



Mid-Atlantic Network

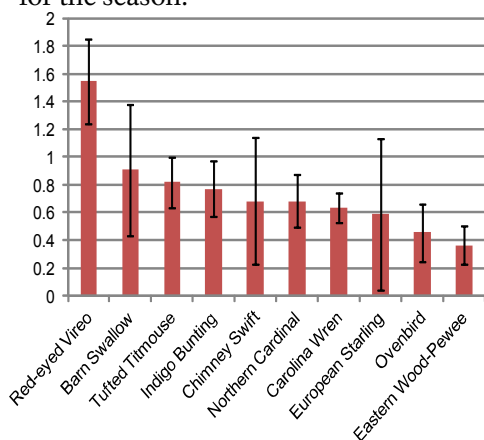
Breeding Bird Resource Brief



Baltimore Oriole

Appomattox Court House National Historical Park 2011 Status & Trends

A total of 22 stations were surveyed at Appomattox Court House NHP during the park's second season of breeding bird monitoring, including 16 stations in forested habitats and 6 stations in grassland habitats. Four volunteer birders from the local birding community conducted an average of 1.0 surveys per station producing a total of 22 surveys for the season.



The 10 most commonly detected bird species at Appomattox Court House NHP in 2011 and their associated relative abundance (average birds/station). Error bars indicate standard error, a measure of variation.

Between May and June, 280 birds of 49 species were detected throughout the park. Both forested and grassland habitats showed good species richness with 36 species in forested habitats and 30 in grassland habitats. Several species were detected this year that were not in previous years including the Purple Martin, Brown Thrasher, Summer Tanager, and Pileated Woodpecker.

Red-eyed Vireos had the highest relative abundance averaging 1.55 birds / station and were the most prevalent species, occurring in 72.7% of the stations surveyed.

Species of conservation concern, as defined by Partners in Flight (PIF), were well represented in the park, with volunteers detecting 23 species (see table on back right). PIF further distinguishes species of concern as “watchlist” species, which face immediate threats, or “stewardship” species, which are rep-

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.

resentative of avifaunal biomes that may or may not be in immediate danger.

Within the park, 10 watchlist species and 13 stewardship species were detected. Three species of concern including a watchlist species (i.e. Chimney Swift) 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 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



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 49 species were detected across the park including 23 species of concern.
- Three species of concern were among the 10 most common species in the park.
- Red-eyed Vireos had the highest abundance using unadjusted counts and were the most prevalent species in the park.

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...

Plain region (O'Connell et al. 2003), forested stations maintained their ecological rank of "naturalistic", the highest rank available in the metric. When broken out by guild, most ranks were of medium to high ecological integrity (see

table on left) and all but the pine associated guild improved or maintained their rank from 2010.

		2010		2011	
Guild		Percent	Rank	Percent	Rank
Structural	Forest Interior	22.77	Largely Intact	29.55	Naturalistic
	Pine Associated	2.92	Largely Intact	0.89	Moderately Disturbed
	Urban/Suburban	42.50	Largely Intact	37.04	Largely Intact
Functional	Bark Prober	16.42	Largely Intact	22.16	Naturalistic
	Ground Forager	2.49	Moderately Disturbed	5.55	Largely Intact
	Upper Canopy Forager	28.93	Naturalistic	24.55	Naturalistic
Compositional	Nest Predator/Brood Parasite	18.52	Moderately Disturbed	11.49	Largely Intact
	Single Brooded	46.02	Naturalistic	50.19	Naturalistic
	Exotic	0.00	Naturalistic	0.00	Naturalistic
Total BCI Score		0.78	Naturalistic	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 and results are limited to areas in the park sampled. 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: Thelma Dalmás, JoAnne Pierce, John Styrsky, and Gene Sattler.

Species	Detections	% Occupied
Watchlist Species		
Brown Thrasher	1	4.5
Chimney Swift	15	13.6
Eastern Kingbird	1	4.5
Eastern Meadowlark	6	9.1
Eastern Towhee	1	4.5
Eastern Wood-Pewee	8	27.3
Field Sparrow	4	9.1
Grasshopper Sparrow	2	4.5
Wood Thrush	5	13.6
Yellow-billed Cuckoo	5	22.7
Stewardship Species		
Acadian Flycatcher	2	9.1
Blue Grosbeak	3	13.6
Carolina Chickadee	5	13.6
Carolina Wren	14	63.6
Downy Woodpecker	4	13.6
Indigo Bunting	17	50.0
Northern Parula	1	4.5
Pileated Woodpecker	2	9.1
Pine Warbler	1	4.5
Purple Martin	-	-
Red-bellied Woodpecker	8	27.3
Summer Tanager	2	9.1
Yellow-throated Vireo	1	4.5

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations with detections at Appomattox Court House NHP in 2011. 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>