Assessment of suitability of the ponds at Fairfield Osborn Preserve for the Red-Legged Frog

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Introduction and background

The Red-Legged Frog (Rana Draytonii) is currently a threatened species protected under the law. The purpose of the project is to determine if Kelly Pond, the Vernal Pool, and Turtle Pond are suitable environments for the frog. Information given by others about this question informs us that frogs are found near the edges of ponds in areas with high vegetation and that they are easiest to detect at night, whereas the tadpoles are most noticeable during the day. People should care about this question because there has been no previous research or studies done about the presence of suitable habitats for the Red-Legged Frog at the Fairfield Osborne Preserve (F.O.P.), where this project had taken place.

Research methods

Process: To collect and display the data we made a check-list with 5 specifications used in determining a suitable environment for the Red-Legged Frog.

- Water temperature under 29 ˚C for the adult Red-Legged Frog
- High vegetation
- Red-Legged Frog presence
- Red-Legged Frog tadpole presence
- Bullfrog presence

Approach: The first time we went to Fairfield Osborn Preserve (F.O.P.) we assessed the water temperature at each pond and the Vernal Pool with an averaged output of multiple measurements. The second time, we went in search of good vegetation and to sight out any frogs and/or tadpoles. To analyze data, we would conclude which area is best by seeing which had the most checkmarks from the assessment checklist

Figure 1: Tadpole found at Vernal Pool

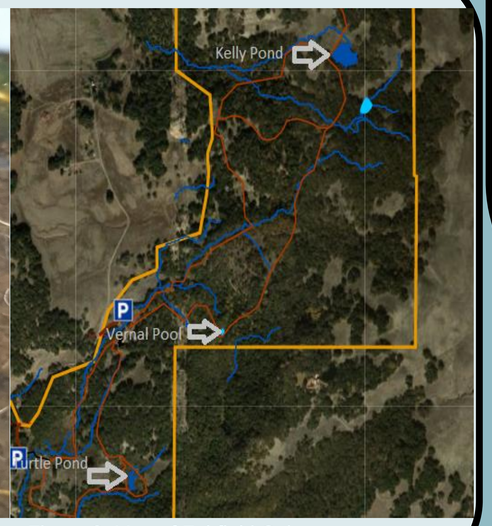

Figure 2: Map of Fairfield Osborn Preserve

Results

Assessment Checklist	Turtle Pond	Kelly Pond	Vernal Pool
Ideal Temp. (< 29˚C)	✖	✖	✖
Vegetation	✖	✖	✖
Red-Legged Frog Presence	N/A	N/A	N/A
Bull Frog Presence	N/A	N/A	N/A
Red-Legged Frog Tadpoles	N/A	N/A	N/A

We resulted in finding a large amount of Pacific Tree Frogs in Kelly Pond and several within the Vernal Pool. We were unable to fully assess the Turtle Pond because we did not see nor hear any type of frog.

Additionally, we did confirm the presence of Red-Legged Frogs at Turtle Pond from Senior Environmental Specialist, David Cook from the Sonoma County Water Agency

Temperature:.

Turtle Pond –Location 1:16˚C

Location 2:15˚C

Vernal Pool –Location 1:12˚C

Location 2:13˚C

Kelly Pond – Location 1:15˚C

Location 2:15˚C

Discussion

General issues that have a negative impact on the Red-Legged Frog include presence of the bullfrog and habitat loss.

The Red-Legged Frog would be able to survive within the three locations (Kelly Pond, Vernal Pool, Turtle Pond) because there is good vegetation and adequate temperature levels.

We determined, based from the checklist that we created, that the environmental conditions are habitable. Fairfield Osborn Preserve should continue to preserve the habitat

Figure 3: Red-Legged Frog from California Herps website

Conclusion

We believe the areas at F.O.P. are ideal places for having populations of Red-Legged Frogs, due to the water temperature and vegetation density.

Overall our findings met the criteria despite being unable to find the frog itself as well as its predator, the Bull Frog. Future studies could focus specifically on finding a way to increase growth of their population.

Acknowledgements

We would gladly appreciate Dr. Nathan Rank and Dr. Martha Shott for their ongoing encouragement, support, and guidance for our experiment. We would also like to provide recognition to David Cook, Senior Environmental Specialist from the Sonoma County Water Agency, for assisting and supporting our studies.

References

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