



Mid-Atlantic Network

Breeding Bird Resource Brief



Downy Woodpecker

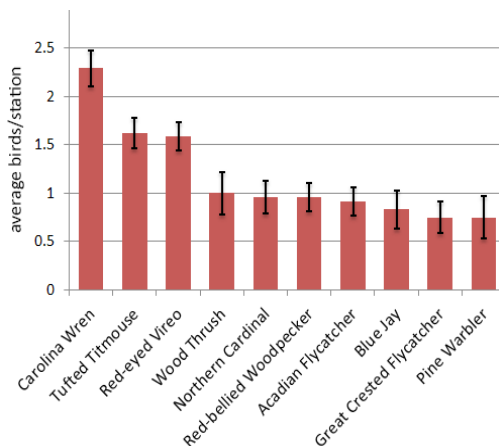
Petersburg National Battlefield 2012 Status & Trends

A total of 24 sampling stations were surveyed at the Eastern Front unit of Petersburg NB during the park's second season of breeding bird monitoring. All 24 stations sampled this year were in forested habitats. Our lone volunteer birder, Dana Bradshaw, conducted an average of 2.0 surveys per station,

producing an amazing total of 48 surveys for the season!

Between May and July, 599 birds of 40 species were detected throughout the unit. The 10 most abundant species were the Carolina Wren, Tufted Titmouse, Red-eyed Vireo, Wood Thrush, Northern Cardinal, Red-bellied Woodpecker, Acadian Flycatcher, Blue Jay, Great Crested Flycatcher, and Pine Warbler. The Carolina Wren had the highest relative abundance averaging 2.29 birds / plot and was also the most prevalent species, occurring at all of the stations surveyed. The Red-eyed Vireo and Tufted Titmouse were a close second occurring at 95.8% of stations.

Volunteers detected 18 species considered to be of conservation concern by Partners in Flight (PIF). PIF distinguishes species of concern facing immediate threats as "watchlist" species. "Stewardship" species are representative



The 10 most commonly detected bird species at Petersburg NB 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.

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

Within the unit, 8 watchlist species and 10 stewardship species were detected (see table on back right). Five species of concern, including 1 watchlist species (Wood Thrush) and 4 stewardship species (Acadian Flycatcher, Carolina Wren, Pine Warbler, and 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 stressors via bird community



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 40 species were detected across the unit, including 18 species of concern.
- Five species of concern were among the 10 most common species.
- 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. 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...

assessments, or “indices” (BCIs). Based on a BCI developed for the Piedmont/Coastal Plain region, forested stations surveyed this year received a ranking of “naturalistic,” which is the highest rank in the

metric and unchanged from 2011.

Rankings, broken out by guild, ranged from medium-low to high ecological integrity (see table below).

		2011		2012	
Guild		Percent	Rank	Percent	Rank
Structural	Forest Interior	26.16	Largely Intact	26.65	Largely Intact
	Pine Associated	0.60	Moderately Disturbed	2.44	Largely Intact
	Urban/Suburban	46.16	Largely Intact	39.33	Largely Intact
Functional	Bark Prober	20.32	Naturalistic	20.07	Naturalistic
	Ground Forager	3.68	Largely Intact	2.73	Moderately Disturbed
	Upper Canopy Forager	15.94	Largely Intact	20.17	Naturalistic
Compositional	Nest Predator/Brood Parasite	14.38	Largely Intact	12.68	Largely Intact
	Single Brooded	46.02	Naturalistic	44.65	Largely Intact
	Exotic	0.45	Largely Intact	0.00	Naturalistic
Total BCI Score		0.78	Naturalistic	0.81	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 our website.

We'd like to thank our lone volunteer, Dana Bradshaw, for walking off the beaten path in the summer heat to count birds.

Species	Detections	% Occupied
Watchlist Species		
Brown Thrasher	1	4.2
Chimney Swift	-	-
Eastern Towhee	9	33.3
Eastern Wood-Pewee	17	62.5
Northern Flicker	4	16.7
Red-headed Woodpecker	1	4.2
Wood Thrush	24	58.3
Yellow-billed Cuckoo	9	33.3
Stewardship Species		
Acadian Flycatcher	22	70.8
Carolina Chickadee	16	37.5
Carolina Wren	55	100.0
Downy Woodpecker	11	45.8
Pileated Woodpecker	7	29.2
Pine Warbler	18	37.5
Purple Martin	-	-
Red-bellied Woodpecker	23	75.0
Summer Tanager	12	50.0
Yellow-throated Vireo	2	8.3

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations with detections at Petersburg NB 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/NRDS—2014/650. National Park Service, Fort Collins, Colorado.

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Protocol Website:
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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