



Mid-Atlantic Network

Breeding Bird Resource Brief

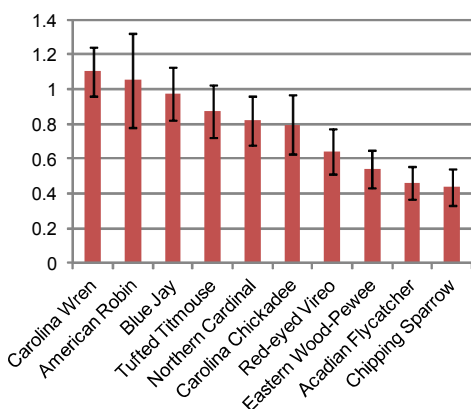


Baltimore Oriole

Petersburg National Battlefield 2011 Status & Trends

A total of 39 stations were surveyed at the Eastern Front unit of Petersburg NB during the park's first season of breeding bird monitoring, including 32 stations in forested habitats and 7 stations in grassland habitats. Four volunteer birders conducted an average of 1.03 surveys per station producing a total of 40 surveys for the season.

Between May and July, 574 birds of 61



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

species were detected throughout the park. Species richness was higher at forested stations, with 52 different species detected, versus 37 species detected at grassland stations.

The 10 most abundant species were the Carolina Wren, American Robin, Blue Jay, Tufted Titmouse, Northern Cardinal, Carolina Chickadee, Red-eyed Vireo, Eastern Wood-Pewee, Acadian Flycatcher, and Chipping Sparrow. The Carolina Wren had the highest relative abundance averaging 1.1 birds / plot and was the most prevalent species occurring at 74.3% of stations surveyed.

Several species of conservation concern, as defined by Partners in Flight (PIF), were detected in the park, with volunteers detecting 19 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, 8 watchlist species and 11 stewardship species were detected. Four species of concern including 1 watchlist species (i.e. Eastern Wood-Pewee) and 3 stewardship species (i.e. Carolina Wren, Carolina Chickadee, and 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 devel-



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 61 species were detected across the park including 19 species of concern.
- Four Partners in Flight (PIF) stewardship 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...

oped 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, ranged from medium-low to high

ecological integrity (see table below).

The pine associated guild received the lowest rank of "moderately disturbed" among the guilds but this group is comprised of rare and difficult to detect species (i.e. Pine Warbler, Red-cockaded Woodpecker, etc). The bark

	Guild	Percent	Rank
Structural	Forest Interior	26.16	Largely Intact
	Pine Associated	0.60	Moderately Disturbed
	Urban/Suburban	46.16	Largely Intact
Functional	Bark Prober	20.32	Naturalistic
	Ground Forager	3.68	Largely Intact
	Upper Canopy Forager	15.94	Largely Intact
Compositional	Nest Predator/Brood Parasite	14.38	Largely Intact
	Single Brooded	46.02	Naturalistic
	Exotic	0.45	Largely Intact
Total BCI Score		0.78	Naturalistic

Avian forest guild summary and Bird Community Index (BCI) score for 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.

prober and single brooded guilds received the highest rank of "naturalistic" as species such as the Carolina Chickadee, Tufted Titmouse, and Eastern Wood-Pewee were quite prevalent.

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: Dana Bradshaw, Victoria Summy, Amanda Vander Zanden, and Joseph Webb.

Species	Detections	% Occupied
Watchlist Species		
Chimney Swift	-	-
Eastern Towhee	1	2.56
Eastern Wood-Pewee	21	43.59
Kentucky Warbler	2	5.13
Northern Flicker	7	15.38
Willow Flycatcher	3	7.69
Wood Thrush	14	30.77
Yellow-billed Cuckoo	4	10.26
Stewardship Species		
Acadian Flycatcher	18	41.03
Carolina Chickadee	31	48.72
Carolina Wren	43	74.36
Downy Woodpecker	11	28.21
Pileated Woodpecker	12	28.21
Pine Warbler	2	5.13
Red-bellied Woodpecker	15	30.77
Red-shouldered Hawk	1	2.56
Summer Tanager	14	28.21
White-eyed Vireo	5	10.26
Yellow-throated Vireo	4	10.26

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations with detections at Petersburg NB 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>