



Mid-Atlantic Network

Breeding Bird Resource Brief



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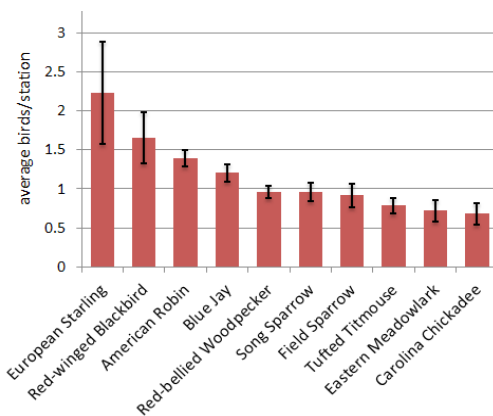
Valley Forge National Historical Park 2013 Status & Trends

A total of 76 stations were surveyed at Valley Forge NHP during the park's fifth season of breeding bird monitoring, including 37 stations in forested habitats and 39 stations in grassland habitats. Ten volunteer birders from the local birding community conducted an average of 2.37 surveys per station, producing a total of 180 surveys for the season.

Between May and July, a total of 2,864 birds of 69 species were detected throughout the park. The number of species was similar across habitat types with 57 different species detected at forested stations, versus 61 species detected at grassland stations.

Two species were detected this year that were not in previous years including the Ruby-throated Hummingbird and Pine Warbler. The European Starling was the most abundant species, averaging 2.24 birds per station, while the American Robin was the most prevalent species, occurring at 82.89% of stations surveyed.

Volunteers detected 23 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 of avifaunal biomes that may or may



The 10 most commonly detected bird species at Valley Forge NHP in 2013 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.

not be in immediate danger. Within the park, 11 watchlist species and 12 stewardship species were detected. Four species of concern, including two watchlist species (Eastern Meadowlark and Field Sparrow) and 2 stewardship species (Carolina Chickadee 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 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, forested stations



Blue-gray Gnatcatcher

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 69 species were detected across the park including 23 species of concern.
- The Eastern Meadowlark and Field Sparrow, both watchlist species, were among the 10 most common species in the park.
- The Park's forested stations maintained the second highest ecological integrity rank measured 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...

surveyed at the park this year received the second highest ranking of "largely intact," which is consistent with the 2009-2012 rankings for the park (see table below). All guild ranks remained consistent with last year's rankings

with the exception of the Bark Prober and Ground Forager guilds, which decreased one rank from last year, and the Pine Associated guild which increased one rank from previous years.

| | | 2012 | | 2013 | |
|-----------------|------------------------------|---------|----------------------|---------|----------------------|
| Guild | | Percent | Rank | Percent | Rank |
| Structural | Forest Interior | 23.70 | Largely Intact | 24.38 | Largely Intact |
| | Pine Associated | 0.00 | Humanistic | 0.14 | Moderately Disturbed |
| | Urban/Suburban | 52.01 | Moderately Disturbed | 49.56 | Moderately Disturbed |
| Functional | Bark Prober | 20.74 | Naturalistic | 19.13 | Largely Intact |
| | Ground Forager | 1.09 | Moderately Disturbed | 0.00 | Humanistic |
| | Upper Canopy Forager | 13.53 | Largely Intact | 13.38 | Largely Intact |
| Compositional | Nest Predator/Brood Parasite | 21.73 | Moderately Disturbed | 17.93 | Moderately Disturbed |
| | Single Brooded | 38.96 | Largely Intact | 39.30 | Largely Intact |
| | Exotic | 0.00 | Naturalistic | 0.00 | Naturalistic |
| Total BCI Score | | 0.67 | Largely Intact | 0.64 | Largely Intact |

Avian forest guild summary and Bird Community Index (BCI) score for 2012-2013. Values 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 dedicated volunteers: Tim Clemens, Ron Grubb, Michael Harvell, Rick Keyser, Les Murray, Geoff Rogalsky, Wendy Sykora, Lisa Tull, Zoe Warner, and Rick Wolf.

| Species | Detections | % Occupied |
|----------------------------|------------|------------|
| Watchlist Species | | |
| Baltimore Oriole | 43 | 40.8 |
| Chimney Swift | 21 | 13.2 |
| Eastern Kingbird | 24 | 21.1 |
| Eastern Meadowlark | 55 | 39.5 |
| Eastern Towhee | 37 | 31.6 |
| Eastern Wood-Pewee | 30 | 34.2 |
| Field Sparrow | 70 | 42.1 |
| Northern Flicker | 17 | 21.1 |
| Willow Flycatcher | 2 | 1.3 |
| Wood Thrush | 38 | 32.9 |
| Yellow-billed Cuckoo | 3 | 3.9 |
| Stewardship Species | | |
| Acadian Flycatcher | 1 | 1.3 |
| Blue Grosbeak | - | - |
| Carolina Chickadee | 52 | 39.5 |
| Carolina Wren | 46 | 46.1 |
| Downy Woodpecker | 18 | 21.1 |
| Indigo Bunting | 21 | 21.1 |
| Northern Parula | 2 | 1.3 |
| Orchard Oriole | 23 | 22.4 |
| Pileated Woodpecker | 7 | 7.9 |
| Pine Warbler | 1 | 1.3 |
| Red-bellied Woodpecker | 73 | 73.7 |
| Yellow-throated Vireo | 1 | 1.3 |

Number of detections of Partners in Flight (PIF) watchlist and stewardship species and percent of stations with detections at Valley Forge NHP in 2013. Detections exclude flyovers and incidental encounters.

References:

Johnson, M. J. 2014. Breeding bird monitoring: Mid-Atlantic Network 2013 summary report. *Natural Resource Data Series NPS/MIDN/INRDS—2014/736*. National Park Service, Fort Collins, Colorado.

Photographs by: Bill Tucker

Website:

ation and full annual reports may be found at nce.nature.nps.gov/im/units/midn/monitor/birds.cfm



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