

# Informally Discovering Science... One Spider at a Time.



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NOAA B-WET

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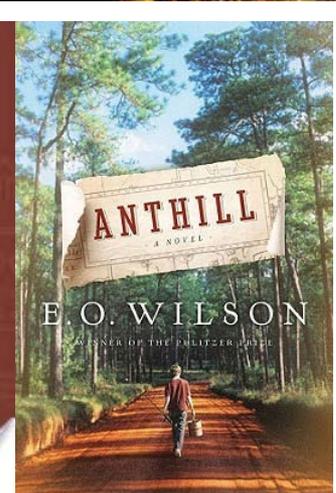
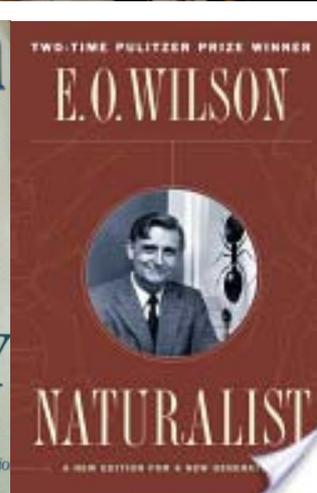
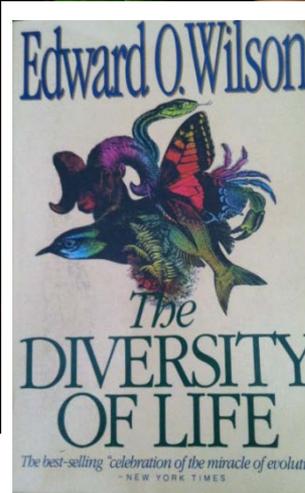
# What incites us to discover?



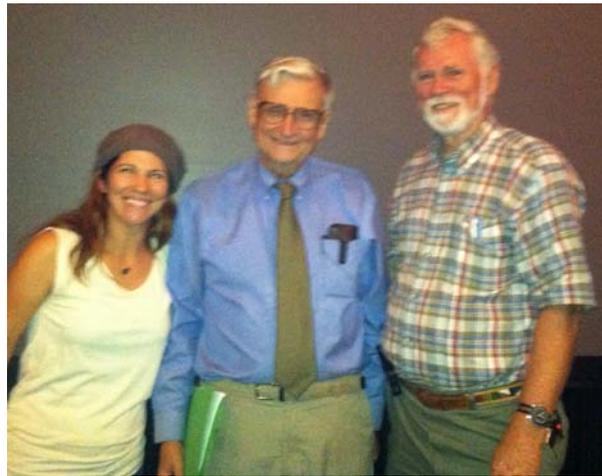
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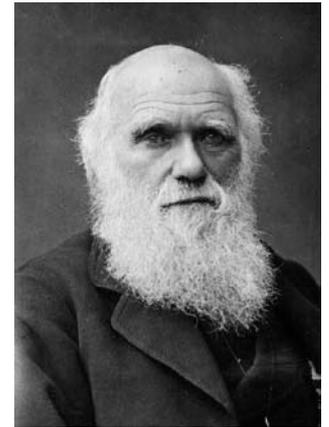
# *Famous naturalists*



E.O. Wilson "The Naturalist"  
1994 "The Diversity of Life"  
1991 and others



Freeman Tilden  
"Interpreting Our  
Heritage" 1957



Charles Darwin "On the  
Origin of Species" 1859

Aldo Leopold "A Sand  
County Almanac" 1949



John  
Burroughs

John James  
Audubon

John Muir

Bill Cliburn

# Why do we love nature?

- John Burroughs said the three most precious resources of life are books, friends, and nature; and the greatest of these, at least the most constant and always at hand, is nature.
- Richard Louv says he sensed an ownership of nature.
- E.O. Wilson says it's *Biophilia*, the urge to affiliate with other forms of life .

# Why do we love nature?

- ...the sheer beauty of nature and the awe of trying to understand how everything works...



# Why Informal Science Education?

“...ISE allows for different learning styles and multiple intelligences...”

“...ISE complements, supplements, deepens and enhances classroom science studies. It increases the time participants can be engaged in a project...”

NSTA position statement on ISE

([www.nsta.org/about/positions/informal.aspx](http://www.nsta.org/about/positions/informal.aspx))

“...much of what people know about science is learned informally...”

Nature 464, 813-814 (8 April 2010)

# Old Chinese Proverb

“Tell me and I'll forget; show me and I may remember; involve me and I'll understand.” ~

Unknown



# Biological Sciences Learning Center

- Focused on expanding our appreciation for biology and its impact on our lives
- Unique, modern, hands-on learning experiences for all
- Purpose of Center:
  - 1) Undergraduate biology laboratory
  - 2) Community outreach
  - 3) Teacher training facility



# Survivor: Biology Adventure Camp

- Provides awareness of skills necessary to be successful in the sciences.
- Promotes science and math through creative, experiential-learning and collaborative activities.



# Night at the Museum



- Spend-the-night adventure
- Entomology, Herpetology, Plankton



*Night at the Museum - Entomology  
September 18th, 2010*

# Discover Nature

- Nurture your inner nature
- Fish are Inseine!, Let's Go Birding MS, Fall Foliage Fun



# OUTSIDE

Two-year NSF funded grant to study how students interact with 1) naturalists, 2) nature, and 3) iPad technology.

## Broader Impacts:

- 1) Attract more underrepresented students to learn/pursue science
- 2) Improve scientific literacy and attitudes about science

# OUTSIDE

- We are developing an informal environmental education nature program at Lake Thoreau
  - Partnership with:
    - USM Biological Sciences Learning Center
    - Lake Thoreau Environmental Center
    - Mississippi Museum of Natural Science
    - Hattiesburg Public School District
- Targeting Middle School Students (5<sup>th</sup> & 6<sup>th</sup> grade)
  - Year 1: Scavenger Hunt/Nature Hike
  - Year 2: Flora/Fauna of south Mississippi

# Overview

## Lake Thoreau Environmental Center

Department of Biological Sciences

The University of Southern Mississippi

### Biological Preserve

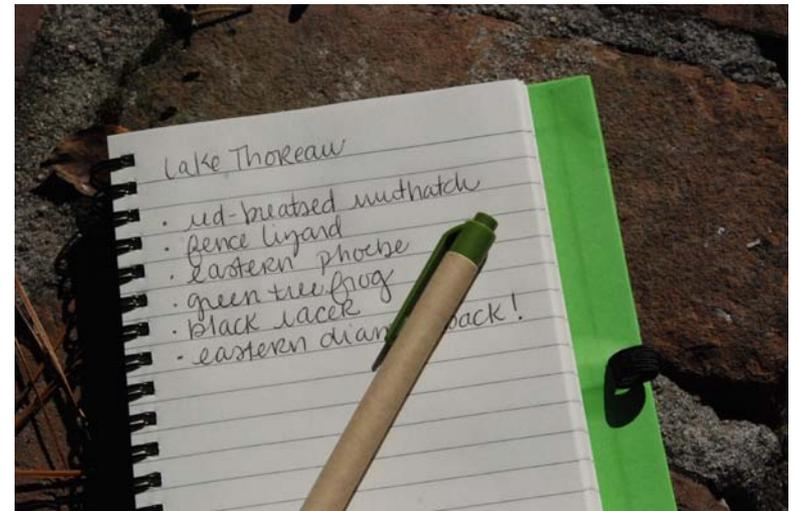
- 140 acres for public use
- Myriad of habitats including:
  - Longleaf Pines
  - Marshes
  - Swamps
  - Bottomland Hardwoods
  - Open water (artificial lake)
- Hundreds of native plants & animals



# Goal 1: *Provide Training for Volunteer Naturalists*

## Role of the naturalist

- To lead OUTSIDE programs
- Biology, Pedagogy, and Technology



## Goal 2: *Capture Patterns in Learning & Interactions*

- Three Field Trips:
  - Walk the Trail
  - Meet the Wildlife
  - Explore the Plants
- Two classes of 30 – 5/6<sup>th</sup> graders
- Interactions...
  - Look
  - Listen
  - Touch





## GO to Lake Thoreau



## WELCOME

This guide to the Lake Thoreau Environmental Center provides visitors with a structured and fun tour of the property. It provides information on the natural landscape, plant life, and the animals of Lake Thoreau.



# Research Questions

- Exploratory Ethnographic Study:
  - In what ways do students interact with naturalists, nature, and technology supplements while participating in OUTSIDE informal environmental programs?
  - What are students' ideas about the environment and environmental awareness?

# LA Master Naturalist Greater New Orleans Chapter



- Course designed for citizens to expand or sharpen their skills in natural history
  - special focus on the diversity of the lower MS Delta
- Started Fall 2012; 50 certified LMN, 29 enrolled in fall course

# Spider Ecology in Belize



# Spider Ecology in Belize



# Spider Ecology in Belize



# Preliminary findings....

- Spider families were active at different times.
- Spider families differed in habitat use.
- Pisauridae, Ctenidae, Salticidae, Lycosidae, Sparassidae, and Tetragnathidae comprised 88% of the total sample.



- Spider abundance varied among sampling sites.

*“Nature holds the key to our aesthetic, intellectual, cognitive and even spiritual satisfaction.” ~E.O. Wilson*



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