



Mid-Atlantic Network

Breeding Bird Resource Brief



Downy Woodpecker

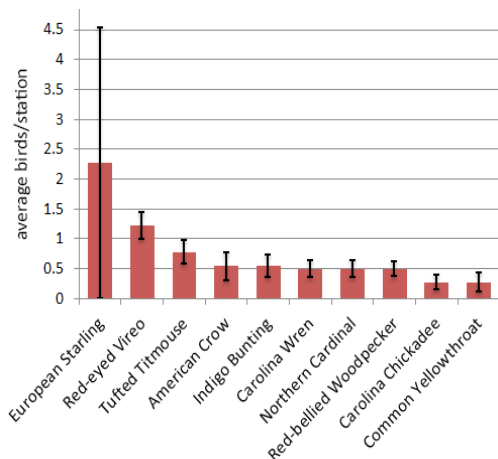
Appomattox Court House National Historical Park 2012 Status & Trends

A total of 22 stations were surveyed at Appomattox Court House NHP during the park's third season of breeding bird monitoring, including 16 forested habitat and 6 grassland habitat stations. Six 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.

Between May and June, 274 birds of 50 species were detected throughout the park. Both forested and grassland habitats showed similar species richness with 34 species in forested habitats and 29 in grassland habitats. Several species were detected this year that were not in previous years including the Blue-headed Vireo, Louisiana Waterthrush, and Prairie Warbler.

European Starlings had the highest relative abundance averaging 2.27 birds / station, but this is based on a single detection of a large flock. Red-eyed Vireos had the second highest relative abundance averaging 1.23 birds / station and were the most prevalent species, occurring in 77.3% of the stations surveyed.

Volunteers detected 21 species considered to be of conservation concern by Partners in Flight (PIF). PIF distinguishes species of concern facing



The 10 most commonly detected bird species at Appomattox Court House NHP in 2012 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.

immediate threats as “watchlist” species. “Stewardship” species are representative of avifaunal biomes that may or may not be in immediate danger.

Within the park, 8 watchlist species and 13 stewardship species were detected (see table on back right). Four species of concern, all stewardship species (Carolina Chickadee, Carolina Wren, Indigo Bunting, Red-bellied Woodpecker), were among the 10 most abundant species.

Avian guilds, or groups of species occupying similar ecological niches, can be utilized for assessing responses to environmental changes and ecosystem



Great Crested Flycatcher

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 21 species of concern.
- Four species of concern were among the 10 most common species in the park.
- Red-eyed Vireos had the second highest abundance 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. Many 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...

stressors via bird community assessments, or “indices” (BCIs). Based on a BCI developed for the Piedmont/Coastal Plain region, forested stations are ranked as “naturalistic,” which is unchanged from 2011. When broken

out by guild, most ranks were of medium to high ecological integrity (see table below), and all but the forest interior guild maintained their rank from 2011.

		2011		2012	
	Guild	Percent	Rank	Percent	Rank
Structural	Forest Interior	29.55	Naturalistic	26.35	Largely Intact
	Pine Associated	0.89	Moderately Disturbed	1.25	Moderately Disturbed
	Urban/Suburban	37.04	Largely Intact	32.01	Largely Intact
Functional	Bark Prober	22.16	Naturalistic	25.13	Naturalistic
	Ground Forager	5.55	Largely Intact	5.95	Largely Intact
	Upper Canopy Forager	24.55	Naturalistic	24.71	Naturalistic
Compositional	Nest Predator/Brood Parasite	11.49	Largely Intact	13.40	Largely Intact
	Single Brooded	50.19	Naturalistic	53.14	Naturalistic
	Exotic	0.00	Naturalistic	0.00	Naturalistic
Total BCI Score		0.86	Naturalistic	0.83	Naturalistic

Avian forest guild summary and Bird Community Index (BCI) score for 2011-2012. Percents indicate the average percent guild membership at sampled monitoring stations. Total BCI scores range from 0-1 with 1 having the highest integrity. Ranks in descending order of ecological value are: Naturalistic, Largely Intact, Moderately Disturbed, and Humanistic.

A Final Note

It is important to note that the results presented in this brief are preliminary and are limited to areas sampled in the park. 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 Dalmas, JoAnne Pierce, Gene Sattler, John Styrsky, and Robert Tillotson.



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

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Species	Detections	% Occupied
Watchlist Species		
Chimney Swift	5	9.1
Eastern Kingbird	2	9.1
Eastern Meadowlark	5	13.6
Eastern Wood-Pewee	5	18.2
Field Sparrow	3	9.1
Grasshopper Sparrow	1	4.5
Prairie Warbler	1	4.5
Wood Thrush	5	18.2
Stewardship Species		
Acadian Flycatcher	3	9.1
Blue Grosbeak	3	13.6
Carolina Chickadee	6	22.7
Carolina Wren	11	40.9
Downy Woodpecker	4	13.6
Indigo Bunting	12	36.4
Northern Parula	1	4.5
Orchard Oriole	1	4.5
Pileated Woodpecker	5	22.7
Pine Warbler	1	4.5
Red-bellied Woodpecker	11	45.5
Summer Tanager	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 2012. Detections exclude flyovers and incidental encounters..

References:

Johnson, M. J. 2014. Breeding bird monitoring: Mid-Atlantic Network 2012 summary report. Natural Resource Data Series NPS/MIDN/INRDS—2014/650. National Park Service, Fort Collins, Colorado.

Photographs by: Nicholas Bircher