

# FRESHWATER COMMUNITIES

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# INTRODUCTION

**Question: What determines which types and how many macroinvertebrates colonize leaf packs in a given location?**

- ❖ Dispersal
- ❖ Abiotic Resources
- ❖ Biotic Resources

# MAP OF RED BUG SLOUGH

## LEGEND



-  = Slough site
-  = Wetland site
- #'s = Bag numbers

Figure 1: Map of Red Bug Slough marked with the two distinct sites where numbered leaf packs were deployed.



Photo credit: Sarasota County: Nature Parks and Preserves

# METHODS

- Prepared ten leaf packs of deciduous leaves to deploy at two sites, the slough and the wetland
- Five leaf packs were anchored and deployed at different locations around each site
- Abiotic and biotic data collected
- Leaf packs were left for two weeks allowing for microorganisms to inhabit the packs
- Leaf packs were collected and taken to the lab for identification of macroinvertebrates



Photo Credit: Alexander Witter



Photo Credit: Emily Saarinen

# RESULTS

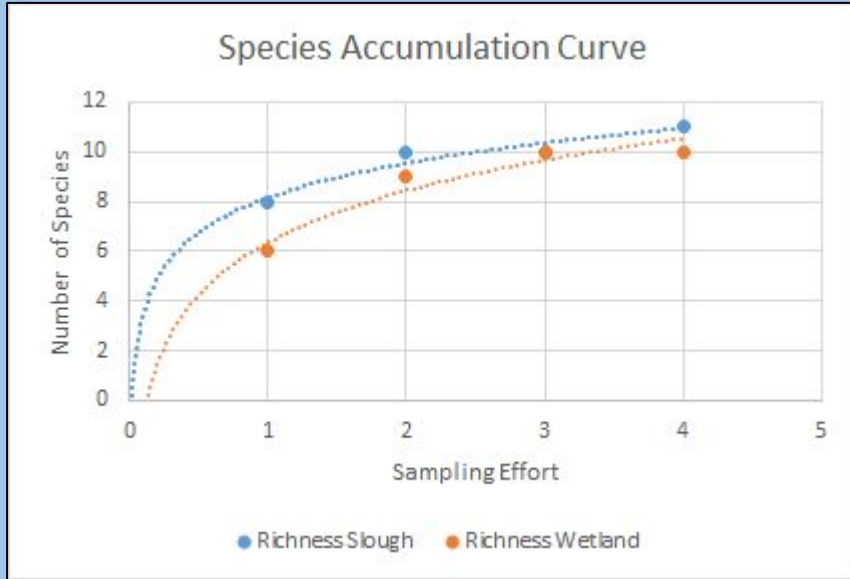


Figure 2: Species accumulation curve illustrating the accumulation of species as the number of bags sampled increases.

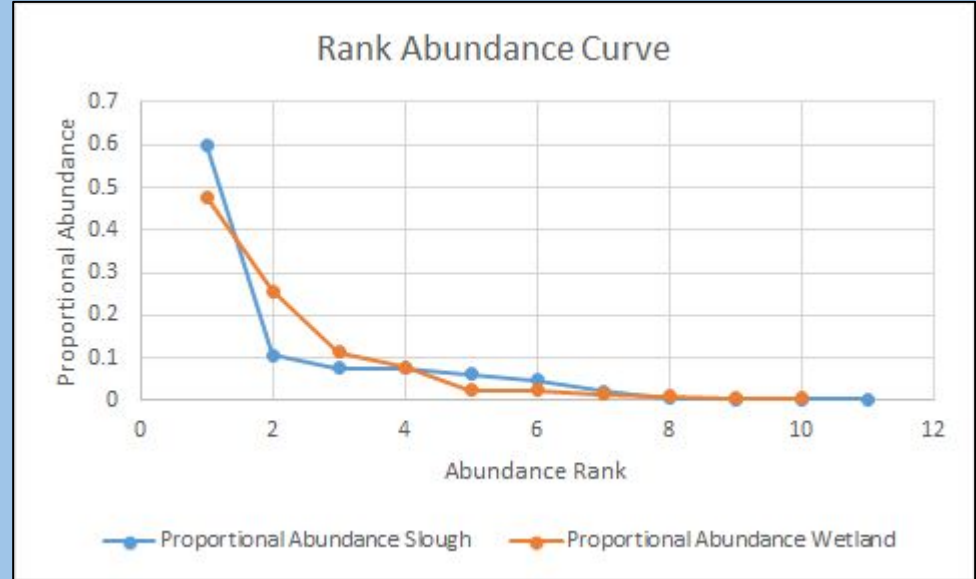


Figure 3: Rank Abundance Curve for each location.

# RESULTS (CONT.)

Table 1: Diversity calculations. Shannon Diversity, Shannon Evenness and Hill numbers for each location.

Community	H'	J'	ENS
Slough	1.414	0.590	4.112
Wetland	1.464	0.636	4.323

# DISCUSSION

- Dispersal: proximity of the two sites
- Abiotic: DO levels and other tests
- Biotic: Vegetation
- Functional Redundancy





Slough Site

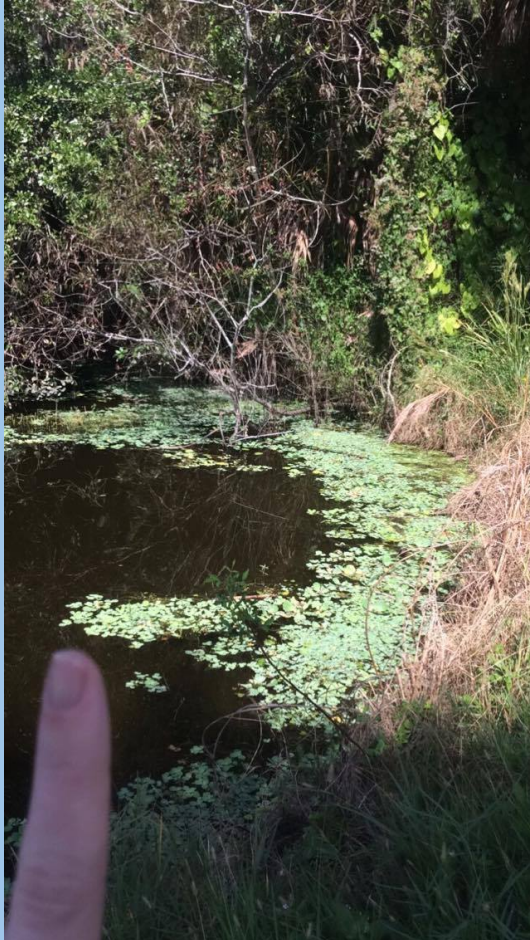


Photo Credit: Kayla Evens

Wetland Site



Photo Credit: Kayla Evens



# REFERENCES

- Behar, S. and M. Cheo. 2004. "Hudson Basin River Watch Guidance Document." River Network. [www.hudsonbasin.org](http://www.hudsonbasin.org)
- Belyea, L.R. and J. Lancaster. 1999. Assembly rules within a contingent ecology. *Oikos* 86: 402-416.
- Colorado Division of Wildlife. 2006. River Watch Water Quality Sampling Manual ver 3.06. <http://wildlife.state.co.us/landwater/riverwatch/docs/participants/StreamEcology.pdf>
- Perry, D. A. 1994. *Forest Ecosystems*. The Johns Hopkins University Press. Baltimore.
- Thorp, J.H. & A.P. Covich. 2010. *Ecology and Classification of North American Freshwater Invertebrates*. Elsevier, Amsterdam.
- Vannote, R.L., G. W. Minshall, K. W. Cummins, J.R. Sedell, and E. Gushing. 1980. The river continuum concept. *Can. J. Fish. Aquat. Sci.* 37: 130-137.
- Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America*. McDonald & Woodward Publishing Company, Virginia.
- U.S. Environmental Protection Agency, 2004. Wadeable Stream Assessment: Field Operations Manual EPA 841-B-04-004. U.S. Environmental Protection Agency, Office of Water and Office of Research and Development, Washington, D.C., 106 pp.