

Draft decision-making framework: Review of Eastern Oregon and Siskiyou riparian protections

I. Introduction

This document lays out a suite of information related to the decisions the Board will make for directing the department's work on the eastern Oregon and Siskiyou review of riparian protections, and proposes a draft framework to help guide the Board's decision-making process. This draft framework is intended to spur additional brainstorming on what would help the Board's decision making process, and thus by definition the draft framework is a work in progress. We have not yet solicited input from stakeholders or Board advisory committees regarding the framework, and they will likely have valuable input to help us improve it.

We start by delineating the decision elements for which the Board chose to be responsible. Then, we describe the components of the any rule review, including the steps in a review and potential responses to its results. Finally, we lay out a framework for their decisions, which includes:

- Context: the Board's November 2016 direction for the department
- Context: the legal and policy foundation on which to conduct reviews
- Informational analyses to be completed by the department
- Additional considerations; and,
- A framework that helps the Board link the previous bullet points in order to make a suite of decisions.

The last part of this document provides examples of previous reviews that illustrate what the Board's decisions could look like.

Board decision elements

The Board will eventually decide on:

- Which monitoring issue(s) to address
- Where to focus the questions (including stream type(s) and size(s), and which georegion(s))
- What level of rigor with which to address the monitoring issue(s)

II. Steps in review process

The steps in the review process are laid out in Figure 1, and described in the subsequent narrative.

What are the steps in a review?

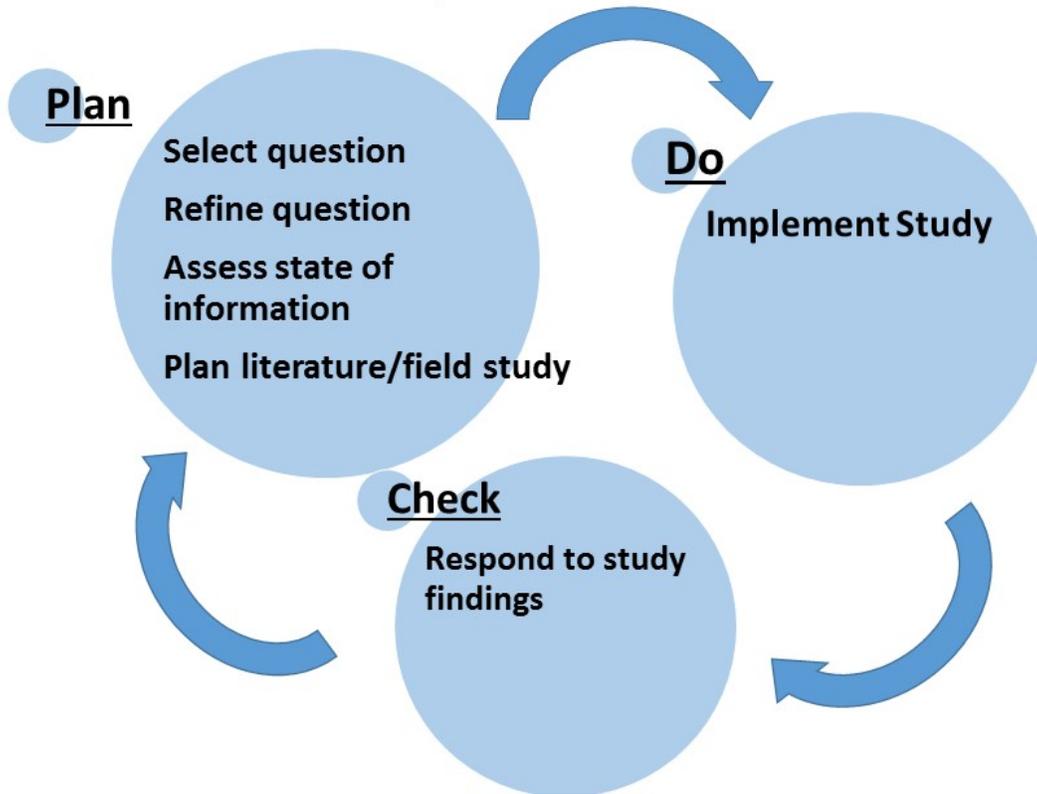


Figure 1. Steps in the adaptive management cycle for doing a rule review.

Plan: *Select monitoring question to address*

The Monitoring Program, as part of the Private Forests Division, relies on work prioritization efforts conducted through the Fiscal Year Annual Operation Plan (FYOP) process. This process is intended to describe how the Private Forest Division will meet the objectives of the Oregon Department of Forestry by ensuring alignment with the overall agency strategic work and focusing on agency initiatives and projects for the upcoming fiscal year. The FYOP is reviewed and updated on an as-needed basis with an annual review of fiscal year priorities by central office and field staff, leadership, and key stakeholders.

Plan: *Refine monitoring question*

For questions in the Monitoring Strategy to be addressed in an effective and efficient manner, they need refinement before they can be addressed via a study. The work of refining a question may include any of the following steps:

- Ensuring the question is clearly defined, both so that it can be addressed in a study or literature review, and so that it properly reflects the concern that needs to be addressed.

For example, a question's direct link to policy, statute, and/or rule may need to be clearly embodied in the question.

- Consultation with disciplinary experts who can provide insight on both the state of the information (particularly for studies in progress) related to a question, and what aspects of a question can be studied given existing knowledge and technology.
- Reviewing relevant literature to assess the state of the information.

Plan: Assess state of information

The state of the information refers to what has been studied or is known about a particular question. Assessing this state is a key step in addressing a question since this information helps to outline gaps in our knowledge, and may be helpful in refining a question. This process includes considering studies in progress and reading publications from relevant studies. Note that reviewing studies may require various intensities of assessment depending on the nature of the question. For example, if there is deemed to be a sufficient body of science based on an initial assessment of relevant literature, a systematic review (SR; i.e., an intensive, rigorous, inclusive literature review technique) may be used to answer the question. An SR could thereby obviate the need for a field study, and ODF could choose how to act on its findings (see below for subsection on responding to findings). Or, a less rigorous assessment may be used to guide development of a study plan.

Plan: Develop study plan

A study plan is necessary to guide study implementation, and applies to both field studies and systematic reviews. It incorporates many elements, including:

- Objectives of the study and the monitoring question to be addressed
- Clarification of the policy and scientific context, including appropriate metrics of either effectiveness (e.g., compared with reference sites or regulatory standards) or implementation (e.g., compliance rates on a rule or unit basis)
- Information on study sites
- Study design
- Methods for collecting and analyzing data, quality assurance/quality control
- Data storage, security, public access to results, and project documentation
- Budget
- Timelines, products, reports

The monitoring program draws on established field measurement techniques and the systematic review (SR) method. Appropriate monitoring parameters must be selected in order to evaluate effectiveness and implementation of management strategies in protecting resources. However, selecting the correct monitoring parameter is challenging. A given parameter may be affected by multiple activities and a given resource is affected by multiple parameters. Therefore, it is important to select monitoring parameters that have a strong link to management, are sensitive to change, and are directly related to the resource in question. Examples of recently used protocols

(e.g. stream temperature, shade, riparian structure, landslides monitoring protocols) are available from the department on request.

Another aspect of developing a study plan is determining the level of effort required. For effectiveness questions, if there are sufficient, relevant scientific analyses, an SR may be warranted. SRs require a detailed protocol for how to conduct the review. For perspective, the riparian SR (Czarnomski *et al.*, 2013) entailed approximately 10 months from refining the question to completing the paper.

Alternately, a field study may be warranted. Such studies can have vastly different intensities of study design, data collection, and analysis. On one extreme, the Riparian Function and Stream Temperature project (RipStream) was started in 2002, and analyses are ongoing as of summer 2017. To date, we have over 10 analyses either completed or underway from this study, a number of which resulted in published journal articles. On the other extreme are projects such as the leave tree pilot study (Weikel and Krahmer, 2006). It entailed approximately 1 season of field work at 5 harvest units, and had 1 technical report. A monitoring project of moderate complexity would roughly entail six months to a year to plan, 1-2 field seasons to complete, and six months to a year for analysis with an end product being a department technical report.

Do: Implement study plan

The Department's role in completing a study spans a range of possibilities. At one end of this range, ODF hires an external group to design, implement and analyze a study (e.g., Plissner *et al.*, 2015). This effort requires ODF to dedicate time to creating and managing the contract to ensure our needs are met. Another possibility is that ODF performs much of the work and hires out a portion of it (e.g., Czarnomski *et al.*, 2013). For example, ODF designed the study methods and analyses for the annual compliance audit, yet hired external contractors to collect the data (Clements *et al.*, 2014). In another example, ODF plays a cooperating role in study design and implementation on a large, multi-disciplinary project, with most of the work left to collaborators (e.g., Trask Paired Watershed Study). Finally, ODF can perform all the steps from study design to report writing (e.g., Weikel and Krahmer, 2006). The decisions of how a study is implemented, and by whom, rests with Private Forests management, in consultation with the Monitoring Unit, ODF Executive staff, stakeholders, and the Board. In some cases, it may be directed by the Legislature, as was the case with the use of contractors in the ODF compliance audit.

Check: Respond to study findings

Responses to study findings by the Department and the Board vary widely, and can focus on different organizational functions. In the policy realm, findings might indicate:

- The Forest Practices Act (FPA) or rules are working as designed
- There is opportunity to relax or rescind FPA rules
- FPA rules may not meet stated objectives

Rule change decisions are ultimately the purview of the Board of Forestry and must follow the procedures and evidentiary criteria as established under statute (ORS 527.714). Rule changes can involve both decreases in protective measures (e.g., with the pending bald eagle rules), or increases in protective measures (e.g., with the new west-side riparian rule). Study findings could

also lead to an effort to address an issue via voluntary measures and an associated outreach and education campaign. No action may be necessary as well: the ODF Compliance Audit (Clements *et al.*, 2014) illustrates high compliance with many rules examined. The Audit also illuminates several rules for which there is low compliance. In response to this latter finding, ODF and its partners have designed training programs to increase compliance. ODF also assessed implementation of voluntary measures, which might lead to an outreach and education program, in collaboration with partners. Finally, it may be possible that study results are inconclusive, or the Board may find these results lack sufficient rigor, and therefore additional study is warranted.

III. Decision-making framework

This is a draft framework and is intended to start a conversation about how best to support the Board in their selection of a question, geography, and level of study rigor. We have not sought input from stakeholders yet in this process, and thus this attachment is also designed to initiate conversations with stakeholders. Finally, it is important to note that this is new territory for all of us: at least in the last 10-15 years, the Board has not previously selected particular monitoring questions, their geographic scope, nor level of rigor.

Context: November 2016 Board direction

The Oregon Board of Forestry (Board) and the Department of Forestry are committed to using adaptive management in reviewing (and revising, if necessary) the Forest Practices Act using available science, monitoring and research. In November 2015, the Board of Forestry increased streamside protection standards in western Oregon. The Siskiyou region was not included because of different vegetative and geologic conditions, and the Eastern Oregon region was 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 issues in the Siskiyou and Eastern Oregon regions. The Board decided to direct the Department to:

- Develop potential questions regarding streamside protections in the Siskiyou and Eastern Oregon regions;
- Estimate the timeline and resources to address questions for various levels of study rigor; and,
- Work with stakeholders to inform the Department and the Board.

Context: Legal and policy framework for rule review

Rule reviews are both a longstanding policy of the Board, and codified in rules and statutes. The Board of Forestry's (Board) 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). There are also various rules stipulating

monitoring (e.g., for water protection measures [OAR 629-635-0110]). Finally, there are statutes that mandate monitoring (e.g., for forest resources and water quality [ORS527.710(7)]).

Informational analyses for the Board

The department is completing several analyses that are designed to aid the Board's decision-making process. These analyses are detailed in Attachment 1.

Constraints, challenges, and opportunities

It is helpful for the Board to consider additional information in their decision-making process. While we have not completed the compilation of all this information, we present an initial brainstorm on this information, while also acknowledging that more information will likely arise as discussions (within the department, with stakeholders, and amongst Board members) proceed.

One consideration is that available resources to conduct a study may be more limited than in the past. At the time of writing this document, the 2017-2019 biennium budget for ODF has not been set. However, the Governor's Recommended Budget calls for significant decreases in the monitoring program, both in staff and money available to contract out work. If the budget is too severely reduced to proceed with a large study (e.g., of the scope of RipStream), we would either not be able to complete it, or we would need to decide from what other programs to remove funding. However, the Board may decide that to make a determination of the effectiveness of rules, they would require a high level of study rigor – beyond what the department could afford to achieve.

Another challenge is that the georegions under consideration provide a wide array of forest types. This wide array is due to a multitude of differences, including climate (e.g., are they low elevation, rain dominated or high elevation snow-dominated hydrologies?), geography (e.g., the steepness of the terrain), and latitude (from the border of California near Ashland to the border of Washington near Wallowa). Thus, there is likely limited scope of inference between the different areas.

An additional consideration is cultural differences. In many places in rural, eastern and southern Oregon, communities are more independent and less embracing of government rules than in e.g., northwestern Oregon. These differences are compounded by the fact that many of the forest landowners do not generate much revenue from their forests (at least compared to their counterparts in northwestern Oregon). Rather, forest management is more a by-product of their ranching operations, and thus additional restrictions may have a relatively larger impact on their income compared with their counterparts in northwest Oregon. Given this cultural context, we assert that it is essential to continuously include both internal and external stakeholders in this process.

A final consideration is the priorities of sister agencies for our work. Their priorities point to particular issues for which they have more expertise than ODF. The department is gathering information on their priorities, both through the formal survey, as well as in conversations via e.g., the coordinated monitoring efforts such as Stream Team.

Linking the information

It is helpful to have a conceptual framework within which the Board can make decisions. One way to address this is to use the analogy of reforestation on a site (Figure 1). In reforestation, one needs to consider the particular site: What are the climate and soils? What is the elevation? These elements form the basis for subsequent decisions, and for this rule review, they are akin to both the Board’s November 2016 direction for the department, and the suite of policies, rules, and statutes within which the department works.

Next, one envisions a forest by asking themselves “What type of forest to grow? For what purposes? How will I manage the forest?” In this rule review, these questions are analogous to the informational analyses and additional considerations that help the Board make a decision. Finally, one selects the suite of species and nursery stock to help achieve the goals of the forest, in the context of the site characteristics (climate, aspect, soils, etc). This step is akin to the Board making the decisions outlined at the beginning of this document.

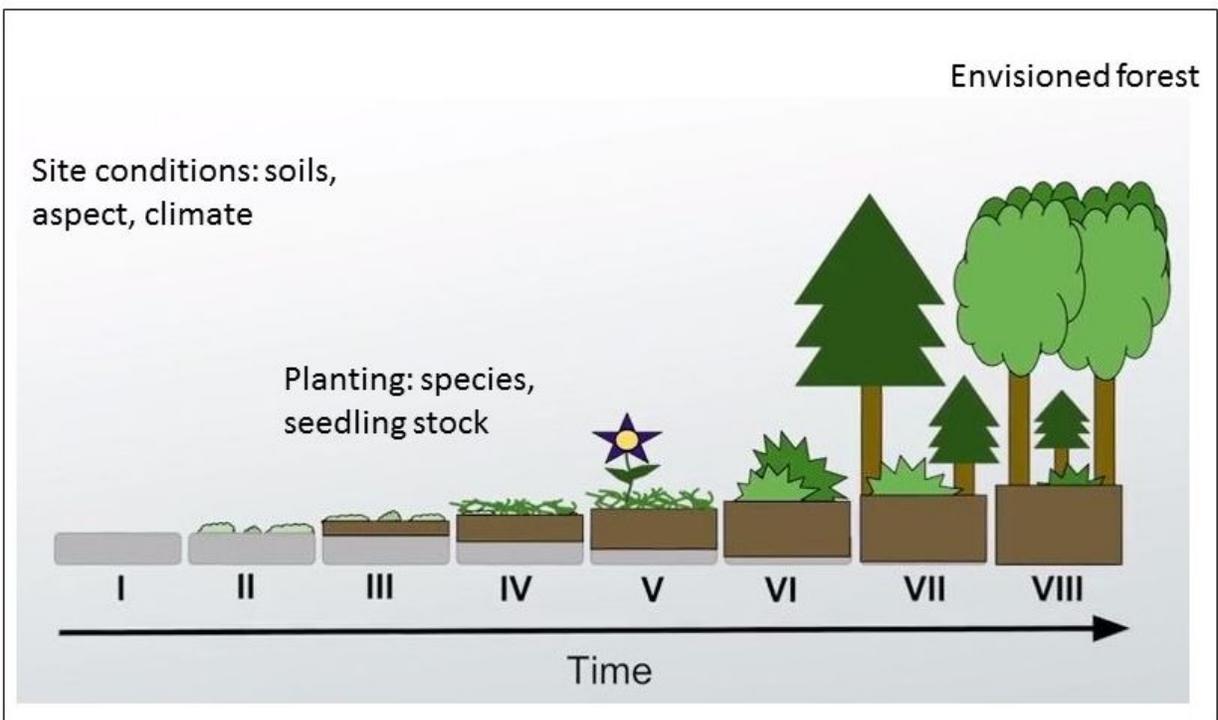


Figure 1. Conceptual framework for Board decisions regarding rule review in eastern Oregon and Siskiyou.

To help transform the conceptual framework into a usable structure, Table 1 outlines a connected set of information useful for thinking through the various components of each of the Board decisions.

Table 1. Linkage of information to potential outcomes for Board decisions.

Decision element	Considerations	Anticipated outcomes	Decision Range		
Issue					
Stream size					
Stream type					
Geographic regions					
Study rigor					

IV. Example Decisions

Table 2 outlines several examples of previous decisions that have been made that illustrate what the Board’s decisions could look like.

Table 2. Examples of ODF work that illustrate the types of selections the Board will make

Study¹	Topic²	Streams (size, type)	Georegions³	Rigor	Time to complete
RipStream	WQ, LW, DFC	Small & medium Type F	CR, I	High	~14-17 years
Riparian function	WQ, DFC, LW	Small, Medium, Large Type F	I, CR, EC, BM, Sisk, WC	Medium	2-3 years
Stream temp. systematic review	WQ	Small & medium Type F	I, CR, SC, Sisk, WC	Medium	1 year

¹References: Ripstream (ODF, 2002); Riparian Function (Dent, 2001); Stream temperature Systematic Review (Czarnomski *et al.*, 2013)

²These topics roughly correspond to those outlined as Board decisions: WQ is water quality; LW is large wood; DFC is desired future condition (i.e., healthy riparian forests).

³BM is Blue Mountains; CR is Coast Range; EC is Eastern Cascade; I is Interior; Sisk is Siskiyou; SC is South Coast; and WC is Western Cascade.

V. References

- Clements, P, J Groom, J Hawksworth. 2014. Forest Practices Compliance Audit 2013.
- Czarnomski, N, H Hale, WT Frueh, M Allen, J Groom. 2013. Effectiveness of riparian buffers at protecting stream temperature and shade in Pacific Northwest Forests: a systematic review. Report prepared by Environmental Science Associates, Portland, OR, and Nutter and Associates, Athens, GA, for Oregon Dept. of Forestry, Salem, OR. 258 pp.
- Dent, L. 2001. Harvest Effects on Riparian Function Under Current Oregon Forest Practice Rules. ODF Forest Practices Monitoring Program Technical Report #12.
- ODF. 2002. Study approach to: Riparian Function and Stream Temperature: Effectiveness of Oregon Department of Forestry's Protection Rules and Strategies; ODF Forest Practices and State Forests.
- Plissner, JH, BA Cooper, RH Day, PM Sanzenbacher, AE Burger, MG Raphael. 2015. A review of Marbled Murrelet research related to nesting habitat use and nest success. Prepared for: Oregon Department of Forestry, Salem, Oregon by ABR, Inc.—Environmental Research & Services Forest Grove, Oregon. 420 pp.
- Weikel, J and R Krahrmer. 2006. *Compliance with Leave Tree and Downed Wood Forest Practices Act Regulations: Results from Pilot Study*. Oregon Department of Forestry Forest Practices Monitoring Section Technical Report #18.