



Eastern Oregon Steep Slopes: Preliminary Literature Review and Scoping Proposal

Independent Research and Science Team
Institute for Natural Resources - OSU

Scoping Proposal

Submitted to

The Adaptive Management Program Committee

IMAGE IS A PLACEHOLDER

31 December 2024

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Prepared by

The Institute for Natural Resources

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Photo by **NAME**

Acknowledgments

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Disclaimer

This scoping proposal is submitted to the Adaptive Management Committee as a requirement of the Oregon Department of Forestry Adaptive Management Program rules ([Chapter 629, Division 603](#)).

The contents of this report reflect the views of the Independent Research and Science Team (IRST) that is solely responsible for the facts and accuracy of the material presented. This scoping proposal does not constitute a standard, specification, or regulation.

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Executive Summary

1. Introduction

1.1 Background and Project Purpose

The IRST was established via SB 1501 as part of the Oregon Department of Forestry's [Adaptive Management Program](#). The IRST supports the work of the Adaptive Management Program Committee (AMPC) by responding to AMPC-developed research questions packages. As per rule, and in consultation with the AMPC, the IRST refines the preliminary research questions into finalized research questions. The IRST then works to develop scoping proposal(s) for how to address the finalized research questions. The proposal(s) need(s) to include:

- A literature review that specifies the need for or the type of monitoring, research, commissioned studies, or other means of scientific inquiry necessary to answer the finalized research question mentioned in #1;
- A preliminary estimate of the budget for each year of the research, and a timeline to complete the research project with specific deliverables; and,
- A preliminary description of research project requirements, scope of work including an estimate of the timeline and key milestones, and an estimate of the degree to which knowledge may be improved if the research proposal is implemented.

The AMPC submitted preliminary research questions pertaining ([Appendix A](#)) to east of the crest of the Cascades¹ in Oregon and were asked to be answered via literature reviews. In addition to an overview of the literature, the review should provide an assessment of how robust the conclusions from the literature are and where there may be need for additional research.

- Overarching Question: What impacts do hillslope processes have on the covered species in the draft HCP and their habitats in Eastern Oregon?
- Primary Focus: What does the literature say about upslope initiated shallow rapid slides and how timber harvesting may impact these in Eastern Oregon environments?
- Secondary Focus: Are there hillslope processes other than upslope initiated shallow rapid slides that may affect covered species within the draft HCP and are these processes changed by forest practices?

1.2 Approach

1.3 Organization of report

¹ Note: ODF maintains a regulatory GIS layer of the FPA delineation between eastern and western Oregon.

2. Initial Literature Review

2.1 Introduction

2.2 Methods

2.3 Findings

Normal or Body Text

Overarching question: What impacts do hillslope processes have on the covered species in the draft HCP and their habitats in Eastern Oregon?

Primary focus: What does the literature say about upslope initiated shallow rapid slides and how timber harvesting may impact these in Eastern Oregon environments?

Secondary focus: Are there hillslope processes other than upslope initiated shallow rapid slides that may affect covered species within the draft HCP and are these processes changed by forest practices?

2.4 Summary

3. Scoping Proposal(s)

3.1 Introduction

NOTE: Sections 3.2 and 3.3 are two different options for the scoping proposal

3.2 Scoping proposal: Section organization option 1

NOTE: This scoping proposal is organized based on CMER's organization (see slide 17 in last month's IRST meeting [timeline and tasks presentation](#).)

Literature review

Study/Project objectives

Problem statement

Project summary

Project execution and schedule

Anticipated outcomes/deliverables

Estimated timeline, effort, and costs

Table X: Estimated timeline, effort, and costs once a notice of award has been given to a researcher/research team.

Task	Research Team	OSU/INR
Administrative Start up (i.e., contracting, etc.)		8-12 weeks
Study/Project		
Task 1:		
Task 2:		
Task 3:		
Task 4: Reports		

Administrative closing	45 days
Total	

3.3 Scoping proposal 2: Section organization option 2

NOTE: This is scoping proposal is organized based on rule.

Literature review

Scope of work

Knowledge contribution

Timeline and key milestones

Project execution and schedule

Budget

Table X: Summary of estimated timeline, effort, and costs once a notice of award has been given to a researcher/research team.

Task	Research Team	OSU/INR
Administrative Start up (i.e., contracting, etc.)		8-12 weeks
Study/Project		
Task 1:		
Task 2:		
Task 3:		
Task 4: Reports		
Administrative closing		45 days
Total		

4. Summary

4.1 Overview of eastern Oregon steep slopes

Table X: Estimated total time and budget for eastern Oregon steep slopes.

Task	Budget total	Total time
Scoping proposal 1		
Scoping proposal 2		
Scoping proposal 3		
Total		

References

Appendix A

AMPC Research Questions Package

Research question(s) package for the research topic: Literature review for eastern Oregon steep slopes

This document provides the following Adaptive Management Program elements from the Adaptive Management Program Committee (AMPC) regarding eastern Oregon steep slopes research:

The preliminary research questions the AMPC developed to guide the literature review; and,

Contextual information for these questions, as required in rule². This information clarifies the basis for these questions, and what additional information the AMPC would like to see from the Independent Research and Science Team (IRST).

Dear Members of the IRST,

Below you will find research questions modeled after language from the Private Forest Accord Report Section 3.3.8, regarding hillslope processes in Eastern Oregon and their impacts on covered species in the draft HCP. This specific research question package is a request for literature review, making it somewhat unique.

Process summary:

- Developing Research Proposals
- The complete process is found in rule³.
- Refine preliminary research questions into final research questions.
- Develop research proposals for each question⁴.
- Within 45 days of receiving this document, please provide an estimate of the time you will need to complete #2⁵.

Next steps after IRST scoping proposals: Research agenda, implementation, reporting

In summary, the next steps in the Adaptive Management Program process are:

The AMPC completes preliminary research questions for another AMPC priority research topic (amphibians).

² Oregon Administrative Rule (OAR) 629-603-0200(3)(a)

³ OAR 629-603-0200

⁴ OAR 629-603-0200 (4)(c)(A)

⁵ Per OAR 629-603-0200(4)(a)

The IRST will complete similar scoping proposal(s) (outlined above) for these questions.

The AMPC will consider all of these scoping proposals in developing a complete research agenda⁶.

The IRST will implement the research agenda⁷, then report to this work to Oregon Board of Forestry (Board) and the AMPC⁸. The AMPC will report alternative options to the Board for the Board's decisions⁹.

Closing

The AMPC looks forward to working with you, both in the long term, and on this particular scoping proposal. If you have any questions, please reach out to Oregon Department of Forestry's Adaptive Management Program Coordinator, Emily Martin at Emily.J.Martin@ODF.Oregon.gov or 503.302.3696.

Sincerely,

Members of the AMPC

⁶ OAR 629-603-0200(5)

⁷ OAR 629-603-0200(6)

⁸ OAR 629-603-0200(7)

⁹ OAR 629-603-0200(8)

A. Preliminary research questions

These preliminary research questions were approved by the AMPC as a substantial decision at their July 2, 2024 meeting. These questions apply east of the crest of the Cascades¹⁰ in Oregon and are to be answered via literature reviews. In addition to an overview of literature, the review should provide an assessment of how robust the conclusions from the literature are and where there may be need for additional research.

Overarching Question:

What impacts do hillslope processes have on the covered species in the draft HCP and their habitats in Eastern Oregon?

Primary Focus:

What does the literature say about upslope initiated shallow rapid slides and how timber harvesting may impact these in Eastern Oregon environments?

Secondary Focus:

Are there hillslope processes other than upslope initiated shallow rapid slides that may affect covered species within the draft HCP and are these processes changed by forest practices?

B. Research Question Package

The remainder of this document provides contextual information that details the context for the preliminary research questions, as required by rule¹¹. The following are organized per the elements in this rule.

B.1 The type of research¹²

AMPC response:

This research is of type OAR 629-603-0100(1)(a): *“Conduct effectiveness monitoring by assessing the degree to which the rules facilitating particular forest conditions and ecological processes achieve the biological goals and objectives. This assessment may include evaluation of cumulative effects.”*

B.2 The rule, biological goals and objectives (BGOs), or other issue being studied¹³

AMPC response: The BGOs¹⁴ are listed below with those applicable to these questions [in orange font]:

“Overarching Goal: Forest practices that support the survival and recovery of the covered species by providing clean, cool, connected, and complex habitats.

Goal 1: Provide clean water and substrate for the covered species.

– Objective 1.1 - Forest practices near streams minimize sediment delivery.

¹⁰ Note: ODF maintains a regulatory GIS layer of the FPA delineation between eastern and western Oregon.

¹¹ OAR 629-603-0200 (3)(a)

¹² OAR 629-603-0200(3)(a)(A)

¹³ OAR 629-603-0200(3)(a)(B)

¹⁴ The most recent version of the BGOs is in the Dec. 2022 draft HCP. The BGOs will be finalized within the HCP due Dec. 31, 2027.

- *Objective 1.2 – Slope Retention Areas reduce episodic sediment delivery to fish-bearing streams.*
- *Objective 1.3 – Road runoff directly to streams is minimized.*
- *Objective 1.4 – Roads are not a significant source of episodic sediment delivery to streams.*

Goal 2: Shade and watershed processes controlling stream temperature provide cool water compatible with the needs of the covered species.

- *Objective 2.1 – Forest practices maintain stream shade sufficient to support desired cool water temperatures on fish-bearing streams.*
- *Objective 2.2 – No-harvest RMAs maintain stream shade sufficient to support desired cool water temperatures for covered amphibians.*
- *Objective 2.3 – Forest practices near non-fish-bearing perennial streams do not notably increase water temperatures in fish-bearing streams.*

Goal 3: Stream network connectivity satisfies freshwater habitat needs for covered species.

- *Objective 3.1 – Road crossings on fish-bearing streams are passable by the covered fish species.*
- *Objective 3.2 – Forest practices maintain the hydrologic continuity of stream-associated wetlands and stream-adjacent seeps and springs to stream habitats.*
- *Objective 3.3 – Timber harvest maintains stream-associated connectivity in riparian areas along non-fish streams sufficient to support covered amphibians.*

Goal 4: Riparian areas function to support complex habitats for the covered species.

- *Objective 4.1 – Mature, complex riparian forests are fostered in no-harvest zones of RMAs.*
- *Objective 4.2 – Forest practices within tree retention areas of RMAs promote delivery of large wood.*
- *Objective 4.3 – Designated Debris Flow Traversal Areas function to deliver large wood to fish-bearing streams.*
- *Objective 4.4 – Forest practices maintain stream-associated wetlands and stream-adjacent seep and spring habitat for amphibians.”*

The issue being studied is outlined in the PFA Report direction, cited below under context of the research question.

B.3 The objective of the research¹⁵

AMPC response: The objective of this research is to inform deliberations about whether rules or other policies are needed regarding timber harvest and other forest practices on steep slopes in eastern Oregon to protect HCP-covered species.

B.4 A brief description of the context of the research question¹⁶

AMPC response: The following direction was provided in the PFA Report and provides the foundation for these research questions:

¹⁵ OAR 629-603-0200(3)(a)(C)

¹⁶ OAR 629-603-0200(3)(a)(D)

“CHAPTER 3. TIMBER HARVEST ON STEEP SLOPES

3.2 Goals

The goals of the PFA commitments regarding timber harvest on steep slopes is to provide large wood and sediment consistent with maintaining or improving aquatic habitat within large basins over long timeframes. (For the purposes of this Chapter, large basins are those of a size equivalent to those supporting independent populations of Oregon coastal coho salmon. In modeling to support the PFA, these are USGS HUC 4th Field [8-digit] basins). To accomplish this, sediment sources and debris flow runout paths will be identified and a subset of these will be managed during timber harvest activities to retain trees and other vegetation. These actions, together with other HCP commitments, are intended to provide high-quality habitat to support recovery and long-term conservation of the species covered by this HCP on private forestlands.

3.2.1 Objectives

- *Aligned with the overall goals for timber harvest on steep slopes to provide high-quality habitat that supports the recovery, protection, and long-term conservation of covered species on private forestlands, the Authors establish the following objectives under the PFA:*
- *Leave trees in Designated Debris Flow Traversal Areas to help create and maintain high-quality habitat in:*
 - *Type F or Type SSBT streams by delivering large wood and regulating sediment storage and transport.*
 - *Type N streams by creating shade and cover for amphibians covered under the HCP.*
- *Leave trees in Slope Retention Areas to:*
 - *Reduce timber-harvest-related increases in the frequency and volume of sediment delivered to Type F or Type SSBT streams from mass wasting events.*
 - *Contribute large wood to Type F or Type SSBT streams.*
- *Leave trees on a subset of steep (>70%) slopes immediately adjacent to Type F or Type SSBT streams to:*
 - *Stabilize these areas.*
 - *Contribute large wood to Type F or Type SSBT streams.*

3.3.8 Timber Harvest on Steep Slopes in Eastern Oregon

The Private Forest Accord does not prescribe new management measures for landslide initiation zones or debris flow traversal channels in Eastern Oregon. The Authors agree that Eastern Oregon’s unique geologies and climates likely mean that these processes are different in magnitude, frequency, and impact on the covered species, when compared to Western Oregon. Similarly, the impact of timber harvesting on these processes is potentially different in Eastern Oregon. In light of this uncertainty, the Authors agree that the Adaptive Management Program shall, beginning no later than January 1, 2024, examine the scientific literature on the impacts that hillslope processes have on the covered species in Eastern Oregon. The primary focus will be on upslope initiated shallow rapid slides and how timber harvesting may impact these in Eastern Oregon environments. A secondary and more limited focus is whether other hillslope processes that likely affect covered species are changed by forest practices. Findings of the Adaptive Management Program on these topics will be presented to the Board of Forestry. These findings should focus primarily on the importance of shallow rapid landslides in Eastern Oregon to habitat for the covered species and the

potential modification of these processes by forest practices or lack thereof. The report on this primary topic may or may not include recommendations as to desirability and relative importance of potential management measures. In addition, the report should convey whether the secondary review of literature on the effect of forest practices on other hillslope processes merits more thorough consideration by the Adaptive Management Program in light of scientific literature on the connection of these processes to covered species. Nothing in this Report should be read to suggest that any additional Eastern Oregon steep slope or other hillslope prescriptions are, or are not, necessary. The timber harvest prescriptions for steep slopes established under Section 3.3.3 of this Chapter for Designated Debris Flow Traversal Areas and under Section 3.3.4 of this Chapter for Designated Sediment Source Areas and Slope Retention Areas do not apply to any private forest ownership class east of the summit of the Cascade Mountains. The timber harvest prescriptions for steep slopes established under Section 3.3.7 Stream Adjacent Failures apply to all private forest ownership classes both west and east of the summit of the Cascade Mountains.”

Appendix B

Literature Search Strategy