

**Inventory for Oregon Slender Salamander,
Batrachoseps wrightorum,
on the Mt. Hood National Forest**

**Report to the Interagency Special Status Sensitive Species Program
FY 2009**



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Summary

This project surveyed for Oregon slender salamander (*Batrachoseps wrightorum*) at 23 sites on the Mt. Hood National Forest in 2009. The purpose of the survey was to revisit previously occupied sites to determine occupancy and record habitat data. Three survey areas were selected based on high concentrations of previous detections and 23 individual sites within these areas were selected at random. We found Oregon slender salamander at a total of 7 of the 23 sites visited. Access to sites was restricted due to heavy snow and many sites were beginning to dry by the time we were able to conduct surveys. This may account for the low number of occupied sites.

Introduction

The Oregon slender salamander (OSS) is dark brown above, with yellowish-brown or reddish flecks forming a band from snout to tail tip (Corkran and Thoms 1996). Their size ranges from 3.5 to 4.25 inches total length (Stebbins 1985, Storm 2005), and there are only 4 toes on the back feet (Storm 2005). The species is currently known from the north Oregon Cascade Range and foothills, occurring west of the crest from the Columbia River to Highway 58, and occurring east of the crest from the Columbia River to the Warm Springs Indian Reservation. It occurs across a north-south range of close to 145 miles, from approximately 80 feet in elevation (at the northern end of its range in the Columbia gorge) to approximately 5,600 feet at the southern end of its range on the west side of the Cascade Range crest. East of the crest, it occurs along a north-south span of 40 miles and occurs up to 4,000 feet elevation.

The OSS is associated with down wood in older forests. In the western Cascades, OSS is found in older forests with dead wood and occurs in stands with moist microhabitat conditions (Bury and Corn 1988, Gilbert and Allwine 1991). While it may be found in all seral stages when down wood is present, studies west of the Cascade Range have shown abundances are higher in late-successional forests (Bury and Corn 1988). Habitat associations east of the Cascades are not well known. The species uses a variety of ground cover objects ranging from sloughed bark to down logs, and has been found to occur in younger and older forests.

State and federal agencies classify the OSS as a potentially vulnerable species due to its restricted distribution and vulnerability to a variety of human caused disturbances. The species is listed as an Oregon State Sensitive species and is currently listed as a USDA Forest Service and USDI Bureau of Land Management Sensitive species.

Inventory Area

Because habitat associations of Oregon slender salamander are not as well known east of the Cascades, we focused our survey sites on the east side of the Mt. Hood National Forest. Surveys have been conducted for OSS on the east side of the Forest over the past years. This species was found at several sites during past surveys and based on those surveys we chose areas with high concentrations of salamanders for our site visits. From the locations in NRIS Wildlife, 3 survey areas evenly distributed north and south were identified north of FS4400 road at the north end, the Badger Creek drainage twelve miles to the south, and the McCubbins Gulch area an additional nine miles to the south. Each survey area covered roughly 5-6 square miles. Twenty-

three individual sites where salamanders had previously been found within those concentration areas were selected for site revisits. Sites ranged from 2,200 and 4,200 feet in elevation.

Methods

Surveys were conducted using the Terrestrial Mollusk Survey Protocol, Version 3.0 (Duncan et al. 2003). Mollusk Daily Survey Log forms were filled out for each survey and Mollusk Location Record forms were filled out each time an OSS was found (Appendices 1 and 2).

UTM coordinates were obtained from the GIS layer in NRIS and a Trimble hand-held GPS unit was used to relocate the selected historic sites. At each site, a 10 acre area was surveyed for one hour. The selection of the 10 acres was made by identifying areas with sufficient leaf and woody debris to warrant one hour of searching. Each 10 acre survey consisted of two 20 minute intensive searches of downed wood and litter and 20 minutes of walking with brief searches of likely habitat for a total search time of one hour. If the site was no longer suitable habitat, such as a timber harvest unit with no down wood and little or no tree retention, then the survey was not conducted and a note was made of the habitat conditions.

Two visits were made to each site unless an OSS was located during the first visit. If the species was detected during the first visit, the site was not visited a second time. All animals were left in the locations where they were found. Surveys were conducted from June 8 to June 24, 2009.

Survey Results

A total of 23 sites were surveyed for OSS. The sites were located within 3 different survey areas on the east side of the Forest: Badger Creek drainage, McCubbins Gulch, and FS4400 Road. A total of 30 individuals were found at 7 sites. Table 1 shows the number of individuals found within survey areas.

Table 1. Summary of Survey Results Within Survey Areas

Badger Creek		McCubbins Gulch		FS4400 Road	
Site #	# of OSS individuals	Site #	# of OSS individuals	Site #:	# of OSS individuals
176	0	166	0	160	0
177	2	167	6	161	0
178	0	168	0	162	4
179	5	169	0	163	0
180	0	170	0	164	0
181	0	171	0	165	0
182	0	172	3		
		173	0		
		174	3		
		175	7		
Total	7		19		4

Badger Creek-

This area contained 7 sites and was surveyed on June 9 and 16. OSS were found at 2 of the 7 sites with a total of 7 individuals. OSS were found during the first visit at site 179 and on the second visit at site 177.

McCubbins Gulch

This area contained 10 sites and was surveyed on June 8 and 22. OSS were found at 4 of the sites with a total of 19 individuals. OSS were found during the first visit at sites 167, 174, and 175, and on the second visit at site 172.

FS4400Road-

This area contained 6 sites and was surveyed on June 10 and 24. OSS were found at one of the sites with a total of 4 individuals. OSS were found during the first visit at site 162. No OSS were found during the second visit.

Three historic sites were no longer in suitable habitat and were located within harvest units with little or no tree retention. Nine of the sites appeared to be in marginal habitat with little downed wood and less than 50 percent canopy cover. The remaining 4 sites with no OSS detections, and all 7 sites where OSS were found, were older forests (greater than 80 years) with down wood and canopy cover greater than 70 percent.

The conditions for all sites during the first visit were still within the survey protocol parameters for moisture and temperature, although the more open sites were drier than the less open sites. All sites began drying rapidly and by the second visit, conditions at most sites were marginal even though the soil temperatures were around 50-55 degrees F.

The survey areas were not accessible earlier in the year due to snow levels on the roads. Some of the sites appeared to have been snow free for quite some time before we were able to conduct surveys, which could mean we were past the optimal time for surveys. Since OSS were found within the marginal sites in the past, and they were not found in marginal habitat during these surveys, it is not known if these sites still support OSS or if the conditions were too dry by the time we were able to access these areas. None of the marginal habitat appeared to have been treated in recent years so it is assumed that the habitat at these sites has remained relatively unchanged since detections during previous surveys.

We recommend surveys to re-visit the marginal habitat sites when access in the early spring is possible, although the window for this appears to be very short. Some of the marginal sites could be accessed on foot when snow still prevents travel by vehicle, but many of the sites are too far to be able to access by foot. Because the snow remains on the road in patches, with much of the road bare, travel by snowmobile is not practical or possible. Several visits to the area prior to surveying to determine the earliest possible access may be necessary in order to conduct surveys during optimal conditions.

References

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Notes:SP=Survey Plot. Enter UTM'S for each Survey plot

Appendix B

Initials 1. ____ 2. ____

2007 MOLLUSK LOCATION RECORD

Survey ID: ____ - ____ - ____ Loc. ID: _____ ISMS: ____
Admin. Unit Proj. ID Unit ID

Visit #: 1 2 Surveyors name: _____ Date: ____ / ____ / ____
Day Month Year

Species ID #: 06 - ____ - ____ Map loc. #: ____ . ____ Search type: area point
Year crew # specimen #

Zone 10 UTMX: ____ - ____ - ____ UTM Y: ____ - ____ - ____ Time: _____
Easting Northing

Aspect (0-360): ____ Slope (%): ____ Elevation (ft): _____ Air Temperature: ____°F

Cloud Cover: clear partly cloudy overcast Soil Temperature: ____°F

Precipitation: none fog drizzle rain hail/sleet snow

Topographic Slope Position: top upper 1/3 mid 1/3 low 1/3 bottom

Land Form: stream bottom ridgetop draw/depression concave slope convex slope flat/bench

Type: pre-disturbance incidental

Method: belt transect incidental key feature/sample area

S&M species only!

SPECIES CODE	TOTAL	RELIABILITY	OBSERVATION TYPE	CONDITION L/D	VOUCHER #	VERIFIER	FEATURE TYPE	FEATURE SPECIES	DECAY CLASS	DBH

	TREE SPECIES			SHRUB/UNDERSTORY			GROUND COVER		
	SPECIES 1	SPECIES 2	SPECIES 3	SPECIES 4	SPECIES 5	SPECIES 6	SPECIES 7	SPECIES 8	SPECIES 9
SPECIES CODE									
TOTAL COVER %									

Seral Stage: Grass/forb, Shrub, Pole, Early-mature, Late-mature, Old Growth

Canopy Structure: Multiple, Single, Two

Community Classification: Series or Association

Community Age: ____ years Community Code: _____

Total Overstory Cover %: ____ Total Understory Cover %: ____ Total Canopy %: ____

Notes: