



De'lyncia Bethea ECSU



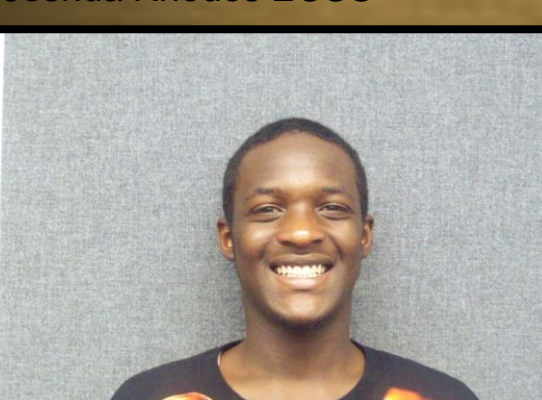
Justin Paxton COA



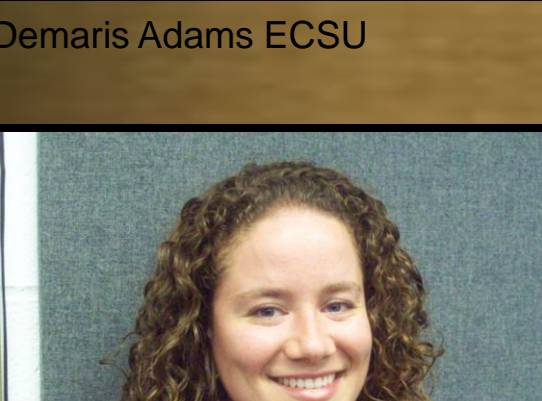
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Herpetofauna and Avifauna Diversity in the Great Dismal Swamp and the Elizabeth City State University Campus



Great Bay Community College



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Observing the effects of urban development on bird, reptile, and amphibian populations.

Introduction

Research was conducted to compare the abundance and diversity of amphibians, reptiles, and birds in three separate locations within the Great Dismal Swamp (GDS) in Suffolk, VA and three locations on the Elizabeth City State University (ECSU) campus in Elizabeth City, NC. The preservation of these animals and their habitat is not only important to the eco-system but to human life because some of these creatures serve as bio-indicators for water and air quality. Additionally herps and birds help to keep mosquito and other pest populations in check.

Hypotheses: The habitat in the swamp is more hospitable than on the (ECSU) campus because there are fewer human impacts there.
•The GDS will have more species than ECSU.
•The GDS will have more abundance than ECSU

The Interior Ditch-

- Positioned along the north side of the auto road dividing dense forest.
- Altered by natural disasters like hurricanes and wildfires.
- Declining population of cedar trees.

West Ditch-

- Found near Big Tree, in the GDS
- Open and sunny.
- Water contains large amounts of algae duckweed.
- Loblolly Pines, Cypress Trees, and various oaks.

Washington Ditch-

- Adjacent to the ditch.
- Understory is thick
- Dense herbaceous plants.
- Cypress trees.

ECSU Pond –

- Surrounded by manicured lawn and no trees.
- Perimeter contains inflow and outflow pipes for run-off.
- Filamentous algal growth in shallow edges.
- Surface clear of scum and emergent vegetation.

Drift Fence-

- Divides stream from ditch
- Behind the U.T. building adjacent to the parking lot.
- Tall oaks and pine trees.
- Ditch covered with duckweed, pickerelweed, and arrowhead weed.

Outdoor Classroom - The outdoor classroom is a clearing in the woods.
•Areas of lawn and brush.
•Tall Loblolly pines, oak trees, and Red Maples.

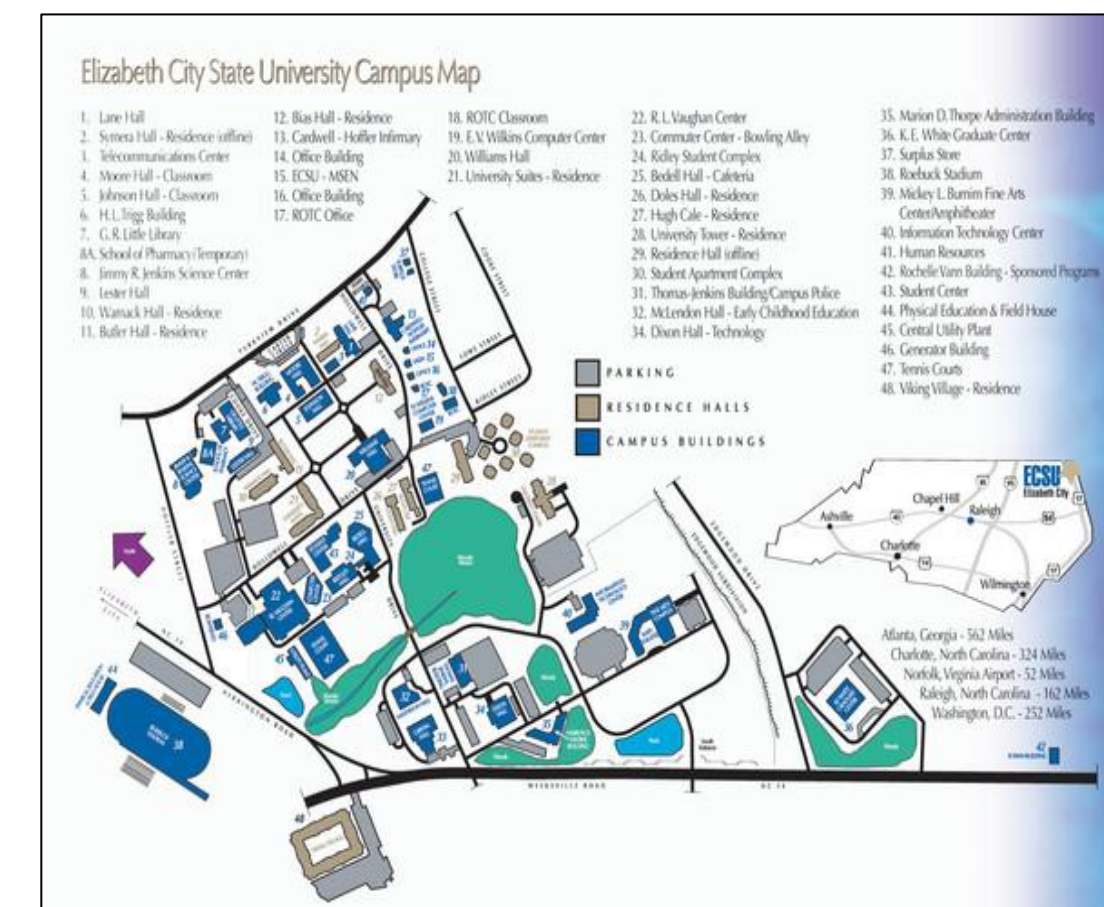
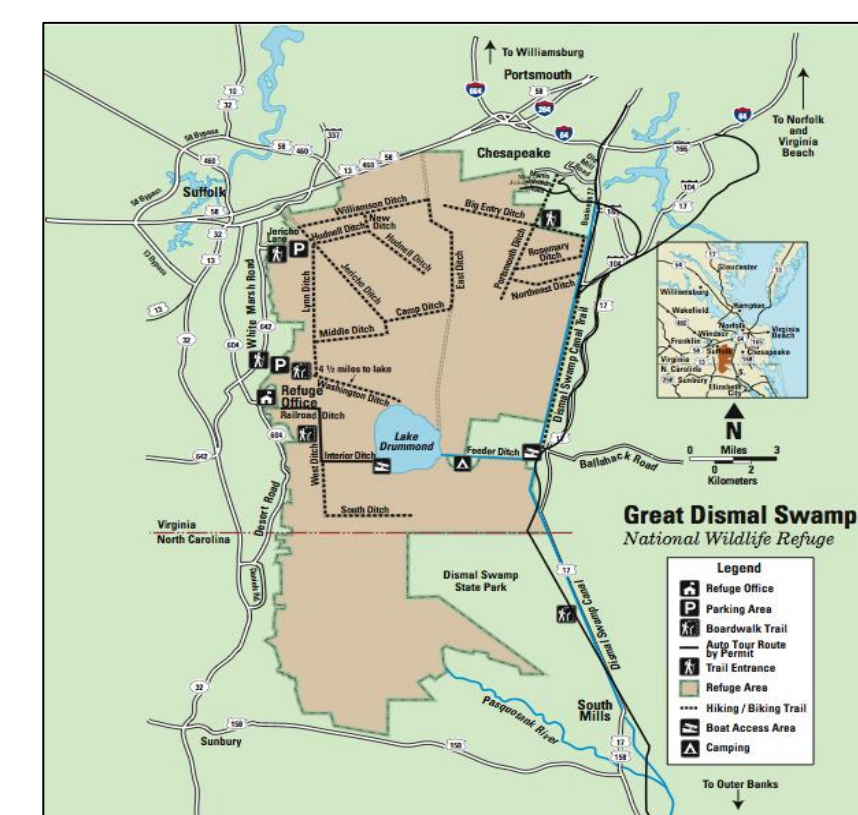
Methods - Our group had three different methods to observe amphibians, reptiles, and birds.

Drift fence:

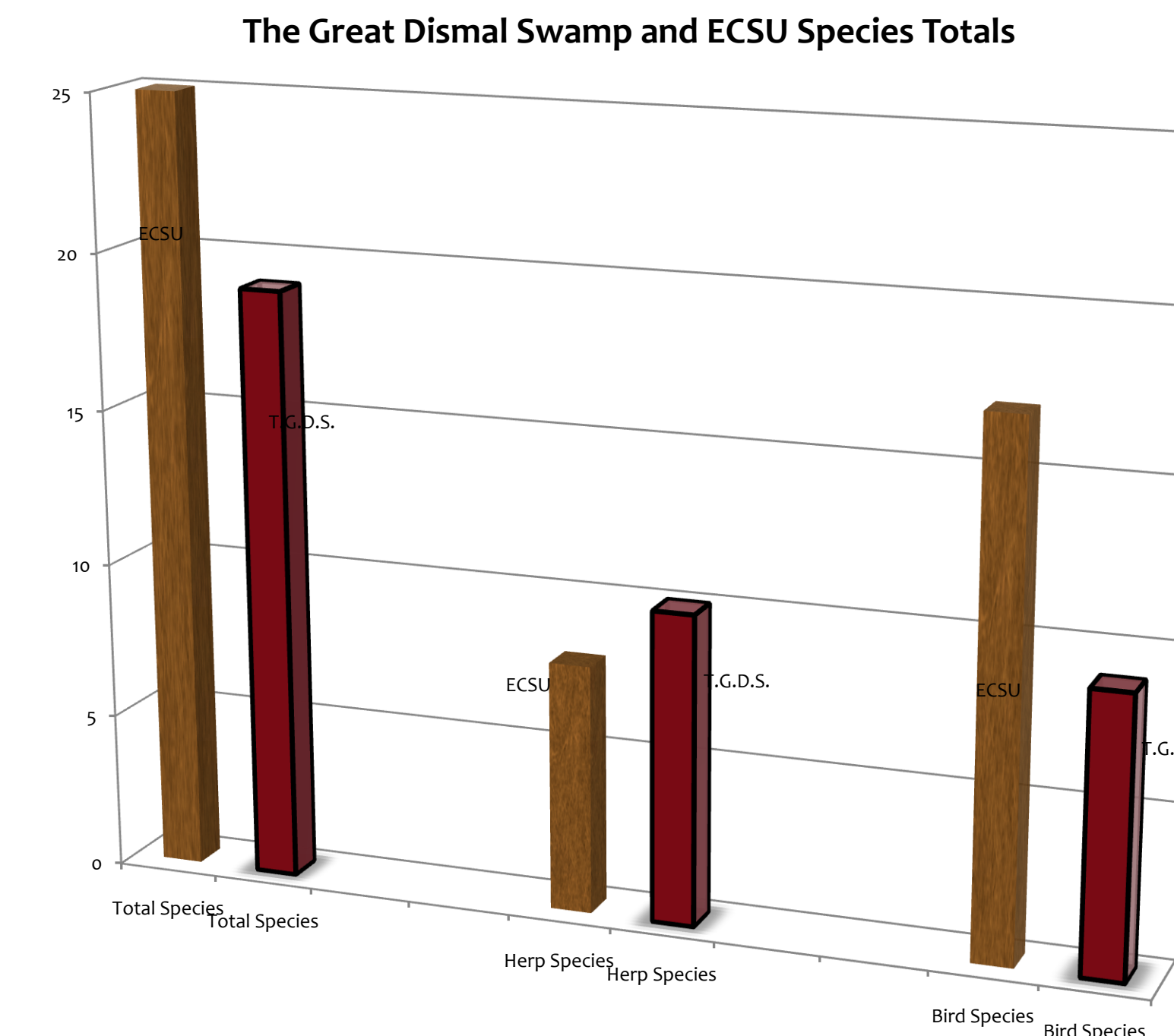
- Catch and release amphibian and reptile species.
- Barrier dividing two habitats.
- Pit fall traps set up under parts of the fence

Point count:

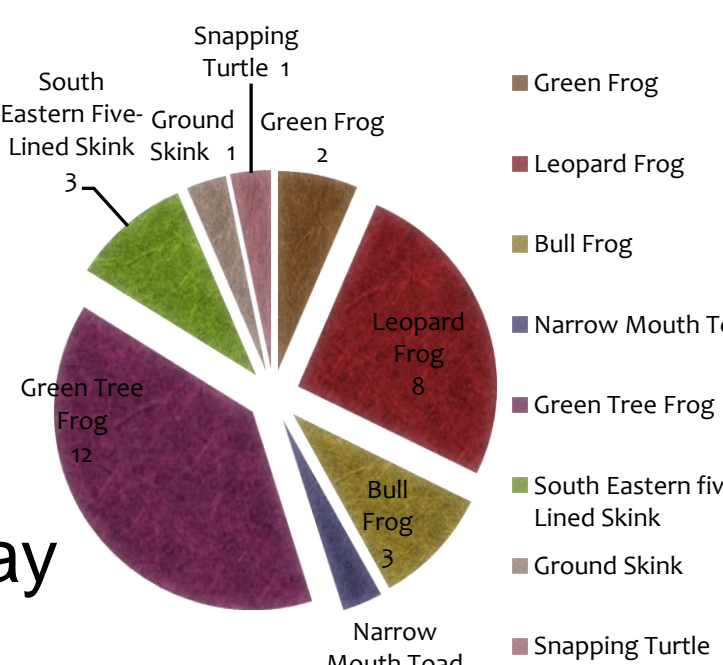
- Set a location
 - Observe for thirty minutes
 - Record all that is heard and seen.
- Directed Search:**
- Explore a set location.
 - Overturn logs and rocks listen to surroundings.
 - Observed birds at GDS for approximately two hours one day and two hours over two days at ECSU.
 - Observed reptiles and amphibians one day for two hours at GDS, at ECSU for two hours and utilized drift fence for seven full days.



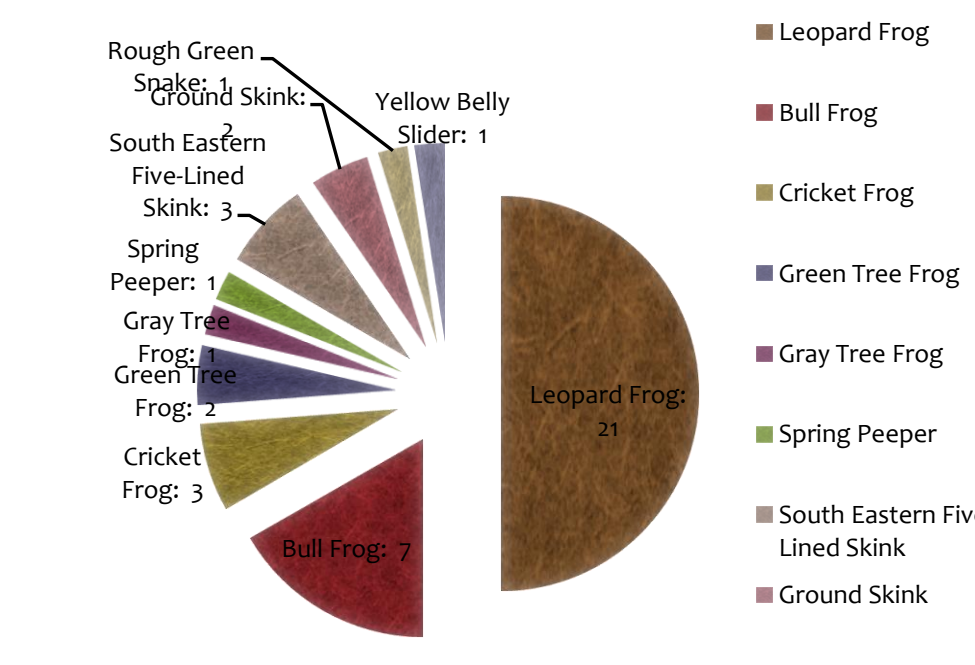
Results



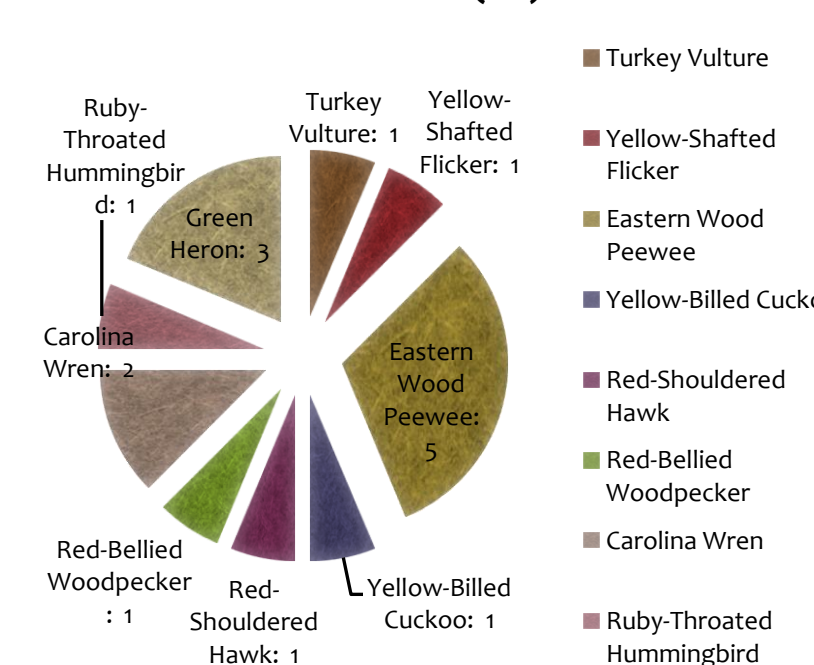
ECSU Herpetofauna Total (32)



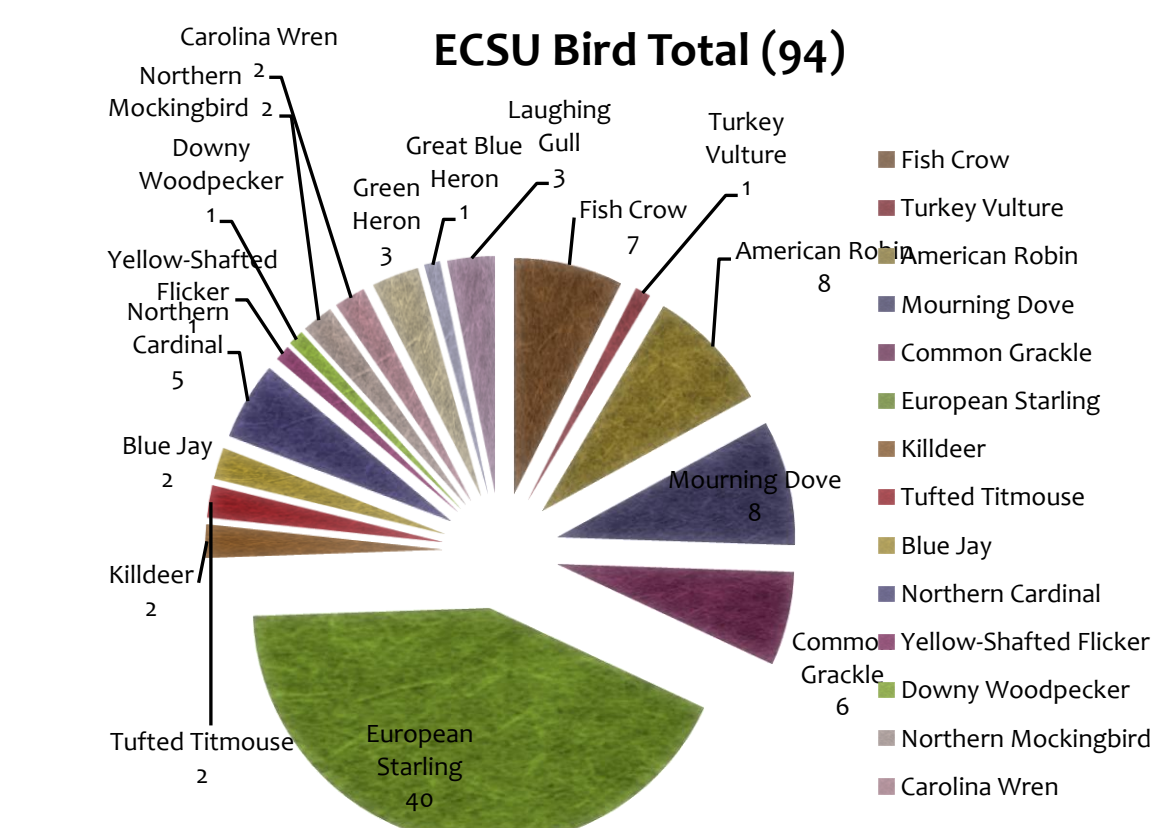
The Great Dismal Swamp Herpetofauna Total (42)



The Great Dismal Swamp Bird Total (16)



ECSU Bird Total (94)



Conclusion

Birds

- Hypotheses were not supported by the data.
- Results showed more species diversity and abundance at ECSU than GDS.
- ECSU had more diverse habitats compared to GDS.
- ECSU has fragmented habitats, i.e. open fields, ditches, and patches of forest.
- GDS has only two habitats, matrix forest and wind and fire damaged forest.
- Time of day varied at both locations which created a possible bias because we sampled at earlier times at ECSU when birds were more active.
- ECSU had more open areas; easier to spot bird species.
- Reptiles and Amphibians
- Hypotheses were supported.
- GDS showed more species diversity and abundance than ECSU.
- We walked approximately one mile along undisturbed reptile and amphibian habitat.

Acknowledgements

We would like to thank faculty and staff at Elizabeth City State University, College of the Albemarle, and The University of New Hampshire. Many thanks to our mentors Chris Perry and Steve Hale for all of your help and support. Thank you: Mike Gagnon and Barry Rock.

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