

## **STAFF REPORT**

Agenda Item No.:	2
Work Plan:	Private Forests
Topic:	Water Quality
Presentation Title:	Final information and decision support on riparian protection monitoring questions, methods, and timelines in eastern Oregon and Siskiyou geographic regions.
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### **SUMMARY**

This agenda item presents work completed since the January 2018 Board of Forestry (Board) meeting. Methods and timelines to address the previously-presented monitoring question alternatives are presented as well as the tally of potentially-relevant studies, a discussion of tradeoffs, and department options placed in the context of monitoring question alternatives.

### **CONTEXT**

The Board's 2011 *Forestry Program for Oregon* supports an effective, science-based, and adaptive Oregon Forest Practices Act (FPA) as a cornerstone of forest resource protection on private lands in Oregon (Objective A.2). The discussion of Goal A recognizes that the FPA includes a set of best management practices designed to ensure that forest operations would meet state water quality standards adopted under the federal Clean Water Act. Similarly, the discussion of Goal D recognizes that the FPA is designed to protect soil and water resources, including aquatic and wildlife habitat (Objective D.6). The Board's guiding principles and philosophies includes a commitment to continuous learning, evaluating and appropriately adjusting forest management policies and programs based upon ongoing monitoring, assessment, and research (Value Statement 11).

### **BACKGROUND**

The Board and the Oregon Department of Forestry (ODF) are committed to using adaptive management in reviewing (and revising, if necessary) the FPA using available science, monitoring and research. In November 2015, the Board of Forestry increased streamside protection standards in most of western Oregon. The Siskiyou region was not included because of different vegetative and geologic conditions, and the Eastern Oregon regions were out of the scope of the science used in the review.

At the November 2016 meeting, the Board finalized the Private Forest Division's Monitoring Strategy. In conversing about the Strategy, the Board discussed the need to address riparian issues in the Siskiyou and Eastern Oregon regions. The Board directed the department to:

- Develop potential monitoring questions regarding streamside protections in the Siskiyou and eastern Oregon regions;
- Estimate the timeline and resources to address questions for various methods of study; and,
- Work with stakeholders to inform the department and the Board.

The Board directed the department to bring this information to the Board in July of 2017. At that meeting, staff presented an update of the work to date on: the project charter, stakeholder survey and comments, geographic information systems (GIS) analysis of stream type and size by geographic region, voluntary measures projects, harvest types, compilation of existing science, and study methods. The department also outlined a decision-making framework.

At the January 2018 Board meeting, staff presented the results of the input (survey and written comments) from potentially-interested parties, along with a coarse assessment of the staff resources, time, and confidence in results of approaching a monitoring question with different methods (e.g., literature review, light field study). The input was used to develop six monitoring question alternatives. These alternatives were paired with the aforementioned GIS data to inform the upcoming Board decisions.

## **ANALYSIS**

### Informational Analyses

The Board directed the department to provide information to assist their decision on defining one or more monitoring questions focused on riparian rule protections in eastern Oregon and Siskiyou. The Board also requested information on proposed methods and timelines to answer the questions. The department has completed various analyses that provide this information (Table 1).

Based on this information, the department developed monitoring question alternatives, along with GIS data on acreages of ownership, stream miles, and number of harvests by ownership and harvest type (Attachment 1).

**Table 1.** Summary of information and analyses for the Board. Information in **bold** is described in more detail in the body of this document and the attachment.

<u>Title</u>	<u>Information type</u>	<u>When presented to Board of Forestry</u>
Survey	Public opinion	July 2017, January 2018
Written comments	Public opinion	January 2018
Geographic Information Systems (GIS)	Landscape	July 2017, January 2018
Voluntary Measures	Land management	July 2017, January 2018
Harvest type	Land management	January 2018
<b>Tally of Existing Science</b>	Science	<b>March 2018</b>
Study Method, <b>Timelines, and Cost</b>	Conceptual review approaches  <b>Estimated timelines and cost by question, method</b>	January 2018  <b>March 2018</b>

Tally of existing scientific data

Almost 1400 studies were located and assessed for inclusion as potentially relevant to all of the monitoring question alternatives, with 91 studies meeting all the inclusion criteria (Attachment 1, Table A.1, Appendix A). Water quality topics had the most potentially-relevant studies (e.g., 29 peer reviewed, versus 13 for that of the large wood topic). Peer reviewed had the most studies (50), with Total Maximum Daily Load (TMDL) the fewest (9). Finally, there were 3 status and trend databases (water quality, fish, and aquatic and terrestrial habitat) that may be useful. The pertinence of this information relative to the monitoring question alternatives is discussed in Attachment 1, subsection 3.D.2.

Study duration and costs

We refined information on staff resources and study durations, presented in January 2018, for conducting field studies of two intensities (light and intensive) for each monitoring question alternative (Attachment 1, Figure 3). We also added cost estimates for these approaches and questions. Increasing geographic scope and number of topics for a question increases the cost and time to complete the study. Light field studies range in cost from \$0.3 million to \$ 0.6 million, requiring an average of two to four and a half years. In contrast, intensive field studies range in cost from \$2 million to \$10 million, requiring an average of 7 to 15 years. Note that the more expensive projects would likely require the department to seek additional funding. Additionally, staff resources would be 1-2 full time equivalents (FTE) and 1-4 FTE for light and intensive field studies, respectively, for each monitoring question alternative.

Attachment 1 (section 3.D) compares monitoring question alternatives for the following information:

- GIS data: acres of ownership, stream miles, and number and types of harvests;
- The number of potentially-relevant studies; and,
- The time and cost for addressing a question through either light or intensive field studies.

#### Department options

The aforementioned considerations focus on monitoring question alternatives presented to the Board at the January 2018 meeting. At that meeting, several Board members requested the department make a recommendation about which course to pursue. Given this request, we used our established methods for deciding on which monitoring question to pursue. First, we used the Monitoring Strategy (approved by the Board in November 2016; ODF, 2016) that forms a central, organizing framework for deciding on the work of the Monitoring Unit. Preference is given to high-priority questions from the Strategy to determine new projects. Another aspect of deciding on new projects is the Unit staff capacity, described in the Strategy, as the ability to undertake one large, or two medium, or three small projects. Finally, we note that the Strategy is a living document that is revisited as new issues arise, with a structured process to consider addressing them (p. 27, Section 4.C of the Strategy). This process resulted in the following options:

**Option 1 - Implement 2016 Monitoring Strategy Alternative:** *Rely on adopted Monitoring Strategy for prioritizing department monitoring actions. Do not conduct a study to assess the effectiveness of Forest Practice Act streamside protection rules in the eastern Oregon and Siskiyou geographic region(s) at this time.*

This option is based on the initial discussion of the monitoring strategy and priority projects, presented to the Board in November 2016. This option represents the right mix of project sizes and complexity relative to available resources (for more details on this, see Attachment 1, section 4.A). Following the Strategy, we would significantly expand the compliance audit, complete the remaining RipStream analyses, and continue with core business. Upon completion of the first two work products, we would initiate some form of riparian monitoring study in eastern Oregon-Siskiyou regions.

**Option 2 – Modified Siskiyou Alternative:** *Conduct a study to assess the effectiveness of FPA streamside protection rules in the Siskiyou geographic region on Type F stream types and size medium and small streams to meet the purpose and goal for healthy streamside forests (desired future condition, “DFC”), and water protection relating to stream temperature and shade. Utilize research and monitoring data from peer-reviewed scientific articles, unpublished “gray” or “white” literature, TMDL analyses by Oregon Department of Environmental Quality, watershed council data or analyses, status and trend data on fish populations, streamside and fish habitat data, and voluntary measures on non-federal lands to inform the monitoring study. Begin with a literature review of this information.*

This alternative strikes a balance between Board direction to monitor the effectiveness of riparian protections in eastern Oregon and Siskiyou, input from stakeholders, and department priorities and resources. This alternative accommodates existing workload on RipStream, and a

light expansion of the compliance audit. It also makes efficient use of existing science and monitoring information. The literature review (or, systematic review if sufficient, high-quality evidence exists) will inform the direction and scope of any future work. Additionally, it addresses a high-priority effectiveness question from the Monitoring Strategy (Attachment 1).

This option also addresses key stakeholder concerns about water quality (stream temperature) and healthy forests (i.e., achieving DFC with active management), and contains the context relative to potential impacts to fish. More specifically, we propose to collaborate with appropriate partner agencies (e.g., ODFW) to characterize fish status and trend in the Siskiyou geographic region, and thereby provide the context of fish use.

This option fits between the Siskiyou and Domestic alternatives discussed at the January 2018 Board meeting in terms of monitoring topics, cost, and complexity. ODF would complete the literature review for this option, and bring information back to the Board in 2019.

As described in Section 4.B.6 (“Respond to Study Findings”) of the 2016 Monitoring Strategy, the Board would use the results of the review to decide if:

- The FPA or rules are working as designed.
- FPA or rules may not meet stated objectives.
- Additional study is warranted.
- No action is needed.

Attachment 1, section 4.B compares these options with the other questions in the context of the range of GIS data (acres of ownership and stream miles, number and type of harvests), tally of science, and time and cost to complete a study (Figure 4).

### **RECOMMENDATION**

The department recommends the Board direct the department to implement Option 2 (Modified Siskiyou Alternative).

### **NEXT STEPS**

The department will implement the Board’s direction and report back to the Board at the regular September Monitoring Unit update.

### **ATTACHMENTS**

1. Information for Decisions: Analyses, Considerations, and Department Options