

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

### Purpose of this document

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

- A. The preliminary research questions the AMPC developed to guide the literature review; and,
- B. Contextual information for these questions, as required in rule<sup>1</sup>. 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).

These elements will guide the IRST in developing the scoping proposal(s) to conduct the literature review.

**Commented [EM1]:** Changed wording to emphasize that a literature review is the desired end product.

### 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:

The complete process is found in rule<sup>2</sup>.

1. Refine preliminary research questions into final research questions.
2. Develop research proposals for each question. In rule, a literature review in the initial research proposal is required as part of the process for answering research questions<sup>3</sup>. As the end product of this package is a literature review, essentially, the process requires nesting literature reviews where the first could be an assessment of methodologies for conducting the final literature review.
3. Within 45 days of receiving this document, please provide an estimate of the time you will need to complete #2<sup>4</sup>.

**Commented [EM2]:** Wording to be discussed in the meeting

The AMPC appreciates your using this document to guide your work in the next step of the Adaptive Management Program, which includes your completing the following items per rules: In consultation with the AMPC, refine these preliminary research questions into finalized

<sup>1</sup> Oregon Administrative Rule (OAR) 629-603-0200(3)(a)

<sup>2</sup> OAR 629-603-0200

<sup>3</sup> OAR 629-603-0200 (4)(c)(A)

<sup>4</sup> Per OAR 629-603-0200(4)(a)

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research questions<sup>5</sup>. The intent is for these finalized research questions to be able to be addressed via review of published studies.

1. Develop scoping proposal(s) for how to address the finalized research questions. The proposal(s) need(s) to include<sup>6</sup>:
  - a. 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;
  - b. A preliminary estimate of the budget for each year of the research, and a timeline to complete the research project with specific deliverables; and,
  - c. 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.

Additionally, please use the associated contextual information (detailed in section B, below) to guide your efforts.

2. Within 45 days of receiving this document, please provide an estimate of the time you will need to complete #2<sup>7</sup>.

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

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

- I. The AMPC completes preliminary research questions for another AMPC priority research topic (amphibians).
- II. The IRST will complete similar scoping proposal(s) (outlined above) for these questions.
- III. The AMPC will consider all of these scoping proposals in developing a complete research agenda<sup>8</sup>.
- IV. The IRST will implement the research agenda<sup>9</sup>, then report to this work to Oregon Board of Forestry (Board) and the AMPC<sup>10</sup>. The AMPC will report alternative options to the Board for the Board's decisions<sup>11</sup>.

#### 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](mailto:Emily.J.Martin@ODF.Oregon.gov) or 503.302.3696.

Sincerely,  
Members of the AMPC

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<sup>5</sup> Per OAR 629-603-0200(4)(b)

<sup>6</sup> Per OAR 629-603-0200(4)(c and d)

<sup>7</sup> Per OAR 629-603-0200(4)(a)

<sup>8</sup> OAR 629-603-0200(5)

<sup>9</sup> OAR 629-603-0200(6)

<sup>10</sup> OAR 629-603-0200(7)

<sup>11</sup> OAR 629-603-0200(8)

Commented [EM3]: Removed use of "rigorous"

## **A. Preliminary research questions**

These preliminary research questions were approved by the AMPC as a substantial decision at their \_\_\_\_\_ meeting. These questions apply east of the crest of the Cascades<sup>12</sup> in Oregon, and are to be answered via literature reviews. In addition to 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 rule<sup>13</sup>. The following are organized per the elements in this rule.

### **B.1 The type of research**<sup>14</sup>

#### 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 studied**<sup>15</sup>

#### AMPC response:

The BGOs<sup>16</sup> are listed below with those applicable to these questions highlighted:

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

<sup>12</sup> Note: ODF maintains a regulatory GIS layer of the FPA delineation between eastern and western Oregon.

<sup>13</sup> OAR 629-603-0200 (3)(a)

<sup>14</sup> OAR 629-603-0200(3)(a)(A)

<sup>15</sup> OAR 629-603-0200(3)(a)(B)

<sup>16</sup> 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.

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

- o **Objective 1.1** - Forest practices near streams minimize sediment delivery.
- o **Objective 1.2** – Slope Retention Areas reduce episodic sediment delivery to fish-bearing streams.
- o **Objective 1.3** – Road runoff directly to streams is minimized.
- o **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.

- o **Objective 2.1** – Forest practices maintain stream shade sufficient to support desired cool water temperatures on fish-bearing streams.
- o **Objective 2.2** – No-harvest RMAs maintain stream shade sufficient to support desired cool water temperatures for covered amphibians.
- o **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.

- o **Objective 3.1** – Road crossings on fish-bearing streams are passable by the covered fish species.
- o **Objective 3.2** – Forest practices maintain the hydrologic continuity of stream-associated wetlands and stream-adjacent seeps and springs to stream habitats.
- o **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.

- o **Objective 4.1** – Mature, complex riparian forests are fostered in no-harvest zones of RMAs.
- o **Objective 4.2** – Forest practices within tree retention areas of RMAs promote delivery of large wood.
- o **Objective 4.3** – Designated Debris Flow Traversal Areas function to deliver large wood to fish-bearing streams.
- o **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.

Note: there are no HCP-related rules for steep slopes in eastern Oregon. However, for context, the analogous rules in western Oregon are listed in Appendix 1.

### **B.3 The objective of the research**<sup>17</sup>

<sup>17</sup> OAR 629-603-0200(3)(a)(C)

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 question<sup>18</sup>**

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

**“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:*

- a. *Leave trees in Designated Debris Flow Traversal Areas to help create and maintain high-quality habitat in:*
  - 1) *Type F or Type SSBT streams by delivering large wood and regulating sediment storage and transport.*
  - 2) *Type N streams by creating shade and cover for amphibians covered under the HCP.*
- b. *Leave trees in Slope Retention Areas to:*
  - 1) *Reduce timber-harvest-related increases in the frequency and volume of sediment delivered to Type F or Type SSBT streams from mass wasting events.*
  - 2) *Contribute large wood to Type F or Type SSBT streams.*
- c. *Leave trees on a subset of steep (>70%) slopes immediately adjacent to Type F or Type SSBT streams to:*
  - 1) *Stabilize these areas.*
  - 2) *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*

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<sup>18</sup> OAR 629-603-0200(3)(a)(D)

*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."*

**B.5 Other information the AMPC deems necessary for the IRST's work<sup>19</sup>**

**AMPC Response:**

1. It is essential to maintain the role of the regulatory framework (the OFPA) throughout the design and implementation of studies, including the following considerations:
  - a.: Results should be stratified by the two landowner classifications in the FPA– 1) small forestland owners (RCA); 2) large forestland owners (FRIA).
  - b. Studies should be tailored to inform model development by including variables such as precipitation, geology or soil type, slope, or concavity.
2. The AMPC wants to know how metrics of interest (e.g., sediment delivery from steep slopes associated with forest practices) compare background levels, and when thresholds of negative impacts to covered species have been crossed.
3. The AMPC acknowledges that some terms (e.g., characteristics) in the preliminary research questions lack specificity that would be needed to conduct a study. This is because the AMPC sets the policy direction with these preliminary research questions, and

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<sup>19</sup> OAR 629-603-0200(3)(a)(E)

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needs the scientists on the IRST to use available science to fill in those details. Note that this situation was envisioned by the Private Forest Accord authors, and thus the process outlined in rule<sup>20</sup> for communication between the IRST and the AMPC to finalize the research questions.

4. The intention of this monitoring is NOT to compare conditions or rules with the previous rules.
5. Deposits from hillslope processes evolve over time, and it is important to consider how these changes affect (positively and negatively) covered species.

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<sup>20</sup> OAR 629-603-0200(4)(b) The IRST shall hone each preliminary research question into a final research question. The IRST shall communicate with the AMPC via the Adaptive Management Program Coordinator to allow the AMPC an opportunity to provide input to ensure that the AMPC's original intent is maintained in the final research question. Following this communication, the IRST shall finalize the research question.