

Research questions package for Amphibians

Dear Members of the IRST:

This document provides preliminary research questions for the research topic “amphibians” developed by the Adaptive Management Program Committee (AMPC) and contextual information for those questions, as required in rule.¹

The AMPC provides this document to guide your work in the following next steps:

1. **Develop finalized research question(s).** In consultation with the AMPC, refine these preliminary research questions into finalized research questions². These finalized research questions should be capable of being addressed via research and/or monitoring.
2. **Develop scoping proposal(s):** The IRST shall develop scoping proposal(s) for the finalized research question(s). Each scoping proposal needs to include³:
 - 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.
3. **Estimated timeline to complete scoping proposal due to AMPC within 45 days:** Within 45 days of receiving this document, please provide an estimate of the time you will need to complete #2.⁴

The scoping proposals developed by the IRST on amphibians will be considered by the AMPC together with any previously submitted scoping proposals. The AMPC will consider all of these scoping proposals to develop a comprehensive research agenda⁵ that will be shared with the Board of Forestry by July 15, 2025.

The AMPC looks forward to working with you, both in the long term and on these particular scoping proposals. If you have any questions, please reach out to Oregon Department of Forestry’s Adaptive Management Program Coordinator, W. Terry Frueh, at Terry.Frueh@ODF.Oregon.gov or 503.871.2699.

Sincerely,
Members of the AMPC

¹ Oregon Administrative Rule (OAR) 629-603-0200(3)(a)

² Per OAR 629-603-0200(4)(b)

³ Per OAR 629-603-0200(4)(c and d)

⁴ Per OAR 629-603-0200(4)(a)

⁵ OAR 629-603-0200(5)

A. Preliminary research questions

The following preliminary research questions were approved by the AMPC at their April 7, 2025, meeting. The AMPC approved, as a substantial decision, this completed research question package, including subsequent contextual information, at their April 18, 2025, meeting. Note that text highlighted in gray is quoted from another source.

The three AMPC-approved preliminary research questions were developed as part of a discussion of how to meet the requirements of the Private Forest Accord (PFA) Report Section 7.3.4 relating to effectiveness monitoring, and the relationship between forest management and covered amphibian species.

The AMPC requests IRST provide scoping proposals for Questions 1 and 2 as soon as possible with the goal of including them in the research agenda in 2025. They also ask that Question 3 have its own scoping proposal to be addressed later. Question 3 is included in this package to highlight the importance of its subject matter and indicate the direction of future amphibian research. The AMPC looks forward to supporting and guiding the IRST regarding Question 3 and the specific rules being addressed.

Question 1. For each of the covered amphibian species, what is the distribution (including genetics) within Oregon, and what factors (e.g., stream gradient, stream size, fish presence/absence, slope, aspect, temperature, seasonality, micro-habitat conditions) determine this distribution at a smaller spatial scale (e.g., watershed)?

Question 2. What is the population trend of the Columbia and Southern torrent salamanders over time on lands subject to the Forest Practices Act (FPA) rules? This question is informed by the following overarching biological goal as stated in the draft PFA HCP: “Forest practices that support the survival and recovery of the covered species by providing clean, cool, connected, and complex habitats.”⁶

Question 3. The following sub-questions are informed by direction from the PFA Report to “...better understand how riparian and unstable slope protections of at least the current and proposed rules for private forestland impact persistence of populations.”⁷

Question 3.1. How do rules for no-harvest RMAs affect Columbia and Southern torrent salamanders’ habitat?

BGO from Draft PFA HCP:

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

Objective 2.2 – No-harvest RMAs maintain stream shade sufficient to support desired cool water temperatures for covered amphibians.

⁶ 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.

⁷ Private Forest Accord Report, p. 121.

Question 3.2. How do rules for Type N streams affect Columbia and Southern torrent salamanders' habitat?

BGO from Draft PFA HCP:

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

Objective 3.3 – Timber harvest maintains stream-associated connectivity in riparian areas along non-fish streams sufficient to support covered amphibians.

Question 3.3. How do rules for steep/unstable slope protections affect Columbia and Southern torrent salamanders' habitat?

BGO from Draft PFA HCP:

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

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.

B. Research Question Package

The remainder of this document provides contextual information for the preliminary research questions, as required by rule⁸. The following are organized per the elements in this rule.

B.1 The type of research⁹

AMPC response:

“OAR 629-603-0100(1) The adaptive management program must:

- 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) Conduct research inquiry and validation monitoring to:*
 - (A) Determine if additional scientific inquiry is needed to fill knowledge gaps related to biological goals and objectives;”*

B.2 The rule, biological goals and objectives (BGOs), or other issue being studied¹⁰

AMPC response:

The BGOs¹¹ are listed below with those applicable to these questions highlighted in yellow:

“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.

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

⁸ OAR 629-603-0200 (3)(a)

⁹ OAR 629-603-0200(3)(a)(A)

¹⁰ OAR 629-603-0200(3)(a)(B)

¹¹ 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.

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.”

B.3 The objective of the research¹²

AMPC response:

The objectives of this research are to understand:

- A. **Status:** Where on the landscape the covered amphibians are located, and what affects those distributions; and
- B. **Trends:** How the populations of the Columbia and Southern torrent salamanders change over time on lands subject to the Oregon Forest Practices Act regarding the overarching biological goal as stated in the draft HCP.¹³
- C. **Rule Effectiveness:** How identified rules on private forest lands impact the persistence of amphibian populations.

¹² OAR 629-603-0200(3)(a)(C)

¹³ 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.

B.4 A brief description of the context of the research questions¹⁴

AMPC response: The following information and direction were provided in the PFA Report, the content of which was enacted as statute by reference, and provides the foundation for these research questions:

“CHAPTER 7. AMPHIBIAN CONSERVATION

7.2 Goals

The goal of riparian management practices and other conservation measures described in this section is to protect and conserve stream and riparian habitats important for all life stages of Columbia (*Rhyacotriton kezeri*) and Southern (*R. variegatus*) torrent salamanders, Coastal (*Dicamptodon tenebrosus*) and Cope’s (*Dicamptodon copei*) giant salamanders, and Coastal tailed frog (*Ascaphus truei*).

7.3.3 Conservation Measures to Support Protection of Stream-Dwelling Amphibians

Conservation measures to support the protection of stream-dwelling amphibians include riparian prescriptions that protect fish and non-fish-bearing streams as identified in Chapter 2 of this Report. That Chapter includes conservation measures for seasonal and perennial streams that provide important habitats for stream-dwelling amphibians. Additional protections for seeps, springs, and stream-associated wetlands are established in Chapter 2.

Additional conservation measures to conserve stream-dwelling amphibians include:

- a. The Slope Retention Areas, Designated Debris-Flow Traversal Areas, and Stream Adjacent Failure prescriptions which are identified in Chapter 3.
- b. The wetland protections, including the 2:1 replacement for filling or draining wetlands, identified in Chapter 4.
- c. The updated culvert design standards identified in Chapter 4.
- d. The reduction of fine sediment through the hydrologic disconnection of roadside conveyance systems from streams as identified in Chapter 4.

7.3.4 Adaptive Management

Uncertainty exists around amphibian population characteristics, distribution, productivity, survival, and abundance. A robust effectiveness monitoring plan as part of an adaptive management program will be used to better understand the relationship between forest management and covered amphibian species. To support this program, it is recommended that \$1.5 million be initially applied to research through the first funding cycle of the adaptive management program to better understand how riparian and unstable slope protections of at least the current and proposed rules for private forestland impact persistence of populations. The Authors agree that the \$1.5 million will be used to fund an initial study and that ongoing research over appropriate intervals of time beyond this initial study will be necessary to understand research outcomes over long periods of time. The priority species for monitoring will be the Columbia and Southern torrent salamanders. With consideration to funding

¹⁴ OAR 629-603-0200(3)(a)(D)

constraints and other priorities, this research could also include other species covered by the HCP. Additionally, it could include Cascade torrent salamanders, which are not covered by the HCP.”

B.5 Other information the AMPC deems necessary for the IRST’s work¹⁵

AMPC Response:

1. It is essential to maintain the role of the regulatory framework (the OFPA) throughout the design and implementation of studies. Specifically, there are two stratum classifications:
 - A. The West and East Oregon FPA regions.
 - B. Landowner classifications in the FPA of which there are two, each with a different regulatory framework.
2. In any studies assessing species population trends, it’s important to differentiate impacts of forest practices from those outside the FPA framework (e.g., climate change, non-forest land uses, amphibian diseases).
3. The AMPC will send the IRST a list of rules to be addressed in the sub-questions of Question 3, with an anticipated delivery in 2025. The AMPC acknowledges that the IRST cannot make significant progress on developing scoping proposals on these sub-questions without this list of rules.
4. The AMPC would appreciate scoping proposals for Question 1 that prioritizes gathering information on Columbia and Southern torrent salamanders in a way that furthers addressing Questions 2 and 3 soon, and that reserve resources for the broad research goal directed by the PFA Report, i.e. “...to better understand how riparian and unstable slope protections of at least the current and proposed rules for private forestland impact persistence of populations.”

¹⁵ OAR 629-603-0200(3)(a)(E)