

After a Wildfire

Resources for Stevens County Landowners

WSU EXTENSION AND STEVENS COUNTY CONSERVATION DISTRICT



Wildfires profoundly impact people, land, animals and the environmental and economic well-being of affected areas. This guide is intended to provide information about locally available resources landowners can contact to assist them in making informed decisions about actions they can take after a fire to prevent additional post-fire damage and guide their property to recovery.

Post Fire Assessment

As soon as possible after a fire, walk your property taking notes on what is damaged or has changed. Pay particular attention to conditions that pose an imminent risk of causing additional damage such as the potential for erosion, flooding or fire reoccurrence.

Your assessment work will be much easier if you have a forest or farm management plan with a current inventory of conditions and amounts (trees or livestock, for example) for distinct parts of your property. Management plans also contain written goals and objectives. Review these as they can provide a basis for decision-making during a sometimes emotionally difficult transition period.

The key factors to evaluate on your property after a fire:

- Erosion potential
- Flooding potential
- Tree mortality
- Fire reoccurrence
- Soil conditions (Hydrophobic)

Restoring Land After Fire

While nature will do most of the work, there are places where simple land restoration work will be an important part of the recovery process. Areas to concentrate on for rehabilitation include:

- Steep slopes
- Previously weedy areas
- Forests
- Newly built firelines with disturbed soil
- Deeply burned soil

Management concerns in the forest ecosystem after a fire include minimizing erosion and its effects on aquatic systems, minimizing the likelihood of an insect outbreak among fire stressed trees, reducing the potential for a severe reburn, and ensuring tree regeneration.

TABLE OF CONTENTS

- Page 1 Post Fire Assessment
Restoring Land After Fire
- Page 2 Erosion, Flooding and Soil
Restoring Fire Lines
Controlling Noxious Weeds
Fire Retardant
- Page 3 Fire Injury to Trees
Livestock and Pasture Recovery
- Page 4 Private Landowner Assistance
and Reforestation Resources

This document is focused on post-fire rehabilitation of forest, pasture and agricultural land. Other sources should be used for issues pertaining to lost or damaged structures or businesses.

CAUTION

Often trees will burn at the base around the trunk and into tree roots. These trees can fall over without warning. You can also fall into deep holes where roots have burned out.

Be careful out there!



Erosion, Flooding and Soil

How Wildfire Affects the Soil

Fire destroys organic matter which is essential for maintaining soil structure. High intensity fires can create soil conditions that are water repellent (hydrophobic) increasing water runoff and making it difficult for seeds to receive moisture necessary for germination.

To test, scrape away any remaining soil organic matter and place a drop of water on top of the soil and wait a few minutes to see if the water is absorbed. If the water remains in a droplet, gently break up the soil with a rake or use a harrow in larger areas.

Normally, vegetation absorbs rainfall, reducing runoff. Wildfires leave the ground charred, barren, and unable to absorb water creating conditions ripe for erosion, flash floods and mudflow.



A flooded stream can find a new channel, cutting through roads. (Photo: Tip Hudson)

Erosion/Mudslides

Gully and small stream erosion is common after a fire. Worst case scenario is when water mixes with ash and topsoil causing whole hillsides to turn to fluid and flow downhill.

Flooding

Water flows can increase by 20 to 40%. Flood risk remains significantly higher until vegetation is restored - up to five years after a wildfire. Flooding happens in the valleys, sometimes many miles downstream of the fire.

Erosion Control

Common treatments include mulching, seeding, hydroseeding, barriers such as contour-felled logs, straw wattles, silt fences and sandbags. Contouring, ditching and water bars are additional erosion control measures. Engineered designs of protection structures may be required to ensure success.



Top: A burned mountainside devoid of vegetation has a limited ability to retain or absorb water. (Photo: Karen Wattenmaker)



Bottom: Contour log. (Photo: afterthewildfire.org)

Restoring Fire Lines

Restoring fire lines is one of the major post-fire rehabilitation tasks. Without prompt attention, firelines are at risk of weed colonization and erosion. Restoration tips to consider include:

- Pull natural debris back onto disturbed fireline soil
- Avoid compacting disturbed soil with heavy equipment
- Install water bars and/or woody debris depending upon slope and conditions
- Re-seed before winter with habitat appropriate seed mix
- Plant trees and brush where appropriate, usually in spring or after fall rains
- Monitor and control weeds for a couple of seasons

Controlling Noxious Weeds

After a fire, weeds are among the first plants to recolonize. It is important to monitor and manage these weeds, especially those that are considered "noxious" for the area. Weeds are more difficult and expensive to control once established.

For assistance in identifying and controlling weeds contact Stevens County Noxious Weed Control Board. 230 Williams Lake Rd., Colville WA, 99114 Phone 509-684-7590.

Fire Retardant

Some of the most effective tools firefighters have to suppress wildfires are the fire retardant chemicals. Fire retardants are comprised of an ammonia phosphate blend with a surfactant and color dye. Ammonia phosphate is basically a concentrated agricultural fertilizer. It binds oxygen, which retards the fire and aids in vegetation regrowth: the dye allows crews to see treated areas. These retardant chemicals have gone through extensive testing for fire control ability and animal and environmental impacts. While the fertilizer effect can be a benefit to landowners, the ammonia in the retardant can burn foliage. Rains and runoff can concentrate the nitrates and create water quality issues in lakes and ponds including algal blooms and fish kills.

Fire Injury to Trees

Tree Mortality

Evaluating whether a tree will survive the fire is difficult for the average person. The degree of crown scorch, foliage consumption, bud mortality and stem damage to the bark and cambium layer (just under the bark) determines whether the tree will survive or not. While complete crown scorch causes rapid tree death, many trees with partially scorched crowns survive. In general, trees with less than 50% crown scorch are more likely to survive. Trees with greater than 75% crown scorch are more likely to die. A major determining factor in whether a conifer with crown scorch can survive is the damage to the buds. Many trees will die 2 to 3 years after the fire due to insects and diseases invading weakened trees.

Salvage Logging

Rapid salvage allows financial return and removes potential breeding sites for insect pests. Logging too soon or too much may create bigger problems with soil erosion. It may also increase costs of restoration. Salvage logging may require a permit and replanting. The DNR can assist in making that determination and help in the application process.

Tree Value

Dead trees lose their commercial value quickly due to decay. The speed at which this occurs varies by the tree species. Douglas-fir and Western Larch are decay resistant and will typically take several years to lose commercial value. Pine trees often become infected with blue stain fungus which is brought in by bark beetles. Blue stain fungus does not weaken the wood, but decreases the value and grade of lumber which can be made from it.



Scorched foliage.
(Photo: Karen Wattenmaker)

Livestock and Pasture Recovery

Evaluation of the soil, vegetation, fences, and water sources are important after pasture and range fires. A cool grass fire will not kill grass, however grass typically will not regrow until the next spring when sufficient moisture is present. The grass and other forage plants may look good that next year but may be weak and heavy grazing that first year may reduce production for many years to come. Significant damage to pastures may require replanting and deferred grazing for a couple of years. Livestock should not be returned to a burned pasture. Further vegetation damage can occur due to hoof action and trampling. Pond or stock water may be contaminated with retardant and should be flushed if possible and tested for nitrates before allowing access.

Livestock Mortality

Animal carcasses must be properly disposed of for safety and health reasons as soon as possible. Northeast Tri County Health District, Environmental Health (509-684-2262) has authority over disposal methods for animals that have died from a known cause such as fire and flood. The owner is responsible for disposal but assistance is usually available.

Disaster Relief Programs

Upon declaration of natural disaster, compensation for losses may be available. Feed (pasture and hay) and livestock losses are the most common losses reimbursed. Most programs will be for agricultural producers and will require proof of loss.

Financial assistance for reseeding, deferred grazing, repair of fences and livestock watering sites may be available through NRCS and FSA Emergency Watershed Protection Funds.

NRCS and Conservation District can provide technical assistance for reseeding, site preparation, grass species and rates recommendations specific to your property.

Animal Health

Many animals surviving a fire develop respiratory problems from the smoke. The most common injuries include cuts and trauma from running through fences. Severely burned animals fail to recover. Local veterinarians will be able to help with the diagnosis and treatment options.

Retardant drop on the Valley Mill Fire. (Photo: Charlie Kessler)



Landowner Assistance

The majority of Stevens County lies in a fire-based ecosystem with a long history of wildfire. Emergency rehabilitation may not be necessary and many areas will recover normally without intervention. In some cases, logging immediately after the fire can make conditions worse for erosion and mudslides, hamper natural regeneration and further reduce wildlife habitat.

Consulting Foresters

A consultant's business is based on satisfied clients. The person or company you hire should represent and serve your best interests in all matters concerning your timberlands. There are also consulting land managers and range specialists. Be cautious when hiring immediately after a traumatic event such as wildfire or wind storm since well established consultants will be busy. Unqualified companies and individuals may come in and try to make a profit. Make sure to ask for references and check that they are members in good standing of professional organizations.

Most agencies have a list of consulting foresters or you can check the local phone book. Professional organizations also have a listing of members.

Local and State Organizations

Neighbors, commodity groups and professional organizations can be a tremendous help in coordinating resources for land restoration after the fire.

American Tree Farm System

treefarmssystem.org

Society of American Foresters (SAF)

safnet.org/certifiedforester/
findcertifiedforester.cfm.

Stevens County Farm Bureau

stevenscountyfarmbureau.com/contact/

Stevens County Cattlemen

stevenscountycattlemen.com/contact-us/

Washington Farm Forestry Association

wafarmforestry.com

General email contact for our area is newa@wafarmforestry.com.

Regional Mills

Boise Wood Products, LLC

Primarily purchase Pine - Log Buyers:

Rick Hanson, 509-680-1406

Bryan Reggear, 509-675-3275

Chris Magruder, 509-680-0217

Columbia Cedar

Skyler Johnson, 509-738-4177

Idaho Forest Group

447 E Chilco Rd, Athol Id 83801

208-772-6033

Stimson Lumber

Joe Larson at Priest River 208-661-2759 or

Andy Stockwell at Plummer 208-660-1945

Vaagen Brothers

www.vaagenbros.com, 509-684-5071

Log Buyers:

Craig Martin 509-680-0723

Steve Delong 509-671-0494

Matt Scott 509-710-9047

Natural Resource Conservation Service (NRCS) and Farm Service Agency (FSA)

Contact: 509-685-0858 ext. 3

Conservation Farm Planning

Technical Assistance and Cost-share to protect and improve natural resources—including forest health, fuels reduction, pasture renovation and management. Emergency disaster assistance

Washington State Department of Natural Resources (DNR)

Steve Harris, 509-684-7474

steven.harris@dnr.wa.gov

dnr.wa.gov

- Technical assistance—Assessing tree mortality, guidelines for salvage logging, logging permits.
- Eastern WA Cost-share program – Fuels reduction, thinning, pruning and brush removal. Requires site visit and pre-approval.
- Firewise – Site assessments and workshops to help communities and landowners reduce losses to wildfire.



Stevens County Conservation District (SCCD)

Dean Hellie, 509-685-0937 ext. 3

sccd@co.stevens.wa.us

co.stevens.wa.us/cons_district

- Clearinghouse for landowners to report natural resource and agriculture infrastructure damage and post-fire resource concerns. Reports will be used to seek funding for cost-share grants to assist with post-fire recovery actions.
- Site visits and referral to other agencies and professionals to assist landowners with post-fire assessments and suitability for financial assistance.
- Native Plant Sale—reforestation, stream bank stabilization, wildlife habitat improvement.
- Conservation and Farm Planning, Firewise, Natural Resource Education.



WSU Stevens County Extension

Debra Hansen, 509-684-2588

debra.hansen@wsu.edu

stevens.wsu.edu

- Land grant research and education

Steve McConnell, 509-477-2175

steven.mcconnell@wsu.edu

- Forestry and land management education, coached planning workshops

Nils Johnson, 509-684-2588

nils.johnson@wsu.edu

- Nitrate testing of forage
- Livestock and pasture issues