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Steep slopes literature search strategy (Updated 31 October 2024)

For 8 November IRST meeting

Literature Search Strategy – Eastern Oregon Steep Slopes (DRAFT)

The eastern Oregon steep slopes literature compilation conducted by the Institute for Natural Resources is intended to serve, not as a comprehensive literature review, but rather to support the development of a research proposal package, which will inform the AMPC and Board of Forestry decisions about soliciting further research via requests for proposals



This literature search strategy outlines how literature will be sought. It is a living document.

AMPC's Final 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 Cascades¹ 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?

Search Strategy

Focus

Since the objective is to produce a research proposal for a literature review, this review will just gauge whether sufficient literature exist to justify a full literature review. We will search a number of databases, do a cursory screening for relevance, and collect the qualifying references. IRST can then review the resulting database of references and decide whether a full review is worthwhile.

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

Time period to conduct literature search

- Start date
- End date

Electronic databases

- Forest Science: CAB Direct
- Treearch: USDA Forest Service Research
- Web of Science: Science Citation Index

Meta search engine

- Google scholar
- [SciSpace \(AI tool - can extract methods\)](#)

Library collections

- Oregon State Library
- Washington State Library
- Oregon State University Library: [ScholarsArchive@OSU](#)
- University of Washington Library
- Washington State University Library
- Land grant university libraries in the noted geographies (Idaho, Colorado,...)

Selected bibliographies

- [WA Cooperative Monitoring, Evaluation, and Research Committee \(CMER\)](#)
 - [AMP Dashboard](#)
- [California Board of Forestry, Effectiveness Monitoring Committee](#)

Literature dates

- No restriction?

Type of literature

- Peer review
- Technical reports
- Dissertations and theses
- Conference proceedings

Literature Geographies

- Oregon
- Washington
- Idaho
- Colorado
- Montana

Keywords

Hillslope processes

Shallow rapid slides/landslides

Landslides

Debris flows

Mass wasting

HCP covered species and their habitats

Aquatic & riparian biota

Trout – cut throat, bull, rainbow

Salmonids

Salmon

Torrent salamander

Giant salamander

Forest practices

Timber harvesting

Fuel treatments

Harvest

Environmental

snow-dominated systems

semi-arid systems

arid systems

dry-side

Suggestions gathered by Becky

Mass wasting, arid environments

Hillslope failure, arid environments

Roads on steep slopes, arid environments

Culverts and mass wasting, arid environments

Mass wasting and timber harvest, arid environments

Wildfire, mass wasting, timber harvest, arid environments

Wildfire, road failure, steep slopes, arid environments

forest* AND (slope* OR hillslope) AND (arid OR semi-arid OR dry OR snow-dominated)

(slope* OR hillslope) AND (trout OR salmon* OR salamander) AND (eastern AND (Oregon OR Washington))

Review Strategy

Categories of information documented for each publication

- Publication citation (principal investigators, date, title, etc.)
- Study dates and study duration
- Study location
- Research question(s), hypotheses
- Sample sizes and results
- Methods: empirical vs modeled

Subjects of Interest for article reviews

- ***Hillslope processes***
 - Landslides
 - Hydrology
 - Large wood delivery
- ***Management actions***
 - Harvest type
 - roads
- ***Environment***

- Climate: rainfall
- Geology
- Soil characteristics
- Forest type
- Topography