Agenda Item No:	5
Presentation Title:	Review of Forest Conditions and Issue Identification
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SUMMARY AND CONTEXT

Staff from multiple divisions will present information related to the status of particular forest conditions, including carbon sequestration, forest health, federal forests, and the forest sector and economy. The purpose of this agenda item is to provide the Board with base information to inform a discussion of priority issues for Board focus and workplan development over 2020 and 2021. This agenda item functions as an assessment phase that initiates the Board's two-year planning cycle. At its October retreat, the Board will continue discussion regarding issues identified and workshop ideas with Department staff to inform Board work plan development.

BACKGROUND

The agenda item covers a wide range of topics with each briefly summarized below. Items with associated attachments that provide additional depth are indicated within the issue-by-issue summaries below.

Forest Ecosystems Carbon Report and Harvested Wood Products. During the 2018 Legislative Session, the Legislature charged the Office of Carbon Policy (OCP) to conduct an assessment of carbon in Oregon's forests. The OCP initiated an agreement to have ODF complete this work. ODF contracted with the Pacific Northwest Research Station of the US Forest Service to complete the Forest Ecosystem Carbon Report based on plot data from the Forest Inventory Analysis (FIA) Program. The Forest Ecosystems Carbon Report is based on data collected from 9,483 FIA plots across both public and private forestlands. FIA plots were initially installed between 2001 to 2010. Annually, 10% of the plots are re-measured. Cumulative carbon storage in Oregon's forests are estimated from the most recent 10-years of plot data (for this report 2007-2016). Annual estimates of carbon flux in the report are based on re-measurement data spanning from 2011 to 2016, representing 60% of all plots. A few selected highlights of the Forest Ecosystem Carbon Report from 5a attachment one include:

- Carbon storage in Oregon's forest is approximately 3.2 billion metric tons
- Total annual carbon accumulation from forest growth is 90.2 million metric tons of CO_2 equivalents. After accounting for timber harvests (34.8 million metric tons) and mortality (25.3 million metric tons), Oregon's forests sequester 30.9 million metric tons of CO_2 equivalents annually.
- Flux of carbon released from wildfire is smaller than the standard error (3.8) on the total annual net flux

Work is also underway on a second report to estimate the carbon stored in harvested wood products and will be complete by the end of calendar year 2019. ODF staff have initiated scoping on a third report planned to evaluate potential management and utilization scenarios on the ability of Oregon's forests to increase overall carbon storage and climate change mitigation. This work is being coordinated with similar efforts in California and Washington to ensure a common framework and analysis of forests along the west coast.

Climate Change Policy and Business Practices. Oregon's forests are strongly influenced by climate and topography. Modeled projections of long-term changes in climatic conditions across the Pacific Northwest based on rising concentrations of atmospheric carbon dioxide have been accompanied by predictions such as increased temperatures, rising sea levels, declining snowpack, extreme precipitation events, and increased risk of drought and heat waves. Oregon has established various climate and carbon policies since the early-to-mid 1990s, including multiple statutory changes, work groups and agency-driven plans focused on adaptation. The Board's strategic plan *Forestry Program for Oregon* includes carbon sequestration in one of seven goals:

> *Goal G: improve carbon sequestration and storage and reduce carbon emissions in Oregon's forests and forest products.*

In 2015, the Board reaffirmed its commitment to this goal by adopting a set of recommendations regarding integration of climate change into the agency's business across all three operating divisions. In 2019, the Board reaffirmed its interest in elevating climate change policy with respect to its purview and statutory authority. ODF staff will present a summary of the policies and practices implemented (see 5b attachment 1) in response to the 2015 Board-adopted recommendations and initiate a discussion with the Board regarding incorporating climate change and carbon policy in the Board's work and decision-making process going forward, with further discussion at the October Board retreat.

2018 Forest Health Report. ODF Forest Health staff provide specialized expertise in forest entomology, pathology, invasive species and other forest health issues to ODF District Offices, all three ODF Divisions, ODF leadership, and other state, local, and federal agencies and Tribes. By combining the Unit's capabilities in the areas of forest health surveys, trainings, and collaborative research, the ODF Forest Health staff aim to ensure healthy forests for decades to come by assisting private forest landowners and others in the management goal of productive and sustainable forestry in the Pacific Northwest. The results of this work are presented annually to the Board. Highlights pulled from the more detailed 5c attachments (1, 2, and 3) are as follows:

- In 2018, the ODF Forest Health Unit detected over 675,000 acres with tree mortality and other damage during the statewide aerial survey, which is below the 10-year average of approximately 750,000 acres.
- Sudden oak death (*Phytophthora ramorum* or SOD) continued to intensify and spread in Curry County. In 2018, 48 new infestations were detected at or beyond the GIA (generally infested area). The GIA now covers 89 square miles of disease establishment and intensification within the quarantine area; approximately 14 miles north-south and nine miles east-west.
- In 2018, ODA staff detected 27 gypsy moths (*Lymantria dispar dispar*) in and around two apartment complexes in Benton County/Corvallis. These detections resulted in an ODA-led gypsy moth eradication that occurred in May, 2019.

- Invasive species cost the U.S. economy over $120 billion dollars per year and are the second leading cause of species extinctions worldwide. From 2016-2018, ODF led an effort to improve upon early detection methods. During the ground survey, new trapping technology in insect pheromone trapping was tested at 12 sites along a 165-mile segment of the Columbia River corridor from Astoria to The Dalles. Four exotic species, previously unknown to occur in Oregon or the Pacific Northwest, have been detected in the samples.
- Invasive forest plants, such as Scotch broom and Himalayan blackberry, are major reforestation pests in Oregon. ODF Forest Health surveyed nearly 400,000 acres in Curry County for the presence of the forest weed, gorse. Orange hawkweed (*Hieracium aurantiacum*), classified as a Class A noxious weed, was initially detected in two small populations at a single site in Clatsop State Forest in August 2017. ODF treated the site in June 2018 and conducted follow-up surveys in the summer of 2019.
- The swiss needle cast (SNC) survey, a native foliage disease, is now flown biannually. The last survey in 2018 (supported by the OSU Swiss Needle Cast Cooperative) covered 3.8 million acres and detected approximately 420,300 acres impacted, a slight decrease from the previous two years. Growth loss due to SNC in Oregon is estimated at more than 190 million board feet per year.

Federal Forest Restoration. In 2013, the State Legislature initiated ODF's Federal Forest Restoration Program (FFRP) that was designed in response to the Board's Federal Forest Subcommittee with the stated objective to increase the pace, scale and quality of restoration and resilience on Oregon's federal forests. In 2017, the Legislature made this program permanent at ODF with a biennial investment of $3 million. In April 2016, Governor Brown signed a Master Good Neighbor Agreement (GNA) with the US Forest Service. FFRP staff has developed Supplemental Project Agreements (SPAs) to contract and implement restoration projects. Highlights of the GNA program (see 5d attachment 1) of work include:

- 16 timber-removal projects with an estimated volume of 30 million board feet. An additional 8 timber-removal projects are currently in development for ODF to administer.
    - 6 of these projects have been awarded by ODF to timber purchasers.
- $3.4 million of service-related restoration work, primarily including non-commercial thinning and timber sale layout
    - As reported by EWP in the spring, 16 activities have been completed, including 1,081 acres treated for fuel reduction and 5,221 acres of unit layout (to be implemented by contractors)
- 3,100 acres of completed environmental analysis for future projects using various Categorical Exclusions to the National Environmental Policy Act

Since inception, ODF has contracted third-party reporting and monitoring work to the Ecosystem Workforce Program (EWP), housed within the Institute for a Sustainable Environment at the University of Oregon. In a recent publication (see 5d attachment 2), the EWP reports that FFRP investments have:

- Generated 40 jobs and contributed $3 million to Oregon's gross domestic product annually since 2013.

Forest Sector Employment and Economic Forecast. The Principal Economist will provide an overview of the Oregon Forest Product Sector using results from the *2019 Forest Report* from the Oregon Forest Resources Institute (see Consent Agenda Item B). This overview will include the most recent data pertaining to Employment and Wages in the forest sector as well as the relative importance of the forest sector to the state's economy. Finally, this presentation will discuss the 2018 Timber Harvest Report results, trends, and discuss the harvest forecast for the next biennium.

Western Oregon Streamside Protections Review Update. ODFs "RipStream" study was initiated in 2002 to evaluate the effectiveness of the Forest Practices Act (FPA) in protecting stream temperature and promoting streamside forest structure that provides necessary functions for fish and wildlife habitat. Previous work (e.g., reports, analysis, and peer-reviewed publications) focused on harvesting effects on stream temperature and shade, as well as meeting state water quality standards. Based on that work, small and medium fish-bearing streams were found to be insufficient in meeting the Protecting Cold Water criterion and rules were revised accordingly. The Oregon Board of Forestry (Board) directed ODF to continue work to address whether rules are effective in achieving goals for desired future conditions and large wood in the Coast Range, South Coast, Interior and Western Cascade regions (Western Oregon).

At the September 2018 Board meeting, the Private Forest Division's Monitoring Unit staff presented an overview of the Western Oregon Streamside Protections Review to the Board. Staff described the general approach to addressing the question of whether the FPA rules are effective in achieving desired future conditions (DFC) and large wood recruitment to streams. This approach included: 1) data analysis on RipStream vegetation and large wood data, 2) systematic review, and 3) exploration of modeling stand growth, mortality, regeneration, and large wood recruitment to streams. An overview of the progress on these three items are described in 5f attachment one. For each component of this study, we describe the work completed, timelines, and stakeholder and tribal engagement and outreach. The preliminary results of the RipStream data analysis are provided in 5f attachment two.

Preliminary Data Analysis Findings (small and medium type-F streams on private land):

- On average, riparian stands were 38 years old at time of pre-harvest data collection
- Most stands were generally conifer-dominated or mixed conifer-hardwood stands
- Most common species: Red alder (hardwood); Douglas-fir, western hemlock (conifer)
- Pre-harvest conditions (e.g., conifer basal area) determines the amount of RMA harvest
- Smaller diameter conifers (6-22") near the edge of the RMA were targeted for harvest
- Large diameter conifers and hardwoods (>36") were uncommon and not often harvested
- Site index assumptions for conifer species growing in riparian areas appear valid
- Further analysis (modeling) is appropriate for testing stand growth assumptions over time

Systematic Literature Review

A protocol has been drafted and an initial literature search on DFC has been completed by the OSU Institute for Natural Resources. Next steps: Outreach to and incorporation of stakeholder and tribal feedback on protocol and literature; drafting the systematic literature review. Final Literature Review: Summer 2020.

DFC and Large Wood Modeling

Given the timespan of the RipStream study, modeling is considered an appropriate approach to answering questions about achieving DFC into the future. A modeling proposal has been drafted and circulated for stakeholder review. The updated proposal was then used to conduct market research for work to be completed under contract or interagency agreement. A range of prices and timelines was received. Next steps: The Department is currently assessing its budget and options for moving the modeling forward in the contracting process. Modeling Contracting: TBD

RECOMMENDATION

No Board action is required or recommended.

NEXT STEPS

Discussion at the October Board Retreat.

ATTACHMENTS

5a (1) Oregon Forest Ecosystem Carbon Inventory: 2001-2016 – Executive Summary

5b (1) Current Climate Change Policy Direction and Business Practices within ODF Divisions

5c (1) 2018 Forest Health Report

5c (2) 2018 Forest Health Unit Update

5c (3) Forest Health Highlights in Oregon 2018

5d (1) Federal Forests Restoration Program (FFRP) and Good Neighbor Authority

5d (2) Monitoring Investments in Oregon's FFRP, FY 2014-2019

5f (1) Current Status of the Western Oregon Streamside Protections Review

5f (2) RipStream Data Analysis and Preliminary Results