

OREGON SLENDER SALAMANDER STUDY - 1997

Charlotte C. Corkran and Fara Currim
Northwest Ecological Research Institute
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[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. This annual report summarizes the several portions of our field work, for the first of 3 years of field work.]

FIELD WORK UPDATE – July, 1997

STUDY AREAS

Twelve sites were selected during April and May, 1997. Of these, 7 are on the Detroit Ranger District (RD) of the Willamette National Forest (NF), 4 on the Clackamas RD of the Mt. Hood NF, and 1 on the Zigzag RD of the Mt. Hood NF. All study sites are in late successional Douglas fir stands, with mean dominant conifers >50 cm DBH, and >50% of the dominant trees Douglas fir. Part or all of some sites have been partially logged at some time in the past.

METHODS

At the time of selection of each site, a “Hobo-temp” temperature recorder was placed in the stand and activated. It was retrieved at the end of the salamander survey.

The 12 study sites were each surveyed once, between April 26 and June 15, 1997, using a time constrained survey. With 2, 3, or 4 surveyors, a total of 10 person-hours was spent searching for Oregon slender salamanders (BAWR) in each study site. Decaying logs, debris mounds, and surface cover objects were searched. Logs were lightly searched, and reasonable effort was made to restore all habitat disturbed. Each BAWR caught was measured (SVL), and the cover and substrate described (see Appendix 1). BAWR detection sites were flagged for revisit (hopefully). All other amphibians found were measured or categorized as juvenile or adult. All amphibians were released at the capture site.

Each study site will be revisited for further description of habitat at each BAWR detection site and at random plots within the stand. Slope, aspect, topographic position, canopy density, and description of logs in 5 meter plots will be recorded. This work was begun in June and will be completed in late August and September.

RESULTS

In the total 120 hours of search time, 284 amphibians were found, including 142 BAWR (see Table 1). In addition, a group of 6 eggs was found, identified as BAWR although no female was in attendance. The number of BAWR found during the 10 hours per study site ranged from 0 to 28. The number of total amphibians per site ranged from 7 to 48.

BAWR (Oregon slender salamander)	142 (+ 1 group of 6 eggs)
ANFE (clouded salamander)	21 (+ 2 outside of survey)
ENES (ensatina)	76
PLDU (Dunn’s salamander)	19

TAGR (roughskin newt)	19
AMGR (northwestern salamander)	1
DITE (Pacific giant salamander)	3
HYRE (Pacific treefrog)	3
Total	284

DISCUSSION

Great fun!

Table 1. OREGON SLENDER SALAMANDER STUDY - 1997 CAPTURE SUMMARY

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Survey crew: Char Corkran, Fara Currim, Hal Hushbeck, Damon Schrosk

BAWR - Oregon Slender Salamander**ANFE** - Clouded Salamander**ENES** - Ensatina**PLDU** - Dunn's Salamander**AMGR** - Northwestern Salamander**TAGR** - Roughskin Newt**DITE** - Pacific Giant Salamander**HYRE** - Pacific Treefrog

	BAWR	ANFE	ENES	PLDU	AMGR	TAGR	DITE	HYRE	Totals
TOMC 4/26	12	2	8	-	-	2	2	-*	26**
FRCK 4/27	25	-*	24	-	-	-	-	-	49
WDPH 4/27	1?	-	5	-	1	-	-	-	7
ALDF 4/29	-	-	10	-	-	6	-	1	17
BAGB 5/1	27	-	10	-	-	1	-	-	38
BREI 5/2	15	4	7	-	-	-	-	-	26
RAIN 5/2	9	9	2	-	-	1	-	1	22
INDH 5/3	6	-*	6	-	-	4	-	-	16
CLAC 5/3	-	-	2	17	-	-*	-	-	19
BULL 5/31	14	-	-	-	-	2	-	-	16
CLIF 6/14	5 + eggs	3	2	2	-	2	1	-	15**
BLOW 6/15	28	3	-	-	-	1	-	1	33**
Totals	142	21	76	19	1	19	3	3	284

* Individual of the species found during preliminary reconnaissance of the site, or on the survey date but outside of the survey area or time, and not counted in totals.

** Reptiles found during the surveys, or during subsequent habitat surveys: TOMC: 1 Rubber Boa, 9/5. CLIF: 1 Northwestern Garter Snake. BLOW: 1 Northwestern Garter Snake, 1 Common Garter Snake, 2 alligator lizard (sp.).

HOBO-TEMP USE, 1997

The following "Hobo-temps" were placed at the study sites several days or weeks before salamander surveys were conducted, and each was retrieved at the end of the survey on that site. In many cases, a Hobo-temp was placed at a second site, usually the next day. The Hobo-temps were plugged in and placed in a shaded location inside the stand, under a few centimeters of duff. Time of placement usually was not recorded. Each Hobo-temp was retrieved several minutes to 1 hour after the survey ended. Most were unplugged at the time of retrieval, however the first few were not, because we were concerned that somehow data might be lost (or we just wanted to provide a spike of higher temperature). One ("Fido" at the CLIF site) was retrieved and unplugged part way through the survey because we found that the stand was bisected by a recently blown out creek and we had to walk out from that area and drive around the base of the stand to resume the survey on the other side. Another ("Spot" at the BULL site) was not unplugged for a week and dutifully recorded temperatures at the inside of a closet, possibly due to incipient senescence on the part of the co-investigator.

NAME	STUDY SITE	DATE / TIME PLACED	DATE / TIME RETRIEVED
Fluffy	ALDF	18 APR	29 APR / >1331
	BAGB	29 APR / > 1500	1 MAY / >1720
Spot	INDH	18 APR	3 MAY / >1315
	BULL	15 MAY / 1335	31 MAY / >1847
Tiger	CLAC	18 APR	3 MAY / >1804
Rex	WDPH	19 APR	27 APR / >1818
	RAIN	28 APR	2 MAY / >1908
Fido	TOMC	19 APR	26 APR / >1732
	CLIF	28 APR	14 JUN / 1254
Fang	FRCK	19 APR	27 APR / >1336
	BLOW	28 APR	15 JUN / >1530
Skippy	BREI	19 APR	2 MAY / >1220

HABITAT PLOT SUMMARY – September, 1997

Study Areas – Of the original twelve salamander survey sites, habitat plot surveys were conducted on ten. No BAWR were initially found on the remaining two. The sites were distributed on the Willamette and Mt. Hood National Forests, in late successional Douglas Fir stands. Part or all of some sites had been logged in the past.

Methods – BAWR detection points that had been flagged previously within each stand were relocated if possible. In some cases, heavy brush, missing flags, etc. did not permit 100% revisit. Once a detection point was rediscovered, a five-meter square was set around it. If two detections were within five meters of each other, the square was centered on the midpoint between the two. Within the square, the following data were collected: slope; aspect; topographic position; decay class, diameter, and length of large down woody material; decay class, diameter at base, and height of snags; % cover of down bark; and % cover of fine woody material (see Appendix 1). Random habitat plots in the stands were also analyzed in the same way. The total number of random habitat plots matched detection habitat plots one-to-one. Canopy closure was measured with a densiometer at 4 total habitat plots (two detection and two random) within each of the ten stands. All habitat plot surveys were conducted in the summer and fall before the leaves fell from the hardwood trees.

Results – Of 142 BAWR detection points flagged in the spring, 128 were relocated and analyzed via a habitat plot. The following is a breakdown of habitat plots by site.

Bagby	24 of 27 detection points were relocated
Blowout	26 of 28
Breitenbush	15 of 15
Bull Run	11 of 14
Cliff	5 of 5
French Creek	21 of 25
Indian Henry	6 of 6
Rainbow Lake	8 of 9
Tom Creek	11 of 12
Woodpecker Hill	1 of 1

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).