Is FOP Canopy Cover and Soil Moisture Suitable for the Slender Salamander?

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Science 120 Spring 2017, Sonoma State University , Rohnert Park, CA 94928

Introduction and background

Our research is investigating the living conditions Fairfield Osborn Preserve has for the California Slender Salamander and to see whether or not they are suitable for them. Because of their skin being exposed, they directly receive oxygen through their skin. We have found that the salamanders are an essential part of the ecosystem in such ways as acting as a pest control and also keeping the amount of carbon being released into the environment. Studies have shown that they could be a key factor in reducing the impacts of global warming because they feed on invertebrates that would release carbon by them feeding on fallen leaves and other forest debris. If we can better one living environments for this species and all other herpetofaunas, we can improve the eco-system that Fairfield Osborn Preserve offers.

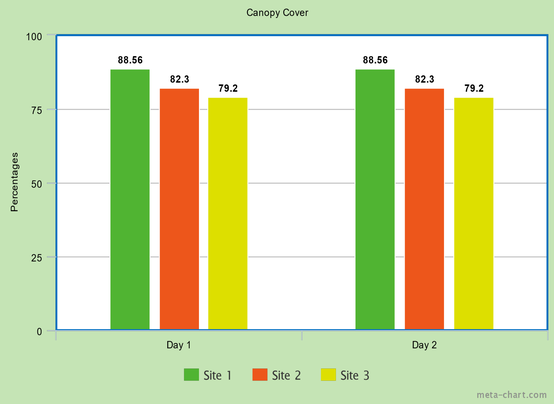
Research methods

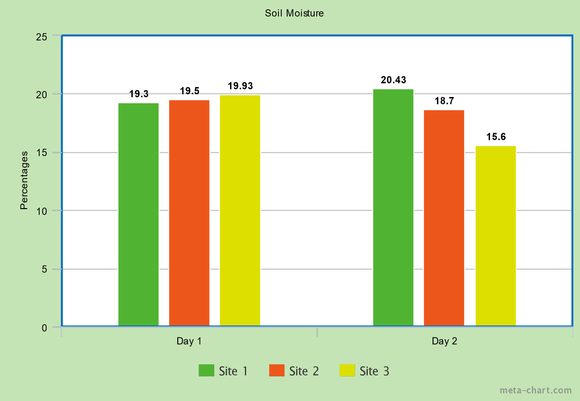
- We went to Fairfield Osborn Preserve 2 times to test canopy coverage and soil moisture along Copeland Creek.
- Because the Slender Salamanders depend on moisture, we wanted to see if the canopy coverage affects the way they live.
- We used a soil moisture sensor and a densitometer to measure soil moisture and canopy coverage.
- We found out about Julie Byrne and Derek Girman's project on herpetofauna abundances project where they used cover boards at Fairfield Osborn Preserve and Pepperwood Preserve to find suitable locations for testing herpetofauna habitats.
- We tested soil moisture and canopy coverage in the general areas where the cover boards are to locate were salamanders are generally located.

Study system

Results

	Average Soil Moisture 4/21/17	Average Soil Moisture 4/30/17	Canopy Coverage %	GPS Coordinate
Location 1	19.3%	20.43%	88.56%	38*20.376*N, 122*35.671*W
Location 2	19.5%	18.7%	82.3%	38*20.488*N, 122*35.748*W
Location 3	19.93%	15.6%	79.2%	38*20.476*N, 122*35.766*W





Discussion

- All of the sites had similar moisture percentages and canopy coverage near the coverboards where we did our measurements
- We did not find any salamanders and we were not looking for them at the sites
- The most comfortable living conditions for the Slender Salamander are the soil moisture of at least 25%
- Our data is below this level but we are experiencing weather changes with the lack of rain and higher temperatures
- In order to further investigate, perhaps we could look in closer proximity of Copeland Creek and other locations at Fairfield Osborn Preserve where we know salamanders are found

Conclusions

The soil moisture decreased in locations 2 and 3 on day 2. This may be because of the warmer weather and location 1 had the highest canopy coverage which allowed the soil to maintain more moisture. This project shows some knowledge about the California Slender Salamanders ideal living conditions in Fairfield Osborn Preserve. Salamanders are important because they are an example of a pest control for bugs that could cause diseases. These salamanders are also important because they are only found in California and in parts of Oregon.

References

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Acknowledgements

Claudia Luke, Martha Shott, Nathan Rank, Suzanne Decoursey, Julianne Bradbury, Derek Girman, Julie Byrne