

OREGON SLENDER SALAMANDER STUDY – 1998 FIELD WORK SUMMARY

Charlotte C. Corkran, Northwest Ecological Research Institute
NERI # 98-05

[This study was funded by Oregon Department of Fish and Wildlife. NERI surveyors were contracted to carry out field work in cooperation with principal investigator, David Vesely, Pacific Wildlife Research, who designed the study and analyzed/reported the results. These 3 reports summarize our data from the 3 years of field work.]

STUDY SITES

In accordance with David Vesely's study design, Douglas fir stands were located within the Breitenbush River drainage and adjacent drainages (French Creek, Tumble Creek, Tom Creek, and Boulder Creek) on the Detroit Ranger District (RD) of the Willamette National Forest (NF). A total of 56 stands were selected as study sites, in 3 categories. Twenty-three sites were naturally regenerated, old growth stands. Twenty-three were stands that had been clearcut logged in the 1950s and 1960s, planted after prescribed burning, and that had developed to stem exclusion. Ten sites were plantations established after clearcut logging and prescribed burning in the early 1990s. Neither stand size nor aspect was standardized, but all stands were below 3800 feet elevation.

METHODS

Each of the 56 study sites was surveyed once between 24 April and 13 June, 1998. The start points and compass bearings of 3 belt transects, each 50 meters in length, were randomly determined within each site. Two or 3 surveyors temporarily flagged the center line of each transect in 10-meter segments, and then surveyed a 2-meter wide strip, beginning at opposite ends. With 3 surveyors, 2 worked in tandem from one end (or if the site was very brushy, worked alternating 10-meter segments). Surveyors looked for Oregon slender salamanders (BAWR) and other amphibians by picking up all potential cover objects (bark slabs, wood chunks, branches, and rocks, including multiple layers of debris mounds), scraping through duff and fine litter, and tearing apart the section within the transect of all decaying logs. Surface objects were returned to approximately their original positions, and disturbed sections of logs were roughly reassembled. Each BAWR caught was measured (SVL), and the cover, substrate, and soil temperature recorded (see Appendix 1 for categories). All other amphibians found were measured or categorized as juvenile or adult. All amphibians were released at the capture sites.

At the end of the survey (or at a later date in the case of the first 7 sites surveyed), several habitat parameters were measured at a randomly selected 10-meter segment of each transect, and at each segment in which BAWR were found. Aspect, slope, % canopy closure, soil temperature, and GPS position were recorded. The cumulative total length of all logs that crossed or touched the center line of the transect segment was recorded in 5 diameter and 3 decay class categories. The number of snags within or immediately adjacent to the segment was recorded in the same diameter and decay class categories. Elevations were later estimated from topographic maps.

RESULTS

On the 56 sites surveyed, a total of 144 amphibians was found both inside and outside the belt transects, including 80 BAWR. Of the 69 transects in old growth sites, BAWR were found on 22

transects (48 individuals). Of the 69 transects in stem exclusion sites, BAWR were found on 17 transects (24 individuals). No BAWR were found on the 30 transects in recent clearcuts.

Only 5 other species of amphibians were found. Most were ensatinas (ENES), including a female with 8 eggs. Eleven clouded salamanders (ANFE), 2 tailed frogs (ASTR), 2 roughskin newts (TAGR), and 2 Pacific treefrogs (HYRE) were also found.

The first attached table provides the legal description and UTM coordinates for each of the study sites where any amphibians were found. The second table summarizes all amphibians and reptiles found on those study sites, both on and outside of the transects.

DISCUSSION

Analysis of the amphibian and habitat data from the transects will be done by David Vesely.

The amphibian surveys and habitat measurements were done by Charlotte Corkran, Alan Swanson, Karl Hartzell, and Hal Hushbeck (“The Truffle Pigs”). The help of Lori Turner from the Detroit RD in finding maps and GIS layers, and in arranging free housing for the crew, is greatly appreciated, as is the enthusiastic support of Rebecca Goggans from the Oregon Department of Fish and Wildlife, and the funding from the U. S. Fish and Wildlife Service.

Appendix 1. LOG DECAY CLASS DESCRIPTIONS

LOG FROM LIVE TREE OR CLASS 1 SNAG

	1	2	3	4	5
BARK	tight	partly loose	loose	soft or none	soft or none
TWIGS	present	none	none	none	none
TEXTURE	solid	mostly solid	fairly hard chunks	soft blocks & layers	soft powder
COLOR	original	original	faded	red, brown	red, brown
SUPPORT/ SAG	up on stobs	up on stobs, but sagging	sagging, or on ground	all on ground	partly in ground
INVADING ROOTS	none	none	in outer sapwood	into heartwood	into heartwood
SHAPE	round	round	round	roundish	oval

LOG FROM SNAG WITH NO BARK, HARDENED OUTER WOOD

	(1)	2	3	4	5
TEXTURE	--	mostly solid	hard outer, softer chunks	soft outer & blocks	soft powder
COLOR	--	original	gray, tan	gray, tan	gray, tan
SUPPORT/ SAG	--	up on stobs, but sagging	sagging, or on ground	all on ground	partly in ground
SHAPE	--	round	round	roundish	oval

Adapted from Maser et al. (1979 and 1988).

AMPHIBIAN DATA SHEET DEFINITIONS

Header Information

- 1) REGION: Silver Falls St. Park (SF); Willamette Nat. Forest (WF); other.
- 2) STRATUM: Nat. regen. (late –successional), Old har., New har. (< 5 years prior to study)
- 3) STAND: Unique letter and/or number combination to identify stand from others in stratum
- 4) STIME: Start time of search or time of last capture on previous sheet
- 5) ETIME: End time of search or time of last capture recorded on this sheet
- 6) ATEMP: Air temperature (C) recorded at start of this sheet
- 7) STEMP : Soil temperature (C), approx. 10-cm below the surface recorded at start of this sheet.
- 8) SKY: 1=clear, 2=overcast, 3=pt cloudy, 4=rain. Record when completing sheet

Capture Data

- 1) SPP: Four letter acronym for species observed.
- 2) ID#: Detection number unique to this site: B1, B2.... B(N) for BAWR. A for ANFE.
- 3) SUBST: Substrate the amphibian was resting upon when first observed.
 - 1 = conifer log, decay 1
 - 2 = conifer log or chunk decay 2
 - 3 = conifer log or chunk decay 3

- 4 = conifer log or chunk decay 4
- 5 = conifer log or chunk decay 5
- 6 = bark
- 7 = litter, branches, fine woody debris, duff
- 8 = rock, mineral soil
- 9 = other (e.g. hardwood)

- 4) COVER: Cover lying immediately above amphibian when first observed. Use same code as for SUBST. Also 10 = exposed / not using cover.
- 5) LENGTH: Snout-vent length (mm).