



Mid-Atlantic Network

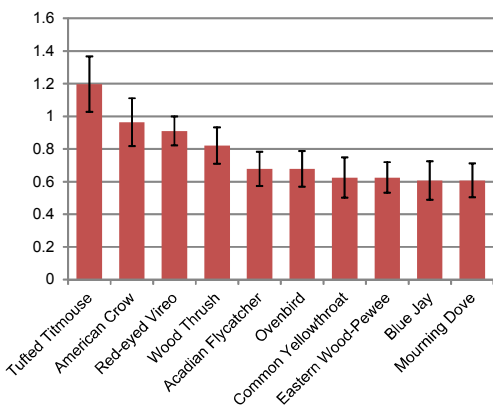
Breeding Bird Resource Brief



Red-eyed Vireo

Fredericksburg and Spotsylvania National Military Park 2010 Status & Trends

A total of 56 stations were surveyed at Fredericksburg and Spotsylvania NMP during the 2010 breeding bird monitoring program, including 48 stations in forested habitats and 8 stations in grassland habitats. Eight volunteer birders from the local birding community conducted an average of 1.84 surveys per station producing a total of 103 surveys for the season.



The 10 most commonly detected bird species at Fredericksburg and Spotsylvania NMP in 2010 and their associated relative abundance (average birds/station). Error bars indicate standard error, a measure of variation.

Between May and July, 1165 birds of 63 species were detected throughout the park. Several species were detected this year that were not in previous monitoring years, including the White-eyed Vireo, Kentucky Warbler, and Baltimore Oriole.

The Tufted Titmouse was the most numerous species averaging 1.20 birds / station followed by the American Crow at 0.96 birds / station, while the Red-eyed Vireo was the most prevalent, occurring at 75% of the stations surveyed.

Species of conservation concern, as defined by Partners in Flight (PIF), were well represented in the park, with volunteers detecting 27 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.

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, 12 watchlist species and 15 stewardship species were detected. Three species of concern, including 2 watchlist species (i.e. Wood Thrush and Eastern Wood-Pewee) and a stewardship species (i.e. Acadian Flycatcher), 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 “naturalis-



Wood Thrush

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 63 species were detected across the park including 27 species of concern.
- The Wood Thrush and Eastern Wood-Pewee, both watchlist species, were among the 10 most common species in the park.
- 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...

This was consistent with the 2009 ranking for the park. Rankings, when broken out by guild, also show medium to high ecological integrity (see table below). Only the pine associated guilds

was ranked "moderately disturbed" as species such as the Pine Warbler and Red-cockaded Woodpecker were rare to absent.

		2009		2010	
Guild		Percent	Rank	Percent	Rank
Structural	Forest Interior	40.58	Naturalistic	36.10	Naturalistic
	Pine Associated	0.92	Moderately Disturbed	0.42	Moderately Disturbed
	Urban/Suburban	28.21	Largely Intact	33.57	Largely Intact
Functional	Bark Prober	18.98	Largely Intact	20.98	Naturalistic
	Ground Forager	7.49	Naturalistic	5.88	Largely Intact
	Upper Canopy Forager	23.42	Naturalistic	23.37	Naturalistic
Compositional	Nest Predator/Brood Parasite	9.97	Largely Intact	15.72	Largely Intact
	Single Brooded	59.70	Naturalistic	56.06	Naturalistic
	Exotic	0.00	Naturalistic	0.00	Naturalistic
Total BCI Score		0.86	Naturalistic	0.86	Naturalistic

Avian forest guild summary and Bird Community Index (BCI) score for 2010. 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: Andrew Dolby, Donna Finnegan, Michael Lott, Paul Nasca, Chris Ochman, Matt Roland, Beverly Smith, and Marty Wright.

Species	Detections	% Occupied
Watchlist Species		
Baltimore Oriole	1	1.79
Brown Thrasher	3	5.36
Eastern Kingbird	-	
Eastern Towhee	3	5.36
Eastern Wood-Pewee	35	51.79
Field Sparrow	11	16.07
Kentucky Warbler	1	1.79
Northern Flicker	1	1.79
Prairie Warbler	3	3.57
Wood Thrush	46	57.14
Worm-eating Warbler	1	1.79
Yellow-billed Cuckoo	23	35.71
Stewardship Species		
Acadian Flycatcher	38	50.00
Blue Grosbeak	6	5.36
Carolina Chickadee	28	30.36
Carolina Wren	7	10.71
Downy Woodpecker	21	32.14
Indigo Bunting	22	23.21
Northern Parula	2	1.79
Orchard Oriole	1	1.79
Pileated Woodpecker	5	7.14
Pine Warbler	1	1.79
Red-bellied Woodpecker	31	50.00
Red-shouldered Hawk	1	1.79
Summer Tanager	5	8.93
White-eyed Vireo	1	1.79
Yellow-throated Vireo	6	8.93

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations they were detected at Fredericksburg and Spotsylvania NMP in 2010. Number of detections exclude flyovers 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>



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