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Riley Rickman

Cal Poly Humboldt, rtr17@humboldt.edu

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CHARACTERS AFFECTING SALAMANDER MICROHABITAT SELECTION

RILEY T. RICKMAN
CAL POLY HUMBOLDT WILDLIFE DEPARTMENT, ONE HARPST AVE, ARCATA, CA 95521

Introduction

- Literature provides conflicting answers for what microhabitat characters salamanders select for
- Many characters studied, cover type, temperature and humidity, and how these characters change with season and elevation
- Tested several of these characters among local plethodontids, *Batrachoseps attenuatus*, California slender salamander, and *Ensatina*, *Ensatina eschscholtzii*
- Tested two hypothesis: that cover type is the most significant factor in salamander microhabitat selection, and the climate of the microhabitat is the most significant factor in selection

Study Area

- Arcata Community Forest
- 790 acres of redwood forest
- Diverse composition of flora and fauna
- Relative ease of finding salamanders
- Provides a wide variety of characters to test microhabitat selection



Methods

- Split cover characters into five categories: woody debris, logs, grass, leaf litter, and human litter
- Measured temperature and relative humidity with a Kestrel unit and a hygrometer, estimated percent canopy cover
- Surveyed five sites, each divided into 1x1 meter plots of a single cover type
- 50 total plots, 10 per cover type, randomly distributed across the five sites
- Each plot was surveyed for salamanders, and presence absence data was recorded, along with temperature and relative humidity data. The Ambient temperature and relative humidity of the site was recorded before individual plots where surveyed
- After all data was recorded, used linear regressions to look for what variables where predictors of salamander presence

Character	Estimate	Std. Error	p value
Human Litter	2.860	2.354	0.224
Leaf Litter	-1.460	2.143	0.496
Log	-1.025	1.714	0.549
Woody Debris	0.442	1.896	0.816
Grass	-2.861	2.354	0.224
Temperature	0.067	0.257	0.792
Relative Humidity	0.343	0.107	0.001**
Canopy Cover	0.004	0.025	0.865
Ambient Temperature	-0.039	0.206	0.851
Ambient RH	0.078	0.126	0.534

Conclusion

- The results of my research provides evidence that local plethodontid salamander species select their microhabitats not based upon cover type, or temperature, but instead solely select for high relative humidity.

Results

- Cover type was not significantly significant in microhabitat selection
- Temperature of microhabitat was not a significant factor
- Relative humidity of microhabitat was significant in microhabitat selection
- Canopy cover was not a significant factor
- Ambient outside temperature and relative humidity were not significant factors

Discussion

- Findings did not support hypothesis one, as cover type was found tot not be a significant factor in salamander microhabitat selection
- Findings supported part of hypothesis two, as temperature was found to not be a significant factor, but relative humidity was found to be very significant is salamander microhabitat selection
- Important to note that temperatures in the tested area remain relatively stable, so salamanders in ranges with a wider seasonal temperature range might respond differently
- Due to time constraints, research can not provide any insight into potential seasonal variation in microhabitat selection

