

Forest Practices Implementation and Effectiveness Monitoring Update

This report summarizes work completed by ODF Private Forests Monitoring Unit personnel since the last Board of Forestry (Board) update in September 2015.

Implementation Monitoring

Forest Practices Act (FPA) Compliance Audit

Background

The Board was introduced to the Compliance Audit program in the September 2012 Monitoring Unit update¹. The department utilizes private contractors to collect audit data and uses that data to determine apparent compliance. The compliance audit provides statistically valid rates of compliance of the FPA for forestlands from which timber was harvested during the previous two years. The protocol and sampling process allows for reporting results at the statewide and FPA regional levels, by industrial, private non-industrial and other (e.g., county, state) ownerships, and by rule division. The department reports on FPA compliance as an annual Key Performance Measure for the Agency. The department presented the 2013 compliance audit report to the Board at the September 3, 2014, meeting². The department provided summary results from the 2014 audit to the Board at the September 2015 Board of Forestry meeting and has finalized a detailed report on the 2014 audit.

FPA Compliance Audit Process

The compliance audit evaluates a subset of rules based on information provided from field measurements made by contractors. The audited rules to date include road construction and maintenance, timber harvesting, some riparian management area measures, measures for small wetlands, and rules for operations near waters of the state. The 2014 Compliance Audit used the same protocols as the 2013 audit only differing in the sample-size of 100 notifications vs. 200 in 2013.

The sampling design involves random selection of notifications from the three FPA regions (Northwest, Eastern, and Southern Oregon Areas) and three landowner types (private industrial, private non-industrial, and other, which includes municipally owned, county and State Forests lands). Sampling is proportional to the number of notifications indicating some type of timber harvest.

¹ Oregon Department of Forestry. September 2012 Board of Forestry Meeting. Forest Practices Effectiveness Monitoring and Compliance Audit Update. Agenda Item 3.

http://www.oregon.gov/odf/Pages/board/BOF_090512_Meeting.aspx

² Oregon Department of Forestry, September 2014 Board of Forestry Meeting. Forest Practices Act Compliance Audit Results. Agenda Item 7.

http://www.oregon.gov/odf/BOARD/docs/2014_Sept/BOFSR_20140903_07.pdf

2015 Compliance Audit Activities –

No data was gathered in 2015. Field data collection for the 2014 study concluded in the 4th quarter of 2014, and funds were unavailable until the onset of a new biennium budget cycle in July 2015.

The Department responded to a request from a third party for data gathered during the 2014 audit regarding a single industrial landowner, who had voluntarily participated in the audit process. As a result, concerns regarding the potential for open distribution of Compliance Audit data arose among stakeholders. Forest landowners began to question the value of the ongoing audit effort without some assurance of confidentiality of the results. Without landowner participation, support, and access to sites where harvests have occurred, the Compliance Audit process would have been seriously compromised.

Therefore, much of the second and third quarter of 2015, was spent developing and implementing a process whereby landowners could participate and expect a confidential submission exemption to the Oregon Public Records Law. As a result, landowners' whose property was selected for study from the Notifications of Operation submitted during the period under study could specify, in writing, their expectation that information regarding their participation would be kept in confidence by the Department. The process reflects the belief that the public interest would suffer if the information could not be kept in confidence and in turn the audit could not be carried out absent permission from the landowners.

Stakeholders were consulted on the process and found it satisfactory, and once again the Department began requesting permission from landowners to access lands for assessing compliance with the FPA standards.

Landowners were contacted with requests for permission to access the lands, and by the end of 2015, the Department was poised to resume the sampling of recent timber harvest sites. Field work began near the end of first quarter 2016 and is ongoing.

During the months necessary to address landowner concerns for confidentiality, the Department continued in efforts to add value to the audit process, primarily through participation in training programs offered to forest industry personnel by the Association of Oregon Loggers and the Oregon Professional Loggers, Inc. In 2015, the Department participated in 56 separate training sessions statewide in conjunction with the Associated Oregon Loggers, with attendance from over 2800 persons. Audit findings where there were obvious successes and needs for improvement were featured in most of those trainings. ODF personnel also receive updates on Audit outcomes and processes through training (May 2016 Advanced FPA Training) and by joining Salem staff in review of sample sites in their respective areas.

Data from the compliance audit is of value to the landowners who participate in certification systems, such as the Sustainable Forestry Initiative, American Tree Farm System, and the Forest Stewardship Council, as it provides verification of compliance with the rules.

Field work is ongoing in 2016, and efforts are underway to ensure a seamless transition for data collection in 2017.

The current contract for data gathering will expire in 2018. FPA Compliance Monitoring will be a component of the Private Forests Division Monitoring Strategy and an annual audit of Forest Practices Compliance will continue to provide valuable information on a topic of interest.

Voluntary Measures in the Coast Range

The Oregon Plan for Salmon and Watersheds was developed to help recover salmon and improve watersheds throughout the state. This Plan emphasizes the importance of voluntary restoration efforts that benefit salmon. Since the establishment of the Plan, private forest landowners have voluntarily conducted thousands of restoration projects and contributed millions of dollars to salmon and watershed restoration. The Private Forests Monitoring Program, the Oregon Watershed Enhancement Board (OWEB) and the Oregon Forest Research Institute (OFRI) are conducting a collaborative study on reported voluntary measures on forestlands in the Oregon Coast Range.

The main objectives of the study are to:

- 1) Tell the success story of voluntary measures on forestlands in Oregon.
- 2) Identify barriers to the implementation and reporting of voluntary measures.
- 3) Describe voluntary measures that are most frequently implemented by forest landowners.

To accomplish objectives 1 and 3, a report is being prepared that summarizes voluntary measures reported by landowners to the Oregon Watershed Restoration Inventory (OWRI) database. OWRI is the primary repository for information on voluntary projects that were done in association with the Oregon Plan. To address objective 2, a survey was conducted in June 2016, that assessed forest landowner's understanding of voluntary measures and what they perceived as barriers to implementing and reporting voluntary projects.

The anticipated benefits of the study are:

- 1) Increased awareness and support of voluntary measures by forest landowners and stakeholder groups.
- 2) Improved access to technical assistance, reporting opportunities, financial and other assistance to help with implementing future restoration work by forest landowners.
- 3) Increased implementation and reporting of voluntary measures by forest landowners.

It is anticipated that work on the project will conclude during the fall of 2016.

Effectiveness Monitoring

RipStream Project

The main objective of the Riparian Function and Stream Temperature (RipStream) project is to evaluate the effectiveness of FPA forest practices rules and State Forests management strategies at

protecting stream temperatures within and immediately below harvest units and promoting desired riparian structure and function. Most of the focus to date, including the riparian rule analysis process, has been on the effectiveness of FPA and the State Forest Northwest Forest Management Plan (NWFMP) riparian protections for stream temperature. Stream temperature analyses are essentially complete, and are in different stages of preparation for publication. Analyses to address riparian structure and large wood recruitment questions remain to be completed. Completed work since the September 2015 Board meeting has largely focused on writing up the stream temperature predictive analysis and descriptive model of downstream temperature dynamics.

Accomplishments since the September 2015 presentation to the Board include:

- 1) Fulfilment of a cooperative agreement with Oregon State University for the development of a descriptive model of the downstream temperature dynamics and related stream characteristics observed in the RipStream data. A draft manuscript has been reviewed by ODF and the RipStream External Review Team. Principle Investigator: Dr. Ivan Arismendi, OSU Dept. of Fisheries and Wildlife. This manuscript is being prepared for publication with a target date in the second quarter of 2017.
- 2) Publication of a downstream temperature manuscript for publication in *Hydrological Processes*. The manuscript describes a physical basis for stream temperature change downstream of harvest, using RipStream data. Lead author - Dr. Lawrence (Mick) Davis of D3 Scientific (online 2015) (Attachment 2).
- 3) Completion of the stream temperature predictive model. Model development was assisted by statisticians from OSU and forest industry, RipStream external review team members, scientists from the U.S. Environmental Protection Agency, and others. The model was used to develop estimates of predicted temperature change that would result from different simulated harvest approaches and was previously shared with the Board as part of the riparian rule analysis (2015). Work has begun on writing the stream temperature predictive model analysis as a manuscript for publication. Principle Investigator – Dr. Jeremy Groom, OSU Dept. of Statistics (formerly Oregon Department of Forestry).
- 4) Acceptance (pending minor revisions) by the *Journal of the American Water Resources Association* of the manuscript on the Numeric Criteria temperature analysis. Principle Investigator – Dr. Jeremy Groom (formerly Oregon Department of Forestry).
- 5) A draft manuscript of the five-year post-harvest temperature analysis is near completion. The Board has been appraised of these findings at earlier meetings. Principle Investigator – Dr. Jeremy Groom (formerly Oregon Department of Forestry).
- 6) Initial project scoping for large wood recruitment and desired future conditions analyses. Principle Investigator(s) – Large wood recruitment: Dr. Mark Meleason (Oregon Department of Forestry). Desired future conditions: To be determined.

Work over the next year will include continued progress on temperature analysis publications, and preparation for full analysis of the riparian desired future condition and large wood recruitment as based on Ripstream data.

Trask Paired Watershed Study

The Trask paired watershed study takes a long term and multi-disciplinary approach to quantifying the effects of forest harvest on the physical, chemical and biological characteristics of small non-fish headwater streams. This is a collaborative effort between Oregon State University, Weyerhaeuser, Oregon Department of Forestry, Bureau of Land Management, United States Geological Survey, and US Forest Service. Initiated in 2006, the bulk of data collection will be completed by fall 2016. Along with the other cooperators, the State and Private Forests Divisions of ODF contribute funding, participate on the planning committee, and provide a range of support functions from general technical advice, provision of resources or field personnel, and data analysis review to acting as a principle investigator. A particular aspect of the Trask study receiving a significant amount of support from the Private Forests Division is a study of the effect of road construction on sediment levels in streams. In years past, ODF was in the lead for implementing data collection and the collection and processing of water samples under the leadership of former ODF-employee Dr. Jeremy Groom (now Oregon State University). This project is in the analysis phase and nearing completion with Dr. Ivan Arismendi (Oregon State University) as the Principle Investigator and includes several former or current ODF employees as co-authors (Dent, Groom and Meleason – see draft citation below). The goal is to submit this paper to Water Resources Research in Fall 2016:

Manuscript in progress: Arismendi, I., J.D. Groom, M. Reiter, S.L. Johnson, L. Dent, M. Meleason, A. Argerich and A. Skaugset. In review. Suspended sediment and turbidity after road construction and forest harvest in the streams of the Trask River watershed. Target Journal (Fall 2016) - *Water Resources Research*.

Water Quality Pesticide Management Team (WQPMT)

The Water Quality Pesticide Management Team (WQPMT) is comprised of state agencies responsible for water quality, pesticides and/or natural resource management in Oregon: Oregon Department of Agriculture (ODA), Oregon Department of Environmental Quality (DEQ), Oregon Health Authority, Oregon Watershed Enhancement Board, Oregon State University, and Oregon Department of Forestry. The team's work revolves around the Pesticide Management Plan, which was approved by the Environmental Protection Agency, with the main goal of reducing ground and surface water contamination from pesticides currently registered and used in Oregon. This approach aligns closely with FPA rules that direct the department to work with partners to conduct monitoring and evaluation of the chemical and other petroleum product rules, including placing a high priority on securing adequate resources to conduct monitoring.

One tool for completing this work is DEQ's Pesticide Stewardship Partnership, or PSP. Currently, there are nine PSP areas across Oregon. A PSP is a non-regulatory and collaborative approach that works with local partners to reduce contamination from current use pesticides. Three of the nine PSPs represent some amount of private forestland and one PSP area has a significant amount of private forestland. Part of ODF's role in the forested areas is to provide technical information on forest activity and connect stewardship foresters and forest landowners with the WQPMT.

Results of water quality data are evaluated based on the Pesticide Management Plan, which describes prioritizing education and outreach based on pesticide detection frequency and, using non-regulatory EPA benchmarks, pesticide concentration relative to benchmarks. Detections from forested areas are usually prioritized on the lower end of the scale with respect to detection frequency and concentration, where education and/or continued monitoring are the expected responses.

For 2015, water samples in each PSP area were collected based on input from the local partners; the team presented information about the PSP program at dozens of forums; conducted eight waste pesticide collection events across the state that removed thousands of pounds of unused pesticides (including older legacy pesticides such as DDT); and provided five technical assistance grants aimed at working with local partners and pesticide users to improve water quality.

Continued improvement in water quality was observed in 2015. Reductions from 83% in 2011 to 19% in 2015 in detections over the state water quality standard for an insecticide were observed in one PSP watershed. In another PSP watershed, detections and concentrations for two herbicides declined from several detections per year from 2009-2013 to a single detection in 2015. The WQPMT and local partners will be closely evaluating each PSP area over the coming year to develop short and long-term goals that will help focus future monitoring efforts. To help backfill the loss of other funds, ODF provided \$10,000 to help support activities under the WQPMT.

Implementation and Effectiveness Monitoring: Updating the Monitoring Strategy

The Private Forests' Monitoring Strategy³ has guided the Division's monitoring priorities since it was updated in 2002. The Strategy established a prioritized list of monitoring questions categorized by general issues and monitoring type (effectiveness, implementation, etc.). The questions were drawn from the previous monitoring strategy, Oregon Plan for Salmon and Watersheds Workplan, the Forest Practices Advisory Committee final report, and citizen and stakeholder group input in 1994 and 2000.

The Department developed a draft work plan for how to update the strategy, and the Board approved this work plan at their January 2015 meeting. Staff have gathered input from stakeholders and partner agencies on the suite of questions to consider in the strategy, and how to prioritize these questions. The final draft strategy will be presented in a separate agenda item at the November 2016 Board meeting.

Other Monitoring Information

Numerous personnel changes for the Monitoring Unit have occurred over the last year, including:

³ Oregon Department of Forestry - Forest Practices Monitoring Program Strategic Plan. April 2002.
<http://cms.oregon.gov/odf/privateforests/docs/monitoringstrategicplan.pdf>

- Forest Monitoring Technician Michael Thompson moved into a Stewardship Forester position, and was replaced by Jon Laine (formerly of the ODF Forest Health Unit).
- Terry Frueh became the Monitoring Coordinator, and his position as a NRS 3 Monitoring Specialist was filled by Daniel Olson (formerly NRS 2 Monitoring Specialist). The recruitment process to fill this position will begin this month.
- Monitoring Specialist John Hawksworth has been in a developmental position as an Information Specialist 4/GIS coordinator within Private Forests (his NRS 2 Monitoring Specialist position has not been backfilled).
- The Monitoring Unit accepted Kimberly Parrett as a volunteer to work on a paper summarizing the science behind the November 2015 Board decision on the Riparian Rule Analysis. ODF monitoring personnel will complete the draft paper completed by Ms. Parrett before her volunteer work ended in July 2015.

Unit personnel also:

- Represented the Department on the interagency water-monitoring group, Stream Team.
- Helped out with Riparian Rules Analysis and Rule Development, including:
 - Preparing Board material and analyses for the Board's November 2015 decision on prescription packages for the riparian rule analysis;
 - GIS analysis of the percent of landowners with at least 10% of their acreage additionally encumbered by new riparian rules (equity provisions);
- Gave talks at the 2015 National Society of American Foresters on the Compliance Audit and development of the Monitoring Strategy.