



Mid-Atlantic Network

Breeding Bird Resource Brief



Baltimore Oriole

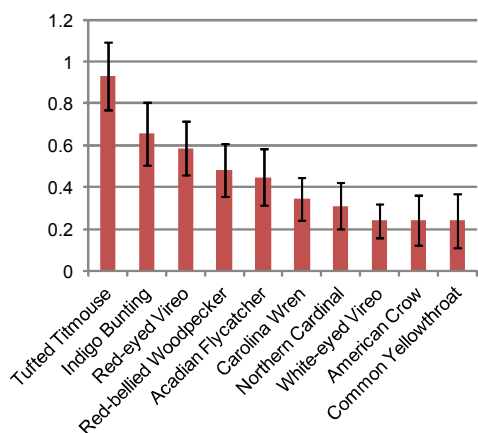
Richmond National Battlefield Park 2011 Status & Trends

Of the 52 bird monitoring stations established at the Malvern Hill unit of Richmond NBP, only 29 were surveyed during the 2011 breeding bird monitoring season due to volunteer shortages. Fifteen of the stations were in forested habitats and 14 in grassland habitats. Three volunteers surveyed the stations once, producing a total of 29 surveys.

Between May and July, 251 birds of 55 species were detected throughout the park. The number of species was similar across habitat types with 39 different species detected at forested stations, versus 40 species detected at grassland stations.

The Tufted Titmouse had the highest relative abundance, averaging 0.93 birds / station, and was the most prevalent species occurring at 62.1% of the stations surveyed.

Species of conservation concern, as defined by Partners in Flight (PIF), were well represented in the park, with volunteers detecting 24 species (see table on back right). PIF further distinguishes species of concern as “watchlist” species, which face immediate threats, or “stewardship” species, which are representative of avifaunal biomes that may or may not be in immediate danger.



The 10 most commonly detected bird species at Richmond NBP in 2011 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.

Within the park, 9 watchlist species and 15 stewardship species were detected. Five species of concern (Indigo Bunting, Red-bellied Woodpecker, Acadian Flycatcher, Carolina Wren, and White-eyed Vireo) were among the 10 most abundant species.

Avian guilds, or groups of species occupying similar ecological niches, can be utilized for assessing response to environmental changes and ecosystem stressors via bird community assessments, or “indices” (BCIs). Based on a BCI developed for the Piedmont/Coastal Plain region (O’Connell et al. 2003), forested stations surveyed this year received the highest ranking of “naturalistic”, an



Tufted Titmouse

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 55 species were detected across the park including 24 species of concern.
- 5 of the 10 most common species in the park were Partners in Flight (PIF) species of concern.
- The park's forested stations received the highest ecological integrity ranking, "naturalistic", using a Bird Community Index (BCI).

Long-term Monitoring

Between May and July of each year, volunteer birders conduct point counts at monitoring stations in forest and grassland habitats. 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...

increase from the "largely intact" rank from 2010.

Rankings, when broken out by guild, ranged from medium to high ecological integrity (see table below). All the compositional guilds increased in rank and only the forest interior guild de-

creased in rank from last year. Results, however, are preliminary and until more data is collected should not be treated as final.

		2010		2011	
Guild		Percent	Rank	Percent	Rank
Structural	Forest Interior	30.73	Naturalistic	25.63	Largely Intact
	Pine Associated	0.58	Moderately Disturbed	2.08	Largely Intact
	Urban/Suburban	40.61	Largely Intact	27.83	Largely Intact
Functional	Bark Prober	23.58	Naturalistic	25.16	Naturalistic
	Ground Forager	6.70	Largely Intact	6.26	Largely Intact
	Upper Canopy Forager	15.99	Largely Intact	24.99	Naturalistic
Compositional	Nest Predator/Brood Parasite	24.89	Humanistic	15.13	Largely Intact
	Single Brooded	44.28	Largely Intact	47.35	Naturalistic
	Exotic	5.26	Moderately Disturbed	0.00	Naturalistic
Total BCI Score		0.69	Largely Intact	0.86	Naturalistic

Avian forest guild summary and Bird Community Index (BCI) score for 2010-2011. Percents indicate the average percent guild membership at monitoring locations across the park. Total BCI scores range from 0-1 with 1 having the highest integrity.

A Final Note

It is important to note that the data presented in this brief is preliminary as variability in the dataset has not yet been accounted for. For more information on this protocol, please see the full annual report accessible from the protocol website linked below.

We'd like to thank all our volunteers for walking off the beaten path in the summer heat to count birds: Caroline Coe, John Coe, and Jerry Wyatt.

Species	Detections	% Occupied
Watchlist Species		
Chimney Swift	-	-
Eastern Meadowlark	-	-
Eastern Wood-Pewee	3	10.34
Field Sparrow	3	10.34
Northern Bobwhite	4	13.79
Prairie Warbler	2	6.90
Red-headed Woodpecker	2	6.90
Wood Thrush	2	6.90
Yellow-billed Cuckoo	3	10.34
Stewardship Species		
Acadian Flycatcher	13	31.03
Blue Grosbeak	4	10.34
Carolina Chickadee	3	10.34
Carolina Wren	10	31.03
Downy Woodpecker	1	3.45
Indigo Bunting	19	44.83
Northern Parula	2	6.90
Orchard Oriole	1	3.45
Pileated Woodpecker	3	6.90
Pine Warbler	2	6.90
Purple Martin	-	-
Red-bellied Woodpecker	14	37.93
Red-shouldered Hawk	1	3.45
White-eyed Vireo	7	24.14
Yellow-throated Vireo	1	3.45

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

References:

O'Connell, et al. 2003. A bird community index for the Mid-Atlantic Piedmont and Coastal Plain. Final Report to the USGS - Patuxent Wildlife Research Center. Report No. 2003-02.

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Protocol Website:

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