Salamander occupancy according to log shape and condition in Humboldt County

Riley Tetzlaff, Cal Poly Humboldt, Arcata, 95521

Figure 2. Mossy log - what lives inside?

Figure 3. gornostaj

Intro

cover objects like logs are used by salamanders for shelter and as a tool when studying salamander occupancy (Hampton 2007; Hesed 2012). what is not known is **how the shape and condition of the cover object effect the occupancy** of the cover objects.

Objective

Quantifying the effect shape and condition of logs has on salamander occupancy.

Methods

- Study in the **afternoon (14:00-18:00h)** in the community forest which is located behind Cal Poly Humboldt.
- Thirty **25 x 25 meter plots** were surveyed.
- **Visual encounter survey** were used (VES) (Crump and Scott 1994, Almedia-Gomes et al. 2016)
- The **height and width** of the log ends were recorded to **determent flatness**
- **Survey plots** were chosen **randomly.**
- Condition of the log were determined using the **USDA decay class chart**.

Simplified Decay Classes

1. Freshly fallen
2. Well seasoned log
3. Little mossy but still sturdy
4. Soft in places well covered in moss
5. Very soft falls apart, very mossy

Results

- A positive correlation between how flat a log was and the occupancy of salamanders was found.
- There was not correlation found between decay level and occupancy was found.

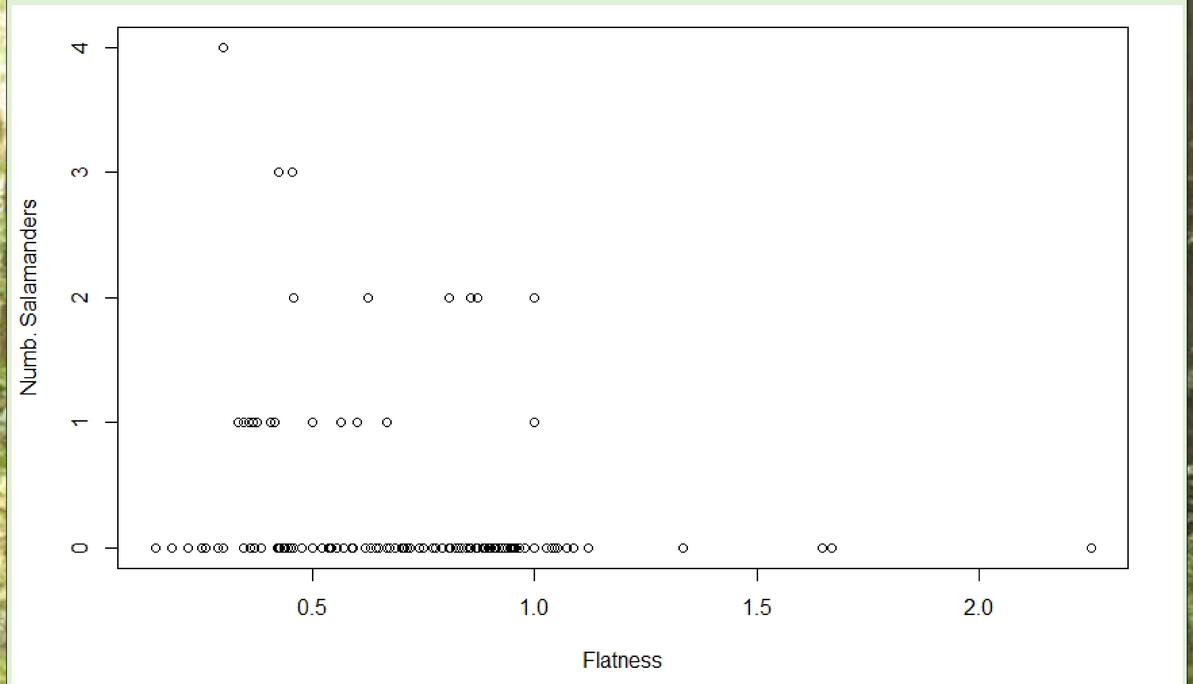

Figure 1. Shows the correlation of salamander occupancy to the flatness of the log, in the community forest behind Cal Poly Humboldt.

Figure 4. Ensentiana Salamander, https://www.elkhornslough.org/ensatina/

© Gary Nafis Figure 5. Slender Salamander. Gary Nafis

Discussion

- Flatter logs have a hire occupancy rate then rounder logs, and the condition of the log has no effect on occupancy rate
- This information can help scientist plan future studies regarding occupancy and help evaluating site fidelity of salamander for conservation work.
- How ever do to a weather being colder then normal the causing the results to be inaccurate.

Acknowledgments

I would like to thank Rob Blenk, Dr. Fogarty, and Dr. Sinn for helping analyze my data. I would also like to thank the Wildlife Department stock room for suppling the equipment I need for this study.

Literature Cited

Almeida-Gomes, M., M. V. Vieira, C. F. D. Rocha, J. P. Metzger, and G. De Coster. 2016. Patch size matters for amphibians in tropical fragmented landscapes. Biological Conservation 195: 89-96.

Crump, M., and N. Scott Jr. 1994. Visual encounter surveys. In "measuring and monitoring biological diversity: Standard methods for amphibians". Smithsonian Institution: Washington, DC

Hampton, P. 2007. A comparison of the success of artificial cover types for capturing amphibians and reptiles. Amphibia-Reptilia, 28: 433-437.

Hesed, M. 2012. Uncovering salamander ecology: a review of coverboard design. *Journal of Herpetology*, *46*: 442-450.