

## UCO Natural History Museum Collection

### What are natural history collections?

- A physical inventory (“treasure troves”) of biological diversity and historical documentation of our natural world
- Collections that are meticulously preserved, labeled, cataloged, and organized that document the ecology and distribution of extinct and extant organisms
- Puzzle pieces that form detailed pictures of evolutionary relationships of organisms, biodiversity loss, and global climate change.
- specimens are historical records



Figure 1. Loaned items from UCONHM to Oklahoma Science Museum 2016.

### The importance of natural history collections

- Conservation of biodiversity
- Voucher specimens; evidence of extinct species
- Unique flora and fauna
- Geographic and ecological distribution
- Changes in diversity – climate change, population structure or loss in genetic diversity (conservation strategies)
- Taxonomic information for various fields: agriculture, medicine, health, forensics, archaeology
- Data storage, sharing, and verification among naturalists, researchers, taxonomists
- Serving the community through education, public outreach and aesthetics
- Research publications and to broaden the scope of knowledge of the life on earth and the relationships among living organisms
- Education of students of all ages
- Analysis of frozen tissues and museum specimens (i.e. molecular analysis for phylogenetic relationships; presence of harmful pathogens)



Figure 2. Case of mammals in the vertebrate dry collection room.

### Current UCONHM collections

#### **Vertebrates:**

Mammals: 7,500 specimens

Reptiles/Amphibians: 2,315 specimens

Birds: 2,625 specimens  
Fish: 1,740 specimens  
Frozen tissues: 900 vials  
Taxidermy Collections: 160 pieces  
Owl pellets: 40,000  
Forensics collection: 200 pieces

***Invertebrates:***

6,800 catalogued wet specimens including an extensive Caribbean collection

6,000+ dry terrestrial specimens

***Herbarium:***

Plants: 16,666 pressed, accessioned Oklahoma specimens + 2,000 out of state specimens

Fungi: 4,100 specimens; part of the MyCoPortal international project

Lichens: 989



Figure 3. Museum student workers in the wet collection room.

## Use of UCONHM collections

***Teaching:***

Specimens have been checked out of the museum areas to be used in over 20 classes including Mammalogy, Aquatic Entomology, Wildlife Forensic Science, Plant Taxonomy, Entomology. Since 2008 (inception of UCONHM), 75 students (undergraduate and graduate) have been involved and worked in the various museum collections.

***Research:***

Many of the specimens not considered teaching specimens (i.e. those without data), have been used or could be used for research and possible publication of data. Studies of specimens have revealed important information about distribution patterns, biodiversity records of occurrence, food habits, reproduction patterns, growth and morphological differences, and shifts in various ecological situations that indicate impacts of global climate change on organisms. Over 100 publications involving UCONHM research and specimens have been published in scientific journals and reference materials. Researchers from various institutions and locations have examined specimens from UCONHM.

***Outreach:***

Requests for outreach to local school groups, libraries, organizations and/or visits to the UCO museum collections in Edmond, OK, should be made to the Collections Manager, Lynda Loucks, [lloucks@uco.edu](mailto:lloucks@uco.edu) or (405) 974-5911. Please visit the UCONHM website for more information at: <https://www.uco.edu/cms/academics/biology/natural-history-museum>



Figure 4. Bat presentation to Centennial Elementary students in 2017.



Figure 5. UCONHM specimens on display in UCO library 2018.