



Mid-Atlantic Network

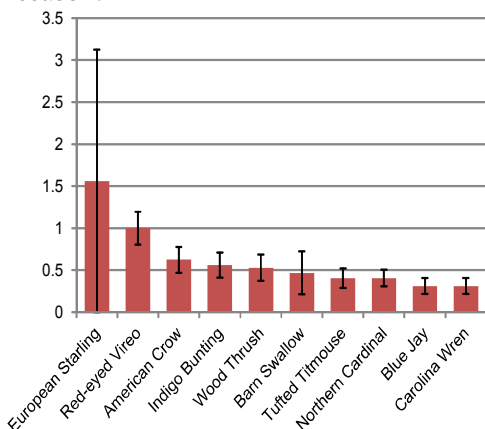
Breeding Bird Resource Brief



Red-eyed Vireo

Appomattox Court House National Historical Park 2010 Status & Trends

A total of 32 stations were surveyed at Appomattox Court House NHP during the park's first season of breeding bird monitoring, including 24 stations in forested habitats and 8 stations in grassland habitats. Six volunteer birders from the local birding community conducted an average of 1.31 surveys per station producing a total of 42 surveys for the season.



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

Between June and July, 377 birds of 50 species were detected throughout the park. Species richness was similar across habitat types with 39 species in forested habitats and 33 in grassland habitats.

The 10 most abundant species were the European Starling, Red-eyed Vireo, American Crow, Indigo Bunting, Wood Thrush, Barn Swallow, Northern Cardinal, Tufted Titmouse, Blue Jay, and Carolina Wren. European Starlings had the highest relative abundance averaging 1.56 birds / station, but this is based on a single detection of a large flock. Red-eyed Vireos were the second most abundant species and the most prevalent species, occurring in 59.3% 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

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 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.

Within the park, 11 watchlist species and 13 stewardship species were detected. The Wood Thrush, a watchlist species was quite prevalent in the park, occurring at 34.4% of the stations surveyed. Additionally, the Wood Thrush and 2 stewardship species (i.e. Indigo Bunting and Carolina Wren) were among the 10 most abundant species.

Avian guilds, or groups of species occupying similar ecological niches, can



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 50 species were detected across the park including 24 species of concern.
- The Wood Thrush, a continental watchlist species, was among the 10 most common species in the park.
- European Starlings, an exotic species, had the highest abundance using unadjusted counts

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...

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”. Rankings, when broken out by guild, also show medium to high ecological integrity (see table on left). Ground foraging species such as Ken-

tucky Warblers, Louisiana Waterthrush, and Ovenbirds were underrepresented, whereas nest predator/brood parasite guild species such as American Crows and Blue Jays were prevalent explaining the “moderately disturbed” rank for these two guilds.

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.

	Guild	Percent	Rank
Structural	Forest Interior	22.77	Largely Intact
	Pine Associated	2.92	Largely Intact
	Urban/Suburban	42.50	Largely Intact
Functional	Bark Prober	16.42	Largely Intact
	Ground Forager	2.49	Moderately Disturbed
	Upper Canopy Forager	28.93	Naturalistic
Compositional	Nest Predator/Brood Parasite	18.52	Moderately Disturbed
	Single Brooded	46.02	Naturalistic
	Exotic	0.00	Naturalistic
Total BCI Score		0.78	Naturalistic

A Final Note

It is important to note that the data presented in this brief is preliminary and results are limited to areas in the park sampled. More information about this protocol can be found in the full annual reports 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: Thelma Dalmas, Joseph Freeman, JoAnne Pierce, Gene Sattler, John Styrsky, and Sandra Weigand.

Species	Detections	% Occupied
Watchlist Species		
Chimney Swift	1	3.13
Eastern Kingbird	2	3.13
Eastern Meadowlark	8	9.38
Eastern Towhee	1	3.13
Eastern Wood-Pewee	2	6.25
Field Sparrow	3	6.25
Grasshopper Sparrow	6	9.38
Northern Bobwhite	1	3.13
Northern Flicker	1	3.13
Wood Thrush	17	34.38
Yellow-billed Cuckoo	9	25.00
Stewardship Species		
Acadian Flycatcher	5	15.63
Blue Grosbeak	2	6.25
Carolina Chickadee	8	15.63
Carolina Wren	10	28.13
Downy Woodpecker	6	18.75
Indigo Bunting	18	43.75
Northern Parula	2	3.13
Orchard Oriole	2	6.25
Pine Warbler	2	6.25
Red-bellied Woodpecker	8	25.00
Red-shouldered Hawk	1	3.13
Summer Tanager	1	3.13
Yellow-throated Vireo	1	3.13

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations they were detected at Appomattox Court House NHP in 2010. Number of 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>

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