



Results of the 2014 Birding Efforts at Effigy Mounds National Monument, Iowa

Birds are an important component of park ecosystems, as their high body temperature, rapid metabolism, and high ecological position in most food webs make them good indicators of the effects of local and regional changes in ecosystems. Moreover, birds have a tremendous following among the public and many parks provide information on the status and trends of birds through their interpretive programs.

We use trends in the composition and abundance of bird populations as long-term indicators of ecosystem integrity in the varied habitats of Effigy Mounds National Monument (EFMO), Iowa. Ecosystem integrity is defined as the system's capability to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region (Karr and Dudley 1981).

Changes in the population size and community composition of birds on the park may reflect the effectiveness of management in restoring and maintaining the various vegetative communities at EFMO. Long-term trends in community composition and abundance of breeding bird populations provide one measure for assessing the ecological integrity and sustainability of these systems.

Methods:

For details on methods of bird surveys see Peitz et al. (2008).

- Bird communities were monitored at 38 points by Jon W. Stravers, Dennis Kirshbaum, and Emily Groom, between May 20th and June 5th.
- All birds seen or heard in a 5-minute sampling period at each plot were recorded.
- Residency status of each species was established prior to analysis of the data (Spess et al. 1996).
- Using hot-spot-analysis in ArcGIS, areas of higher and lower species richness on the monument were determined.
- Calculated number of individuals encountered per plot visit, and proportion of plots occupied by a species.

Summary of Findings:

- Sixty-five bird species were observed during surveys. Sixty-four of the 65 species are resident or summer resident species thus considered breeding species at EFMO (Table 1).
- The most commonly occurring and widespread birds on EFMO were the American Redstart and Baltimore Oriole.
- Six species –Bald Eagle, Black-billed Cuckoo, Blue-winged Warbler, Brown Thrasher, Cerulean Warbler, and Red-headed Woodpecker– are species of

conservation concern for the Prairie Hardwoods Transition Bird Conservation Region (Figure 1).

- Hot-spot-analysis showed concentrations of plots with low species richness at the Main Unit of EFMO, and concentrations of plots with high species richness at the Sny Magill Unit (Figure 2).

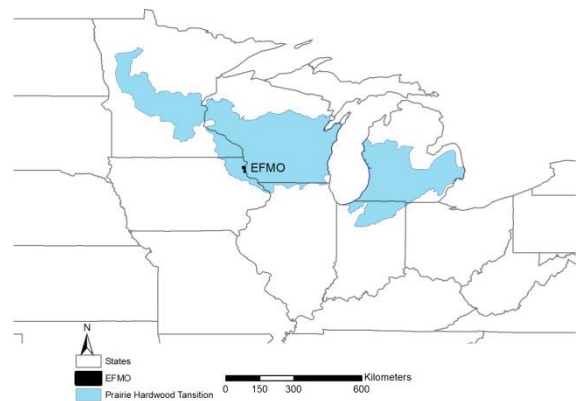


Figure 1. Prairie Hardwoods Transition Bird Conservation Region.

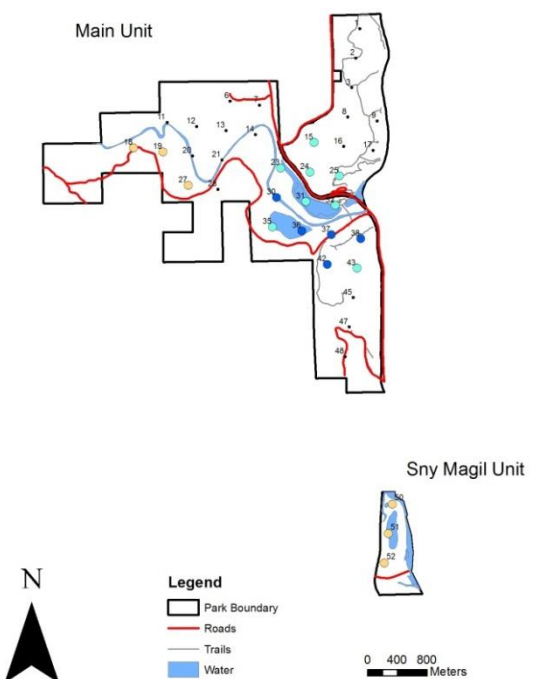


Figure 2. Concentrations of plots with high (orange) to higher (red) and low (blue) to lower (dark blue) breeding bird species richness at Effigy Mounds National Monument, Iowa in 2014.

Table 1. Number of individuals encountered per plot visit, and proportion of plots out of 38 occupied by breeding bird species at Effigy Mounds, Iowa during the 2014 bird surveys. Number of individuals per plot, and proportion of plots occupied includes all individuals recorded on plots during a 5-minute survey, including flyovers.

Common name	Residency ¹	Individuals / plot visit	Proportion of plots occupied
Acadian Flycatcher	SR	0.05	0.05
American Crow	R	0.11	0.08
American Goldfinch	R	0.61	0.50
American Redstart	SR	1.16	0.87
American Robin	SR	0.87	0.66
Bald Eagle	R	0.11	0.11
Baltimore Oriole	SR	1.29	0.79
Barn Swallow	SR	0.03	0.03
Black-billed Cuckoo	SR	0.05	0.05
Black-capped Chickadee	R	0.18	0.18
Blue Jay	R	0.24	0.21
Blue-gray Gnatcatcher	SR	0.50	0.45
Blue-winged Warbler	SR	0.08	0.08
Brown Creeper	R	0.03	0.03
Brown Thrasher	SR	0.03	0.03
Brown-headed Cowbird	SR	0.13	0.13
Canada Goose	R	0.11	0.05
Cedar Waxwing	SR	0.03	0.03
Cerulean Warbler	SR	0.05	0.05
Common Grackle	SR	0.24	0.18
Cooper's Hawk	M	0.03	0.03
Common Yellowthroat	SR	0.63	0.47
Downy Woodpecker	R	0.42	0.42
Eastern Bluebird	SR	0.03	0.03
Eastern Phoebe	SR	0.03	0.03
Eastern Wood-pewee	SR	0.71	0.58
Eastern Towhee	R	0.05	0.05
(Eastern) Tufted Titmouse	R	0.08	0.08
Field Sparrow	SR	0.05	0.03
Great Blue Heron	SR	0.08	0.05
Great Crested Flycatcher	SR	0.05	0.05
Gray Catbird	SR	0.18	0.18
House Wren	SR	0.32	0.29
Indigo Bunting	SR	0.18	0.18
Least Flycatcher	SR	0.05	0.05
Mourning Dove	SR	0.05	0.05
Northern Cardinal	R	0.26	0.26
Northern Flicker	R	0.08	0.08
Ovenbird	SR	0.13	0.13
Pileated Woodpecker	R	0.18	0.18
Prothonotary Warbler	SR	0.29	0.21
Red-bellied Woodpecker	R	0.42	0.39

Red-eyed Vireo	SR	0.50	0.50
Red-headed Woodpecker	SR	0.11	0.11
Red-shouldered Hawk	R	0.08	0.08
Red-winged Blackbird	R	0.66	0.45
Rose-breasted Grosbeak	SR	0.87	0.71
Ruby-throated Hummingbird*	SR	0.05	0.05
Scarlet Tanager	SR	0.13	0.13
Song Sparrow	R	0.50	0.37
Tennessee Warbler	M	---	--
Tree Swallow	SR	0.21	0.08
Turkey Vulture	R	0.08	0.05
Warbling Vireo	SR	0.29	0.24
White-breasted Nuthatch	R	0.24	0.16
Wild Turkey	R	0.05	0.05
Wood Duck	SR	0.08	0.05
Wood Thrush	SR	0.18	0.16
Worm-eating Warbler	SR	0.03	0.03
Yellow-billed Cuckoo	SR	0.05	0.05
Yellow-bellied Sapsucker	SR	0.26	0.24
Yellow Breasted Chat	SR	0.03	0.03
Yellow-throated Vireo	SR	0.45	0.42
Yellow Warbler	SR	0.16	0.16

¹ Residency status: M = late season migrant; R = year around resident; SR = summer resident (Spess-Jackson et al. 1996).

Bolded species names are those species considered of conservation concern for the Prairie Hardwoods Transition Bird Conservation Region (U.S. Fish and Wildlife Service 2008).

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Spess-Jackson, L., C.A. Thompson, and J.J. Dinsmore. 1996. *The Iowa Breeding Bird Atlas*. University of Iowa Press, Iowa City. 484 pp).

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