

RESULTS OF THE LOBLOLLY MARSH WETLAND PRESERVE BIOBLITZ, JAY COUNTY, INDIANA

Donald G. Ruch¹, Daryl R. Karns², Paul McMurray³, Jean Moore-Palm⁴, William Murphy⁵, Scott A. Namestnik⁶ and Kirk Roth⁷: ¹Department of Biology, Ball State University, Muncie, Indiana 47306 USA; ²Rivers Institute and Biology Department, Hanover College, Hanover, Indiana 47243 USA; ³Department of Biology, Indiana State University, Terre Haute, Indiana 47809 USA; ⁴Board Member (Friends of the Limberlost), Volunteer (Gene Stratton Porter State Historic Site), Geneva, Indiana 46740 USA; ⁵Research Collaborator, Smithsonian Institution, Fishers, Indiana 46038 USA; ⁶JFNew, Walkerton, Indiana 46574 USA; ⁷Corradino LLC, 200 S. Meridian Street, Suite 330, Indianapolis, Indiana 46225 USA

Keywords: BioBlitz, diversity, Indiana

The term "BioBlitz" was coined by Susan Rudy, a U.S. National Park Service naturalist, while helping to organize the first BioBlitz held at Kenilworth Aquatic Gardens, Washington D.C. from May 31 to June 1, 1996 (BioBlitz Center 2009, Post 2003). A BioBlitz (also written bioblitz), short for biodiversity blitz, is a rapid assessment of the flora and fauna living in a particular area at a given point in time (Field Museum 2007). It is essentially a "snapshot in time" of the living organisms of a particular site. A full BioBlitz must take place over a full 24-hour period since different organisms will be found at different times of the day. Additionally, it should be noted that since the species pool changes throughout the year, a one day BioBlitz will not produce a complete inventory of the biodiversity of the site. Lastly, the success of the event is based primarily on two factors, i.e., the organization of the event and the team of dedicated scientists, naturalists, and volunteers conducting the surveys.

On 19–20 June 2009, a 24-hour BioBlitz was held at the Loblolly Marsh Wetland Preserve (part of the Limberlost Swamp) in Jay County, Indiana. The event was held to honor the one-hundredth year anniversary of the publication of *A Girl of the Limberlost* by Gene Stratton-Porter, an Indiana native whose concern regarding the ecological consequences of deforestation and wetland drainage foreshadowed the environmental movement of today (Library of Congress 2009). The event was organized by Jamie Faller, Program Developer, Limberlost

State Historic Site and Anne Fairchild, Eastern Region Program Manager, Indiana State Museum and Historic Sites in collaboration with a number of partners (see Acknowledgments).

The results of the BioBlitz (Tables 1–8) are presented on the Indiana Academy of Science Website at indianaacademyofscience.org. The results of two previous BioBlitz events (Otter Creek, Vigo County from 2005 and Wesselman Woods, Evansville, Indiana from 2008) are also available. Once on the website click on Events/Meetings, then click on BioBlitz Information; the lists are indicated by year, 2009, 2008, or 2005). The Loblolly BioBlitz recorded a total of 545 species, including two bees, 55 birds, 24 butterflies and moths, 29 dragonflies and damselflies, one fish, 25 fungi, 15 reptiles and amphibians, two insects (miscellaneous), five mammals, 376 plants, and 11 sciomyzid flies.

Amphibians & reptiles.—A total of nine amphibians (two salamanders and seven frogs) and six reptile species (two turtles, one lizard, and three snakes) was recorded. Of special interest was the abundance of *Acris crepitans* (Northern Cricket Frog) and *Rana pipiens* (Northern Leopard Frog) at the Loblolly site. These two species have been the center of attention in northern Indiana in recent years due to apparent dramatic declines in populations. *Rana pipiens* was the most frequently encountered amphibian; dozens of juveniles would scatter across the water as the herpetology team waded into wetland areas. After dark, the newly transformed juveniles literally cov-

ered the main road through the preserve. *Acris crepitans* was also abundant and could be heard chorusing from all of the major wetlands, suggesting that the preserve serves as a refuge for amphibians and is potentially an important source population for these two species, and possibly others, that are declining elsewhere. Photo-vouchers were taken for all specimens and are maintained by Daryl Karns at Hanover College.

Odonates (dragonflies & damselflies).—A total of 29 odonate species was collected or observed, including 17 new Jay County records (Abbott 2007; Curry 2001). In addition, the flight season of one species, *Sympetrum vicinum* Hagen [Autumn Meadowhawk], was extended by nearly two weeks, and *Tramea onusta* Hagen [Red Saddlebags], listed as “uncommon,” and *Sympetrum corruptum* (Hagen) [Variegated Meadowhawk], listed as “rare” for Indiana by Curry (2001), were collected. Voucher specimens have been placed in the Franklin College Indiana Odonata collection.

Sciomyzid flies.—Eleven species of Sciomyzidae (snail-killing flies) were found, all new for Jay County: *Dictya expansa* Steyskal 1♂; *D. pictipes* (Loew) 1♂; *D. sabroskyi* Steyskal 1♂; *Ditaeniella parallela* (Walker) 40♂ 41♀; *D. trivittata* (Cresson) 1♂ 1♀; *Limnia boscii* (Robineau-Desvoidy) 1♂; *Pherbellia nana nana* (Fallén) 1♀; *P. seticoxa* Steyskal 10♂ 8♀; *Sepedon armipes* Loew 6♂ 5♀; *S. fuscipennis* Loew 1♂ 2♀; *Tetanocera loewi* Steyskal 3♂ 1♀. The number of species was average, whereas the numbers of *D. parallela* set a new national high. This species oviposits on dying or decaying snails. A 1 m² circle of dead *Planorbella trivolvis* (Say) snails in the center of a dried pool hosted about 200 *D. parallela*. Also noteworthy were numbers of *P. seticoxa*, normally found singly or in pairs, and the lone *D. trivittata*, only the fourth individual from Indiana of a species first discovered in the state one month prior to the BioBlitz.

Birds.—The 55 species reported at the BioBlitz represent a list of common birds of field and woodland. It is augmented by a number of marsh and wetland birds, most notable were *Porzana carolina* (Sora) and *Nycticorax nycticorax* (Black-crowned Night Heron). Special birds of open areas were *Dolichonyx oryzivorus* (Bobolink) and *Spiza americana* (Dickcissel). Raptors were lacking except for *Falco sparverius* (American Kestrel).

Butterflies and moths.—The list of 24 species focused mostly on larger butterflies; skippers and moths were generally not recorded. Notable species included *Satyrrium liparops* (Striped Hairstreak) and *Euphydryas gilletti* (Baltimore Checkerspot).

Plants.—Of the 376 plant species recorded, 306 (81.4%) were native and 70 (18.6%) were exotics. The native plants included 61 woody species (33 trees, 20 shrubs, and 8 vines), 175 forbs, 5 herbaceous vines, 27 grasses, 37 sedges, and 1 fern. The exotic plants included 6 woody species (3 trees, 3 shrubs), 50 forbs, and 14 grasses. The floristic quality index (Rothrock 2004) for the native species was 61.1 and for all species was 55.1; the native mean C was 3.5 and the mean C for all species was 2.9. These numbers suggest that the site has some remnant natural quality, but the exotics are having a negative impact. Lastly, three species are state listed. *Carex leptonevia* (Few-Nerved Wood Sedge) [endangered]; *Hydrastis canadensis* (Golden Seal) and *Tripsacum dactyloides* (Eastern Gama Grass) [watch list] (Division of Nature Preserves 2007). *Tripsacum dactyloides*, which occurred in a restored prairie, was probably introduced. A limited number of vouchers were collected for identification of unknown species and were deposited at the Ball State University Herbarium (BSUH).

Fungi.—Although it rained the Thursday before the BioBlitz, it had been very dry the six to eight weeks prior. As a result, 23 of the 25 fungi recorded were typical “wood-rot” fungi. Twenty-three of the fungi were basidiomycetes, including *Puccinia podophylli* [May Apple Rust] and *Rhodotus palmatus* [Netted Rhodotus], and 2 fungi were ascomycetes, including *Sarcoscypha coccinea* [Scarlet Cup] and *Galiella rufa* [Hairy Rubber Cup]. No voucher specimens were taken.

ACKNOWLEDGMENTS

We wish to thank the Indiana State Museum and Historic Sites, Limberlost State Historic Site, the Indiana Department of Natural Resources, and Ken Brunswick, Northeastern Indiana Regional Ecologist, Indiana Department of Natural Resources, for sponsoring the BioBlitz held at Loblolly Marsh Wetland Preserve. Additional sponsors include the Jay County Soil & Water Conservation District, Jay County REMC, Adams County Community Foundation, Friends of the Limberlost, the Rivers Institute at Hanover College, and the

Biodiversity and Natural Areas Committee of the Indiana Academy of Sciences. We also extend our sincere appreciation to the staff, scientists, naturalists, and volunteers conducting the surveys; the list of these individuals is on the IAS website at www.indianaacademyofscience.org.

LITERATURE CITED

- Abbott, J.C. 2007. OdonataCentral: An online resource for the distribution and identification of Odonata. Texas Natural Science Center, The University of Texas at Austin. Available at <http://www.odonatacentral.org>. (Accessed: October 02, 2009).
- BioBlitz Center. 2009. History of the BioBlitz. At <http://www.bioblitzcenter.com/about/history.html>.
- Curry, J.R. 2001. Dragonflies of Indiana. Indiana Academy of Science, Indianapolis, Indiana. 259 pp.
- Division of Nature Preserves, Indiana Department of Natural Resources. 2007. Endangered, Threatened, and Rare Vascular Plants of Indiana. At <http://www.in.gov/dnr/naturepr/>.
- The Field Museum. 2007. Calumet Bioblitz. At <http://www.fieldmuseum.org/bioblitz/>.
- Library of Congress. 2009. Limberlost's Nature Day. At <http://lcweb2.loc.gov/diglib/legacies/IN/200003011.html>.
- Post, S.L. 2003. Biodiversity Blitz: A Day in the Life of... The Illinois Steward 12(1):1-8.
- Rothrock, P.E. 2004. Floristic quality assessment in Indiana: The concept, use and development of coefficients of conservatism. Final Report for ARN A305-4-53, EPA Wetland Program Development Grant CD975586-01. 96 p. At <http://www.in.gov/idem/water/planbr/401/publications.html>.

Manuscript received 14 November 2009.