



Mid-Atlantic Network

Breeding Bird Resource Brief

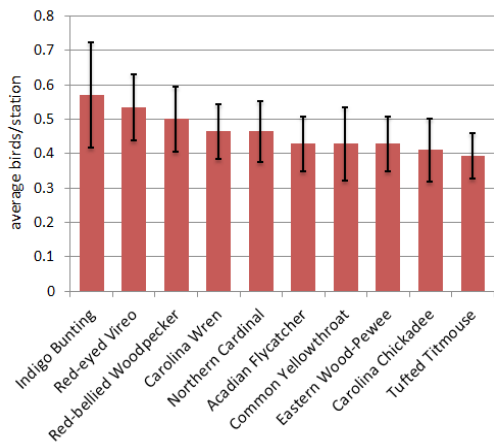


Richmond National Battlefield Park 2013 Status & Trends

A total of 56 sampling stations were surveyed at the Malvern Hill and Cold Harbor units of Richmond NBP during the park's fourth season of breeding bird monitoring, including 41 stations in forested habitats and 15 stations in grassland habitats. Ten volunteers from the local birding community completed

a total of 64 surveys, an average of 1.14 surveys per station. Between May and July, a total of 591 birds of 68 species were detected throughout the units. Forested habitat had slightly higher species richness than grassland habitat with 60 species occurring in forested habitats and 45 in grassland habitats. The Indigo Bunting had the highest relative abundance, averaging 0.57 birds / station. The Red-eyed Vireo was the most prevalent species, occurring at 42.86% of the stations surveyed.

Volunteers detected 25 species considered to be of conservation concern by Partners in Flight (PIF). PIF distinguishes species of concern facing immediate threats as "watchlist" species. "Stewardship" species are representative of avifaunal biomes that may or may not be in immediate danger. Within the units, 11 watchlist species and 14 stewardship species were detected. Six



The 10 most commonly detected bird species at Richmond NBP in 2013 and their associated relative abundance (average birds/station). Error bars indicate standard error, a measure of variation.

Objectives

1. Determine annual changes and long-term trends in species composition and relative abundance.
2. Improve our understanding of relationships between breeding birds, habitats, and park management.

species of concern, including 1 watchlist species (Eastern Wood-Pewee) and 5 stewardship species (Acadian Flycatcher, Carolina Chickadee, Carolina Wren, Indigo Bunting, Red-bellied Woodpecker), were among the 10 most abundant.

Bird community assessments, or "indices" (BCI), can be used to assess responses to environmental change by Avian guilds. An avian guild is a group of species that occupy similar ecological niches. Based on a BCI developed for the Piedmont/Coastal Plain region, forested stations surveyed in Malvern Hill and Cold Harbor received a ranking of "Naturalistic," which is higher than



Importance

In the densely populated Mid-Atlantic region, birds face numerous threats including urbanization, habitat loss, and fragmentation. National parks provide refuge from such threats with contiguous and protected tracts of habitat suitable for breeding birds. These parks host species of continental concern and other species that are declining throughout their range.

Birds are also excellent barometers of ecosystem health due to their high metabolism and prominent position in the food web. Detecting changes in bird populations may help alert park staff to ecological stressors such as invasive species, overbrowsing, detrimental park management practices, or climate change and help guide future management actions.

Management Applications

- A total of 68 species were detected across the unit, including 25 species of concern.
- 6 of the 10 most common species were Partners in Flight (PIF) species of concern.
- The Eastern Wood-Pewee, a watchlist species, was the eighth most common species detected.

Long-term Monitoring

Between May and July of each year, volunteer birders conduct point counts at monitoring stations in forest and grassland habitats. Many stations in forested areas are located within 125 m of forest vegetation monitoring plots enabling park staff to associate long-term trends in vegetation with avian population trends.

During each 10-minute count, the volunteer records environmental

conditions, how the bird was detected (visually or aurally), and the distance and minute of first detection.

Each site is visited at least once, but volunteers are encouraged to make multiple visits in a season. Multiple visits are especially important for obtaining accurate density estimates as information on variability due to observers, weather, etc. can be accounted for.

Status & Trends Continued...

in 2012 (see table below). Rankings, when broken out by guild, were also higher in 6 out of 9 categories. These results, however, are preliminary, and yearly changes may be influenced by

both natural and observer variation. Until more data is collected, these initial trends should be treated with caution.

		2012		2013	
Guild		Percent	Rank	Percent	Rank
Structural	Forest Interior	16.37	Moderately Disturbed	25.30	Largely Intact
	Pine Associated	2.24	Largely Intact	2.22	Largely Intact
	Urban/Suburban	63.22	Humanistic	39.83	Largely Intact
Functional	Bark Prober	16.62	Largely Intact	21.22	Naturalistic
	Ground Forager	3.29	Largely Intact	5.86	Largely Intact
	Upper Canopy Forager	5.61	Moderately Disturbed	13.65	Largely Intact
Compositional	Nest Predator/Brood Parasite	27.03	Humanistic	14.03	Largely Intact
	Single Brooded	28.54	Moderately Disturbed	50.11	Naturalistic
	Exotic	0.00	Naturalistic	0.27	Largely Intact
Total BCI Score		0.58	Moderately Disturbed	0.81	Naturalistic

Avian forest guild summary and Bird Community Index (BCI) score for 2012-2013. Values indicate the average percent guild membership at sampled monitoring stations. Total BCI scores range from 0-1 with 1 having the highest integrity. Ranks in descending order of ecological value are: Naturalistic, Largely Intact, Moderately Disturbed, and Humanistic.

A Final Note

It is important to note that the results presented in this brief are preliminary and are limited to areas sampled in the park. For more information on this protocol, please see the full annual report accessible from our website.

We'd like to thank all our volunteers for walking off the beaten path in the summer heat to count birds: Lewis Barnett, Ethan Bullard, Pat Edwards, Mary Hamilton, Diane Jadowski, Dave Nichols, Betsy Saunders, Robin Wilder, Irvine Wilson, and Lynn Wilson.



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More information and full annual reports may be found at
<http://science.nature.nps.gov/im/units/midn/monitor/birds.cfm>

Species	Detections	% Occupied
Watchlist Species		
Brown Thrasher	-	-
Chimney Swift	-	-
Eastern Wood-Pewee	24	37.5
Field Sparrow	5	7.1
Grasshopper Sparrow	1	1.8
Northern Bobwhite	5	8.9
Northern Flicker	4	7.1
Prairie Warbler	4	5.4
Red-headed Woodpecker	3	5.4
Wood Thrush	6	10.7
Yellow-billed Cuckoo	5	8.9
Stewardship Species		
Acadian Flycatcher	24	37.5
Blue Grosbeak	10	8.9
Carolina Chickadee	23	30.4
Carolina Wren	26	41.1
Downy Woodpecker	7	12.5
Indigo Bunting	32	32.1
Orchard Oriole	1	1.8
Pileated Woodpecker	14	25.0
Pine Warbler	6	10.7
Red-bellied Woodpecker	28	39.3
Red-shouldered Hawk	1	1.8
Summer Tanager	10	17.9
White-eyed Vireo	7	12.5
Yellow-throated Vireo	4	7.1

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations with detections in Richmond NBP in 2013. Detections exclude flyovers and incidental encounters.

References:

Johnson, M. J. 2014. Breeding bird monitoring: Mid-Atlantic Network 2013 summary report. Natural Resource Data Series NPS/MIDN/NRDS—2014/736. National Park Service, Fort Collins, Colorado.

Photographs by: Bill Tucker