Request for Proposals
McKinney Wildlife Analysis & Documentation

Project Proponent: California Deer Association (CDA)

Location: Klamath National Forest, 6.0 miles (~30-minute drive) from Yreka, CA

Wildlife analysis and documentation in compliance with relevant environmental regulations for a project area within and adjacent to the McKinney wildland fire footprint on the Salmon/Scott River and Happy Camp/Oak Knoll Ranger Districts on the Klamath National Forest (KNF). The project boundary and treatment areas include a 2.5-mile buffer from the McKinney Fire footprint, resulting in a 147,140-acre project boundary with 24,128 acres within that boundary proposed to be treated. The wildlife analysis area (1.3-mile buffer on the project boundary) is 158,192 acres.

The project is located in Siskiyou County approximately 6 miles northwest of Yreka, California in T44N R9W Sec. 1-6; T45N R7W Sec. 4-9, 17-19; T45N R8W Sec. 1-24, 26-32; T45N R9W Sec. 1-36; T45N R10W Sec.1-4, 9-15, 22-26, 36; T46N R7W Sec. 4-10, 15-22, 27-34; T46N R8W Sec. 1-36; T46N R9W Sec. 1-36; T46N R10W Sec. 1-3, 9-16, 21-28, 33-36; T47N R7W Sec. 30-32; T47N R8W Sec. 16-22, 25-36; T47N R9W Sec. 9-11, 13-36; T47N R10W Sec. 24-26, 34-36; Mount Diablo Meridian. Elevation ranges from 1558 to 6781 feet. Preliminary project maps included (Appendix B).

Project Deliverables

- Biological Assessment (BA)
- Biological Evaluation (BE)
- Management Indicator Species (MIS) Report
- Migratory Bird Report
- Terrestrial Survey and Manage (S&M) Report

Project Timeline

The timeline for this project as outlined above would begin upon execution of the contract (estimated August 2026) to February 1st, 2027.

Contractor Minimum Qualifications

- Contractor, Contractor's principal, or Contractor's staff shall have been regularly engaged in the business of National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and/or resource surveys, and document preparation within forest environments for at least three years.
- Contractor shall possess all permits, licenses, and professional credentials necessary to perform services as specified under a CDA contract.
- Contractor shall take out and maintain during the life of the Contract all the insurance required and, if requested, shall submit certificates for review and approval by CDA. Acceptance of the certificates shall not relieve the Contractor of any of the insurance requirements nor decrease the liability of the Contractor. CDA reserves the right to require Contractor to provide insurance policies for review by CDA.

- Contractor shall be responsible for registering with Sam.gov prior to bid submission due to this project being executed under an existing Stewardship Agreement. Contractors who are not registered will not be considered.

Quality Assurance
The Contractor shall maintain an inspection system acceptable to CDA. The purpose of the Contractor performing self-inspection is to monitor quality while work is being performed, thereby allowing the Contractor to identify and correct any quality deficiencies in their work during project implementation. The Contractor shall inspect their work on an ongoing basis and keep the CDA Project Manager regularly informed on the status of all deliverables. Any major concerns identified during the analysis shall be communicated to the CDA Project Manager. The Contractor shall ensure that all Project Design Features (PDFs), mitigation measures, analyses, and compliance documentation prepared for CDA are accurate, complete, and consistent with all applicable laws, regulations, policies, and agency requirements. All completed work shall be subject to review and approval by the CDA Project Manager, and only work deemed acceptable by the CDA Project Manager shall be considered complete and approved for sign-off.

The CDA Project Manager will coordinate with the Contractor on an ongoing basis to support wildlife analysis and NEPA compliance. CDA verification will consist of ongoing document review, regular communication, check-ins, and coordination with the Forest Service Interdisciplinary Team (IDT). Inspections may include confirmation of meeting attendance, regulatory compliance, and examination of documents prepared for accuracy and completeness. All reporting, project documentation, deliverables, and communications prepared by the Contractor related to the scope of work shall be submitted directly to CDA for review and coordination. The Contractor shall not submit final products or formal correspondence directly to external agencies or partners unless otherwise authorized via written consent by the CDA Project Manager.

Description of Work
This project will provide wildlife analysis and documentation assuring NEPA compliance for a post-fire restoration project, including treatments such as roadside hazard tree abatement, roadside fuels reduction, mastication, hand cut-and-pile, site preparation, reforestation, and commercial thinning, that is anticipated to be an Environmental Assessment (EA) class of action. This projects tiers to the Klamath and Shasta-Trinity National Forests' Prescribed Fire Project found here: https://www.fs.usda.gov/r05/klamath/projects/66583. Analysis will provide documented support for the Forest Service line officer to determine if significant impact exists that would preclude use of an EA class of action.

The wildlife analysis and documentation must also comply with relevant environmental law and be consistent with the Klamath National Forest Land and Resource Management Plan ("Forest Plan") as amended (Appendix A). Work will include communication with CDA and KNF Forest Service personnel, participation in bi-weekly Forest Interdisciplinary Team (IDT) meetings, preparation of required wildlife specialist documents (see "deliverables" section above), participation in KNF-USFWS discussions during Section 7 Biological Assessment (BA) preparation, and design of project design features (PDFs) to accommodate ESA-listed, Survey & Manage, Forest Service Sensitive, and other protected species. Field work (i.e., site visits, habitat

assessment) may be necessary to support the environmental analysis, but protocol-level wildlife surveys are not an expectation of this contract.

For all work described, correspondence will be between the Contractor and California Deer Association (CDA). The Contractor will interface with the US Forest Service specialists and leadership only as directed by the California Deer Association. The Contractor is responsible for regularly communicating progress and project timelines to the CDA project manager.

Item 1: Biological Compliance, Coordination, and Reporting

The Contractor shall perform and prepare the required wildlife analyses to assure NEPA compliance for the McKinney project, which is anticipated to be EA class of action.

Any major concerns identified during the analysis shall be communicated to the CDA Project Manager, and the Contractor shall propose PDFs or mitigation measures for incorporation into the project that are consistent with law, regulation, and policy. CDA may provide example reports as needed upon selection of a contractor, and the deliverables will be approved by the CDA Project Manager.

The Contractor shall participate in IDT and progress review meetings, approximately every two weeks as scheduled. Meetings will be held at the Forest Service offices in either Fort Jones or Yreka, CA, or virtually via TEAMS or other software. The Contractor will have in attendance sufficient members of staff to adequately address wildlife analysis progress, any issues, and preliminary determinations and PDFs. It is assumed biweekly meeting are needed throughout the length of the contract; however, the actual number of meetings may vary. Additional communication and coordination activities with specialists may be required to facilitate project progress and completion.

Deliverable Timeline Expectations

Along with the biweekly meetings and other periodic coordination efforts required to accomplish Item 1, including communication of any major concerns identified during the analysis, the timeline below outlines the expectations for delivery of draft and final deliverables:

A-Day	Award Day
A+60	Draft BA submitted to CDA
A+75	Draft BE submitted to CDA
A+80	Draft BA returned to Contractor with comments
A+95	Draft BE returned to Contractor with comments
A +100	Final BA submitted to CDA*
A+115	Final BE submitted to CDA*
A+130	Draft MIS, Migratory Bird, and S&M Reports submitted to CDA
A+130	Final Inventory report submitted to Forest HPM
A+150	Draft MIS, Migratory Bird, and S&M Reports returned to Contractor with comments
A+170	Final MIS, Migratory Bird, and S&M Reports submitted to CDA*
A+180	Contract Termination

*Submission of a revised deliverable on this date does not guarantee it with be accepted as final and approved. Should the deliverable not be satisfactory, more revisions will be necessary.

Appendix A – Specifications

Applicable Documents

The Land and Resource Management Plan for the Klamath National Forest (Forest Plan), 1995, Amended July 29, 2010, can be found at the following website: https://www.fs.usda.gov/sites/nfs/files/r05/klamath/publication/2010%20Forest%20Plan%20Table%20of%20Contents%20-%20Update.pdf. All PDFs, mitigation measures, and documents shall be consistent with this plan.

The project's proposed action that the Contractor will be analyzing the effects for can be found at the following website: https://www.fs.usda.gov/r05/klamath/projects/306270.

Consider the Siskiyou Mountains and Scott Bar Salamander Conservation Strategy (Appendix D) when developing reports, documents, and/or mitigation measures for the McKinney Post-Fire project.

Deliverables

Deliverables will be provided in Microsoft Word, Excel, Access, and/or Adobe PDF, unless otherwise directed or agreed to by the CDA Project Manager. Draft reports will be available for review in Microsoft Word to allow for CDA comments, and the comments on drafts will be in the form of Microsoft Word "track changes." All documents will follow the format of templates and/or example reports provided by CDA from USFS unless change is explicitly requested. All documents will include the required EPA document properties and broken down as needed for web publishing. Final documents will be submitted as both Word and PDF files that meet EPA filing requirements and are Section 508 (amendment to the Rehabilitation Act of 1973) compliant.

Deliverables will contain the required information to inform decision-making and contain all necessary analyses to comply with law, regulation, and policy. Deliverables will be written in a style that is clear, concise, and most importantly, well-organized and easy to use. Poor writing, organization, production, insufficient information, unclear logic, etc. are grounds for rejection. Should the deliverables be rejected, CDA may request a revise-and-resubmit with only broad direction.

The following reports are listed in order of priority by CDA. Specific example documents to be used as a template guide will be provided upon contract execution, but a variety of examples can be found on the KNF's Projects webpage here: https://www.fs.usda.gov/r05/klamath/projects

I. Biological Assessment (BA)

Report prepared to determine the potential effects of project implementation on federally Threatened, Endangered, and Proposed species and their associate suitable habitat—mostly wildlife species but may include a plant. The Document will be used for ESA Section 7 consultation with USFWS and will likely require several revision cycles before acceptance.

The Wildlife BA deliverable for the McKinney project will vary from examples due to scale, scope, and landscape differences, but for reference, a similar document produced on the KNF was 100+ pages and analyzed for effects to 17 Endangered, Threatened, or Proposed species.

II. Wildlife Biological Evaluation (BE)

Report prepared to determine the potential effects of project implementation on regional Forest Service sensitive species as identified in the Forest Service, Region 5, Sensitive Species list provided by the USDA Pacific Southwest Region on July 3, 2013, and updated for the KNF on September 9, 2013. The analysis indicator for sensitive species is the likelihood of management actions resulting in a trend towards Federal listing, this is measured by the acres of habitat maintained or improved, degraded, downgraded, and removed or lost.

The Wildlife BE deliverable for the McKinney project will vary from examples due to scale, scope, and landscape differences, but for reference, a similar document produced on the KNF was 70 pages and analyzed for effects to 15 sensitive species.

III. Terrestrial Survey & Manage Report

Report prepared to analyze the proposed project's potential impacts on Survey & Manage species per the Forest Plan and the Northwest Forest Plan. Klamath National Forest Survey and Manage Guidance is summarized the KNF Survey and Manage Guidance Document (2017).

The Terrestrial Survey and Manage Report deliverable for the McKinney project will vary from examples due to scale, scope, and landscape differences, but for reference, a similar document produced on the KNF was 3 pages and analyzed for effects to 10 survey and manage species.

IV. Management Indicator Species (MIS) Report

Report prepared to evaluate landscape and project-level impacts to habitat conditions associated with species associations and related Management Indicator Species (MIS) identified in the Forest Plan on page 4-30 through 4-32.

The MIS Report deliverable for the McKinney project will vary from examples due to scale, scope, and landscape differences, but for reference, a similar document produced on the KNF was 24 pages (plus an attached spreadsheet).

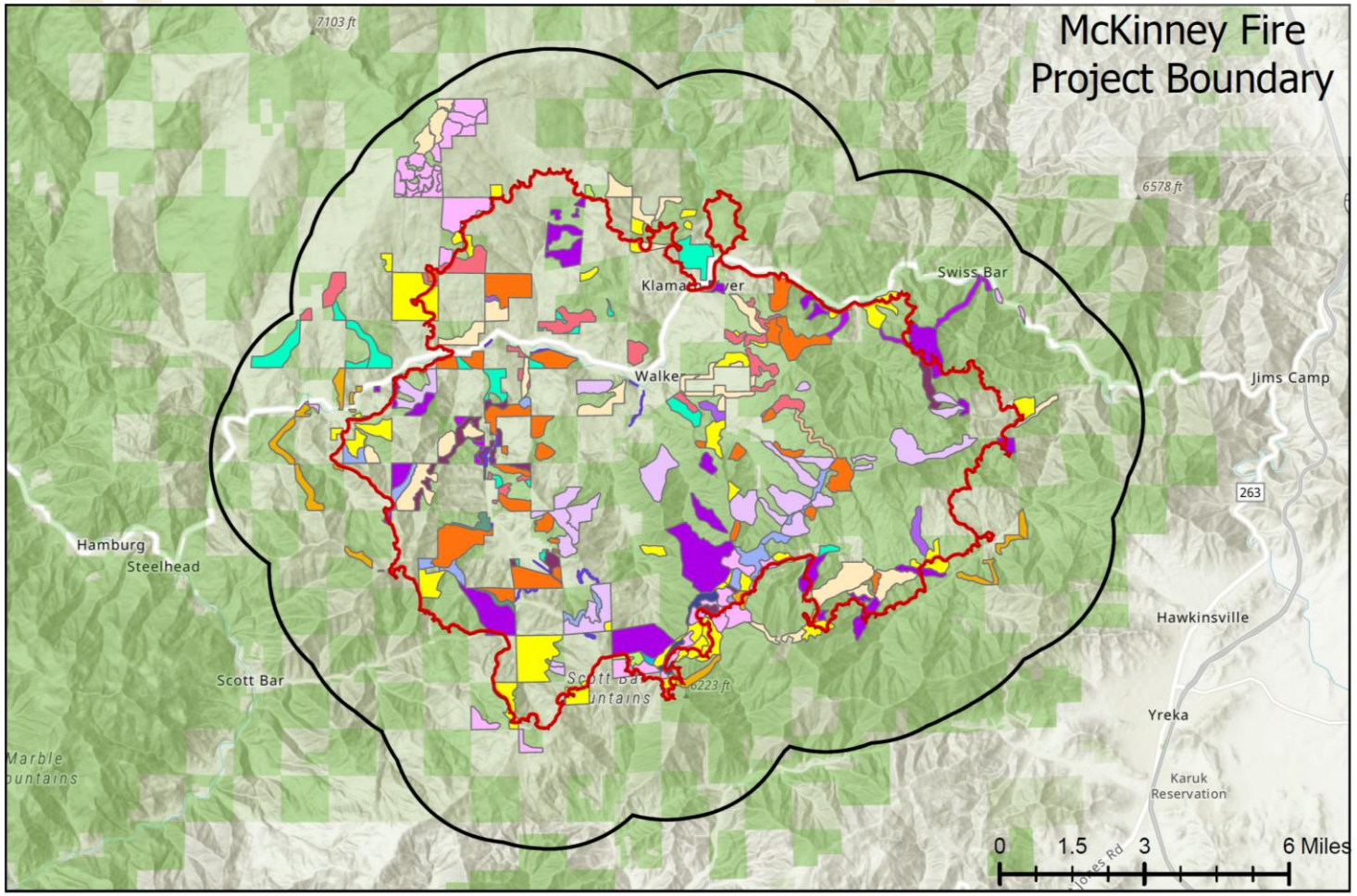
V. Migratory Bird Report

Report prepared to demonstrate compliance and consistency with the Migratory Bird Treaty Act and direction for integrating migratory bird conservation into forest management and planning includes the Landbird Conservation Strategic Plan (USDA Forest Service 2000), Executive Order 13186 (2001), and the Partners in Flight North American Landbird Conservation Plan (Rosenberg et al. 2016), and all reference goals and objectives for integrating bird conservation into forest management and planning.

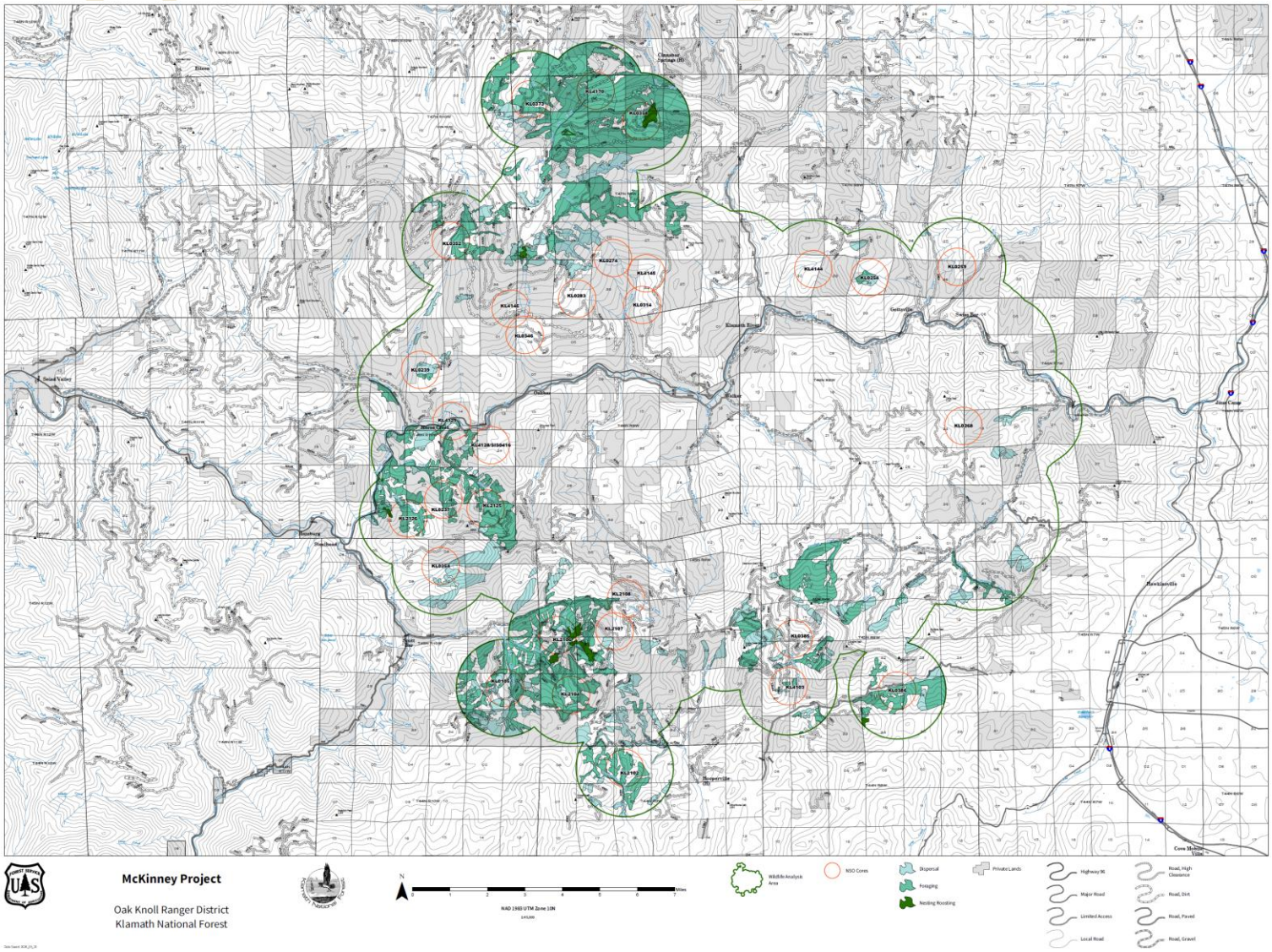
The Migratory Bird Report deliverable for the McKinney project will vary from examples due to scape, scope, and landscape differences, but for reference, a similar document produced on the KNF was 4 pages and analyzed 14 bird species identified in other wildlife analyses also.

Appendix B – Preliminary Project Maps

Project Boundary Map



Wildlife Analysis Boundary



Appendix C – Technical Proposal Guidelines

The California Deer Association (CDA) has prepared this guidance for the development and submittal of technical proposals for this project. Please review the guidelines for instructions on how to prepare and submit a bid for this project. Refer above for project treatments and specifications.

I. INSTRUCTIONS FOR BID DEVELOPMENT

A. BIDDER'S QUALIFICATIONS

Before an offer is considered for award, the Bidder may be required to submit a technical and price proposal, as described in item C (1), and comply with all other provisions stated herein. The proposal should be practical and be prepared simply and economically, providing a straightforward, concise delineation of what the Bidder will do to satisfy the requirements of the contract.

B. PROPOSAL REQUIREMENTS

1) Technical Proposal: The technical proposal will be used to make an evaluation and arrive at a determination as to whether the proposal will meet the requirements of CDA. Therefore, the technical proposal must present sufficient information to reflect a thorough understanding of the requirements and a detailed description of the techniques, procedures, and/or program for achieving the objectives of the specifications/statement of work.
    a) Technical proposals will be evaluated and ranked on the basis of the following criteria. As a minimum, the proposal must clearly provide the following:
        i. Technical Approach
            1. Describe your plan of operations. Include a timeline and the rationale for the work activities identified to ensure all contractual requirements will be completed by the termination date.
            2. Describe your quality control plan for work performed.
        ii. Capability and Past Performance
            1. Provide a list of the experience of your key personnel who will be working on this contract.
            2. Identify subcontractors you propose to use for this contract and the work activities planned for subcontracting. Describe subcontractor's past performance as able. If any subcontractors are certified in their area of expertise, provide information as to when, what, and by whom they are certified.
            3. Submit a list of similar or related contracts that your firm has completed in the past 3 years. This listing must include the contract type; contract amount or contract size; location, the year completed, the Agency, company or individual contracted with, and a current telephone number.

iii. Utilization of Local Work Force

1. Local labor is defined as local and regional communities. Identify how you intend to utilize labor, subcontractors, and other workforce from the local area. Additional evaluation preferences will be given for the use of labor or subcontractors located closest to the contract area.

2) Price Proposal: All bidders shall provide a total proposed cost for completion of the listed project work. **CDA strongly encourages bidders to submit a cost estimate for each deliverable, which should encompass the individual report, associated documentation, and supporting task requirements included.** Compensation shall be issued upon CDA's receipt and acceptance of each completed deliverable, with payment tied to the submission of each individual report and its associated work products.

II. RFP RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION

A. CDA CONTACTS

All contact during the competitive process is to be through the CDA contact person: Tara Durboraw: tdurboraw@caldeer.org.

B. SUBMITTAL OF RFP RESPONSE

1) Late responses will not be accepted.
2) RFP responses must be received by 5:00 p.m. on Friday July 17th, 2026. Any RFP response received after that time or date cannot be considered and will be returned to the Bidder.
3) RFP responses are to be submitted on the CDA webpage platform.
4) Please include "**McKinney Post-Fire Wildlife Analysis and Documentation**" in the Subject Line for emailed bid packages.
5) All costs required for the preparation and submission of an RFP response shall be borne by the Bidder.
6) Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), CDA will be entitled to civil remedies set forth in the California False Claim Act.
7) **It is understood that CDA reserves the right to reject any or all RFP responses.**

C. RESPONSE FORMAT

1) Bidders shall not submit to CDA a re-typed or otherwise re-created version of these documents or any other CDA-provided document.
2) RFP responses, in whole or in part, are NOT to be marked confidential or proprietary. CDA may refuse to consider any RFP response or part thereof so marked. RFP responses submitted in response to this RFP may be subject to public disclosure. CDA shall not be liable in any way for disclosure of any such records.

III. CDA PROCEDURES, TERMS, AND CONDITIONS

A. RFP ACCEPTANCE AND AWARD

1) RFP responses will be evaluated by a selection committee (i.e., CDA, USFS).
2) **The committee will recommend award to the Bidder who, in its opinion, is best qualified to perform the work described in this RFP. Award may not necessarily be made to the Bidder with the lowest bid. (Best Value)**
3) CDA reserves the right to award a single or to multiple General Service Providers, dependent upon what is in the best interest of CDA.
4) CDA has the right to decline to award this contract or any part of it for any reason.
5) Any specifications, terms, or conditions issued by CDA, or those included in the Bidder's submission, in relation to this RFP, may be incorporated into any contract that may be awarded as a result of this RFP.
6) CDA reserves the right to reject any or all proposals, or to accept one part of a proposal and reject the other, unless the bidder stipulates to the contrary, and to waive technical defects, as the interest of CDA may require. Award will be made by an authorized CDA Representative.

B. EVALUATION CRITERIA

All bids are subject to evaluation by the Selection Committee (SC). The SC will be composed of CDA staff, USFS staff, and other individuals who have expertise or experience in this type of project. The SC will select/recommend a Bidder in accordance with the evaluation criteria set forth in this RFP. Evaluation criteria include technical approach, capacity and past performance, and benefits to local communities. The evaluation of the RFP responses shall be within the sole judgment and discretion of the SC.

The award will be made to the Bidder (a) whose proposal is technically acceptable and (b) whose technical/price relationship is the most advantageous to CDA. Therefore, CDA reserves the right to award without discussions with the Bidders. However, after receipt of initial offers, written or oral discussions may be conducted with all responsible Bidders whose offers are determined to be in the competitive range. Discussions conducted after receipt of an offer do not constitute a rejection or counteroffer by CDA.

Firms lacking a past performance record (new firms or those with no relevant experience within their organization) will be treated as an unknown performance risk and will receive a neutral rating in this criterion. A neutral rating will be established as the average of all other competing Bidders.

CDA will base the award decision on a tradeoff between price and non-price factors, comparing the relative risk to CDA of poor or non-performance posed by each of the Bidders, and making a judgement as to whether or not reduced risk of performance is worth additional cost. In some cases, this will result in award to a lower-ranked but lower-priced offer, in other cases award may be to a higher-ranked but higher-priced offer. CDA may, when in its interest, reject any or all offers or waive any informality in offers received.

Appendix D – Siskiyou Mountains & Scott Bar Salamander Conservation Strategy

Provided by USFS to CDA

Siskiyou Mountains and Scott Bar Salamander Conservation Strategy

on Lands Administered by the Klamath National Forest

Prepared by:
Sam Cuenca (Klamath National Forest), Jennifer Jones (Yreka Fish and Wildlife Office)

Contributors:
Kris Sexton, William Wall, Mike Ramsey (Klamath National Forest)
Jenny Ericson, Gina Glenne (Yreka Fish and Wildlife Office)

April 21, 2023

Rachel Smith, Forest Supervisor

Klamath National Forest
U.S. Forest Service

Jenny Fy1yson, Field Supervisor

Yrek h and Wildlife Office
U.S. Fish and Wildlife Service

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Introduction

The Klamath National Forest (KNF) of the U.S. Forest Service (USFS) and the U.S. Fish and Wildlife Service's Yreka Fish and Wildlife Office (YFWO) worked cooperatively' to develop this conservation strategy. The strategy guides management of the southern population of the Siskiyou Mountains salamander *(Plethodon stormi)* and the entire range of the Scott Bar salamander *(P. asupak)* on lands administered by the KNF. The intent of the conservation strategy is to maintain habitat for the Siskiyou Mountains and Scott Bar salamanders at known and potentially occupied sites and reduce potential threats to these species.

The objectives of this conservation strategy are to:

I. Conserve the Siskiyou Mountains and Scott Bar salamanders on lands administered by the KNF.
2. Avoid land management actions that would contribute to the need to list these species under the Endangered Species Act (ESA).
3. Provide guidance for managing known and potentially occupied salamander sites.
4. Provide guidance for vegetation and fuels management in suitable habitat for the salamanders.
5. Provide a framework for continued monitoring of the species and its habitat, based on additional genetic, modeling, and survey efforts.

Similar to the conservation strategy for the Siskiyou Mountains salamander in the northern portion of its range (Olson *et al.* 2009), this strategy works to balance the protection of existing suitable habitat for the salamander with fuels-reduction activities. Specifically, we describe greater protections during forest management activities for small patches (less than 0.25 acre) of suitable habitat and areas with a high likelihood of salamander occupation (i.e., lower hillslopes, northerly exposures). Larger habitat patches and areas with a lower likelihood of salamander occurrence (i.e., upper slopes, southerly exposures) receive fewer protections. See Appendices I and 2 and the Habitat and Ecology section below for a definition and examples of suitable habitat.

This conservation strategy was developed as part of the Forest Service Sensitive Species Program (Forest Service Manual 2670) that works to ·'preclude trends towards endangerment that would result in the need for Federal listing." Forests are specifically directed to develop conservation strategies for those sensitive species whose continued existence may be negatively affected by a forest plan or proposed projects (FSM 2621.2).

Threats to the species are described in more detail below and include timber harvest and prescribed and wildland fires because of their potential impact on salamanders and their habitat. In this strategy, the KNF and the YFWO are working together to implement conservation measures to minimize these potential threats.

[1] Additional authors include Brian Woodbridge (YFWO), Karen West (YFWO/KNF), and Debi Wright (KNF). We greatly appreciate the in-depth reviews of this strategy by Deanna (Dede) Olson (USDA Pacific Northwest Research Station) and Richard David Clayton (Rogue River-Siskiyou National Forest).

To help implement this conservation strategy we developed a flowchart and dichotomous key (Appendices 3 and 4). We also developed a habitat model using biotic and abiotic factors that identifies areas on the KNF that are more or less likely to be occupied by salamanders and displays this as a probability gradient (Appendix 5). The model can be used as a tool for planning forest management actions while providing protections for these species.

This conservation strategy builds on the "Conservation Assessment for the Siskiyou Mountains Salamander and Scott Bar Salamander in Northern California" (Vinikour *et al.* 2006). The 2006 assessment summarizes biological and ecological information, identifies potential threats, and describes conservation considerations for the species.

This conservation strategy includes an adaptive management process. The KNF and YFWO will review the strategy at least every five years and revise it based on new information and monitoring results.

Management Status

The Siskiyou Mountains salamander is listed as "threatened" in California and is provided regulatory protection on private lands under the California Endangered Species Act (CESA; CDFG 2013). The Scott Bar salamander is protected under CESA as a sub-population of the Siskiyou Mountains salamander.

The Siskiyou Mountains salamander was included as a USFS Region 5 sensitive species on April 26, 2004 and is a Survey and Manage Category A species. The USFS currently follows its Sensitive Species objectives and policies (USFS Manual 2670.22 and 2670.32, respectively) and the survey and manage provisions of the Northwest Forest Plan (NWFP), as amended (USDA and USDI 200 I) for this species. Under the current survey and manage program, all known Siskiyou Mountains salamander sites are protected. Generally, prior to implementation of projects, either surveys are conducted in talus within its range, or the habitat is assumed to be occupied and avoided. The survey and manage standards and guidelines include protective measures for occupied sites (Olson 1999).

In 2004, when the Siskiyou Mountains salamander was included as a sensitive species, the Scott Bar salamander was considered part of the same species (see Species Information section below). Although the Scott Bar salamander has not been specifically identified as a sensitive species, it is afforded the same protections as the Siskiyou Mountains salamander under the sensitive species and survey and manage programs. This is due to its restricted range, similar habitat associations, and because it faces the same potential threats as the Siskiyou Mountains salamander. For these reasons, and because the two species are difficult to distinguish in the field, the KNF extends survey and manage protections to the Scott Bar salamander and is including the species in this conservation strategy.

Included Areas

Figure 1 shows the areas on the KNF where the conservation strategy's management guidelines apply. This area is approximately 311,025 acres in size and extends from the Canyon Creek watershed in the south, east to the Collins-Baldy Late Successional Reserve, north to the Siskiyou Crest, and west to the East Fork of Indian Creek.

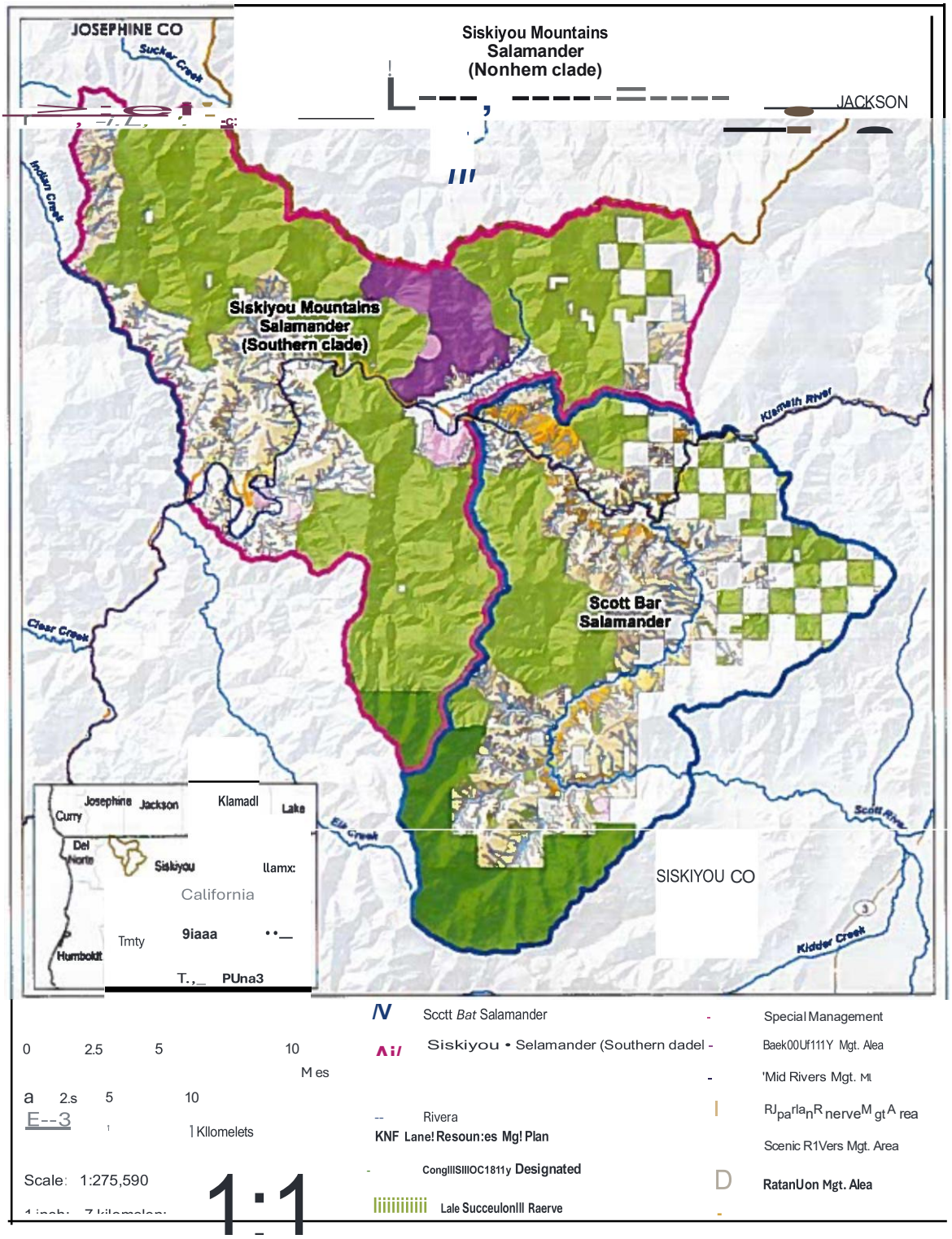

Figure 1. Areas included in the Klamath National Forest conservation strategy for the Siskiyou Mountains and Scott Bar salamanders.

This conservation strategy applies to all KNF lands within the ranges of the Scott Bar and southern population of the Siskiyou Mountains salamanders. Most of the species' ranges are covered by the strategy because the salamanders are primarily located on the KNF (Table I). The remainder of their ranges occur on private land.

Table l. Land ownership within the estimated ranges of the southern population of the Siskiyou Mountains and the Scott Bar salamanders.

Land Ownenhip	Siskiyou Mountains (southern oooulation)	Scott Bar
Private	15,686 acres (9%)	30,083 acres (22%)
Klamath National Forest	158,599 acres (91%)	I06,657 acres (78%)
Total Area	I74,285 acres (I00%)	136,740 acres (100%)

Existing federal regulatory mechanisms such as the NWFP and other provisions of Federal Land and Resource Management Plans (USDA 1994), in combination with the Federal Special Status Species programs, offer many protections for these species on federal lands (USDI 2008, 2018). The majority of the salamanders' ranges are within the Federal Reserve System, which provide the most protection for these species (Table 2). Even though lands covered by the Federal Reserve System are withdrawn from scheduled timber harvest, other activities that can impact salamander habitat can occur, such as prescribed fire and fuels reduction. A smaller proportion of their ranges occurs within Matrix retention areas where timber harvest is restricted. The least protected areas are within Matrix-General Forest and private timberlands where intensive timber management can occur. See Appendix 7 for a description of the various federal land allocations and goals for their management.

Table 2. Land use allocations within the estimated ranges of the southern population of the Siskiyou Mountains and the Scott Bar salamanders.

Type of Land Allocation	Use and Protections	Siskiyou Mo11ntains (southern population)	Scott Bar
Federal Reserve System (e.g., Late-successional Reserves, Wilderness, Riparian Reserves)	Withdrawn from scheduled timber harvest	127,228 acres (73%)	69,737 acres (51%)
Matrix retention areas (e.g., Wild and Scenic Rivers, Retention Visual Quality Objective)	Timber harvest restricted	22,657 acres (13%)	25,981 acres (19%)
Matrix-General Forest and private timberlands	Intensive timber management allowed	24,400 acres (14%)	41,022 acres (30%)

Species Information

The Siskiyou Mountains and Scott Bar salamanders are members of the Plethodontidae family. Plethodontid salamanders are lungless and require contact with moisture in order to breathe through their skin. They are active above ground for breeding and feeding when conditions are moist and temperatures are cool but above freezing (Clayton *el al.* 1999). The brief intermittent periods of surface activity, nocturnal habits, and secretive behavior makes it hard to find these salamanders (Nussbaum 1974; Olson *et al.* 2007).

Taxmwmy

Based on genetic analyses, two distinct clades of the Siskiyou Mountains salamander are currently recognized: 1) the north clade consisting of populations north of the Siskiyou Crest, and 2) the south clade consisting of populations south of the Siskiyou Crest (Pfrender and Titus 2001; Mahoney 2004; Mead *et al.* 2005). Populations along the Scott River drainage and near its contluence with the Klamath River are now recognized as a separate species, the Scott Bar salamander *(P. asupak;* Mead *et al.* 2005).

A portion of the range of another species of salamander, the Del Norte salamander *(P. elongatus),* contacts the western boundary of the Siskiyou Mountains salamander's range. This contact area runs from Indian Creek on the Happy Camp Ranger District, south to the Klamath River, and continuing south to Marble Mountain (Figure I). The area included in the strategy likely includes some areas occupied by Del Norte salamanders since there is some evidence of sympatry (both species occupying the same locations) in the Indian Creek drainage (Mead *el al.* 2005; Mead 2006; DeGross and Bury 2007). Because of the overlap and the difficulties telling these two species apart, the management guidelines in this conservation strategy applies to any suitable habitat within the area covered by the strategy that may contain Scott Bar or Siskiyou Mountains salamanders.

The "Classification and Description" section of the 2006 conservation assessment contains more detailed taxonomic information for the Scott Bar and Siskiyou Mountains salamanders (Vinikour *et al.* 2006).

Habitat and Ecology

Suitable habitat for the Siskiyou Mountains and Scott Bar salamanders has been described as forested, rocky substrates consisting of any rock type (e.g., chert, slate, shale. and schist) with at least some cobble-size pieces (smallest diameter >6.4 cm [2.5 in.]) on the surface that are large enough to provide cover to individual salamanders (Ollivier et al. 2001). These species are primarily found in areas of talus (loose surface rock) or other rocky outcrops (Highton and Brame 1965; Storm 1966; Nussbaum 1974; Clayton and Nauman 2005; Mead *et al.* 2005; Suzuki *et al.* 2008). The rocky talus slopes have interstitial spaces where the salamanders retreat from dry, hot, and sub-freezing conditions above ground to more stable and moist conditions below. These salamanders are occasionally found under other types of cover, such as bark, limbs, or logs, but only during wet weather when moisture is high and only when suitable rocky

substrates are nearby (Nussbaum 1974; Nussbaum *et al.* 1983). Appendix 2 shows examples of suitable talus habitat where these salamanders are found.

Habitat characteristics that influence temperature, humidity, and soil moisture are important to these species. Some of the densest populations of these salamanders are found in areas of talus on heavily wooded, north-facing slopes (Nussbaum 1974) with less solar radiation (Reilly et al. 2009). Sites occupied by Siskiyou Mountains salamanders have attributes that moderate surface microclimates (e.g., canopy closure >70%, more leaf litter cover, more decaying logs) or that are associated with moist, cool microclimates (e.g., less grass cover, more moss and sword fern cover, north-facing slopes) (Ollivier *et al.* 200 I; Welsh *et al.* 2007). Modeled habitat associations at different spatial scales included strong ties to lower elevations within the species' range, and trees found in those lower elevations (Suzuki *et al.* 2008). Habitat maps developed from two modeling efforts (Suzuki *et al.* 2008; Reilly *et al.* 2009) showed signatures of greater salamander habitat suitability with linear stream channels transecting occupied landscapes, likely a composite affect of elevation and cool-moist stream-riparian microclimates at lower hillslope positions. A 'stream effect' on microclimate conditions extends from stream edges into upland forests (Rykken *et al.* 2007; Anderson *et al.* 2007; Olson *et al.* 2007), with likely interactive effects with topographic effects including hillshading.

These salamanders have been detected in rocky substrate in all forest age classes, on all hillslope aspects, and in various conditions of disturbance (Diller and Wallace 1994; Farber *et al.* 200 I; Bull *et al.* 2006; Farber 2007). Although salamanders are found in a variety of habitats and forest types, and can withstand some habitat disturbance, more in-depth studies have found more salamanders in better condition in older forests (Ollivier *et al.* 200 I; Welsh *et al.* 2008).

In summary, Siskiyou Mountains and Scott Bar salamanders are strongly associated with areas containing talus and other rocky substrates (hereafter referred to as "talus") and moist, cool surface microclimates and soils. We used these habitat features to develop management guidelines for this conservation strategy. Please see the "Biology and Ecology" section of the 2006 conservation assessment for a more detailed description of the habitat and ecology of the species (Vinikour *et al.* 2006).

Threats

The Siskiyou Mountains and Scott Bar salamanders are of conservation concern because their limited distribution and restricted microhabitat and microclimatic requirements make them particularly vulnerable to disturbance effects. Threats to these species are more fully described in the 2006 conservation assessment, and include timber harvest, prescribed and wildland fire, recreational and road development, and mining (Vinikour *et al.* 2006). Climate change, disease, and habitat fragmentation are additional potential threats that have been identified (CBD *et al.* 2018).

Prescribed fire is not considered a major threat to the species. The risk of direct mortality of salamanders during prescribed fires is likely low. This is because usually moisture levels are too high for prescribed burning when salamanders are active above ground. In general, it is not expected that the species would be surface active when ground conditions are dry enough for

burning in the spring. It is possible that prescribed fires could temporarily reduce the quality of habitat for these species by reducing understory vegetation, downed wood, litter, and duff, which may decrease surface refugia, moisture levels, and prey availability in those microhabitats. However, the potential short-term negative impacts of fuels reduction activities to the salamanders are likely outweighed by the beneficial long-term effects of reducing the risk of large, high-severity fire.

Timber harvest and large, high-severity wildfire are considered to be the primary threats to the salamanders (Vinikour *et al.* 2006; USDI 2008) and are the threats we address with this conservation strategy. Timber harvest and wildfire alter surface microhabitats and microclimate conditions by removing the forest canopy and disturbing the talus (Olson *et al.* 2009). Moss ground cover can lose its ability to retain moisture and stabilize rocky substrate after significant removal of overstory trees. Substrate interstices within talus may become compacted, exposed, and deconsolidated during timber harvest practices when heavy equipment is used. This can harm salamanders by restricting their underground movements.

The Siskiyou Mountains and Scott Bar salamanders evolved in a landscape with frequent, low-to-moderate or mixed-severity fires (Agee 1993; Odion *et al.* 2004; Skinner *et al.* 2006). Well over half (65.I%) of the combined Siskiyou Mountains and Scott Bar salamander ranges were affected by fire[2] in the past 11 years, and most of the fires burned at high severity (I 9.3% of species' ranges). Of the 293 known Siskiyou Mountains and Scott Bar salamander sites, 207 are located within the fire perimeters (Figure 2 and Table 3). Past fire exclusion practices combined with the projected effects of climate change are likely to increase the frequency, size, and intensity of fires in the Klamath-Siskiyou region (Fry and Stephens 2006). High severity wildfire is expected to affect Siskiyou Mountains and Scott Bar salamander habitat and reduce salamander surface activity by removing overstory forest canopy and organic ground material, such as downed wood and leaf litter, that buffers surface microclimates from high temperatures and low moisture conditions. The recent trends of increased frequency and higher intensity of fire are expected to amplify the stressors to existing salamander populations in the face of increased drought and climate change.

It is not common for heavy equipment to be used on talus during timber operations. However, especially during fire suppression efforts when firelines are constructed, talus may be compacted and degraded by heavy equipment. Compaction of interstitial spaces can cause direct mortality to the salamanders and restrict their vertical movements through the substrate (Moorman *et al.* 2011).

Includes Goff, Happy Camp Complex, Gap, Abney, Cedar, Slater, McKinney, Yeti. and Devil fires.

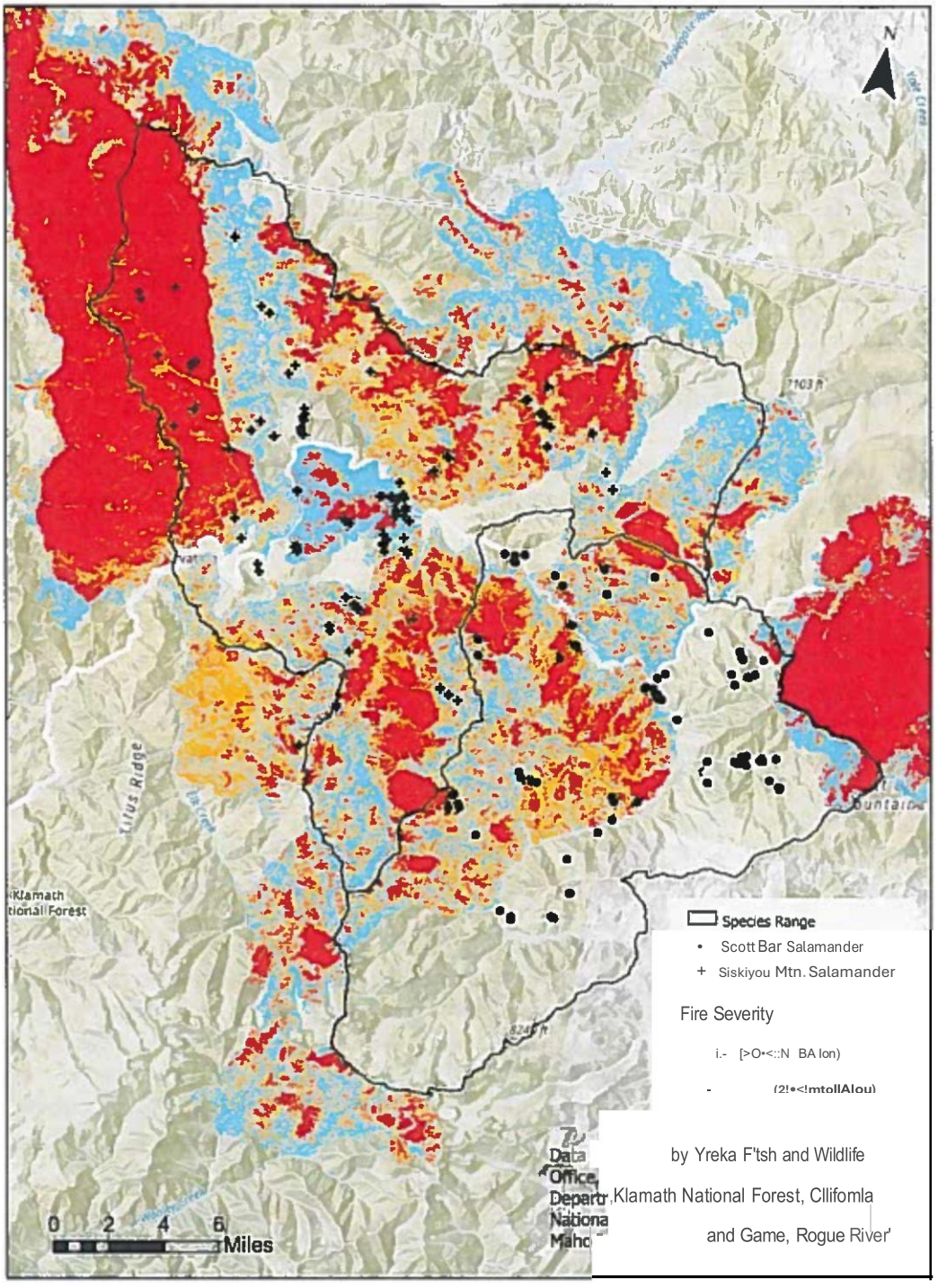

Figure 2. Fire burn severity within the range of the Siskiyou Mountains and Scott Bar salamanders, 2012-2022.

Table 3. Portions of the Siskiyou Mountains and Scott Bar salamanders range affected by fire severity (2012-2022).

Fire severity	Gridcode	Basal Area Loss	Acres (% Area Burned)	% Species RaD!!e	No. Knol'ffl Sites within Fire Perimeter(%)	o/o Sites within Species' Ranges
Low	1-3	>0%- <25%	45,801(22.6%)	14.7%	78 (37.7%)	26.6%
Low-moderate	4	25%- <50%	56,388 (27.8%)	18.1%	65 (31.4%)	22.2%
Moderate	5	50%- <75%	40,285 (19.9%)	13.0%	38 (18.4%)	13.0%
High	6-7	75%- 100%	60,024 (19.3%)	19.3%	26 (12.6%)	8.9%
TOTAL			**202,498**	**65.1%**	**207**	**70.6%**

Basis for Management Guidelines

Maintaining habitat for the Siskiyou Mountains and Scott Bar salamanders at known and potentially occupied sites, and reducing potential threats to these species would be accomplished by:

1) Retaining high canopy cover to provide a moist microclimate in habitat likely to be occupied by the salamanders, especially in areas that may support smaller populations that may be more vulnerable to disturbance,
2) Reducing canopy cover and conducting fuels reduction projects in areas with a lower probability of salamander use and higher fire bum severity likelihood, and in the Wildland Urban Interface (WU[) to protect human safety and structures,
3) Restricting ground disturbing activities on talus to avoid compacting and damaging their habitat and,
4) Applying seasonal restrictions to avoid directly impacting the salamanders when they are active above ground (Clayton et al. 1999).

Appendix 7 identifies existing forest-wide standards and guidelines from the KNF Land and Resources Management Plan that directly or indirectly benefit the Siskiyou Mountains and Scott Bar salamanders. This strategy contains additional conservation measures to protect the salamanders while reducing the threat of large-scale wildfire. These additional measures are based on existing Survey and Manage Guidelines (USDA and USDl 200 I) and current scientific literature on these species, as described in this section below. The strategy's fuels reduction guidelines are consistent with federal management policies that emphasize reducing high fuel loads.

The strategy's management guidelines are based on five criteria: I) substrate, 2) habitat patch size, 3) landscape position, 4) canopy cover, and 5) distance from homes and other structures on private property (WUI versus non-WUI Forest-wide designation). The rationale for using these factors to protect the salamanders while conducting forest management to reduce threats includes the following five considerations.

Substrate

As discussed above, Siskiyou Mountains and Scott Bar salamanders live in and require talus and other rocky substrates to access moist and less extreme temperatures below ground. The conservation strategy's management guidelines only apply to areas of talus habitat within the area covered by this strategy.

Habitat Patch Size

The conservation strategy has greater protections for small patches of talus habitat (<0.25 acre) than larger (0.25 acre) patches. We expect larger patches to be more resilient to disturbance because they can support larger, more stable populations that are less dependent on immigration from surrounding areas, have reduced edge effects because of larger amounts of interior habitat, and are less at risk from complete habitat loss from fire and other disturbance. Most KNF projects involving tractor yarding are limited in size and are not likely to eliminate populations in large patches of habitat, especially on steep ground where equipment is limited because of the terrain.

Populations in small habitat patches are more likely to be impacted by operations without management guidelines that protect these sensitive areas. Small talus patches on the KNF also account for a significant amount of habitat within the species' ranges and tend to have higher canopy closure and more suitable microclimatic conditions for the salamanders than large swaths of open talus fields. Small talus patches distributed throughout the landscape provide habitat connectivity between the larger patches. Maintaining many small habitat patches across the range of a species tends to increase both habitat and genetic diversity because they are more heterogeneous than fewer large patches of habitat (Fahrig 2020). However, it is difficult to manage their habitat to promote successful connectivity between subpopulations given our limited understanding of their dispersal capabilities and movement patterns within the landscape.

Landscape position (hillslope position and aspect)

The conservation strategy's landscape position and canopy cover guidelines are based on local fire behavior and ecology (Skinner *et al.* 2006), the Forest-wide Late Successional Reserve Assessment (USDA 1999), survey and manage survey protocol (Olson 1999), current knowledge of suitable salamander habitat, and our habitat modeling results (see Habitat Model below). These guidelines balance the protection of salamanders where they are more likely to occur with greater fuels reduction and more management flexibility in areas that are at a higher risk of frequent and high severity wildfire.

Shading provided by vegetation, aspect and topography appears to play a significant role in creating the conditions associated with *Plelhodon* salamanders (Olson *el al.* 2009). Siskiyou Mountains and Scott Bar salamanders have been more frequently found in higher numbers on north-facing slopes (Nussbaum 1974; Nussbaum *el al.* 1983; Leonard *et al.* 1993; Farber *el al.* 200 I; Bull *et al.* 2006; Farber 2007); with a higher(>70%) canopy closure (Olliver *et al.* 2001; Nauman and Olson 2004; Reilly *et al.* 2009). These areas, especially on lower slope positions near streams, retain more air and soil moisture and are often more protected from desiccating winds and fire (Rykken *et al.* 2007; Anderson *et al.* 2007; Olson *et al.* 2007; Underwood *et al.* 2010).

Studies have found longer fire return intervals occurring on north-facing slopes in the Klamath Mountains (Taylor and Skinner 1998; 2003). Low-severity fire tends to occur on north and east-facing, lower slope positions near watercourses, while moderate and high severity fires occur more often on upper and south- and west-facing slopes and ridgelines (Taylor and Skinner 1998, 2003; Rockweit *et al.* 2017). Similarly, because of their relatively high fuel moisture content, riparian areas tend to dampen the spread of fires (Pettit and Naiman 2007).

Fire activity is predicted to intensify within the ranges of these species as summers become longer, hotter and drier (Wimberly and Liu 20 I 4; Westerling 2016). As wildfire activity increases with projected climate change, areas that typically experience less frequent and lower severity fires are likely to be more vulnerable to fire, but are still expected to have the highest capacity as refugia (Halosky *et al.* 2020; Meigs *et al.* 2020).

Forest Canopy Cover

This conservation strategy describes different canopy cover levels for fuels-reduction treatments based on hillslope position and aspect site conditions within the range of these salamanders on the KNF. More suitable salamander habitat at lower hillslope positions and more shaded north- and east-facing aspects receive treatments that retain higher canopy cover. Less suitable salamander habitat, including upper hillslope positions and less shaded southern- and western-facing aspects, receive treatments that result in lower canopy cover. This is aimed to maintain a more shaded and moister microclimate in areas more likely to be used by salamanders and where there is a lower risk of high severity tire due to a moister microclimate influenced by topographic features. The guidelines allow greater canopy removal on more exposed aspects on upper hillslope positions where fuel breaks are more effective to reduce the frequency and severity of wildfire in higher-risk areas. Salamanders are not expected to be as abundant in these areas because of the drier habitat conditions.

WUI versus Forest-wide designation

The area within 200 feet of roads and 500 feet of structures within WUI encompasses approximately 23,313 acres[3] (7.5%) of the area included in this conservation strategy and is further defined in Appendix 7. The WUI guidelines are less restrictive than the guidelines for

[3] Does not include all areas within 200 feet of a road within WUI.

non-WU1[4] areas. This approach allows flexibility in vegetation management to protect human safety, and to protect homes and other structures on private property from fire.

Conservation Strategy Management Guidelines

The following guidelines apply to known sites and unsurveyed suitable talus habitat on the KNF within the ranges of the Siskiyou Mountains and Scott Bar salamanders. See Appendices 3 and 4 for a project implementation flowchart and decision key to help incorporate the guidelines into project planning and implementation. Areas that are determined to be unoccupied based on surveys or do not contain talus habitat within the species' ranges will continue to follow the Land and Resource Management Plan Standards and Guidelines.

General Guidelines

The following General Guidelines will either avoid damaging talus habitat or restrict operations to when salamanders are not likely to be active on the surface. These General Guidelines apply to all known sites and unsurveyed talus habitat, regardless of habitat patch size, designation as WUI or Forest-wide, within ridgeline shaded fuel breaks and roadside hazard abatement areas, or within a Specific Area, as described below.

- Avoid using heavy equipment or conducting ground-disturbing activities in areas of talus during any time of the year, including during fire suppression activities. This will protect the integrity of the talus habitat.
- If operating in talus areas is unavoidable:
    - Design operations to minimize compaction or degradation of talus habitat.
    - Examples of fuels reduction activities that can occur in talus habitat include handwork such as removing ladder fuels, manual understory thinning, hand piling debris, and underburning with seasonal restrictions.
    - Ground-disturbing activities should not occur when salamanders are likely to be active on the surface (during the rainy period from late fall through early spring when temperatures are above freezing).
- Avoid constructing and burning piles in talus habitat.

Additionally, no canopy reducing activities are to occur at the known salamander site as well as within at least one site-potential tree height horizontal distance (defined in Appendix I) surrounding known sites, as per Survey and Manage direction for Category A species (USDA and USDI 2001).

[4] The 200- and 500-foot distances are based on Miller *et al.* (2021).

In addition to the General Guidelines, the following specific Forest-wide, WUI, and Special Area guidelines also apply:

Forest-wide Guidelines (non-WU/)

Habitat patch size <0.25 acre

- Avoid treatment of habitat patches <0.25 acre ("'skips").
- If treatment is necessary, minimize impacts and maintain the integrity of the canopy and suitable microclimatic conditions.

Habitat patch size .25 acre

When implementing projects, the goal of the strategy is to retain higher overstory canopy cover and a moister microclimate where the species are more likely to occur. The range in the higher overstory canopy cover desired thresholds are based on survey protocol guidelines and known habitat associations as cited in the Basis for Management Guidelines above. The overstory canopy cover targets are lower in areas less likely to be occupied by the salamanders to provide more management flexibility.

For larger patches of talus, and within at least one site-potential tree height horizontal distance surrounding unsurveyed suitable habitat, implement the following guidelines:

North- and East-facing aspects

- Retain a mosaic of 60-100% (averaging at least 70%) overstory canopy cover on the lower 2/3 of the hillslope
- Retain a mosaic of 40-100% (averaging at least 60% when feasible) overstory canopy cover on the upper 1/3 of the hillslope

South- and West-facing aspects

- Retain a mosaic of 40-100% (averaging at least 60% when feasible) overstory canopy cover on the lower 2/3 of the hillslope
- Retain ::::30% overstory canopy cover on the upper]/3 of the hillslope

Ridgeline shaded fuel breaks and roadside hazard abatement

- There are no canopy cover targets or additional restrictions on treatments within 200 feet of a road or ridgeline shaded fuel break beyond the General Guidelines.

WU/

Habitat patch size <0.25 acre

- Avoid treatment of habitat patches <0.25 acre ("'skips")

Habitat patch size -25 acre

Within 200 feet of a road, there are no canopy cover targets or additional restrictions beyond the General Guidelines for treatments needed for firefighter or property owner ingress, egress, or alternate escape routes for communities.

Within 500 feet of a structure on private property, there are similarly no canopy cover targets or additional restrictions on treatments beyond the General Guidelines.

Specific Areas

Prescribed burning

In talus habitat, prescribed burning should not occur when salamanders are likely to be active above ground from late fall through early spring when conditions are moist and temperatures are cool but above freezing. Prescribed burning is used as a land management tool to mimic a more natural fire regime and minimize the risk of large-scale catastrophic wildfire. Burn piles should not occur on talus habitat.

Rock pits

There are no restrictions on expanding or developing rock pits in areas that do not contain talus habitat. Rock removal within talus habitat that involves no outward expansion of the site should only occur if operations are conducted when salamanders are not active above ground. If expansion of a rock pit determined to have talus habitat is necessary. a wildlife biologist will identify the area to be expanded and parent rock material should be avoided.

Monitoring

Monitoring is important to determine if the conservation strategy's guidelines are being implemented appropriately, and to evaluate the effectiveness of the guidelines at protecting occupied sites and suitable habitat. Additionally, monitoring serves as a foundation for the conservation strategy's adaptive management component. Based on monitoring, the guidelines in this conservation strategy may be modified if the expected results are not achieved. The guidelines may also be modified as conditions change and new information is acquired.

As part of this conservation strategy, YFWO and the KNF will work together to develop a monitoring strategy. This may include preparing an annual report that describes projects conducted within talus habitat within the ranges of the species. Additional information in the report may include maps of the project areas and suitable habitat, management activities,

seasonal timing restrictions, personnel training, and documentation of how the guidelines were applied.

Effectiveness monitoring is important to evaluate the ability of the conservation strategy to protect suitable habitat (objectives I and 3) and support continued occupancy of treated sites (objectives 2 and 4). As funding and time allows, salamander surveys may be conducted in coordination with the YFWO following management activities using a standardized survey protocol (Clayton *et al.* 1999). Survey results would be included in an annual report and entered into an electronic database. If salamander surveys are not feasible, a sample of the project units may be visited after implementation to verify the guidelines are being followed. The conservation strategy will be reviewed every five years and revised based on new information and effectiveness monitoring results (objective 5).

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Appendix 1: Definitions

Direct disturbance: Direct disturbance is any activity that crushes or compacts talus, such that the interstitial spaces are lost.

Ground fuels: Vegetation that is close to or lying on the ground. Ground fuels include dead grass and leaves, needles, dead branches, twigs, and logs.

Ladder fuels: Vegetation that provides vertical continuity between strata, thereby allowing fire to move from ground into the tree crowns or shrubs with relative ease.

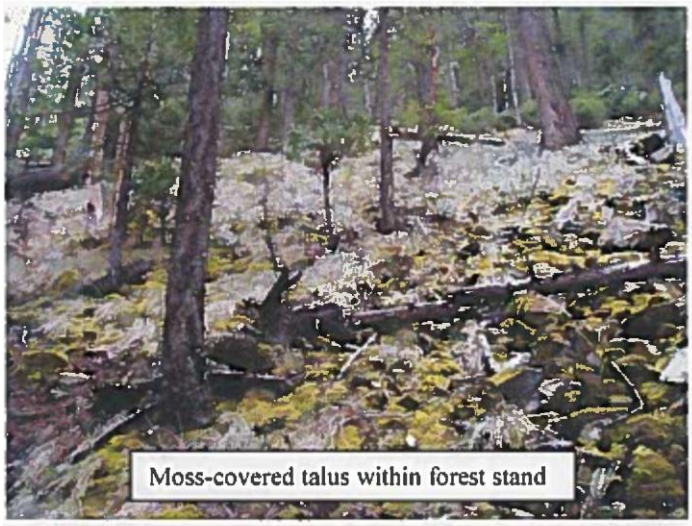
Minimize: Minimize means to reduce to the smallest possible extent. For example, in the case of tractor yarding, ·'minimize direct disturbance to talus" would involve driving tractors around or only on the margins of talus patches.

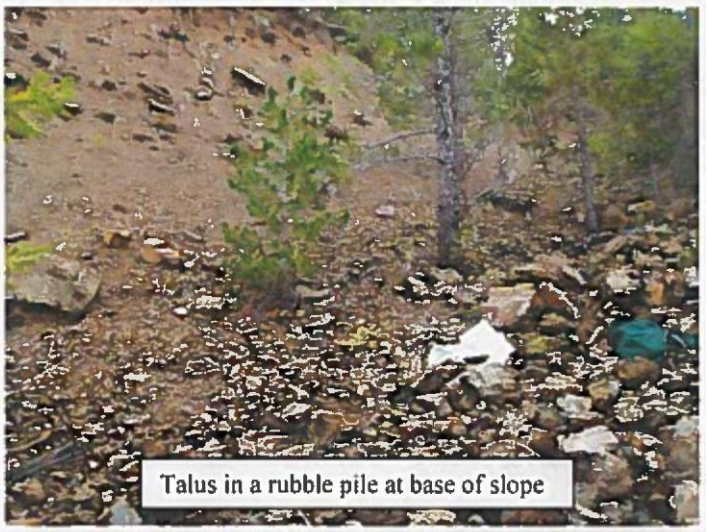
Overstory: Overstory refers to predominant, dominant and codominant trees. As defined in the USDA Pacific Southwest Forest Inventory and Analysis User·s Guide (USDA 200 l), a **predominant** tree is a remnant from an earlier stand whose crown extends above the crowns of the newer stand (at least 2 size classes larger). **Dominant** trees have well-developed crowns that receive direct light from all sides. **Codominant** trees have crowns that receive direct light from above and partly from sides.

Site potential tree height buffer: The horizontal distance from the outer perimeter of the talus habitat patch as measured by the representative tallest tree of a mature forest stand at the site.

Suitable habitat: Suitable habitat is deeply layered talus that provides stable interstitial spaces to allow salamander movement below the surface of the ground. Suitable habitat is talus habitat that is known to be occupied by Siskiyou Mountains or Scott Bar salamanders or determined to be suitable by a wildlife biologist. Protocol surveys (Clayton *et al.* 1999) may be used to determine if talus is occupied. If results of three protocol surveys are negative, then the talus is considered unoccupied and not subject to the conservation strategy guidelines.

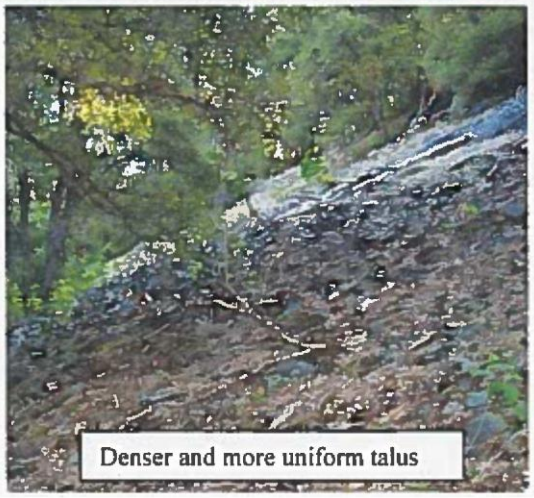
Appendix 2: Examples of Suitable Talus Habitat

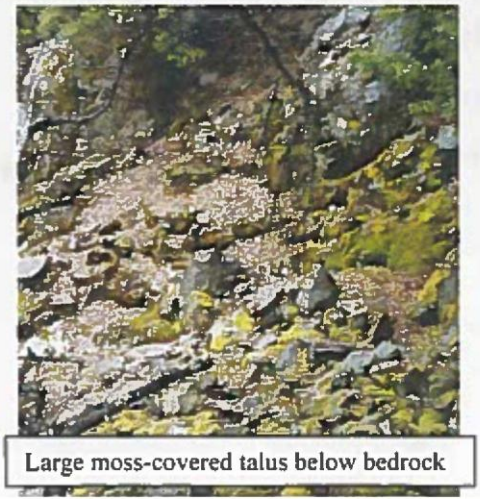

Moss-covered talus within forest stand

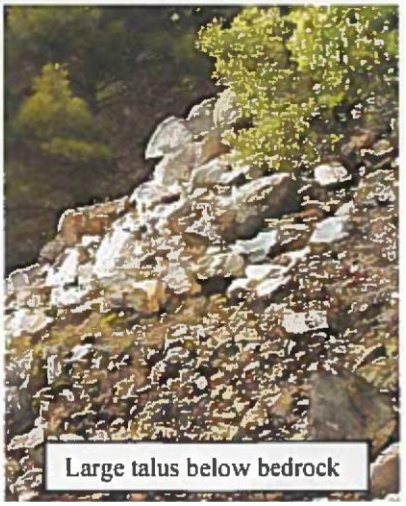

Talus in a rubble pile at base of slope


Sparser talus slope, partially covered by forest debris

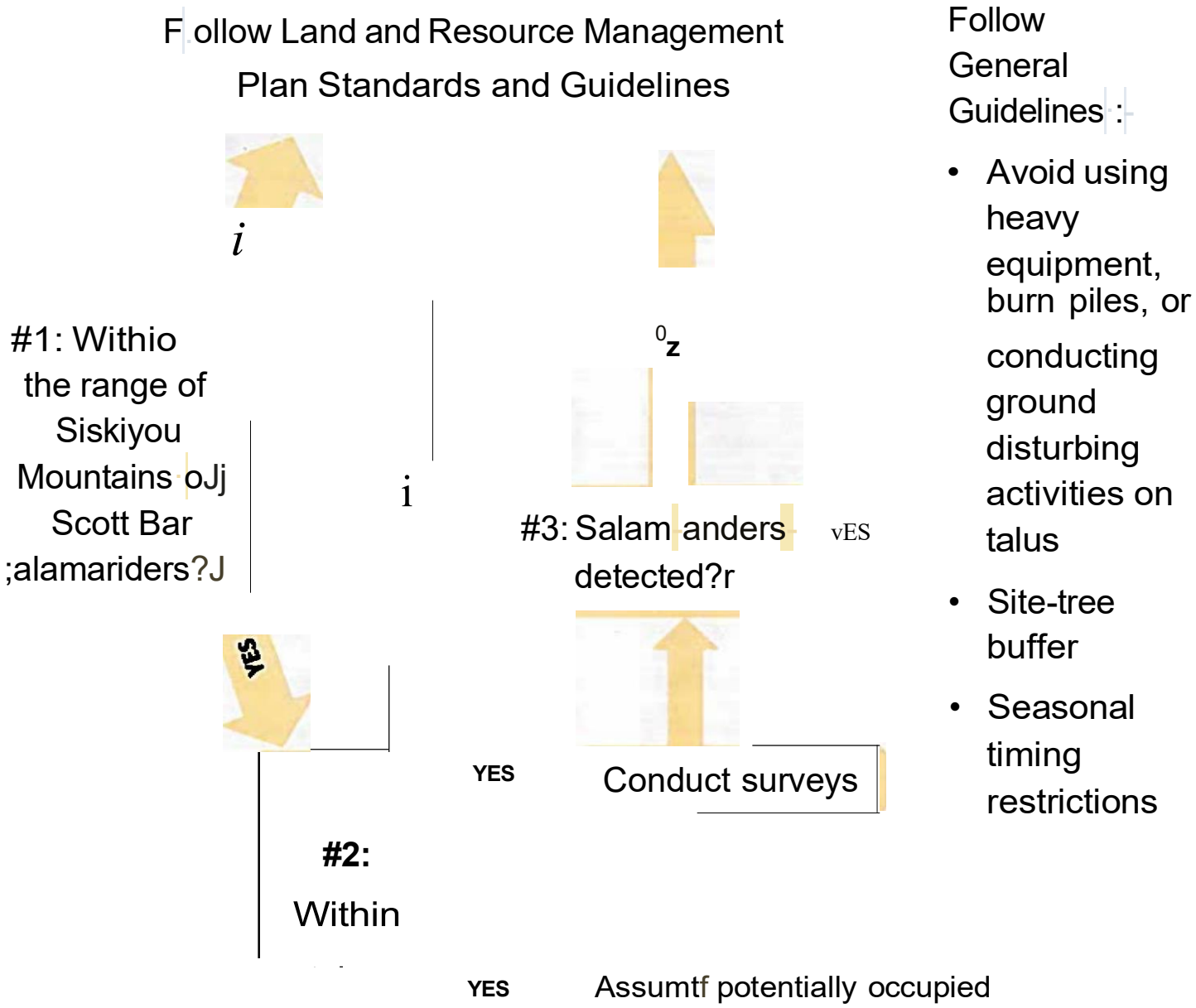

Moss-covered talus in opening with poison oak


Denser and more uniform talus


Large moss-covered talus below bedrock


Large talus below bedrock

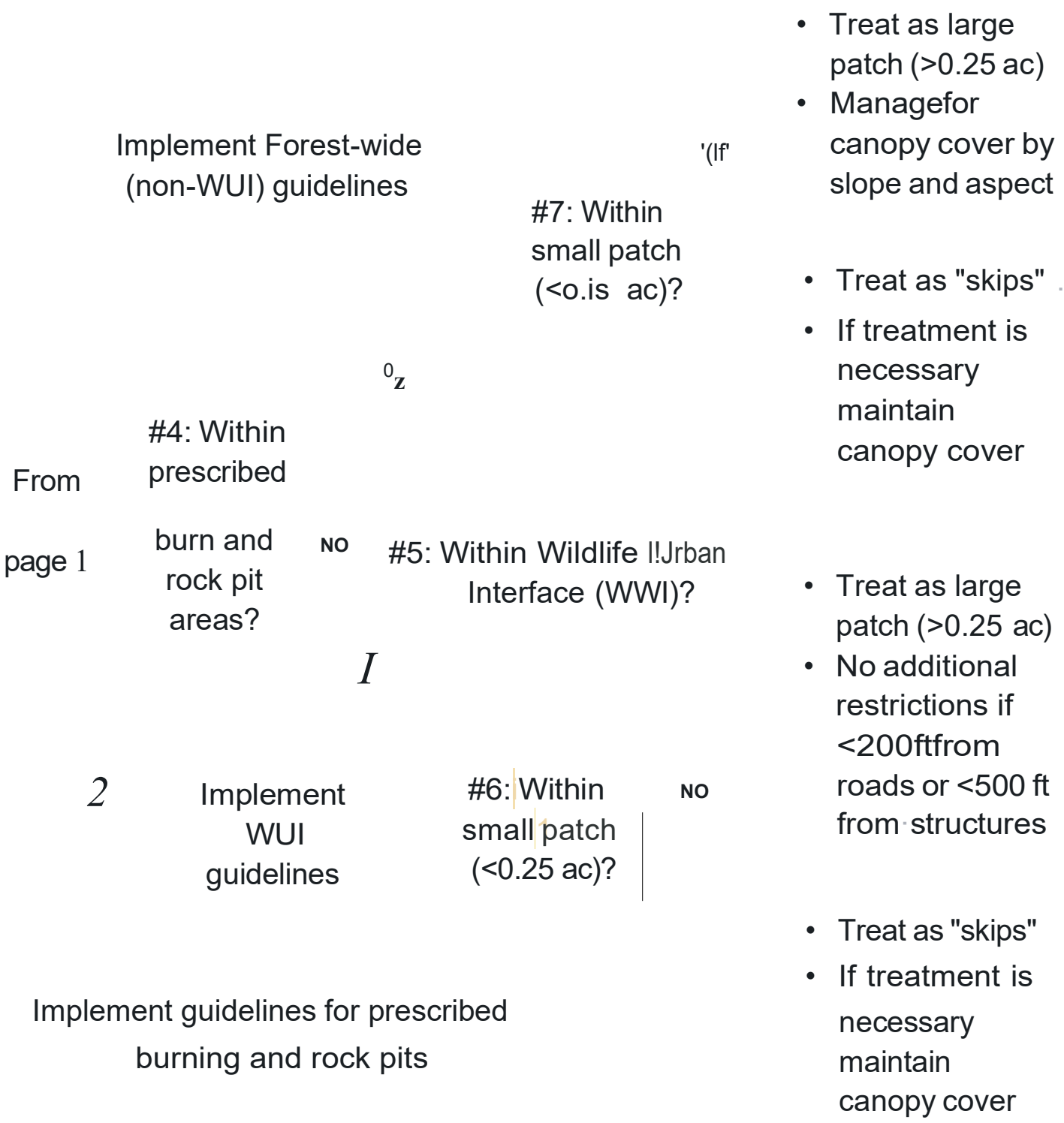
Appendix 3: Project Implementation Flowchart



Follow General Guidelines :-

- Avoid using heavy equipment, burn piles, or conducting ground disturbing activities on talus
- Site-tree buffer
- Seasonal timing restrictions

Appendix 3 (continued): Project Implementation Flowchart



Appendix 4: Implementation Key for Management Guidelines

1. **Within range of Siskiyou Mountains and Scott Bar salamanders?**
   - No= Follow Land and Resource Management Plan Standards and Guidelines, not conservation strategy.
   - Yes""goto#2

2. **Within talus habitat?**
   - No= Follow Land and Resource Management Plan Standards and Guidelines, not conservation strategy.
   - Yes = go to #3 and either conduct protocol surveys or treat as potentially occupied.

3. **Siskiyou Mountains or Scott Bar salamanders detected during surveys?**
   - No= Follow Land and Resource Management Plan Standards and Guidelines, not conservation strategy.
   - Yes= go to #4 and follow General Guidelines (see conservation strategy).

4. **Within prescribed burn or rock pits areas?**
   - No= go to #5
   - Yes""Implement Specific Area guidelines (see conservation strategy).

5. **Within Wildlife Urban Interface (WU[)?**
   - No= go to #7 and implement Forest-wide (non-WUI) guidelines.
   - Yes= go to #6 and implement WUI guidelines.

6. **Within small patch (<0.25 ac)?**
   - No= There are no additional restrictions on treatments beyond the General Guidelines.
   - Yes= Treat as "skip" by flagging boundaries of talus patch and avoid treatment.

7. **Within small patch (<0.25 ac)?**
   - No:
     - Use the Forest-wide (non-WU)) canopy cover guidelines based on hillslope position and aspect (see conservation strategy).
     - Ridgeline shaded fuel breaks and roadside hazard abatement.
       - There are no additional restrictions on treatments within 200 feet of a road beyond the General Guidelines.
   - Yes:
     - Treat as ·'skip" by flagging boundaries of talus patch and avoid treatment.

Appendix 5: Habitat Model Summary

Much of the area covered by the conservation strategy contains likely suitable habitat that has not been surveyed or mapped. In development of a habitat associations model for this area, a presence-only known-site data were used with maximum entropy modeling methods (MaxEnt; Phillips *et al.* 2006} to predict how likely it is for a particular area to be occupied by Siskiyou Mountains or Scott Bar salamanders[5]. The final ·best' model was used to produce a map that categorizes lands within the Conservation Strategy area based on relative habitat suitability (RHS}, or likelihood of occupancy (Figure l).

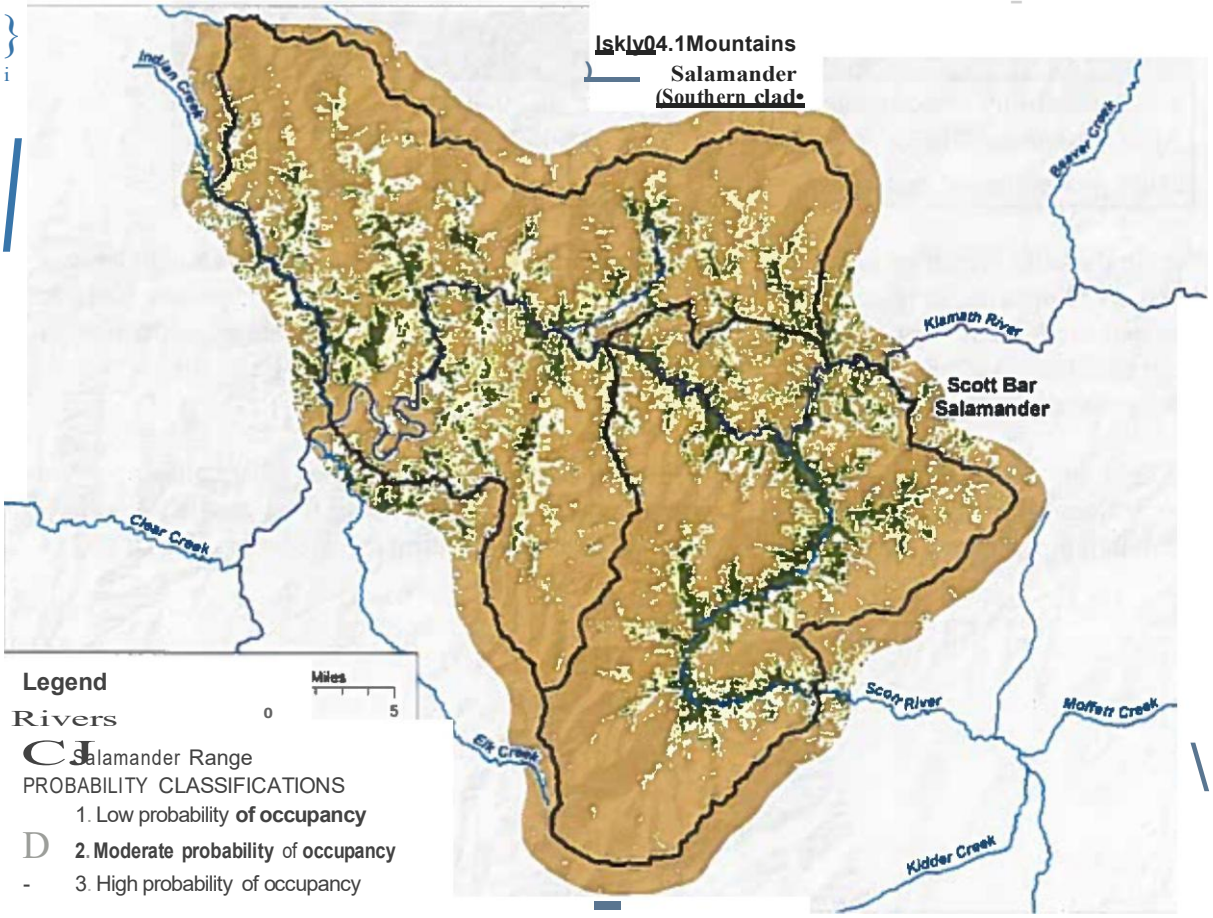


Figure 1. Probability of Siskiyou Mountains and Scott Bar salamander occupancy within the area covered by the conservation strategy based on relative habitat suitability model.

The model identified over half of the strategy area as having a low probability of salamander occupancy (Table 1); however, some of these areas contain known salamander locations. Also, talus habitat was not included in the modeling procedure because landscape coverages of those areas were unavailable. Therefore, talus habitat should either continue to be surveyed before

s Habitat modeling and data analyses were conducted by Dave LaPlante from Natural Resource Geospatial and Jeff Dunk from Humboldt State University.

conducting ground-disturbing activities or assume to be potentially occupied by salamanders, rather than assuming areas identified by the model as having a low probability of occupancy are unoccupied. Despite the model limitations, the results can be used in project planning to identify areas on the KNF to protect for salamanders versus areas with greater management flexibility where salamanders are not as likely to occur. The accuracy of the habitat model may be improved and validated with a field study by conducting surveys of randomly selected sites within areas identified by the model as low, moderate, and high probability of occupancy. These results could be reviewed as part of the monitoring strategy's adaptive management process.

Table 1. Habitat suitability model results.

	Relative Habitat Suitability Rang	Percent Area	Acres
Low probability of occupancy	0-0.39	53.0	134,537
Moderate probability of occupancy	0.39-0.57	32.6	82,630
High probability of occupancy	0.57- 1.00	14.4	36,533

The final model identified climatic, topographic, and habitat conditions associated with known Siskiyou Mountains and Scott Bar salamander locations. Of the nine biotic and abiotic variables included in the final 'best' model, three are included in the conservation strategy guidelines: l) slope position, 2) aspect, and 3) area of land with :::60% canopy cover (see Basis for Management Guidelines above).

See separate ·'Klamath National Forest Siskiyou Mountains and Scott Bar Salamander Conservation Strategy Habitat Model: Methods and Results" document for a detailed description of modeling procedure, covariates analyzed, and results, including top predictors (USDI 2021).

Appendix 6: Topographic Analysis

A topographic analysis was conducted to detennine how many of the known salamander sites occur within each management category and to more quantitatively assess potential risk of management activities to salamanders potentially present within unsurveyed suitable habitat. Management guidelines for sites on northern and eastern aspects and the lower 2/3 of hillslopes are the most protective of salamander habitat. Sites within WUI, upper 1/3 ofhillslopes, and southern and western aspects allow more flexibility for fuels management projects in areas that are at a higher risk of frequent and high severity wildfire, and where salamanders are less likely to occur.

These results indicate whether the conservation strategy protects areas most likely to be occupied by salamanders on northern and eastern aspects and on lower slope positions, based on our occurrence data from known sites. It is important to note that inferences from our results are limited because all known sites were used for this analysis and surveys used to assemble the known-site data were not conducted in a random fashion. This increases the chance that biased sampling may have contributed to observed occurrence patterns with respect to hillslope position and aspect.

The 206 known sites[6] (148 southern population of the Siskiyou Mountains salamander and 58 Scott Bar salamanders) were intersected with the following layers to categorize each site by management guideline:

- Slope position type grid (ridgeline, upper 1/3, midslope, canyon/drainage bottom)
- Aspect grid reclassified into 5 values (north, east, south, west, flat)
- WUI data (points within or intersecting the polygons were considered WUI)

The number of known salamander sites varied by topographic classification and management category (Table I; Figure 1). Overall, most (146; 79%) of the 184 sites outside of WUI were located in the lower 2/3 of hillslopes. The difference in the number of sites between the lower 2/3 of hillslopes versus the upper hillslopes (upper 1/3 and ridgeline) was significant (Chi square= 13.3; df=I; P = 0.0003). Known sites outside of the WUI were significantly more abundant (83; 45%) within the north- and east-facing lower 2/3 hillslope position (Chi square= 90.8; df =3; P < 0.000 I). These areas have the highest level of protection under the conservation strategy by retaining 60-100% total overstory canopy cover.

There are 37 (18%) known sites within areas with the greatest flexibility for fuels management in the WUI and ridgeline categories. The remainder of the management categories are very similar in terms of protections for salamanders. There are 63 known sites within the lower 2/3 of the slope of southern and western aspects and 9 sites within the upper 1/3 of the slope of northern and eastern aspects where 40-100% overstory canopy cover will be retained. Similar, but slightly less protective, are the guidelines for the 14 known sites within the upper 1/3 of the slope of southern and western aspects where :::JO% overstory canopy cover will be retained.

[6] From California Natural Diversity Database, California Department of Fish and Wildlife, KNF, Rogue River National Forest, YFWO, Doug DeGross, Meredith Mahoney, Louise Mead, and Richard Nauman.

These results support our assumption that salamanders are associated with areas that are more likely to be cooler and moister based on their topographic position and orientation. The increased habitat protections within northern and eastern lower hillslopes will maintain a moister microclimate and more hospitable conditions where the species are more likely to occur.

Kelly Christiansen, GIS analyst at the Pacific Northwest Research Station of the USDA Forest Service, conducted geographic analyses to derive topographic positions of salamander at known sites. See separate "Klamath National Forest Siskiyou Mountains and Scott Bar Salamander Conservation Strategy: *Plethodon* Topographic Analysis" document for a more detailed description of our methods, interpretation of results, and important caveats (USDI 2022).

Table I. Number of known Siskiyou Mountains (PLsn and Scott Bar (PLAS) salamander sites by conservation strategy management guideline.

	Toeo2ra bic Position	PLST	PLAS	Total No. Sites
Aspect and Slope Position	North and east, lower 2/3	65	18	83
	North and east, upper I/3	5	4	9
	South and west, lower 2/3	43	20	63
	South and west, upper I/3	10	4	14
	Ridgeline	13	2	15
WUI		12	10	22
TOTAL		**148**	**58**	**206**

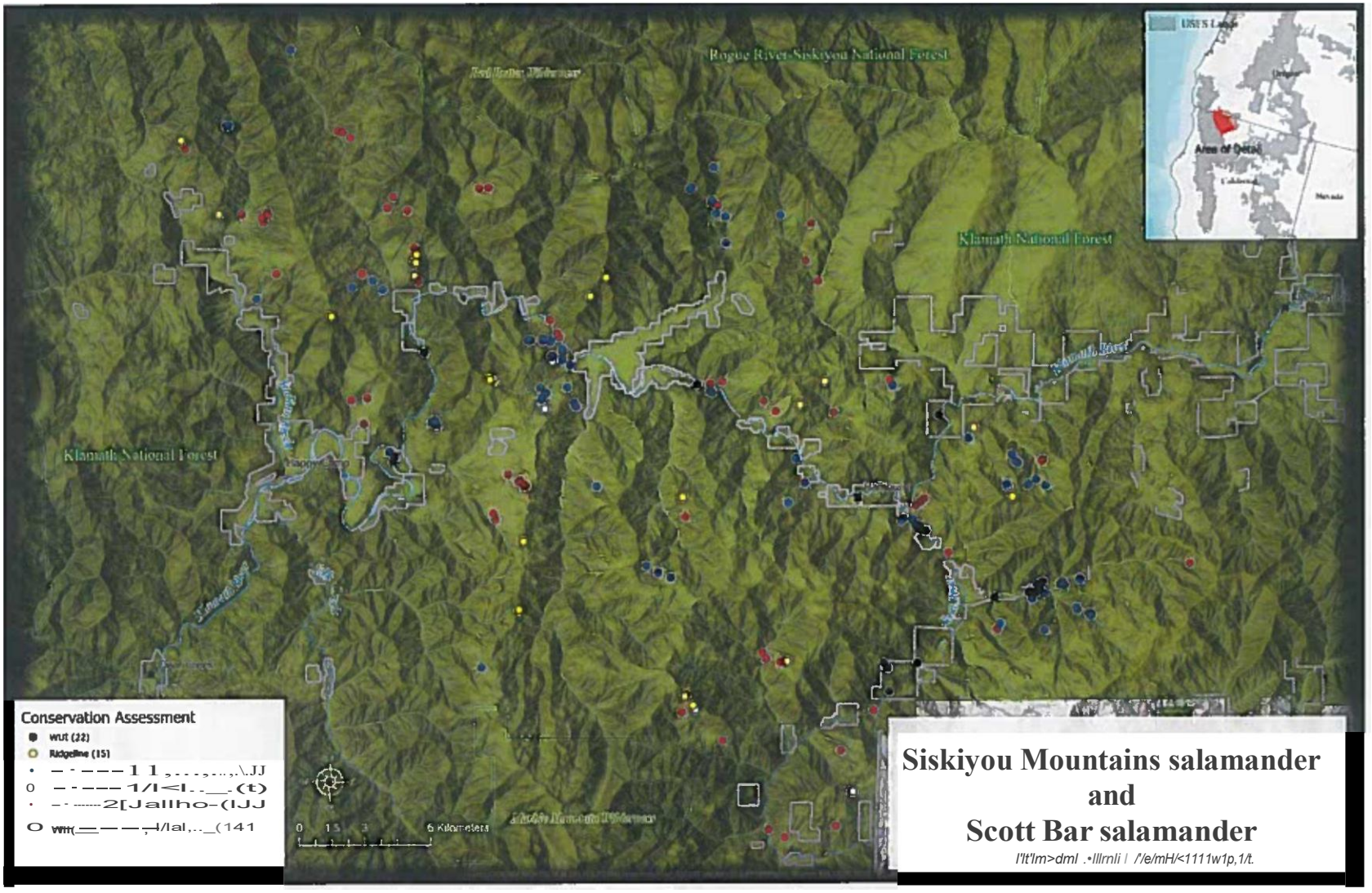


Figure I. Map of the Siskiyou Mountains and Scott Bar salamander conservation strategy area showing the distribution of known salamander sites by topographic classification, management guideline, and in relation to Wildland Urban Interface within US Forest Service, Klamath National Forest. Number of sites shown in parentheses.

Appendix 7: Forest-Wide Standards and Guidelines

These existing standards and guidelines, excerpted from the KNF Land and Resources Management Plan, may benefit Siskiyou Mountains and Scott Bar salamanders, directly or indirectly.

Soil Managt:ment

The soil standards and guidelines have indirect benefits to salamanders in that they prescribe retention of moisture-holding features on the surface.

Soil Erosion

3-2 : With the exception of roads, pennanent facilities or other projects that will pennanently occupy a site, the following levels of total soil cover should be maintained at the stand level to reduce the potential of soil erosion:

Soil Cover Guidelines for Projects

Soil Texture Class	Slope(%)	Minimum Total Soil Cover*(%)
Guidelines for pro.iects usin !: tractors:		
Sandy loam or coarser	0-25 26-35	70 80
Loam or finer	0-35	70
Guidelines for prescribed burnin2 pro.iects:		
Sandy loam or coarser	0-25 26-45 >46	60 70 80
Loam or finer	0-35 36-60 >61	50 60 70

*Soil cover consists of low growing live vegetation (12 inches high), rock fragments (greater than 1/2 inch in diameter), slash (any size) and fine organic matter (charred or not) that is in contact with the soil surface. Fine organic matter refers to duff, litter, and twigs less than 3 inches in diameter.

Soil Productivity

3-3 : Maintain soil productivity by retaining organic material on the soil surface and by retaining organic material in the soil profile.

3-4 : A minimum of 50% of the soil surface should be covered by fine organic matter following project implementation, if it is available on the site.

3-5 : Maintain a minimum of 85% of the existing soil organic matter in the top 12 inches of the soil profile to allow for nutrient cycling and to maintain soil productivity.

Coarse Woody Debris

The coarse woody debris (CWD) standards and guidelines have indirect benefits to salamanders in that CWD retention affects_ surface moisture and microc/imate.

6-16, b): Maintain 5 to 20 pieces of CWD per acre in various states of decay. The specific amount of materials specified for retention on individual projects shall be detennined by the project interdisciplinary team. At a minimum, the interdisciplinary team should consider the amount of materials existing on site, the amount of material needed to provide for nutrient cycling and site productivity, the denning needs of wildlife species, and the fire risk as a result of fuel material on site. Attempt to maintain these levels of CWD on site throughout the life of the project or throughout the rotation (if timber harvest is planned.)

Leave large logs of any species and condition (of at least 20 inches in diameter and about 40 cubic feet in volume) when they are available. Most of the logs should be in Decay Class 3, 4 and 5 (defined in the USDA Handbook 553, page 80) with at least 2 logs per acre in Decay Class I or 2. Do not count logs less than 12 inches in diameter or stumps as CWD. This guide1ine may be waived in strategic fuelbreak areas or for documented safety reasons.

Down logs should reflect the species mix of the original stand. In areas of partial harvest, the same basic guidelines should be applied, but they should be modified to reflect the timing of stand development cycles where partial harvesting is practiced.

6-16 c): CWD already on the ground should be retained and protec.ted to the greatest extent possible from disturbance during treatment (e.g., slash burning and yarding) which might otherwise destroy the integrity of the substrate.

6-16 d): Down logs should be left within forest patches that are retained under green-tree retention guidelines in order to provide the microclimate that is appropriate for various organisms that use this substrate.

Wildlife

The wildlife standards and guidelines have direct benefits to salamanders and are the basis/or this conservation strategy _

Cliff, Cave and Talus

8-38. Design individual projects to protect the value of unique wildlife habitats such as cliffs, caves and talus slopes.

Miscellaneous Wildlife Sites

8-56: Locate and manage habitat sites that have special value for wildlife or botanical resources and are not otherwise provided for in the standards and guidelines. Appropriate management should be determined at the site-level through the environmental analysis process.

Timber Management

The timber management standards and guidelines have indirect benefits to salamanders because areas of forested talus could be incorporated into the 15% retention area.

Cutting Methods

21-13: Retain at least 15% of the area associated with each regeneration cutting unit (stand). As a general guide, 70% of the total area to be retained should be aggregates of moderate to larger size (0.2 to 1 hectare or more) with the remainder as dispersed structures (individual trees, and possibly including smaller clumps less than 0.2 hectares). Larger aggregates may be particularly important where adjacent areas have little late-successional habitat. To the extent possible, patches and dispersed retention should include the largest, oldest live trees, decadent or leaning trees, and hard snags occurring in the unit. Patches should be retained indefinitely. This standard and guideline applies to regulated (matrix) land, and only regulated (matrix) land counts toward the 15% retention area.

Fuel Management and Prescribed Fire

The fuel management and prescribedjire srandards and guidelines have indirect benefits to salamanders because they encourage the management of forest resources to reduce the risk of habitat loss due to large-scale, high inJensity fire.

22-10: Prescribed fire (wildland fire managed for resource benefits or management-lighted prescribed fire) is a desirable tool to be used for managing the Forest resources. Consider the long-term role of fire during all project planning phases.

22-11: Site treatments should be prescribed which will minimize intensive burning, unless appropriate for certain specific habitat, communities, or stand conditions. Prescribed fires should be planned to minimize the consumption of litter and CWD. These provisions apply to regulated (matrix) land and within the Adaptive Management Area.

22-13: Do not allow management activities to result in fuel accumulations that increase the risk of high intensity fires that did not typically occur on the Forest before wildland fire suppression activities began in the early 1900's. Manage fuel loadings and the use of prescribed fire on the Forest to maintain ecological processes.

Management Area Standards and Guidelines

These standards and guidelines apply to specific land allocation within the area included in the conservation strategy.

(MA2) Wilderness (24,237 acres): The management goals of wilderness include to provide for natural conditions and ecological processes, and to provide recreationists primitive and semi-primitive, non-motorized recreation opportunity.

MA2-55: All lightning-started fires will be prescribed natural fire unless the fire does not meet the goals and objectives of wilderness (it will then be declared a wildfire). Penn it lightning-caused fires to play their ecological role, as nearly as possible, within the wilderness.

MA-62: Suppression of wildland fire will use appropriate suppression response and the Minimum Impact Suppression Techniques as outlined in the Forest-wide Fire and Fuels Management Standards and Guidelines.

(MA5) Special Habitat (135,249 acres):

Late Successional Reserves (LSRs; 133,052 acres): The objectives of LSRs are to protect and enhance conditions of late-successional and old-growth forest ecosystems which serve as habitat for late-successional and old-growth related species.

MAS-I: Projects designed to improve conditions for fish, wildlife or watersheds should be considered if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible.

MAS-22: Road construction in LSRs for silvicultural, salvage and other activities generally is not recommended unless potential benefits exceed the costs of habitat impainnent. If new roads are necessary to implement a practice that is otherwise in accordance with these guidelines, they will be kept to a minimum, be routed through non-late-successional habitat where possible and be designed to minimize adverse impacts. Alternative access methods, such as aerial logging, should be considered to provide access for activities in reserves.

MAS-27: Certain risk management activities, if properly planned and implemented, may reduce the probability of major stand-replacing natural events such as fire.

MA5-28: Silvicultural activities aimed at reducing risk shall focus on younger stands in LSRs. The objective will be to accelerate development of late-successional conditions while making the future stand less susceptible to natural disturbances. Salvage activities should focus on the reduction of catastrophic insect, disease and fire threats. Treatments should be designed to provide effective fuel breaks wherever possible. However, the scale of salvage and other treatments should not generally result in degeneration of currently suitable owl habitat or other late-successional conditions.

MAS-29: ln some LSRs in these provinces, management that goes beyond these guidelines may be considered. Levels of risk in those LSRs are particularly high and may require additional measures. Consequently, management activities designed to reduce risk levels are encouraged in those LSRs even if a portion of the activities must take place in currently late-successional habitat. While risk-reduction efforts should generally be focused on young stands, activities in older stands may be appropriate if: (I) the proposed management activities will clearly result in greater assurance of long-term maintenance of habitat, (2) the activities are clearly needed to reduce risks and (3) the activities will not prevent the LSR from playing an effective role in the objectives for which they were established. Such activities in older stands may also be undertaken in LSRs in other provinces if levels of fire risk are particularly high.

MAS-35: Each LSR will be included in fire management planning as part of watershed analysis. Fire suppression in LSRs will utilize minimum impact suppression methods in accordance with guidelines for reducing risks of large-scale disturbances. Plans for wildfire suppression will emphasize maintaining late-successional habitat. During actual fire suppression activities, fire managers will consult with resource specialists (for example, botanists, fisheries and wildlife biologists, hydrologists) familiar with the area, these standards and guidelines and their objectives, to assure that habitat damage is minimized. Until a fire management plan is completed for LSRs, suppress wildfire to avoid loss of habitat in order to maintain future management options.

MAS-38: Utilize an aggressive prescribed fire program to maintain long-term habitat quality and ecological processes within LSRs once LSR assessments and NEPA analysis are completed and site-specific decisions are made. Specific fire prescriptions shall be used until wildland fire managed for resource benefits can be effectively used. The use of wildland fire managed for resource benefits is outlined in the Wilderness Fire Management Standards and Guidelines. Those standards and guidelines also shall apply to LSRs.

(MA7) Special Interest Areas (SIAs; 53 acres): The objectives of SIAs include managing for ecological processes and the unique features for which the area was designated, and promoting public use, education, interpretation, and enjoyment of the special interest values of the area when such activities do not harm the values for which the area was designated.

MA7-12: Rock sources shall not be developed within S[As.

MA7-20: Manage prescribed natural fire, prescribed fire and biomass utilization to maintain the ecological processes within the SIA. Protect all facilities and developments.

(MA9) Backcountry Areas (9,456 acres):

MA9-8: Schedule no timber harvest from these areas. Vegetative manipulations, such as brushing of trails, falling dead snags for public safety and other activities, may occur to promote recreation opportunities, develop primitive facilities or maintain public health and safety.

MA9-9: If a catastrophic event occurs (e.g., fire, widespread insect damage or disease), actions necessary to recover the overall Forest health of the area are appropriate. This may include

salvage and re-vegetation. Reforestation of the area following a catastrophic event shall be a moderate priority, especially within areas that have been salvaged. Measures to avoid catastrophic events within the area may be implemented if consistent with meeting the area goals.

MA9-I 0: Logging systems used in salvage operations will favor aerial methods over road construction. Should roads be constructed, they will be closed to all use immediately after recovery operations are completed.

MA9-I I: Fire shall play an important role in the management of the backcountry recreation area. Wildland fires that are not within the desired prescription shall receive the appropriate fire suppression response (see Forest-wide standards and guidelines). Prescribed fire shall be aggressively used to promote ecological processes.

MA9-12: All lightning-started fires will be wildland fire managed for resource benefits unless declared wildfires. Permit lightning-caused fires to play their ecological role, as near as possible.

MA9-15: Reduce to an acceptable level the risks and consequences of a wildland fire within backcountry areas. Assessments of consequences should emphasize potential impacts on residential areas, adjacent landowners, endangered or threatened species, etc.

(MAIO) Riparian Reserves (RR; 22,395 acres): The objectives of RRs include maintaining and restoring riparian-dependent structures and functions of intermittent streams, providing benefits to riparian-dependent and associated species, enhancing habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas, improving travel and dispersal corridors for many terrestrial animals and plants, providing for greater connectivity of the watershed, and providing connectivity corridors among the LSRs.

MA I0-3: As a general rule, standards and guidelines for RRs prohibit or regulate activities in RRs that retard or prevent attainment of the Aquatic Conservation Strategy objectives.

MA I0-7: The use of heavy equipment within RRs for riparian habitat restoration may be approved after interdisciplinary review.

MA I0-10: Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species and attains Aquatic Conservation Strategy objectives.

MA I0-42: For each existing or planned road, meet Aquatic Conservation Strategy objectives by minimizing road and landing locations in RRs.

MA10-54: Prohibit timber harvest, including fuel wood cutting, in RRs, except as described below. RR acres shall not be included in calculations of the timber base.

a) Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuel wood cutting if required to attain Aquatic Conservation Strategy objectives.

b) Salvage trees only when watershed analysis determines that present and future CWD needs are met and other Aquatic Conservation Strategy objectives are not adversely affected.

c) Apply silvicultural practices for RRs to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives.

MA I0-57: Where possible, manage the conifer vegetation for a basal area greater than or equal to 250 square feet per acre.

MA I0-68: Design prescribed bum projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives and to maintain ecological processes.

(MA11) Retention Visual Quality Objective (VQO; 6,678 acres): The purpose ofa VQO is to provide a level of attractive, forested scenery by maintaining the areas in a natural or natural-appearing condition.

MA 11-3: Manage the area primarily for forested mid- and late-seral stage (3BC to 4BC) habitat. Management activities should promote the growth of larger diameter conifers with a canopy closure of about 60% where areas are capable of supporting forest types.

MA11-11: Design the size and shape of the management activity to mimic the surrounding openings shapes and landscape patterns. Design the shapes to appear natural and not change the existing landscape pattern. Regional unit size limits may be exceeded in some cases to mimic existing openings.

MA I 1-14: Use prescribed fire to reduce natural fuel buildups, to treat post-harvest fuels and to influence vegetative development or composition when there is no market for the slash or down wood.

Note: MA 11-17 are "'Matrix"; regularly, scheduled timber harvest may come from these land allocation.

(MA12) Scenic Rivers (1,232 acres):

MA12-18: A wide range of silvicultural treatments may be used to meet Scenic River objectives.

MA12-19: Schedule marginal timber yields, compatible with area goals.

(MAl3) Recreation River (4,495 acres):

MA13-15: Lands may be managed for a full range of silvicultural uses, to the extent currently practiced. Timber harvesting would be allowed under standard restrictions to protect the immediate river environment, water quality, scenic, fish and wildlife, and other values.

MA13-17: Prescribed fire may be used within the management area to maintain the ecological functions, if it maintains the outstandingly remarkable values for which the river was designated.

(MAIS) Partial Retention VOO (37,626 acres): Areas managed to meet a Partial Retention VQO may show evidence of management activities but are visually subordinate to the characteristic landscape in form, line, color, or texture of landscape elements. Views from visually important roads and trails appear forested and provide a nearly natural looking landscape.

MAl5-3: Manage the area primarily for forested mid- to late-seral stage (3A, 3BC, 4BC) habitat. Management activities should promote the growth of closed canopy forest with scattered openings due to management activities or natural occurrences where the area is capable of supporting these seral stage forest types.

MA 15-12: Use silvicultural treatments compatible with area goals. Depending on conditions, either even-aged or uneven-aged silvicultural treatments may be compatible with the management objectives for these areas.

MA 15-15: Use prescribed fire to reduce natural fuel buildups, to treat post harvest fuels and to influence vegetative development or composition when there is no market for the slash or down wood.

(MAI7) **General Forest (12,153 acres):**

MA17-15: Use prescribed fire to reduce natural fuel buildups, to treat post harvest fuels and to influence vegetative development or composition when there is no market for the slash or down wood.

Other Areas of Interest that overlay with Land Allocations

Wildland Urban Interface (~23,313 acres)[7]:

For this conservation strategy, the Wildland Urban Interface (WUI) are the areas of National Forest within 200 feet of a road needed for firefighter or property owner ingress, egress, or alternate escape routes for communities and 500 feet of private property that includes homes and other structures. The objective within the WUI is to manage vegetation to reduce fuel loading, fire intensity and aid in fire suppression efforts. The potential impacts of fuels reduction activities on these salamander species will be less than the estimated WU) area because the majority of the WUI does not contain suitable talus habitat. Additionally, although the goals is to

[1] Does not include all areas within 200 feet ofa road within WUI.

treat the entire WUI to prevent greater than 4-foot flame lengths, it is likely that not all of the WUI will ultimately be treated.

Inventoried Roadless Areas (72,340 acres):

Areas inventoried by the Forest Service as potentially suitable for inclusion in the National Wilderness Preservation System had to be at least 5,000 acres in size, meet the definition of wilderness found in section 2(c) of the 1964 Wilderness Act, and have an absence of roads. The term 'roadless' was used to describe these potential new areas of wilderness.

In January 2001, the Department of Agriculture published the Final Rule for Road less Area Conservation. The rule established prohibitions on road construction and timber harvest in inventoried roadless areas. The rule allows cutting ·'small diameter timber" where it is needed to improve habitat for threatened, endangered, proposed or sensitive species, and where it is needed to maintain or restore characteristics of ecosystem composition and structure, such as to reduce uncharacteristic wildfire effects. Such activities may proceed on a limited basis, so long as they do not require road construction or reconstruction.

There are 72,340 acres of inventoried roadless area within the area covered by the strategy. The majority of overlap is in LSRs (48,875 acres). Approximately 10,230 acres of inventoried roadless area overlap with Matrix land allocations, about 3,350 of which are in General Forest