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Upper Delaware Bioblitz

National park

Upper Delaware Scenic and Recreational River, Pennsylvania

Dates

28–29 June 2013

Activity name/type

Upper Delaware Bioblitz

Focal taxa

Aquatic macroinvertebrates, birds, fish, fungi, herpetofauna, lichens, mammals, mosses, plants, terrestrial invertebrates

Site

A 64-acre (26 ha) privately owned property mostly in the half-mile-wide wild and scenic river corridor in the northern portion of the park

Methods

Nine taxonomic teams (TWiGs), comprising scientists from the Philadelphia Academy of Natural Sciences, several universities and agencies, students, and volunteers, combed the site to locate and identify taxa, and subsequently to verify certain identifications in the lab. Collection protocols and sampling methods used by each team are described online at <http://www.upperdelawarebioblitz.com/science/default.html>. The public was invited on Saturday to view the results, talk with team members, and participate in instructive programs (see <http://www.upperdelawarebioblitz.com/event/default.html>).

Sponsors

Delaware Highlands Conservancy, Delaware Riverkeeper Network, Friends of the Upper Delaware River, Monroe County Conservation District, National Park Service (Natural Resource Stewardship and Science Directorate, Northeast Regional Office, and Washington Office), Norcross Wildlife Foundation (the property owner), Northeast Pennsylvania Audubon Society, Paul and Scott Hunt, Pennsylvania Native Plant Society, Verizon Wireless (for WiFi access), and Wayne County Community Foundation

Key science partners

The Academy of Natural Sciences (Patrick Center for Environmental Research) of Drexel University, Delaware Highlands Mushroom Society, East Stroudsburg University, Pennsylvania Natural Heritage Program, and Western Pennsylvania Conservancy

Participation

About 50 scientists and amateur naturalists helped collect and identify specimens. More than 25 volunteers planned and ran the event. Approximately 250 park visitors attended educational programs to learn about the event and its findings.

Highlights

Five inches of rain fell the night before the bioblitz, hampering the search for snakes and collections at aquatic study sites. The Pennsylvania endangered bridle shiner (*Notropis bifrenatus*) was documented in a new park location. All 27 documented crane flies were new records for Wayne County. (The previous state record for *Cryptolabis paradoxa*, a riverine crane fly, was in 1917.) Among plants, 29 vascular species (11 of them native) and 31 species of bryophytes were new county records. Areas prone to flooding had a higher proportion of nonnative plant species. Twenty species of ground beetles, a group that reflects specific microhabitat associations, were recorded. All mosquito specimens tested negative for West Nile virus. No bats of the genus *Myotis*, hardest hit by white-nose syndrome, were identified. Herpetofauna identifications included salamanders, newts, frogs, toads, turtles, and one snake species. Some duplication occurred among species recorded by the aquatic macroinvertebrate and terrestrial invertebrate teams, suggesting the need for better coordination among these teams in the future.

Table 1. Results of 2013 Upper Delaware Bioblitz

TWiGs	Number of Species
Aquatic macroinvertebrates (aquatic insects, mussels, snails)	67
Birds	57
Bryophytes (mosses, lichens, and worts)	67
Fish	28
Fungi (mushrooms and molds)	51
Herpetofauna (reptiles and amphibians)	16
Mammals	12
Terrestrial invertebrates (insects, worms, snails)	458
Vascular plants	268 (192 native)
Total	1,024



JON GELHAUS

ROY MORSCH

ROY MORSCH

STEVE SCOTT

(Background) A mercury vapor lamp and a white sheet attract flying insects at the bioblitz. (Inset, top) Young naturalists at the Upper Delaware Bioblitz learn about fish from Dr. Richard Horwitz of the Academy of Natural Sciences. (Inset, middle) A young participant holds a salamander (*Plethodon glutinosus*) identified during the Upper Delaware Bioblitz. (Inset, bottom) Female crane fly, *Tipula bicornis*.

Publications

A final report is available at <http://www.upperdelawarebioblitz.com/science/default.html>. An article about the importance of protected habitats to bryophyte diversity was published in the March 2014 issue of *Evansia* (see "A list of bryophytes for Wayne County, Pennsylvania" at doi:10.1639/079.031.0104).

Educational outcomes

More than 1,000 species of plants and animals were documented in 24 hours and have been entered into the NPSpecies database. The event highlighted the diversity of life that enriches the soil, cycles nutrients, purifies water, pollinates plants, and creates air—ecosystem services that benefit and sustain humans and that can-

not easily be reengineered. By involving the public in a science-based park management activity, the bioblitz supported the NPS Call to Action strategy 7, "Next Generation Stewards."

Follow-up

The park organized and held a second bioblitz in 2014, this time on the New York side of the river. For further information and to view photos of the event see <http://upperdelawarebioblitz.com> and <https://www.facebook.com/UpperDelawareBioblitz>.

Park contact

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