



The Hell Raving Creek wildfire exhibited significant progression through the West Branch Valley, manifesting intense burning from the valley floor to the alpine regions within a brief timeframe. This document outlines the impact of the fire, details our approach to salvage operations, and outlines the comprehensive rehabilitation plan.

Fire Impact Overview

Valley Dynamics

The north side of the valley bore the brunt of the fire's intensity, resulting in nearly 100% tree mortality and extensive scorching of the underlying soils. The south side, primarily an old growth management area, experienced a lower but still considerable overall mortality, featuring unburnt seams of timber associated with wetter microsites.

Fire Progression

Advancing toward the northeast end of Middle Lake, the fire altered its course, pushing upslope due to a change in weather dynamics. The accuracy of the fire perimeter on the BC Wildfire website, particularly in the northeast, is affirmed.

Next Steps – Fire Salvage Planning

As we enter the deeper phases of fall and winter, the Eniyud Community Forest (ECF) will meticulously review the fire's aftermath to identify opportunities for salvaging dead fiber. This proactive approach aims to recover potential losses before the deleterious effects of drying and decay compromise the economic value. Recognizing

the three-year window for viable fire salvage, the ECF will collaborate closely with government entities to expedite tenure opportunities, emphasizing the need to maximize salvage operations. This strategy is essential to minimize green harvest and mitigate impacts on mid-term timber supply.

Fire Salvage Planning Considerations:

Consistent with the Provincial Governments Post Natural Disturbance Forest Restoration Guidance - Landscape Level Wildfire Recovery document (updated July 2023) the ECF has a set out Fire Salvage Plan to recover burnt timber within the Community Forest while maintaining and protecting habitat, biodiversity, water quality, soil, and Cultural Heritage Values. Collaboration and consultation with First Nation communities will be integrated into the timber recovery regime.

Targeted Recovery of Burnt Stands

A systematic fire stratification will be conducted evaluating the burn severity within the ECF. Fire stratification will occur from aerial photos and field visits. Merchantable stands will be categorized and mapped based on fire severity. Light severity burn is defined as an area where less than 10% of the trees 17.5 cm dbh or greater are killed immediately post-fire. Moderate severity areas are those areas with 10-80% of the merchantable trees are killed immediately post fire, and high severity burned areas are areas where more than 80% of the merchantable trees are killed immediately post-fire. Below are several photos demonstrating levels of damage from the *CCLUP Regional MDWR Strategy Information Note #1 Guidance for Fire Damaged Stands (June 2014)*.



Fig. 1a Light severity (note the unburned juniper)



Fig. 1b Light severity



Fig. 1c Moderate severity (note the scorch on lower boles and presence of killed trees)



Fig. 1d Moderate severity



Fig. 1e High severity (note the lack of any forest floor)



Fig. 1f High severity

The ECF will be targeting stands of moderate to high tree mortality, in addition to stands with trees >75% crown scorch (75% of crown has brown or no needles). Studies have found that in fire affected stands only 9% of trees with more than 80% crown scorch were alive after 4 years regardless of diameter, cambium damage, or beetle attack levels (*Hood and Benz, 2007*).

It is expected that in the Spring of 2025 that impact of the fire will evolve, Douglas-fir beetle outbreaks that are associated with fires of this nature are anticipated to develop in some of the unharvested damaged stands in the West Branch Valley. If Douglas-fir beetle outbreaks do occur additional harvesting will be required to control the outbreak beyond the initial fire salvage plan.

In specific circumstances, stands affected by Douglas-fir beetle outbreaks and fire harvesting practices may deviate from the harvesting norm. Although some deviation may occur, the ECF is committed to ensuring long term community safety, minimizing ecological damage, and facilitating the adaptation of forested landscapes to improve resilience to

climate change during all planning, harvest and recovery operations.

Retention Areas

Retention patches will anchor around Riparian Management Zones targeting marginally impacted or non-impacted living stands, where practicable. Landscape level retention patches will maintain landscape-scale heterogeneity, interior forest habitat, landscape-level habitat connectivity, and other ecological attributes that support conservation values. Retention patches along riparian features will reduce the likelihood of soil erosion, compaction, and sedimentation near riparian features maintaining stream ecological integrity.

Roads

To recover burnt timber new roads will be required. Main haul roads will be permanent and limited on the landscape. In block roads will be proposed as temporary with temporary deactivation post harvest and permanent deactivation when silviculture obligations have been achieved. This will be done to limit long term access.

Harvest systems

To conserve soils low impact machinery will be used to recover timber or harvest will occur when soils are adequately dry or frozen, but still allow for soil disturbance to decrease hydrophobic properties.

The anticipated progression of burnt timber recovery is as follows:

Year 1: Intensive salvage of severely burnt and high priority salvage areas to maximize immediate timber recovery. Planning for sanitization for year 2, including baiting to attract beetle into planned harvested areas.

Year 2: continued salvage of severely burnt areas, with maximum emphasis on sanitation of beetle infestations.

Years 3-5: sanitation of beetle infested areas and salvage of remaining burnt trees.

Hydrology

The likelihood of elevated peak flows, soil erosion, and landslides generally increases post-wildfire as a result of the changes to vegetation including canopy, understory, and ground cover as well as changes to soil properties including loss of duff layers and increased potential for hydrophobicity (water-repellence). These effects are most commonly observed following significant fires with widespread areas of high vegetation and soil burn severity. Post-wildfire landslides can occur during high runoff events in any season, with water repellent soils having the greatest potential for effects during high intensity rainfall events following prolonged dry periods in the summer.

The proposed harvesting methods are unlikely to increase the incremental risk of landslides as a result of the fire. However, due to the presence of hydrophobic soils and lack of undergrowth as a result of the fire in certain sites including gully sidewalls and/or steeper slopes, increased peak flows during spring runoff and large precipitation events should be expected for up to 3 years post-harvest, with an increased likelihood of sedimentation in some of the gullies/swales carrying tributary streams.

In-block landslides attributable to forest development on similar terrain using similar harvest methods are uncommon when good practices are employed including careful drainage management.

Through work with Tolko industries, increased hydrological review will be conducted to ensure salvage activities do not inadvertently increase the risk of landslide and strategies are implemented to reduce concentrated run off.

Some mitigation tactics include:

- Increased soil disturbance to disrupt the heat generated hydrophobic soil layers
- Increase coarse woody debris to promote on site moisture retention in large rain events.
- Cross drain and ditch controls to reduce concentration of runoff.

Fire Rehabilitation

Simultaneously and independent of our efforts to salvage, the ECF will extend its efforts into wildfire rehabilitation planning.

Through collaborative partnerships with Provincial, Federal, and First Nations Governments, the ECF is working to secure funding for the comprehensive rehabilitation of wildfire-damaged stands through strategic reforestation efforts.

Upon the completion of wildfire salvage activities and planning, our focus will shift to areas where rehabilitation efforts can yield optimal results. In areas posing threats to roadways, necessary knockdown treatments may be executed, and site preparation may be prioritized in locations where challenging conditions threaten the survival of planted stock.

Areas of significant public use, or community value will also be prioritized and this information will be solicited during our late fall ECF meeting.