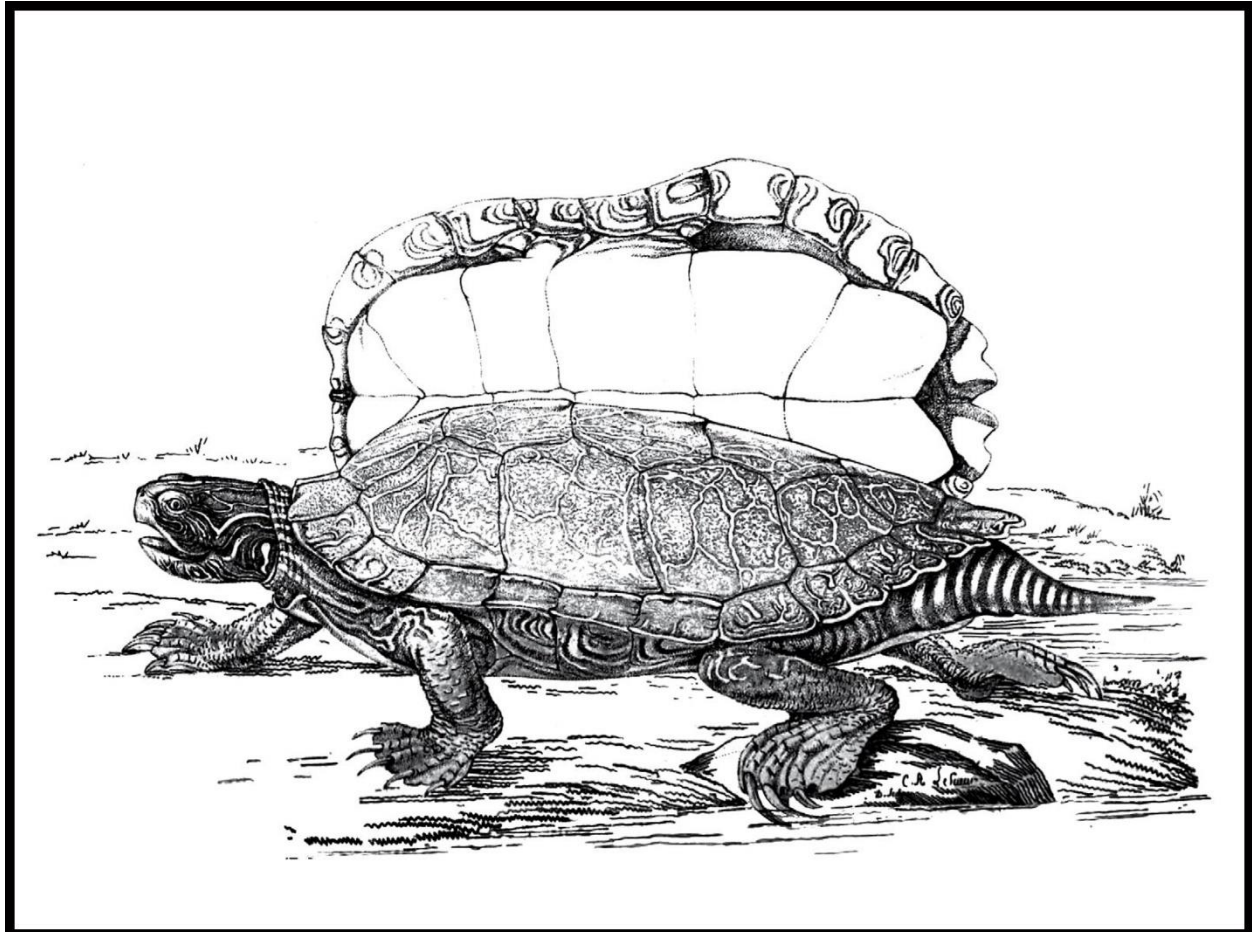


**The Natural History Museum**  
***at the Tom Ridge Environmental Center***  
**Annual Report for 2023**



**Northern Map Turtle (*Graptemys geographica*)**

This species is abundant on Presque Isle and is often seen basking on logs in the open waters of the park. Presque Isle is the type locality for the species, having been described in 1817 by French naturalist Charles Alexandre LeSueur from a specimen observed at the peninsula. The illustration above is LeSueur's original drawing of the Presque Isle specimen.

*“There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.”*

— Charles Darwin, *The Origin of Species*

Despite the value of natural history collections in addressing current catastrophic global biodiversity loss and environmental change, the growth of collections is declining (Rohwer V.G., Rohwer Y., Dillman C.B. 2022. Declining growth of natural history collections fails future generations. *PLoS Biol.* 20:4). The Natural History Museum at the Tom Ridge Environmental Center was established in 2006 to increase the availability of specimens in the study of biodiversity and natural history in northwestern Pennsylvania, particularly in the Presque Isle State Park complex. Due to the presence of habitats that are unique within Pennsylvania, Presque Isle is home to many species that are rare or unusual in the state, including many Endangered and Threatened species. The park continuously undergoes change due to heavy human use, ecological succession, the effects of weather events, climate change and the introduction of non-native species. Monitoring the presence of species on the park is critical to conserving species and habitats in the face of these changes.

The Natural History Museum is housed in two rooms on the basement floor of the TREC, and contains collections of preserved organisms primarily from northwestern Pennsylvania. Collection emphasis is on the Presque Isle and Erie Bluffs State Park complex. These collections are preserved and maintained to professional standards to ensure that they provide a high-quality resource for current and future generations of users. They are available to scientists, conservationists, and educators to further our understanding of biodiversity in the region, to provide validity to conservation efforts, and to increase awareness and knowledge of our flora and fauna among students and the general public. The Museum is administered by Pennsylvania Sea Grant and the collections are held in trust for the people of Pennsylvania.

We thank the staff of Presque Isle State Park, Pennsylvania Sea Grant, the Tom Ridge Environmental Center Foundation, the Regional Science Consortium, our volunteer staff, specimen donors and other contributors for their support of the Museum.

*Submitted by:*

Mark Lethaby, Curator. Natural History Museum at the Tom Ridge Environmental Center  
301 Peninsula Drive, Erie, Pennsylvania, 16505, USA.

## Collection Growth

The Museum continued to grow in 2023 with the addition of specimens acquired through field collecting trips and donations. Below is a summary of material accessioned into the collection during the year. A collection object is defined as all the individual specimens of one species collected at a locality at one time by a single collector or team of collectors. Collection objects may include whole specimens, skeletal material, skins, voucher photographs, or voucher recordings. The numbers don't include specimens not yet identified or processed.

**Plants:** No plant specimens were accessioned.

**Insects:** Three hundred twenty-one collection objects, representing two hundred six species (plus two specimens identified to genus only) accessioned. Eight of these are photographic vouchers. Two hundred seventy-seven were collected at Presque Isle State Park, and three from Erie Bluffs. Fifty-seven new species were added to the collection. **Eighty species** are new to Presque Isle. **Thirty-two** first Erie County records were obtained, including one **first Pennsylvania record** (*Euxoa detersa*, the Rubbed Dart moth).

**Arachnids:** Eighteen collection objects of sixteen species accessioned. Six specimens are from Erie Bluffs State Park and seven are from Presque Isle. Four species are new to the collection. Two are new species to Presque Isle and two are new to Erie Bluffs.

**Crustaceans:** Five collection objects of five crustacean species (three from Presque Isle) were accessioned. Two terrestrial isopods are new to the collection, one is new to Presque Isle.

**Mollusks:** Six collection objects of six species were accessioned, including three species of land snails that are new to Presque Isle. One species is new to the collection.

**Fishes:** Twenty-seven collection objects (including one photo voucher) of twenty-two species accessioned. Two species are new to the collection. Two collection objects are from Presque Isle and two are from Erie Bluffs.

**Amphibians:** Eight collection objects of six species accessioned. One is from Presque Isle and two are from Erie Bluffs. Photo vouchers of egg masses of the spotted salamander (*Ambystoma maculatum*) on Presque Isle were accessioned, representing the first time this species has been documented on the park in 34 years.

**Reptiles:** Thirteen collection objects (including one photo voucher) of seven species accessioned. Three collection objects are from Presque Isle.

**Birds:** Fourteen birds were accessioned. Eight are from Presque Isle. Four new species were added to the collection.

**Mammals:** Eight collection objects, including two photo vouchers and two video vouchers of mammals were accessioned. Six are from Presque Isle.

## Collection Holdings as of December 2023

Group	Species	Collection Objects
Plants	680	1234
Annelids	4	7
Mollusks	68	447
Fishes	107	564
Amphibians	24	191
Reptiles	31	186
Birds	100	250
Mammals	31	55
Crustaceans	13	46
Arachnids	138	414
Insects	1,883	7219
<i>Lepidoptera</i>	712	3479
<i>Trichoptera</i>	197	920
<i>Plecoptera</i>	47	98
<i>Coleoptera</i>	445	1110
<i>Odonata</i>	105	541
<i>Hymenoptera</i>	99	268
<i>Ephemeroptera</i>	37	95
<i>Hemiptera</i>	28	60
<i>Diptera</i>	171	540
<b>Totals</b>	<b>3,079</b>	<b>10,613</b>

### Targeted Biodiversity Surveys

- Bait trapping surveys for butterflies and moths at Presque Isle.
- Light trapping surveys for moths at Presque Isle.
- Acoustic surveys with a Song Meter SM4 Acoustic Recorder for amphibians, birds, and insects on Presque Isle and Erie Bluffs.
- Camera traps for various wildlife species.
- Trapping for invasive red-eared slider turtles.
- Survey for invasive rusty crayfish.
- Collection of crane flies (Tipulidae) for a statewide survey by Jon Gelhaus of Drexel University.
- Trapping for rare fishes on Presque Isle.
- Cover boards set on Presque Isle to detect eastern ribbonsnakes (*Thamnophis saurita*), a Species of Special Concern.

- Provided support to the Pa. Fish and Boat Commission with surveys for the Blanding's turtle (a Pa. Species of Special Concern) on Presque Isle. Radiotracking and camera trapping performed.
- Visual encounter survey for wood turtles, a Pa. Species of Special Concern, in Warren County as part of a statewide assessment of the species by the Mid-Atlantic Center for Herpetology and Conservation (MACHAC).
- Spider collections at Erie Bluffs and Presque Isle.
- Macroinvertebrate, fish, amphibian, and reptile collection to obtain teaching specimens.
- Soil and litter extractions of invertebrates via Tullgren funnel technique.

## **Internship**

The Tom Ridge Environmental Center Foundation sponsored a paid internship for the Museum from June through August. Erik Hagen, an insect ecology major at the University of Delaware, was hired. Erik assisted with field collections, mounted and identified insect and spider specimens, and performed collection maintenance. He assisted with the museum's booth at Discover Presque Isle, and attended a table with specimens at TREC to educate the public about insects. Erik was also responsible for creating the moth display in the museum's display case.

## **Job Shadow**

Fort Le Boeuf High School student Natalie Dushole job shadowed the curator on May 23<sup>rd</sup>. Natalie assisted with collection maintenance, turtle trapping, and fish sampling.

## **Citizen Science**

Pennsylvania Amphibian and Reptile Survey (PARS). The Museum provides regional coordination of this statewide citizen science atlas project sponsored by the Mid-Atlantic Center for Herpetology and Conservation, and the Pennsylvania Fish and Boat Commission. Group field trips ("herpblitzes"), education and recruitment presentations, record verification, and volunteer liaison services for the project have been provided.

## **Displays**

The Museum has a display case on the main floor of TREC to exhibit natural history topics using Museum specimens and other educational items. The Museum collaborates with DCNR education staff in creating displays. Themes displayed in 2023 include "State Symbols of Pennsylvania," "Birds," and "Moth Natural History."

Festival of the Birds (Presque Isle Audubon Society). Display of bird specimens.

Regional Science Consortium Symposium. Table display of Museum specimens.

## **Programs and Publicity**

February 17: Western Pa. Conservancy. Interviewed about xeric bee survey on Presque Isle for article in "Conserve" newsletter.

April 13: Gannon University biology class. Field trip at Headwaters Conservation Park featuring reptile, amphibian, and fish natural history.

May 5: DCNR Frog Walk at Pymatuning State Park. Assisted with public program.

April 29: City Nature Challenge. Assisted DCNR with local event for global iNaturalist event at Erie Bluffs State Park.

June 6: Aquatic Invasive Species Workshop (Pa. Sea Grant event). Presentation on invasive turtles and crayfish. Display of live and preserved specimens.

July 16: Pa. Outdoor Corps (Student Conservation Association). Field sampling event for fish.

July 28: Discover Presque Isle. "Discover Insects" booth with exhibits of live and preserved insect specimens, and demonstrations of trapping and netting methods for insect collection.

August 30: Wildlife Wednesdays. Guest on monthly virtual DCNR program. Presentation on beach invertebrates.

August 31: Penn State-Behrend herpetology class. Presentation on Pennsylvania Amphibian and Reptile Survey and herpetology survey techniques.

September 16: Panel discussion on salamanders at TREC for Regional Science Consortium event.

November 20: Points North podcast. Interviewed about invasive red-eared slider turtles for episode entitled "The Turtle Takeover."

## **Loans**

The Museum maintains a selection of items available for loan for educational and scientific use. Items available for teaching use include standard preserved specimens (freeze-dried animals, alcohol preserved animals), Cornell insect display cases, Riker mounts, resin-mounted specimens, kits of preserved invertebrates (aquatic macroinvertebrates, spiders, soil invertebrates), bones, skins, herbarium sheet photocopy mounts, animal replicas, and natural history books. Users of Museum materials include: Pa. DCNR, Regional Science Consortium, Penn State Behrend Biology Department, the Purple Martin Conservation Association, Presque Isle Audubon, and Asbury Woods.

## **Tours**

Eleven tours serving 109 people. Occasional tours of the Museum are performed for individuals and groups. Groups receiving tours in 2023 include DCNR rangers and volunteers, MWEE

Workshop participants, Upward Bound, Fairview Green Team, RSC Symposium attendees, Mercyhurst College and Erie County Community College students.

## Data and Identification Services

- **Herbarium database.** The Museum's plant data was moved to Mid-Atlantic Herbaria Consortium Symbiota portal (<https://midatlanticherbaria.org/portal/>) in 2022. The herbarium specimens were taken to the Morris Arboretum in Philadelphia in 2023 for digital imaging, and those images are attached to the records in the database. These images are available for viewing through the MAHC website along with the data for each record.
- Species lists of Presque Isle organisms. The Museum is maintaining lists of all species of plants, animals, and fungi that have been verified to have occurred on Presque Isle for use by managers and researchers. Sources include records from museums, iNaturalist, published literature and technical reports.
- University of Chicago. Presque Isle mussel data provided.
- Species verification for the Pennsylvania Amphibian and Reptile Survey.

## Volunteers

Museum volunteers logged over 765 hours of work for the museum. We acknowledge the dedication and generosity of the following volunteers:

**Jessica Brown:** Taxidermy, mammal, and bird preparation.

**James Buchkovich:** Spider collection, identification, and labeling.

**Brian Gray:** Reptile and amphibian collection; PARS verification; invertebrate collection and identification; natural history research.

**Ed Masteller:** TREC Museum founder.

**Jerry McWilliams:** Entomology Curator; collection, identification, and preparation of insects.

**Laurel Peters:** General museum maintenance.

**Chris Roth:** General assistance with museum tasks, especially database management and labeling.

**Dave Roth:** Freeze-drying; fabrication and maintenance of equipment and other items.

**Tim Schloss:** Taxidermy.

**Nikolaus Simione.** Field collection of fish, amphibians, and reptiles.

**Andrew Sipple:** Plant collection, identification, and preparation.

**John Tautin:** Fish, reptile, and amphibian collection.

**Bob Wellington:** Fish collection; miscellaneous collections.

A special thanks to the experts who donate their time and expertise to specimen identification:

**Robert Androw** (Carnegie Museum of Natural History)

**Ainsley Seago** (Carnegie Museum of Natural History)

**Scott Schuette** (Western Pennsylvania Conservancy)

**Robert Whyte** (Penn West California)

**John Titus** (SUNY-Fredonia, ret.) and **Priscilla Titus** (freelance ecologist)