



Mid-Atlantic Network

Breeding Bird Resource Brief



Baltimore Oriole

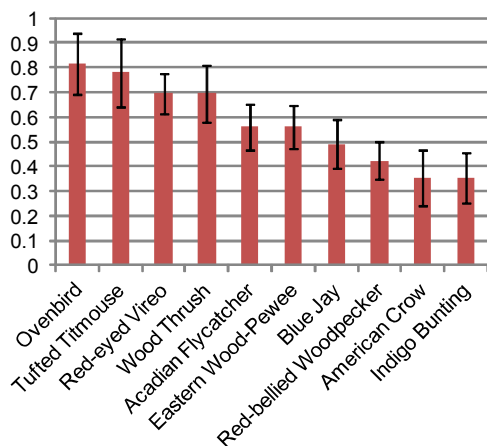
Fredericksburg and Spotsylvania National Military Park 2011 Status & Trends

This year, a total of 59 bird monitoring stations were surveyed at the Spotsylvania Battlefield in Fredericksburg and Spotsylvania NMP, including 51 stations in forested habitats and 8 stations in grassland habitats. Seven volunteer birders from the local birding community conducted an average of 1.31 surveys per

station producing a total of 77 surveys for the season.

Between May and July, 703 birds of 56 species were detected throughout the park. No new species were detected this year and species counts were slightly lower than in previous years (i.e. 58 species in 2009 and 63 in 2010), but this is likely a reflection of the lower number of surveys conducted this year (i.e. 116 surveys in 2009 and 103 in 2010) than a decline in species richness. The Ovenbird was the most numerous species averaging 0.8 birds / station. The Red-eyed Vireo was the most prevalent, occurring at 61% of the stations surveyed.

Volunteers detected 28 species of conservation concern, as defined by Partners in Flight (PIF), (see table on back right), consistent with surveys from previous years. PIF further distinguishes species of concern as “watchlist” species, which face immediate threats, or



The 10 most commonly detected bird species at Fredericksburg and Spotsylvania NMP 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.

“stewardship” species, which are representative of avifaunal biomes that may or may not be in immediate danger. Within the park, 13 watchlist species and 15 stewardship species were detected. Five species of concern, including 2 watchlist species (i.e. Wood Thrush and Eastern Wood-Pewee) and 3 stewardship species (i.e. Acadian Flycatcher, Red-bellied Woodpecker, and Indigo Bunting), 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 assess-

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.



Tufted Titmouse

Management Applications

- A total of 56 species were detected across the park including 28 species of concern.
- Throughout the park, 5 out of the 10 most common species detected were species of concern.
- The park's forested stations maintained the highest ecological integrity ranking, 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...

ments, or "indices" (BCIs). Based on a BCI developed for the Piedmont/Coastal Plain region (O'Connell et al. 2003), forested stations surveyed this year maintained the highest ecological ranking of "naturalistic." Ranks per guild were also consistent with last year, with the exception of the ground

foraging guild, which scored higher likely due to the large number of Oven-birds detected this year.

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.

Photographs by:

Jim Schmidt and Bill Thompson

		2010		2011	
Guild		Percent	Rank	Percent	Rank
Structural	Forest Interior	36.10	Naturalistic	44.13	Naturalistic
	Pine Associated	0.42	Moderately Disturbed	1.20	Moderately Disturbed
	Urban/Suburban	33.57	Largely Intact	24.90	Largely Intact
Functional	Bark Prober	20.98	Naturalistic	21.94	Naturalistic
	Ground Forager	5.88	Largely Intact	10.49	Naturalistic
	Upper Canopy Forager	23.37	Naturalistic	19.04	Naturalistic
Compositional	Nest Predator/Brood Parasite	15.72	Largely Intact	12.54	Largely Intact
	Single Brooded	56.06	Naturalistic	64.75	Naturalistic
	Exotic	0.00	Naturalistic	0.00	Naturalistic
Total BCI Score		0.86	Naturalistic	0.89	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.

Last but not least, we'd like to thank all our volunteers for walking off the beaten path in the summer heat to collect the data summarized in this brief.

Species	Detections	% Occupied
Watchlist Species		
Acadian Flycatcher	33	42.37
Brown Thrasher	1	1.69
Chimney Swift	-	-
Eastern Towhee	2	3.39
Eastern Wood-Pewee	33	47.46
Field Sparrow	9	10.17
Kentucky Warbler	1	1.69
Northern Flicker	3	5.08
Prairie Warbler	3	5.08
Willow Flycatcher	1	1.69
Wood Thrush	41	47.46
Worm-eating Warbler	2	3.39
Yellow-billed Cuckoo	17	27.12
Stewardship Species		
Blue Grosbeak	1	1.69
Carolina Chickadee	18	25.42
Carolina Wren	16	22.03
Downy Woodpecker	6	10.17
Hooded Warbler	1	1.69
Indigo Bunting	21	23.73
Northern Parula	1	1.69
Orchard Oriole	4	6.78
Pileated Woodpecker	16	25.42
Pine Warbler	8	11.86
Red-bellied Woodpecker	25	37.29
Red-shouldered Hawk	-	-
Summer Tanager	3	5.08
White-eyed Vireo	1	1.69
Yellow-throated Vireo	1	1.69

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations with detections at Fredericksburg and Spotsylvania NMP in 2011. Detections exclude flyovers and incidental encounters.



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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>

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