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A Strategy to Restore Forest Health on State Lands in Eastern Washington



WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

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Section 1 – Introduction

Message from the Deputy

The way DNR defines itself as stewards of Washington state forestlands has changed in the last decade. As the citizens and legislature of Washington have recognized a growing forest health problem, we have increased our role and responsibility in treating the forests of the state. We have diversified our goals and found innovative solutions to accomplish new objectives, all while maintaining our primary fiduciary obligation to the trust beneficiaries.

In 2004, legislation enabled us to pioneer a new method of managing low-value, high-risk landscapes with the Forest Improvement Treatment program. In response to still-increasing needs to treat unhealthy DNR-managed forests, the 2017 legislature created a new land management tool: the Forest Health Revolving Account, which allows us to invest in long-term, landscape-level forest health projects with even-greater financial flexibility. New targets to assess and prioritize all state forestlands are ambitious but essential, and reflect both the capacity of our staff and the urgency of addressing forest health hazards.

Our State Lands group now has more tools and resources to face forest health problems. Nevertheless, the problems are large, and we cannot address the entirety of the issue by ourselves. State Lands is working with partners internally and externally to ensure the highest effectiveness from our treatments and investments. A unified effort will increase the benefits to the state and the value to the trust beneficiaries.

The values, goals, and objectives outlined here will provide guidance and direction as State Lands integrates these new tools into our existing management framework. The healthier forests and the benefits achieved through this work will have direct and indirect value to the people of Washington and our trust beneficiaries for years to come.

Lastly, I would like to acknowledge the work of the committee who, on behalf of State Lands, created this plan. Those members include Brian Bailey, David Bergvall, Duane Emmons, Rob Hechinger, Tom Heller, Scott McLeod, Calvin Ohlson-Kiehn, Joe Smith, Sam Steinshouer, and Tim Vugteveen.

Cheers,

/s/ Angus Brodie

Angus Brodie
State Lands Deputy Supervisor

Section 2 – Executive Summary

Executive Summary

Washington’s legislature has reaffirmed that forest health is a priority of the state. With a clear target of increasing the resilience of the state’s forestlands against wildfire, insects, and disease, the 2017 legislature passed two new laws. These laws, Chapter 248, Laws of 2017 (E2SHB 1711) and Chapter 95, Laws of 2017 (2SSB 5546), provide DNR with new tools and increased flexibility to address the growing forest health problem.

These laws build on a history of forest health innovation at DNR that began with the Forest Improvement Treatment (FIT) program in 2004. Since then, DNR has become a leader in managing for complex forestry objectives, balancing potentially conflicting forest health, conservation, and revenue goals to treat successfully over 53,000 acres of eastside forests through the FIT program. However, with little consistency in stand merchantability across the landscape, some low-value stands still have proved difficult to manage. These new and innovative laws will help the State Lands group (State Lands) manage those difficult stands while meeting the state’s obligation to trust beneficiaries.

In E2SHB 1711, the legislature provides DNR a new revolving account, which enables a landscape-level forest health strategy, increases the diversity of stands that can be treated, and ensures proper stewardship of the forest into the future. It will be DNR’s responsibility to innovate and establish guidance to utilize this account to its full potential. With implementation of this law, DNR also is required to prioritize its lands for treatment. DNR must integrate these changes into its standard business practices. Successfully done, these changes will help DNR meet its land management goals and enhance the long-term financial position of the trusts.

DNR developed *A Strategy to Restore Forest Health on State Lands in Eastern Washington* (State Lands Strategy) to clarify State Lands’ roles and obligations in addressing forest health within the context of a statewide forest health effort being led by the Wildfire Division’s Forest Health Group. The State Lands Strategy is intended to be the starting point as DNR moves ahead with full program implementation. The State Lands Strategy identifies the key values, goals, and objectives that will guide DNR’s forest health program to success. The strategy should be used to help focus the operational and tactical decisions that are to come in the next phases, including prioritization and implementation.

Section 3 – Vision and Mission Statements

Vision Statement

Create and maintain a landscape of healthy and resilient forested state trust lands that support the trust beneficiaries, the public, and a sustainable forest products market.

Mission Statement

To meet our obligations to our trust beneficiaries and to enrich the lives of Washington State’s citizens and communities, today and tomorrow, by improving the health of the forest, protecting the corpus of the trust, and creating long-term financial benefits through implementation of active forest health treatments.

Section 4 – Need and Purpose

As Washington State faces a decline in the health of its eastern forests, and as the state’s investment in forest health increases, it is important that State Lands establish the mission and vision of its forest health program. The intention of this document is to do so as well as define core values, goals and objectives to be carried forward through implementation.

These goals, shared by the legislature, have been put into statute:

“...to the extent feasible given all applicable trust responsibilities, develop and implement a policy for prioritizing investments on forest health treatments to protect state lands and state forestlands, as those terms are defined in RCW 79.02.010, to: (i) Reduce wildfire hazards and losses from wildfire; (ii) reduce insect infestation and disease; and (iii) achieve cumulative impact of improved forest health and resilience at a landscape scale” (Chapter 79.10 RCW).

This State Lands strategy also will further the objectives of DNR’s forest health, catastrophic loss prevention, local economic vitality, general silvicultural strategy, and wildlife habitat policies in the *Policy for Sustainable Forests*. With partnerships inside and outside the agency, from DNR’s Wildfire Division to private forestland owners, this strategy and the State Lands forest health program will help Washington meet its statewide goals under Chapter 76.06 RCW to:

“...establish a forest health assessment and treatment framework designed to proactively and systematically address the forest health issues facing the state. Specifically, the framework must endeavor to achieve an initial goal of assessing and treating one million acres of land by 2033.”

Section 5 – Background

Forest Health Program History

In recent decades, landscapes across Washington State have experienced sharp increases in catastrophic loss of timber, wildlife habitat, and ecological functions due to large wildfires, insects, and disease. Excessive stand density and an over-representation of shade tolerant trees has overwhelmed attempts at preventing large wildfires through forest management. The extent of land burned annually during Washington’s wildfire season has risen from an average of under 20,000 acres between 1997 and 2006 to an average of 192,000 acres between 2007 and 2016. The threat of ever-larger fires has caused a dramatic increase in recognition by the public, DNR stakeholders, and the Washington legislature that forested lands are in jeopardy.

Like other landowners, DNR has been unable to address adequately the management needs of low-value, high-risk landscapes in eastern Washington. Weak market conditions and unmerchantable, small-diameter material often make forest health treatments and forest investments, such as planting and silviculture, exceedingly difficult. DNR’s traditional management and funding mechanisms, which are primarily focused on its fiduciary obligation to trust beneficiaries, have proven insufficient at achieving complex forest health objectives.

DNR began collaborating with the legislature and stakeholders in 2004 in hopes of changing the trajectory of landscape-level losses of forest. That year, the legislature passed the Forest Health Improvement Act stating that *“Washington faces serious forest health problems... the causes include fire suppression and past timber harvesting and silviculture practices.”* This act authorized the Forest Improvement Treatment (FIT) Program, which utilized DNR’s Contract Harvesting Revolving Account (CHRA) to fund treatments. The FIT program allowed DNR to treat low-value stands that previously were not financially viable.

The economic downturn in 2008 created additional challenges for the low-revenue treatments needed to address forest health. During this downturn, milling and harvesting infrastructure was liquidated. DNR was forced to reduce funding for forest health-related activities and silviculture. The public, stakeholders, DNR, and the legislature identified a critical need to retain remaining capacity and infrastructure and boost rural Eastern Washington economies in the process. Additional funding sources were needed to support this work.

DNR began receiving state capital funding for forest health treatments in fiscal year 2009. Federal funds also were allotted to DNR to provide forest products and jobs in the 2009 through 2011

biennium. In the 2011 through 2013 biennium, the State Jobs Bill was used to create more forest health sector work in economically challenged parts of the state. In the 2013 through 2017 biennium, capital funds continued to support the treatment of forest health. After seeing its success, the legislature also decided to make the CHRA permanent in 2017.

This commitment of funding has allowed DNR to treat unhealthy, low-value stands. Since the creation of the FIT program in 2006, DNR has successfully made 53,000 acres of forest more resistant to wildfire and disease (Table 1).

Using the CHRA to treat low-value stands, however, has presented challenges. The FIT program’s funding strategy has encouraged a narrow, stand-level approach to addressing landscape-level forest health issues. With new tools, greater coordination, and a landscape-level prioritization strategy, the same treatments can yield a greater return. Strategically focusing on critical areas is essential with over 250,000 acres of eastside State Lands still in need of restoration, according to DNR’s 2014 report to the legislature.

Table 1. Acres of commercial harvest and pre-commercial thinning forest health treatments conducted in NE and SE regions from 2006 to October 2017.

FY	Commercial		Pre-commercial Thinning		TOTAL
	Non-FIT	FIT	Non-FIT	FIT	
2006	7,700	1,400	2,000	-	11,100
2007	10,700	2,600	2,300	-	15,600
2008	8,900	2,700	1,700	100	13,400
2009	5,100	8,000	1,300	-	14,400
2010	5,500	1,400	900	-	7,800
2011	7,500	4,100	4,600	1,500	17,700
2012	5,700	6,900	600	-	13,200
2013	4,700	5,800	1,000	-	11,500
2014	6,000	4,600	5,900		16,500
2015	4,600	3,400	11,300	500	19,800
2016	3,800	5,000	1,700		10,500
2017	1,500	5,300	6,000		12,800
TOTAL	71,700	51,200	39,300	2,100	164,300

SECTION 6 – New Direction

Moving Forward

A new era of landscape-level forest health management is emerging. State legislatures, wildland firefighters, and forest managers across the west are increasingly recognizing the need for a landscape-level approach to improving forest health. Federal and state legislatures also are increasingly supporting this approach through funding and statute. The 2014 US Farm Bill, introducing the Good Neighbor Authority, and most recently Washington state's E2SHB 1711 and 2SSB 5546, extend existing and grant new authorities and funding mechanisms that will help create a forest health program capable of assessing, prioritizing, and treating large, high-risk landscapes in Washington.

Prioritization

The 2017 legislature passed two laws to address forest health. Combined, their intent was to prioritize the forest health treatment needs of Washington's forests to create an organized and unified treatment strategy.

The first piece of legislation, 2SSB 5546, builds upon the State's 20-Year Forest Health Strategic Plan. This plan is an essential step towards prioritizing landscapes for land managers, including but not limited to DNR, to treat. The law aims to build collaboration between state agencies, forest collaboratives, small-forest landowners, tribes, and other federal and private forestland owners.

The legislature passed E2HB 1711 to ensure DNR has the tools and resources it needs to evaluate and prioritize forest health treatments on state trust lands. This law requires DNR to develop and implement a policy for prioritizing investments for forest health treatments. Prioritization must be based on an evaluation of the economic value created by DNR-managed forests and noneconomic values likely to be protected,

Recent Legislation

E2SHB 1711

E2SHB 1711 is specific to state trust lands. This law directs DNR to develop and implement a policy for prioritizing investments in forest health treatments to reduce wildfire hazards and losses from wildfire, reduce insect infestation and disease, and achieve forest health and resilience at a landscape scale. Priorities must be established for the next 2, 6, and 20 years. This law also establishes a new revolving account to help DNR fund treatments.

2SSB 5546

2SSB 5546 addresses forest health statewide and across land ownership boundaries. This law directs DNR to develop an assessment and treatment framework for forest health and to achieve an initial goal of assessing and treating one million acres of forestland in Washington by 2033 (200,000 acres per biennium). This law also requires prioritization of areas to treat as well as regular progress reviews and reports.

Good Neighbor Authority

Stemming from the 2014 Farm Bill, the Good Neighbor Authority is a tool that allows DNR to hire and collaborate with local companies and interests to perform a variety of watershed, rangeland and forest restoration work across state and federal property lines. DNR recently signed a Good Neighbor Authority agreement with the US Forest Service to help address forest health in Washington.

including homes and structures, recreation and tourism, and ecosystem services.

The two forest health laws are meant to complement each other. The 20-Year Strategic Plan will identify large, landscape-scale areas that need treatment. A focused effort within prioritized areas will maximize the benefit for each participating landowner, and for Washington State as a whole. Each landowner must weigh forest health improvements with their other land management objectives. State Lands' obligation under E2SHB 1711 is to include a finer prioritized treatment list based both on State Lands' values and management objectives, as well as consideration of the landscape areas identified by the 20-Year Strategic Plan.

Under E2SHB 1711, State Lands' prioritization must identify areas that would benefit from forest health treatment in the next 2, 6, and 20-year periods. By December 1st of each even-numbered year, the department must submit a report to the legislature that includes this list, as well as a summary of progress and biennial capital funding requests.

Forest Health Revolving Account

One of the new tools and resources available for landscape-level, state trust land forest health management is the Forest Health Revolving Account (FHRA) created by E2SHB 1711.

The FHRA was created to allow State Lands to fund forest management treatments at the necessary scale and speed. The fund, an interest-bearing revolving account overseen by the Board of Natural Resources, is designed to accept receipts from the proceeds from forest health treatment sales and all legislative transfers, gifts, grants, and federal funds dedicated for use in treating forest health on state trust lands. Expenditures from the account may be used only to cover costs, including management and administrative costs, incurred for the full range of forest health treatments that further the objectives of this strategic plan. Deposited revenue will be used for additional treatments in other prioritized areas involving lands of the same trust.

Any unobligated amounts up to ten million dollars at the end of the calendar year are not subject to disbursements to trust beneficiaries, the resource management cost account (RMCA), or the forest development account (FDA). Amounts exceeding ten million dollars will be disbursed to the appropriate trust beneficiaries at the end of each calendar year. These disbursements will not be subject to RMCA or FDA deductions. An appropriation is not required for expenditure of these funds.

The FHRA is designed to retain revenue from commercial forest health treatments on state trust lands that will then be used to fund a suite of necessary non-commercial treatments across those same state trust lands. The goal is to develop a fund that is self-sustaining and that does not rely on capital budget funding to support treatments.

SECTION 7 – Forest Conditions

Silviculture and Ecology

Forest health is affected by internal stand dynamics as well as external factors such as management, fire suppression, harvesting practices, and a changing climate. Historically, catastrophic fire seasons frequently occurred in eastern Washington even though not all of today's externalities were at play. Over recent centuries, sites with frequent fire regimes burned repeatedly every decade or two, sometimes due to fires set by Native Americans. As with today's forests, the process of succession was actively working in most stands to shift species composition towards shade-tolerance and increase stand density until the next fire.

While historically these landscapes shifted toward the same unhealthy and overstocked conditions we see today, there were fewer human demands placed on those forests. Today, interactions between forest management, fire suppression, and climate change, together with increased human demands, compound the complexity of addressing forest health. These new demands are driving the adaptation of silviculture and forest management.

Most health problems of eastside forests are associated with excessive stand density and dominance by shade-tolerant tree species. These conditions result in multi-canopy stands at risk of fire, insects, and disease. Shade-tolerant tree species typically have lower commercial value and are prone to insect and disease problems, and because they can grow in shaded environments, are most likely to cause density problems, serve as ladder fuels, and have poor resilience to disturbance. Forest health treatment will reduce stand density and restore or maintain early seral species compositions to partially offset the consequences of ongoing fire suppression and shade-tolerant regeneration. Fuels treatments, including harvesting and slash abatement, will be conducted as called for in prescriptions.

When selecting locations for forest health treatments, foresters must consider the contribution of that treatment to improved landscape health, function, and resilience to garner the greatest ecosystem and economic benefit from planned activities. Timber harvesting associated with forest health treatments will range from thinning, to even-aged and multi-aged stand treatments, depending on identified objectives. Rotational prescriptions will identify expected rates of vegetative recovery, tree growth and natural regeneration, and incorporate treatments of sufficient intensity to meet the ecological needs of the stand. Consideration should be given to climate change, ecological priorities, and management objectives. Prescriptions also will consider future vegetative and tree growth to plan for anticipated needs prior to the next possible entry.

Section 8 – Ongoing Work

Pilot Projects

In accordance with Section 1 and 2 of E2SHB 1711, those lands currently identified for treatment may be used as pilot treatment projects until new lands are identified through the prioritization process described in the previous section. All receipts from the proceeds from commercial forest health treatments identified as pilot projects will be deposited into the new FHRA.

Pilot project design, layout, assessment, and contract preparation already has been completed in some cases. Revenue collection from some commercial projects will begin within FY 2018. Funds not obligated within the FHRA will be available for non-commercial activities and future assessment, prioritization, and completion of commercial projects in upcoming biennia.

These pilot projects are intended to ensure a positive fund balance that will allow work to commence expeditiously on the 2-year prioritization list, once developed.

SECTION 9 – Goals and Objectives

To fulfill the intent of the 2017 legislature, the underlying goal of this plan is to produce resilient forests by conducting appropriate forest health treatments on state trust lands while maintaining a financially viable forest management program. To do this work, DNR defined twelve individual goals and the objectives that will be used to meet them.

These goals and objectives are meant both to achieve the landscape-level results expected by the legislature and meet the operational needs of State Lands. These goals and objectives will establish a framework for long-term success in improving forest health, as well as create an efficient and productive work environment in the short term.

This strategy places goals and objectives into three broad categories: landscape, operational, and program goals and objectives. These categories encompass the major themes that emerged as requiring action.

Landscape Goals and Objectives

Landscape goals and objectives express the large, long-term, and collaborative goals of the State Lands forest health program. Accomplishing the requirements set forth by the legislature will require a substantial investment and persistence in planning and collaboration. While these goals will set State Lands on the path to achieve long-term forest health, the work on these tasks must begin immediately to meet the November 2018 reporting deadline set forth in E2SHB 1711.

Operational Goals and Objectives

Operational goals and objectives also contribute to successful landscape goals and objectives, but are concentrated primarily on the actions related to the implementation of individual treatments. Each treatment must be prioritized based on its effectiveness at achieving landscape goals, and each treatment must be implemented in an efficient and resourceful manner. These goals and objectives will influence most directly the implementation work at the field, process, and prioritization phases of the program.

Program Goals

Program goals and objectives ensure effectiveness and accountability throughout the life of the program. Transparency in finance and planning will make the program more efficient, trackable, and communicable, which is essential while working between regions and divisions and with stakeholders and the legislature. Internally, these goals will strengthen working relationships and provide clear expectations and targets for State Lands.

Landscape Goals

Goal 1. Develop a treatment plan for the next 2, 6, and 20 years as required in chapter 248, Laws of 2017 (E2SHB 1711).

Objectives:

- Regions will develop 2- and 6-year forest treatment schedules every biennium, with support from Divisions.
- The Forest Resources Division will lead the development of the 20-year prioritization list for eastern Washington state trust lands.

Goal 2. Increase the economic, biological, and social value of the forest.

Objective:

- Regions will implement treatments that add value and/or reduce the risk of loss of value for the landscape. Values include, but are not limited to, the value of marketable forest products, resiliency of biologically healthy forests, and protection from wildfire.

Goal 3. Support communities and forest product markets through reliable production and responsible management.

Objectives:

- Meet production targets consistently and reliably.
- Discuss market conditions and desired products with timber sale purchasers and operators. When possible, align harvest treatment prescriptions to maximize merchantable product removals and meet forest stand improvement objectives.

Goal 4. Foster and support partnerships that enhance successful attainment of forest health treatment goals across Washington.

Objective:

- Coordinate with DNR's Wildfire Division and nearby landowners, and support the state's 20-year Forest Health Strategic Plan as appropriate.

Operational Goals

Goal 1. Maximize impact and effectiveness of treatments.

Objectives:

- Regions will prioritize treatments that contribute to meeting both landscape objectives and the needs of individual stands.
- Per E2SHB 1711 Section 1(2)(a), regions will include at a minimum the following factors in the prioritization formula: commercial forest products removed during mechanical treatments, commercial forest products likely to be spared by wildfires, infrastructure likely to be spared from damage by wildfire, impacts to recreation and tourism, and ecosystem services.

Goal 2. Make decisions as efficiently and as appropriately as possible at every level and scale.

Objective:

- Regions will delegate stand, site selection, and silviculture prescription decision-making authority to field staff, within the framework set forth by division and region management.

Program Goals

Goal 1. Maintain the financial solvency of the program as a whole.

Objectives:

- When it aligns with forest health needs, identify and conduct profitable forest health treatments to ensure a constant, positive account balance.
- Continue to seek additional funding for the management of high-priority areas when the cost will exceed available funding.
- Ensure funding of reforestation and other silvicultural activities necessitated by commercial forest health treatments.
- Prioritize treatments that contribute to meeting landscape objectives over individual stand needs.

Goal 2. Demonstrate financial responsibility through comprehensive and accessible accounting processes.

Objectives:

- Support and be accountable for all direct and indirect costs associated with forest health treatments.
- Establish a transparent method to track costs clearly and consistently.
- Use unique project codes for forest health treatments.
- Train staff to implement tracking processes consistently.

Goal 3. Provide transparency of program intentions, targets, and finances.

Objective:

- The Product Sales Division will make targets, deliverables, and processes openly available and understood, to ensure consistency across the agency and accountability within the program, for staff, the Board of Natural Resources, and external interests such as the legislature.

Goal 4. Have clear and open internal communication between management, divisions, and regions.

Objectives:

- Establish clear terms regarding the use of funds.
- Provide clear deliverable expectations and targets.
- Ensure cost accounting is consistent across DNR.

Goal 5. Design an agile program that enables DNR to respond to future circumstances and disturbances.

Objectives:

- Maintain a diverse set of forest health treatment tools that are responsive to the full range of forest health scenarios.
- Provide marketing flexibility to prepare for fluctuating markets and prices.

Goal 6. Sustain the longevity of the program.

Objectives:

- Educate and inform staff and stakeholders of the ongoing need for forest health treatments.
- Product Sales and Leasing Division will make treatment data easily accessible for sharing, to demonstrate effectiveness and accomplishments.

Section 10 – Next Steps

In DNR's 2014 report to the legislature, approximately 250,000 acres of state managed forestlands were identified as needing forest health treatments. Years of forest health management, stand replacing wildfires, and increases in insects and disease since 2014 have made those numbers outdated. State Lands must begin the planning process by re-evaluating the condition of its forests.

Current treatment rates indicate State Lands has the capacity to treat about 16,000 acres per year, including commercial harvest, FIT, and PCT. A re-evaluation of treatment needs, based on both ecological and social values, will guide the acre targets of the future. Regardless, it is currently understood that DNR, and other landowners, must use their current treatment capacity more strategically. The prioritization of treatments is a step towards ensuring efficacy and maximizing results.

State Lands has been tasked with strategically prioritizing forest health treatments for this reason. The condition of the forest, along with collaborative partnerships, legislative priorities, health and safety, financial viability, ecosystem function, and the previously stated goals and objectives, will all influence the prioritization process.

State Lands must utilize its forest health assessment data to identify areas that would benefit the most from forest health treatments in the next 20 years, 6 years, and then specific lands to be treated in the subsequent biennium. DNR must update this prioritization list by November 15th of each even-numbered year. DNR also must submit a summary of its progress, recommended funding amounts, and trends in forest health conditions by December 1st of each even-numbered year.

This State Lands strategy begins a transition to landscape-level, collaborative, multi-objective forest health management. This document must be coupled with both existing work, such as DNR's 20-year Forest Health Strategic Plan, and work still undeveloped, such as an assessment of the treatment need of the regions. As new goals are formed and new needs are identified, this strategy must be flexible and amendable. This strategy sets the values, goals, and objectives of the program. With this framework and the investment to carry it forward, Washington's State Lands will enter a new phase of intentional, systematic, and successful forest stewardship of unhealthy eastern Washington forested state trust lands.

Appendix 1 – Management Tools

Forest Health Treatment Toolbox

DNR will utilize a variety of forest management activities to address poor forest health conditions. While each activity has specific applications, many of them aim at removing small diameter trees and reducing fuel loads to quickly decrease vulnerability to forest health problems. Depending on the size of the material, the merchantability of the timber, the issue to be addressed, and the availability of funding, DNR may choose from one of several available tools and programs to complete this task.

Each treatment activity may be used under one or more DNR program. The programs are important because they provide the authorization to carry out the treatments. The treatment is the actual timber activity being implemented. All of these programs and activities can be used to meet forest health objectives.

Programs

- Stumpage Timber Sales
- Contract Harvest Sales
- Forest Improvement Treatment Sales
- Non-commercial Treatments

Treatment Activities

- Regeneration Harvest
- Commercial Thinning
- Timber Salvage
- Non-commercial Thinning
- Prescribed Burning
- Pruning
- Site Preparation
- Reforestation
- Road Realignment
- Shaded Fuel Breaks
- Hazard Abatement for Roads
- Stand Assessment Surveys

Forest Health Treatments

Forest health is defined in statute as *“the condition of a forest being sound in ecological function, sustainable, resilient, and resistant to insects, diseases, fire, and other disturbance, and having the capacity to meet landowner objectives”*(Chapter 76.06 RCW). The Washington State legislature went on to define forest health treatments as *“actions taken by the department to restore forest health including, but not limited to, sublandscape assessment and project planning, site preparation, reforestation, mechanical treatments including timber harvest, road realignment for fire protection and aquatic improvements, and prescribed burning”*(Chapter 79.10 RCW).

In virtually all cases, DNR will implement forest health treatments that simultaneously meet multiple objectives. Treatment methods that accomplish financial, social, and environmental objectives will be prioritized when possible. Doing so will enable DNR to maximize the efficacy and extent of treatments and create resilient forests that meet multiple objectives.

Treatment Programs

The following programs are the mechanisms granted in statute to market and sell valuable materials from state-owned lands. Although they can be used for a variety of objectives, each program provides a unique set of management options for enhancing forest health.

- **Stumpage Sales**

Stumpage sales are the most common timber sales prepared by DNR. The timber is auctioned to a single purchaser and DNR receives payment for the stumpage (the price the purchaser pays for the timber once their logging and hauling costs have been subtracted). This class of timber sales was authorized by the Public Lands Act. Regeneration harvests, commercial thinnings, and other partial cutting methods all can be sold as stumpage sales.

- **Contract Harvest Sales**

Authorized by the legislature in 2003, contract harvest sales allow DNR to contract directly for the removal of timber and other materials from state trust lands. This type of sale allows DNR to sell individual product sorts directly to the mills, which leads to product specialization, provides access to small market mills, increased merchantability, produces higher revenue, and increases environmental protection.

- **Forest Improvement Treatment (FIT) Sales**

Authorized by the Forest Health Improvement Act of 2004, the FIT program enables DNR to contract for the harvest of timber and sell sorts when forest health is seriously threatened. This program allows DNR to conduct treatments that otherwise would not be

financially feasible. This program includes both commercial and non-commercial silvicultural treatments. While FIT sales remain an option, the new Forest Health Revolving Account (FRHA) predominately will replace this option.

- **Non-commercial Treatment**

Non-commercial silvicultural treatments do not generate revenue; therefore, work is completed by DNR staff, hired contractors, inmate crews, volunteers, or other labor sources. Examples of non-commercial treatments are described under “Treatment Activities” in this appendix.

Treatment Activities

Each of treatment programs described in this appendix can be used to conduct one or more of the following treatment activities. Some of these activities are non-commercial treatments (for example prescribed burning, pruning, site preparation, reforestation, road realignment, and hazard abatement) but are still forest health treatment activities and are authorized within the FRHA.

COMMERCIAL ACTIVITIES

- **Regeneration Harvest**

A commercial regeneration harvest is a timber harvest that reduces the existing stand to a density that allows for the establishment of a new stand or cohort of trees. When combined with appropriate silviculture treatments, regeneration harvest promotes the establishment of a healthier forest. Regeneration harvests may range from variable retention harvests to group and individual tree selection systems.

- **Commercial Thinning**

A commercial thinning is a harvest that generates revenue and is performed to meet a wide range of objectives including reducing overstocking, improving the growth of the stand, enhancing stand health, reducing tree mortality, or accelerating the development of habitat. The leave trees are a future commercial crop.

- **Timber Salvage**

A type of timber harvest used to harvest trees that are dead, dying, or deteriorating due to fire, insect damage, wind, disease, or injuries. Salvage can be used to improve a site for regeneration, remove heavy fuels, and capture financial value that would otherwise be lost.

NON-COMMERCIAL ACTIVITIES

- **Precommercial Thinning**

This treatment removes less desirable, small-diameter trees to reduce overstocking and maintain the growth, stability, and resiliency of retained trees. This treatment is performed before the trees are large enough to be marketable.

- **Prescribed Burning**

Also called controlled burning, prescribed burning is the planned application of fire to fuels in a confined and predetermined area at a prescribed intensity to meet resource management objectives. Prescribed burning may include broadcast burning, pile burning, jackpot burning, and other, similar activities. This treatment can be used to reduce fuel loads, promote regeneration, and restore ecosystem health.

- **Pruning**

Pruning is the removal of low hanging limbs and branches that can become ladder fuels during a wildfire. Pruning can reduce the risk of fire spreading to the crown of a tree, reduce fire intensity, reduce disease infection, and increase the value of the residual stem at harvest.

- **Site Preparation**

Site preparation is performed to increase the success of regeneration in a harvested unit by reducing competition or other impediments to growth. Site preparation activities include reducing slash and/or undesirable plants and may occur concurrently with logging or after harvest has occurred, or in areas capable of growing trees that are currently occupied by shrubs or grasses. Common methods include slash piling or burning, hand cutting, herbicide application, broadcast burning, and occasionally ground scarification with mechanical equipment.

- **Reforestation**

Reforestation is the restocking of forests either through natural seeding or planting of young trees. Reforestation can establish desirable species composition that can lead to healthier and more resilient forests.

- **Road Realignment and Maintenance**

Roads can be realigned or maintained to provide fire protection such as a fire break, provide access, and protect aquatic and other resources.

- **Shaded Fuel Breaks**

Also known as ladder fuel reduction, shaded fuel breaks include thinning of tree cover, removal of underlying vegetation, and pruning of residual trees. Shaded fuel breaks are placed in strategic locations along ridges, access roads, or other locations such as around a residential subdivision. They provide for logical places to prevent fires from spreading or to begin suppression activities. They also reduce canopy closure and ladder fuels, resulting in a less-intense fire that is more likely to burn closer to the ground (and less likely to reach the tree canopy).

- **Hazard Abatement along Roads**

Hazard abatement is the required clearing and removal of debris and slash from both commercial and non-commercial treatments to set distances away from roadways (refer to WAC 332-24-650). These treatments are intended to reduce wildfire risk along actively used travel corridors by removing receptive fuel beds and contiguous fuels, and facilitating fire suppression efforts when needed.

- **Stand Assessment Surveys**

A stand assessment survey is a silvicultural surveys conducted to determine compliance with regulatory requirements, assess the need for silvicultural treatments, and contribute to sub-landscape planning efforts. This activity is available for funding using the FIT and forest health programs.