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Final Presentation

Urban Conservation and
Environmental Education Intern

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Species Monitoring



Sarah, Sheldon, AJ, and Logan

What is Species Monitoring?

Species monitoring refers to monitoring programs for wildlife. Monitoring occurs in many ways, through tags, bands, gps tracking, and more. All types of organisms are monitored by many types of organizations, from government to non-profit to volunteer led.

The Importance of Species Monitoring

Species Monitoring plays an important role in conservation. Details about species can be monitored and recorded to track population numbers, invasive control, effects of pollutants and disturbances, migration routes, and much more. Wildlife biologists are well known for their part in conducting monitoring studies, however volunteers and people of all positions can help conduct these studies.



Monitoring Experiences as an Intern:

- Patuxent Research Refuge: Salamanders and Box Turtles
- Poplar Island: SAV's, Ospreys, and Terns
- Eastern Shore: Shark Tagging
- Masonville cove: Fish traps and Bioblitz



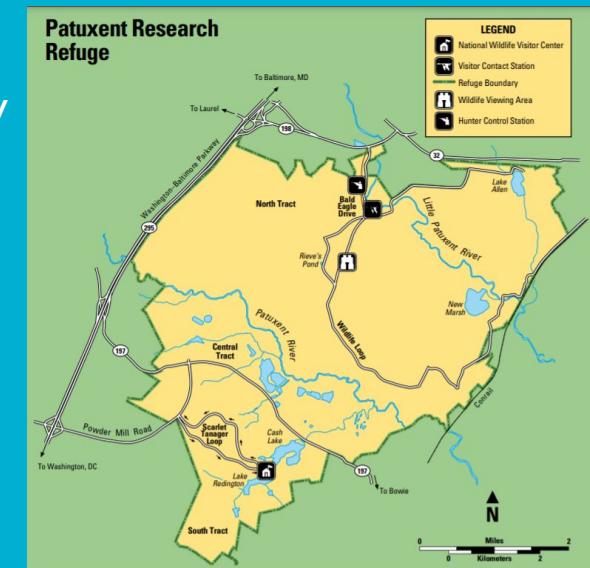
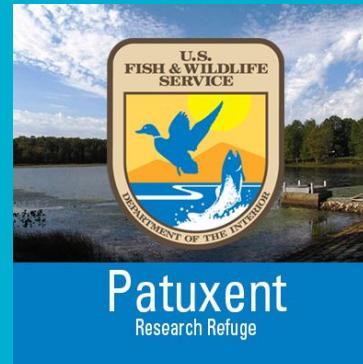
Patuxent Research Refuge



Patuxent Research Refuge is the only U.S. National Wildlife Refuge created to support wildlife research.

The refuge exists as a large tract of undisturbed land which provides habitat for many vulnerable species like migratory birds and riparian forest species.

Much of the research and activities are performed by USGS through the Patuxent Wildlife Research Center.



Salamanders



Species identification occurred at Patuxent Research Refuge as data in an Environmental Impact Statement on a tract of land that a local airport was looking to purchase.

Salamanders are a Forest Interior Dwelling Species (FIDS), so they live exclusively in forests. Additionally, their habitat is further restricted away from acidic soil in pine forests.



Red Spotted Newt



Marbled Salamander

Eastern Box Turtles



The Eastern Box Turtle's conservation status is listed as vulnerable by the IUCN. Patuxent Research Refuge is monitoring this species primarily because of its conservation status, but also to compare to a past study done on box turtles in the 1950's. Individuals were gendered, shells were marked with a identifying key, and shell dimensions were recorded.



Poplar Island

Poplar Island is an island in the Chesapeake Bay off the coast of Talbot County. It was a populated island in the early 1900s, but eroded away into tiny islets by the 1990s.

A project to use dredge material to restore island habitat in 1994 led to the island being rebuilt. Much of the research on the island assesses the ecological success of the project as vital barrier island habitat.



Credit: US Army Corps of Engineers

Submerged Aquatic Vegetation



Stable and abundant SAV populations are critical for good water health. SAV's provide crucial habitat for marine wildlife. Sediment pollution and dredging activities can cause SAV declines. USFW samples density of SAVs around Poplar Island to study how the nearby aquatic habitat was proliferating over time.

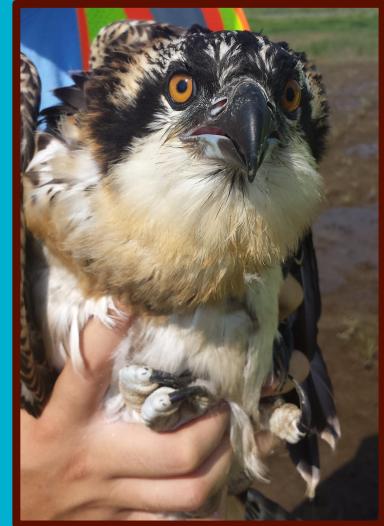


Sarah and AJ pulling a rake full of Widgeon Grass.
Photo Credit: Molly Finch. Location: Poplar Island.

Ospreys



Although Ospreys have made significant recovery from historic population declines caused by DDT, they are currently monitored due to decreasing habitat for migratory birds. Poplar Island provides remote island habitat for migrating birds and has been the site of a wildlife refuge since reconstruction. Young Ospreys were given ankle bands and orphaned ospreys were given to new nests along Poplar Island.



Least and Common Terns



Least and Common Terns only breed on barrier islands. Tracking of these species is done to see if and to what degree Poplar Island is succeeding as a habitat for birds that breed on barrier islands. For each Tern nest mapped, number of eggs and number and age of chick were recorded, and ankle bands were given to surviving chicks.



Tern chicks, one very young and the other a bit older.

Eastern Shore, MD

The Eastern Shore of Maryland lies between the East side of the Chesapeake Bay and the Atlantic Coast.

Although fragmented by human activity, there is lots of wetland, marsh, forest, and beach dune habitat on the Eastern Shore that is essential for wildlife communities.

Oyster and blue crab populations, shark tracking, and agricultural studies are research topics that are popular in this area.



Shark Tagging

Shark monitoring encompasses several species of sharks and takes place globally. Shark monitoring can give insight on migration routes, changes in population, growth rate of the sharks, genetic diversity, vulnerability, and more. To track physiology and migration across species, fin samples and length measurements were collected from each shark, and an identifying tag was implanted in a larger specimen.



Atlantic Sharpnose



Sandbar Shark

Masonville Cove Environmental Education Center

Masonville cove is the first Urban Wildlife Refuge Partnership, many civic groups partnered to rehabilitate the area in 2007, and additional restoration and enhancement continues presently.

Masonville cove serves an important role in the local community as a hub for education, citizen science, recreation, and community engagement.

“Bioblitz” citizen science events are hosted where many attendees can contribute to ecological data through species ID-ing using the iNaturalist app.



Fish Monitoring



Masonville Cove was created to provide Urban Wildlife Refuge in an area that otherwise has limited viable wildlife habitat. Fish monitoring done at Masonville has shown us how well the area provides the wildlife with viable and remediated habitat conditions. The presence of fish, along with improved water quality data, supports the thought that conditions are improving, particularly compared to adjacent areas that are full of dead zones and sediment.



BioBlitz Observations

270 observations recorded, and 175 species identified!

Top 3 most observed species:



#1



#2



#3

Eastern Painted Turtle
Observed 6 times

Eastern Tailed Blue Butterfly
Observed 5 times

Common/Northern Watersnake
Observed 4 times



Everyday Sightings of Wildlife



1.



2.



3.



4.



5.



6.



7.



8.



1. Monarch Caterpillar
2. Dekay's Brownsnake
3. Ghost plant
4. snake eggs
5. Eastern Mud Turtle
6. Green Treefrog
7. Fowlers Toad
8. American Giant Millipede

What have I learned?

From the many experiences with many groups and organizations I've learned, no matter your position, you have the opportunity to gear yourself towards conservation. You don't need to be a Biologist with a degree to volunteer for environmental organizations and do something fun and eco-friendly. There are many approaches to conservation and all of them are fundamentally important to progressing to a greener society.



How Can I Use My Knowledge and Experiences to Make a Difference in Baltimore?

Overall I think that making an impression on children and young adults will make the biggest difference. Young people are the future of our society and very impressionable. I'd love to do local work with some schools in my area and community programs working with children doing many of the things we did this summer like species ID, water testing, guided hikes, cleanups, and more activities. I'd particularly like to do hands on environmental education workshops for adolescents in my local community.



Favorite Internship Experience:

At the end of the last day at Poplar Island Robbie, our USFW guide, drove the boat to Harbor Cove. Sheldon and AJ got in the shallow water and we fed them salsa and chips from the boat for lunch. They tried to catch a jellyfish in a bag, and then we jokingly attempted to leave Sheldon behind. I love that almost every experience I had was outside and involved with wildlife. The internship group got along really well and working together with our diverse backgrounds helped us further broaden our conservation perspectives.





Thank you!

