

Wildfire Land-Based Recovery

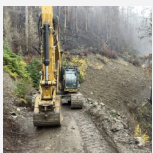
Fire is a natural, normal process in many ecosystems and is necessary to maintain a healthy forest and a diversity of plant and animal life.

While lower intensity wildfires can improve forest health, reduce future wildfire intensity and support water quality, habitat, recreational and industrial opportunities, severe wildfires can have detrimental impacts to our lands and ecosystems.

The Wildfire Land-Based Recovery program is intended to reduce the negative impacts of wildfires, such as:

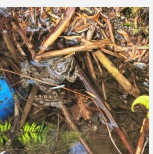
- Public safety risks due to geohazard events such as debris flows, rock slides and floods resulting from soil changes and vegetation loss;
- Degraded water quality from the introduction of ash and sediments into streams and bodies of water;
- Plant community changes and biodiversity loss;
- Establishment of invasive species
- Damaged or lost soil and organic growing media
- Damaged or lost aquatic and terrestrial habitats
- Impacted or lost recreational opportunities and visual quality values
- Impacted cultural heritage values
- Reductions in timber value and economic opportunities

Areas of Work



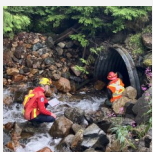
Wildfire Suppression Rehabilitation

A variety of treatments help to restore the function of ecosystems damaged by fire suppression activities.



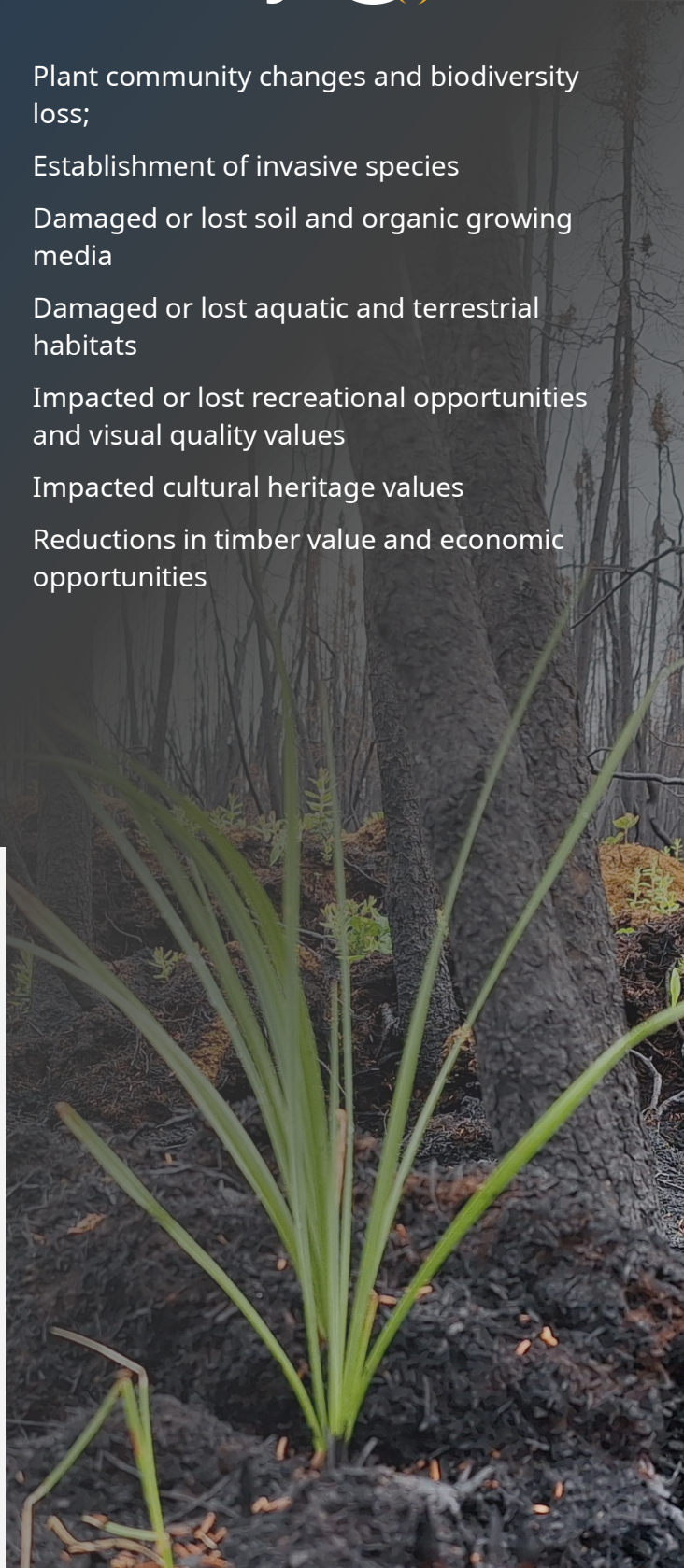
Ecological Wildfire Recovery

Suite of actions undertaken to assess, recuperate, restore, reclaim and/or salvage landscape values disturbed by a wildfire.



Post-Wildfire Natural Hazard Risk Analysis

Assessing changes in risk for natural hazards after a wildfire to identify threats to public safety.





BC Wildfire
Service

WILDFIRE LAND-BASED RECOVERY Wildfire Suppression Rehabilitation

Protecting critical values impacted by wildfire suppression using techniques aimed at stabilizing soils and supporting the recovery of hydrologic and biologic functions.

The Effects of Wildfire Suppression

Fireguards are the most common fire suppression activity that requires rehabilitation. A fireguard is a strategically planned barrier that is intended to stop or slow the spread of a wildfire. Since 2017, over 20,000 kilometres of fireguard and other access trails have been constructed in B.C. These and other fire suppression activities can negatively impact the land, affecting soil stability, water sources and more.



Rehabilitation Objectives

Rehabilitation practitioners are responsible for developing and implementing wildfire suppression rehabilitation plans that address six objectives:

1. Restoring natural drainage patterns
2. Stabilizing soils
3. Minimizing surface erosion
4. Minimizing fire hazards
5. Promoting revegetation while preventing invasive species from inhabiting affected areas
6. Repairing damaged infrastructure

Collaborative Implementation

The Ministry of Forests collaborates with First Nation communities and industry partners to implement treatments prescribed by forest professionals to address the six objectives. Treatments include activities such as:

- Removing introduced materials from stream crossings, restore stream profiles as required, stabilize stream banks, and promote the revegetation of the riparian area;
- Pulling back or recontouring sites with displaced or exposed soils that are no longer stable;
- Constructing water management structures or treating soils in a manner that reduces potential for erosion;
- Salvaging or disposing of timber and vegetation that has been felled, knocked down, or pushed aside and may pose a fire hazard;
- Preparing the soils and seeding where required to promote natural vegetation to establish on exposed soils while reducing the risk of invasive species establishment;
- Repairing infrastructure damaged by heavy equipment such as fences.





WILDFIRE LAND-BASED RECOVERY Ecological Wildfire Recovery

Ecological wildfire recovery is the suite of actions undertaken to assess, recuperate, restore, reclaim, and/or salvage landscape values that have been disturbed by a wildfire.

Ecological Recovery Planning

Ecological Wildfire Recovery (EWR) is an initiative under the BC Wildfire Service's Wildfire Land-Based Recovery program. EWR takes an ecosystem approach, while also considering strategies to maintain and develop disturbance resilience in an uncertain future. EWR is actively engaged in supporting assessments, recovery planning, research, and management projects that further our understanding of wildfire recovery. EWR is based on cooperative management between relevant First Nations, governments, and stakeholders at the local and regional level. EWR complements post-wildfire rehabilitation and natural hazard risk assessment work, and one can inform the other. The list below shows the values and management issues EWR is working on.

Rapid Ecological Assessments

The Wildfire Land-Based Recovery program is currently developing a rapid ecological assessment process (REAP) for areas impacted by wildfire. Three levels of assessment are proposed to identify impacts and risks to sensitive values, including GIS screening, desktop analysis, and field deployment of assessors to a fire. Provincial specialists (e.g., hydrologists and biologists) contribute objectives and actions for identified values and management issues. Assessments lead to site or landscape level objectives and potential options that can be implemented by First Nations, managers and decision-makers to support ecological recovery.



Ecological wildfire recovery may address any or all the following values and issues:

Eco-Cultural	Biodiversity*	Climate Change	Land Management	Vegetation	Watershed
Archaeology (HCA protected)	Furbearers	Climate Trend	Access Concerns	Forage & Plant Communities*	Fish/Riparian*
Cultural Sites & Trails	GAR Orders	Drought Resistance	Fire Resilience	Forest Health	Soils*
Traditionally Important Plants	Plant Communities at Risk		Parks & Protected Areas	Invasive Species Management	Watershed Function
	Species at Risk		Recreation*	Non-timber Resources	Natural Hazard Risk Assessment
	Ungulates		Wildfire Suppression Rehab	Timber/Forestry Values*	*FRPA Values



WILDFIRE LAND-BASED RECOVERY

Post-Wildfire Natural Hazard Risk Analysis

Studying areas recently impacted by wildfire, which are more vulnerable to high precipitation, for increased risk of additional natural hazards, such as debris flows and rock slides.

Natural Hazard Risks After a Wildfire

After severe wildfires, an area can be more vulnerable to increased precipitation in which extra moisture is not absorbed fully in the soil. This may lead to increased water runoff that overwhelms natural and man-made drainage features. Slides, debris flows, and floods can result, threatening public safety and infrastructure.

Risk Analysis Process

All wildfires over 50 hectares in size are screened for post-wildfire hazard risk. This process starts as soon as fires are listed as 'under control' by BC Wildfire Service. Burned areas with identified risks and terrain steep enough to generate possible hazards are then selected for a reconnaissance-scale review.

The reconnaissance review typically consists of a helicopter overflight and field verification of burn-severity, soil characteristics and suspected values-at-risk, such as homes and provincial or community infrastructure.

The goal is to start screening and reconnaissance during the mop-up stage of wildfire suppression. A report is usually completed within 2 weeks, and provided to impacted communities and partners through the Ministry of Emergency Management and Climate Readiness (EMCR).



If moderate or high risk is indicated, a detailed report may be required. These are typically contracted and community experts are given the opportunity to provide input and local knowledge to the study. Once completed, these reports are also distributed to affected communities and partners through EMCR.

All reports are publicly available at
pwnhr-bcgov03.hub.arcgis.com

First Nations and non-First Nations communities undergo the same analyses process in B.C. but funding works differently for each. Owner/s of at-risk values can work with the EMCRC and either Indigenous Services Canada, for First Nations, or local government, to determine mitigation funding options.