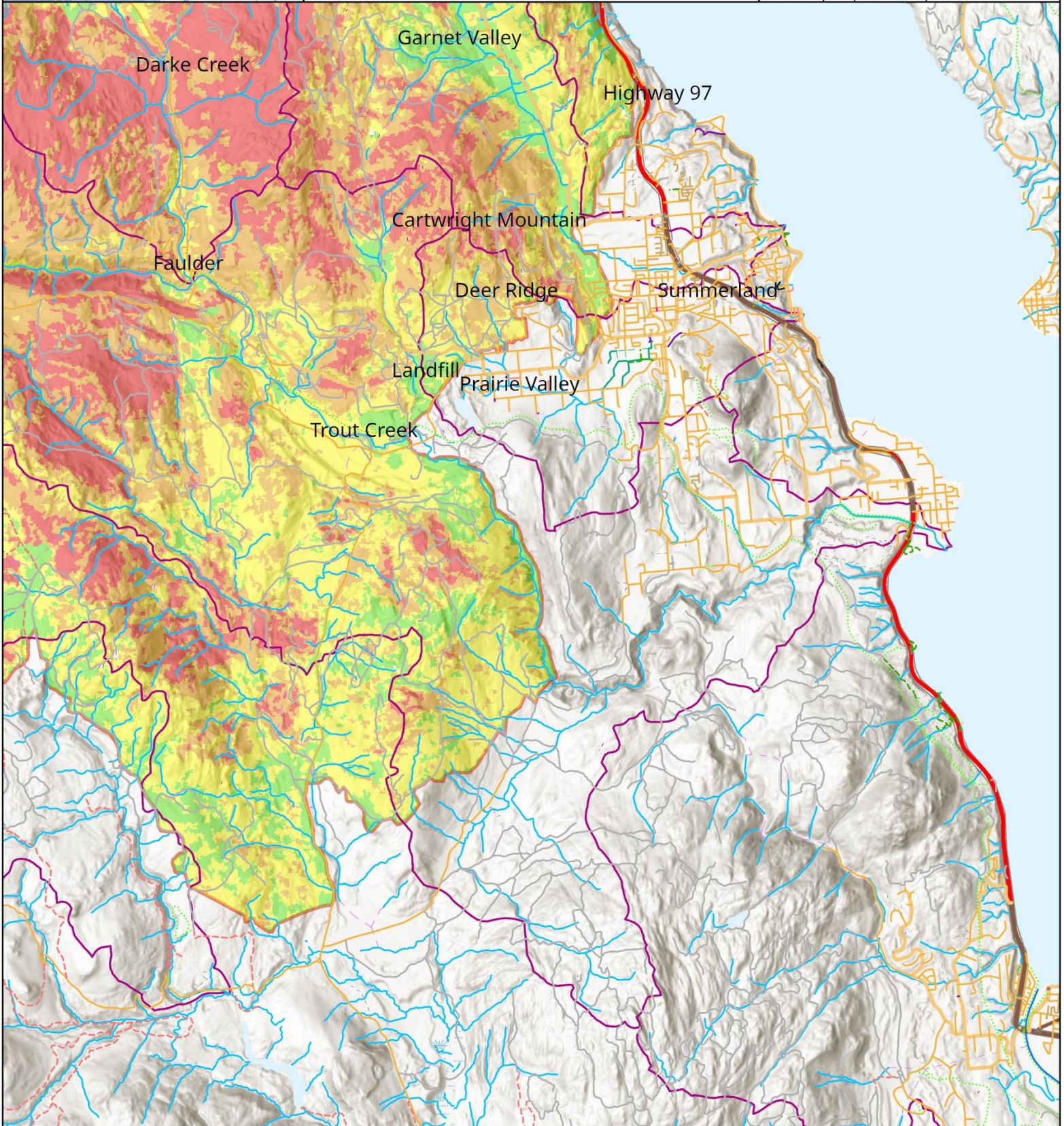
World Terrain Base: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User

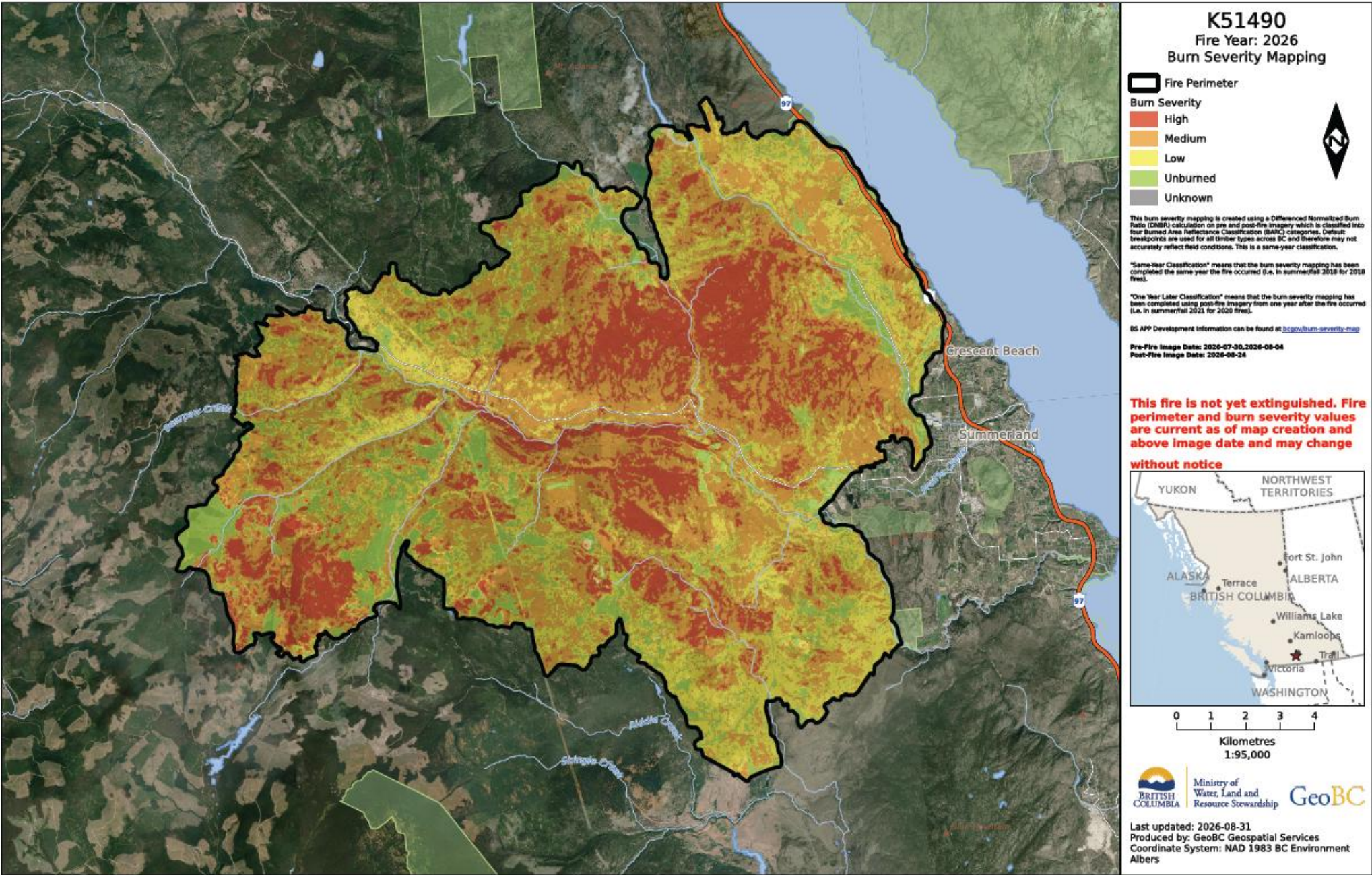
Legend

- High
- Moderate
- Low
- Unburned
- Unknown
- Named Watersheds
- K51490 Bald Range Fire Perimeter
- Stream
- Collector
- Highway

1:80,000

Drawn by GW, October 8, 2026





Appendix A to PWNHRA Reconnaissance Level 2 Reports

Scope of Level 2 Reports

Reconnaissance (Level 2) reports are primarily intended to identify whether post-wildfire hazards are likely to occur and need detailed investigation to protect identified elements at risk. Identified elements at risk are generally limited to public safety and infrastructure. Reconnaissance reports may also be used to assess safety conditions for wildfire fighters. In some cases, the MOF District Manager or other MOF personnel may request assessments for non-standard elements at risk or for other reasons.

Definitions of Hazard and Risk

Wildfire may produce conditions conducive to a suite of hazards. Debris flows, debris floods, and floods are often the most important hazards, but other types of landslide hazards including rockfall, debris slides and earthflows can also occur in response to wildfire. Wildfire can also cause snow avalanches and may affect water quality, cause erosion and result in sedimentation. Terrain, watershed, and channel conditions that produce post-wildfire hazards may also produce similar hazards in unburned conditions; these hazards may be mentioned but are not evaluated in this report.

P(H), P(S:H) and partial risk are presented for each identified elements at risk. Multiple types of channel hazards (debris flows, debris floods, floods) may affect an element at risk. These hazards are ranked by severity, with debris flow as the most damaging and destructive and flood as the least damaging and dangerous, and ratings are given for the highest rating hazard that may affect an element at risk. For example, where a channel has the potential for a debris flow and an element at risk may be affected, the lower ranking debris flood and flood hazards are not rated, since discharge and velocity are likely to be less than for a debris flow. These processes may cause erosion or sedimentation that affects the element at risk. Hazards that are unlikely to affect an identified element at risk are not discussed.

Table A1 shows the annual probability ranges for qualitative definitions of P(H). The probability of the hazard occurrence is for the post-wildfire period of elevated hazard, which in many cases may be less than five years, but in some cases may extend for several more years.

Table A1. Qualitative descriptions of post-wildfire hazard likelihood, hazard criteria, and related quantitative probabilities.

Hazard Likelihood Rating [P(H)]	Description	Annual Probability Range (Return Frequency)
Very High	An event is expected to occur. Most of the catchment or face unit has burned with a significant proportion burned at moderate and/or high severity	>20% (> 1:5)
High	An event is probable under adverse conditions. Most of the catchment or face unit has burned with a significant proportion (i.e., >50 %) of terrain conducive to post-wildfire natural hazard initiation burned at moderate or high severity. Existing indicators of pre-fire terrain instability within stream channels, on fans or face units.	1% to 20% (1:100 to 1:5)
Moderate	An event could occur under adverse conditions. It is not probable but possible over a several-year period. More than 20% of the terrain conducive to post-wildfire natural hazards in the catchment or on the face-unit has burned with moderate and/or high severity. Historic geomorphic indicators of instability are present.	0.2% to 1% (1:500 to 1:100)
Low	An event could occur under very adverse conditions. It is considered unlikely over a several year period. Only a limited proportion of the catchment or face unit has burned. Few or no signs of pre-fire instability present along stream channels, fans or face units.	0.04% to 0.2% (1:2,500 to 1:500)
Very Low	An event will not occur or is conceivable though considered exceptionally unlikely. A limited proportion/none of the catchment was burned. No terrain instability indicators are present	<0.04% (< 1:2,500)

Table A2 defines spatial impact to an element of risk. Post-wildfire event magnitude is considered when rating spatial impact.

Table A2. Post-wildfire spatial impact.

Likelihood of spatial impact	Description	Probability range
H	It is probable that the event will impact the element at risk.	> 50%
M	It is possible that the event will impact the element at risk.	50% to 10%
L	It is unlikely that the event will impact the element at risk.	< 10%

Table A3 is a matrix which combines the hazard likelihood (Table A1) with the spatial impact likelihood (Table A2) to determine partial risk.

Table A3. Post-wildfire risk matrix partial risk matrix.

Hazard Likelihood P(HA) (Table 1)	Spatial Impact Likelihood (P(S:H)) (Table 2)		
	High	Moderate	Low
Very High	Very High	Very High	High
High	Very High	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Very Low
Very Low	Low	Very Low	Very Low

Report Standards

FLNRORD Land Management Handbook 69 is the primary standard followed in this report. LMH 69 describes the process to complete a detailed report. This reconnaissance report uses the framework of LMH 69 but does not follow it where detailed assessment procedures are described.

Land Management Handbook 69 Post Wildfire Natural Hazards Risk Analysis in British Columbia 2015

<https://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh69.htm>

Additional guidance is provided in the MOF SOG for PWNHRA and the 2014 FLNRO Landslide Risk Management Procedure.

Other professional guidance standards that may be used for the preparation of reconnaissance reports are listed below. These guidelines have similar report content to this reconnaissance assessment, but are for different purposes, have different levels of appropriate effort, and do not recognize the potential emergency nature of this reconnaissance assessment. These guidelines include:

EGBC Guidelines for TSA in the Forest Sector 2010

<https://www.egbc.ca/getmedia/684901d7-779e-41dc-8225-05b024beae4f/APEGBC-Guidelines-for-Terrain-Stability-Assessments.pdf.aspx>

EGBC Guidelines for Legislated Landslide Assessments 2010

<https://www.egbc.ca/getmedia/5d8f3362-7ba7-4cf4-a5b6-e8252b2ed76c/APEGBC-Guidelines-for-Legislated-Landslide-Assessments.pdf.aspx>

Legislated Flood Assessments in a Changing Climate in BC 2018

<https://www.egbc.ca/getmedia/f5c2d7e9-26ad-4cb3-b528-940b3aaa9069/Legislated-Flood-Assessments-in-BC.pdf>

Watershed Assessment and management of hydrologic and geomorphic risk in the Forest Sector

<https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW2ATQA5BSODHJAKBAGZDYTRL6FJ/Watershed%20Assessment%20and%20Management%20of%20Hydrologic%20and%20Geomorphic%20Risk%20in%20the%20Forest%20Sector>

Other standards may also apply, depending on the professional qualifications of the writer.

Statement of Limitations

Reconnaissance PWNHRA Level 2 assessments are typically done in constrained timelines where personnel, resources, data collection, and analysis methods are limited. Post-wildfire hydrogeomorphic hazards in BC are not well understood and therefore hazard and risk assessments are estimates only. While probabilities ranges are given in Tables A1 and A2, the state of the science in BC does not allow for precise assessments, particularly near the borders of classes. Numeric probabilities ranges do not imply precision.

Identification of elements at risk relies on BC government data layers, satellite imagery, and perhaps an overview flight. BCWS and the MOF district office may provide additional information. No further confirmation of elements at risk was conducted.

Comments, conclusions, and suggestions contained in this reconnaissance assessment reflect my experience and judgement considering the information available to me at the time that this report was prepared and are considered appropriate for the reconnaissance nature of the review. The review has been carried out in accordance with generally accepted professional practices. This assessment and its contents are intended for the sole use of post-wildfire hazard management by provincial agencies, First Nation governments and local governments. I do not accept any responsibility for the accuracy of any of the data, the interpretation, or the conclusions contained or referenced in the report when the report is used or relied on for any other purpose than specified. Any such unauthorized use of this report is at the sole risk of the user