

Ohio Wesleyan University



Green Trail

OWU Green Trail

Geographic Information Systems (GEOG355)

Spring 2011

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Question: How do I experience and understand the ecology on and around the OWU campus?

Purpose. People have very little exposure to ecology and wildlife in their daily lives, yet even within the confines of Delaware, it is possible to experience a variety of different habitats, animals, and plants. Such experiences and the understanding that arises from the experiences are educational and may lead to the development of a richer appreciation of and care for the environment, both on and around campus and in a broader national and global context. We want to raise awareness about the native plants, animals, and ecosystems around Delaware by making it easy for people to find and experience them and providing information about these ecosystems and our place in them. The means to this end is our proposed OWU Green Trail, a map, and related “green trading cards” to promote it.

By outlining a trail to connect certain wildlife-rich areas, we will make it easy for people to experience the flora and fauna of Delaware. Our map and trading cards will inspire students and residents by providing information about where to go and what to do to encounter more wildlife in the area they live in. The project will lead to enhanced understanding of the ecology of the area as well as providing a means of enjoying the nature we live in and near.

Finally, we anticipate that our project, trail, and map may inspire future projects along and adjacent to the Green Trail: stream restoration, native tree planting, and other projects related to improving OWU’s environment as well as ecological understanding.

Obtaining Data: Definitions, Selection, and Collection

Map:

We will obtain GIS data available from Delaware Co. (<http://www.dalisproject.org/>) including roads, boundaries, buildings, water features, etc. To this existing data we will add habitats, points and areas of biological interest, and a proposed trail connecting these areas.

- *Map scale and extent: [how much of campus/Delaware to include?]*
- *Habitat*

In order to map the habitats around Delaware, we will walk throughout the range of our map and record the areas where different habitat types are present. Microhabitats will be established via colored gradients instead of discreet habitat boundaries as microhabitats often exist along gradients rather than areas of sharp contrast. **Explain methods for determining such micro-habitats (and limitations).**

Various micro-habitat categories:

- *Woods*- area covered by various types and ages of trees, with leaf litter on the ground
- *Open woodland*- large grassy area with few/some large, older trees and/or bushes
- *Grassland/Open Lawn*- large grassy areas with few or no trees
- *River*- the river itself along with the riparian zone
- *Lake/Pond*- a lake or pond including its riparian zone
- *Town/Houses or Rooftops*- populated areas around people’s homes and other buildings
- *Stream*- running water surrounded by riparian zone

- *Points of biological interest and sites of potential future projects*

These locations will be determined through our personal experiences in Delaware as well as the recommendations of biology professors, local bird clubs, arboretum managers, and other people familiar with the area and its wildlife/plant life.

- *Trail*

We will construct a path through the city based on the information gathered on habitat types and points of interest. We will physically explore different routes and select on that is accessible and visits as many habitats and points of interest as possible.

Flora and Fauna:

In addition to a map of eco-spaces in Delaware, we will also provide information on common species that can be found in Delaware along with how and where to find these organisms. Currently, we have decided on six categories of organisms to include (*lists of individual species follow*). Species lists were chosen based on likelihood of an inexperienced wildlife watcher finding the organisms while including a variety of types of organism from each category. Several rare species were also included. Native species dominate the list, but several exotics are included to raise awareness about invasive species.

The information that we include will be gathered from field guides, texts books, internet sources (such as Ohio Wildlife's webpage) and from knowledgeable persons (such as professors).

- *Mammals (10):*
 - North American opossum (*Didelphis virginiana*)
 - Little brown bat (*Myotis lucifugus*)
 - Eastern cottontail rabbit (*Sylvilagus floridanus*)
 - North American beaver (*Castor canadensis*)
 - Muskrat (*Ondatra zibethicus*)
 - Woodchuck (*Marmota monax*)
 - Eastern chipmunk (*Tamias striatus*)
 - Striped skunk (*Mephitis mephitis*)
 - White-tailed deer (*Odocoileus virginianus*)
 - Coyote (*Canis latrans*)
- *Birds (10):*
 - Downy woodpecker (*Picoides pubescens*)
 - House finch (*Carpodacus mexicanus*)
 - House sparrow (*Passer domesticus*)
 - European starling (*Sturnus vulgaris*)
 - White-breasted nuthatch (*Sitta carolinensis*)
 - Northern cardinal (*Cardinalis cardinalis*)
 - American goldfinch (*Spinus tristis*)
 - American robin (*Turdus migratorius*)
 - Carolina chickadee (*Poecile carolinensis*)
 - Red-tailed hawk (*Buteo jamaicensis*)

- *Reptiles & Amphibians (10):*
 - Eastern Garter snake (*Thamnophis sirtalis sirtalis*)
 - Eastern Rat snake (*Pantherophis alleghaniensis*)
 - Common snapping turtle (*Chelydra serpentina*)
 - Midland Painted turtle (*Chrysemys picta marginata*)
 - Common Five-lined skink (*Eumeces fasciatus*)
 - American bullfrog (*Rana catesbeiana*)
 - American toad (*Bufo americanus*)
 - Red-backed salamander (*Plethodon cinereus*)
 - Spring peeper (*Pseudacris crucifer*)
 - Spotted salamander (*Ambystoma maculatum*)

- *Fish (5 categories)*
 - Minnows/ Shiners
 - bluntnose minnow
 - flathead minnow
 - silverjaw minnow
 - silver shiner
 - spotfin shiner
 - sand shiner
 - Darters
 - greenside darter
 - orangethroated darter
 - johnny darter
 - Sunfish
 - bluegill sunfish
 - green sunfish
 - longear sunfish
 - Bass
 - largemouth bass
 - smallmouth bass
 - rock bass
 - “sucker fish”
 - northern hogsucker
 - stone cat madtom
 - stone roller
 - White sucker

- *Insects, Spiders, and Aquatic Invertebrates (5 categories)*
 - *Final selection in progress*

- *Trees*
 - *Final selection in progress*

- *Non-trees*
 - *Final selection in progress*

Additional Information:

Information on invasive species, habitat loss, how to attract native species, etc will also be collected from sources similar to those mentioned above. **Specify a list of potential topics, data sources, etc. Some of these may be future projects (note on map to encourage someone to take on the projects)**

Examples of topics:

- Native species and your garden (Barb Wiehe and botany professors, local greenhouses, Cleveland Botanical Garden)
- Habitat loss in the area (professors, local conservation groups)
 - Olentangy river
 - Delaware River
- Invasive species
 - How they get here, how they spread
 - Is an invasive really harmful?
- Other nature walks in the area
 - The Arboretum (Dr. J has a map of this)
 - Any current birding tours
- The corridor effect
 - How can native planting/ plantings in general turn OWU into a corridor for wildlife instead of huge block

Presenting the Data: Method & Format

Our final product will consist of a double sided 11” x 17” tri-fold brochure and map with approximately 50 “trading cards”, collected together in a bound booklet.

Map:

On one side of the brochure will be a map of Delaware, color-coded by habitat and marked with points of interest and a “green trail” through the habitats.

On the back of the brochure will be the “additional information” discussed above in short blurbs, along with contact information for local wildlife/birding clubs, the Ohio Wildlife Division, nurseries that sell native plants, and other useful information/suggestions for interacting with the habitat in Delaware.

Get information on Duplicating on printing 11” x 17” double sided color.

Trading Cards:

Trading cards will be bound together for convenience. There will be two different formats used, depending on the amount of information we wish to convey about the particular organism. **Get information from Duplicating on printing and binding (costs, types of binding, size).**

Binding options

- Spiral binding (like a notebook)
 - Either on side binding or top binding
 - Advantage- can store a pen in binding if binding large enough
- Simple ring
- Comb binding

Card Type 1: Front and back; front includes picture of organism, scientific name, basic information. Back includes “fun facts” and space to take field notes.

Card Type 2: Front includes an example organism from a particular category (ex: picture and info for a particular type of fir tree); back includes lists of all other similar organisms that can be found in the area (ex: all fir tree species that can be found in Delaware)

Timeline:

Feb 7/9: Have decided on list of organisms to include, layout, what kind of information want to include, start doing research about organisms and where they can be found on campus

Feb 14/16: Work on compiling information for trading cards and map-facts

Feb 21/23: Finish compiling info

Mar 1/3: Start walking around Delaware, looking for wildlife hotspots, thinking about how to connect them, consulting with professors about where they take their students for biology trips

Mar 14/16: Begin collecting data (GPS, “virtual” field work with Delaware Co. orthophots) regarding where the habitats lie, points of interest

Mar 21/23: Finish data collection, construct map

Mar 28/30: Work on map, layout

April 4/6: Work on map, layout

April 11/13: Finish