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MORRISTOWN NHP • ROOSEVELT-VANDERBILT NHS • SAINT-GAUDENS NHS • SAUGUS IRON WORKS NHS • SARATOGA NHP • WEIR FARM NHS

Spring Bird Monitoring by Sight and Song

2013 annual volunteer landbird survey results for Weir Farm NHS

Background

The Northeast Temperate Network (NETN) monitors a variety of natural resource indicators, called vital signs, for 12 parks in the northeast and the Appalachian National Scenic Trail. Breeding birds are one of these vital signs because they are a reliable indicator of ecological integrity and a high profile taxonomic group. 2013 was the 5th year of landbird monitoring in the forests of Weir Farm NHS. NETN and the Vermont Center for Ecostudies are able to maintain this bird monitoring program only with the invaluable help of volunteer birders who crawl out of bed at ungodly early hours, endure hordes of biting mosquitoes and black flies, and contribute their time, efforts, and expert birding skills each season.

On a broad scale, all 13 NETN parks are located within the temperate deciduous forest biome. At a more refined level, the parks range across four Bird Conservation Regions (BCR) with Weir Farm lying in the Southern New England/Mid-Atlantic Coast BCR. BCR's, developed by the North American Bird Conservation Initiative, are ecologically defined areas that provide a consistent framework for bird conservation across North America. Each BCR has its own unique list of "priority" species ranked by conservation importance according to a standardized set of criteria.

Methods

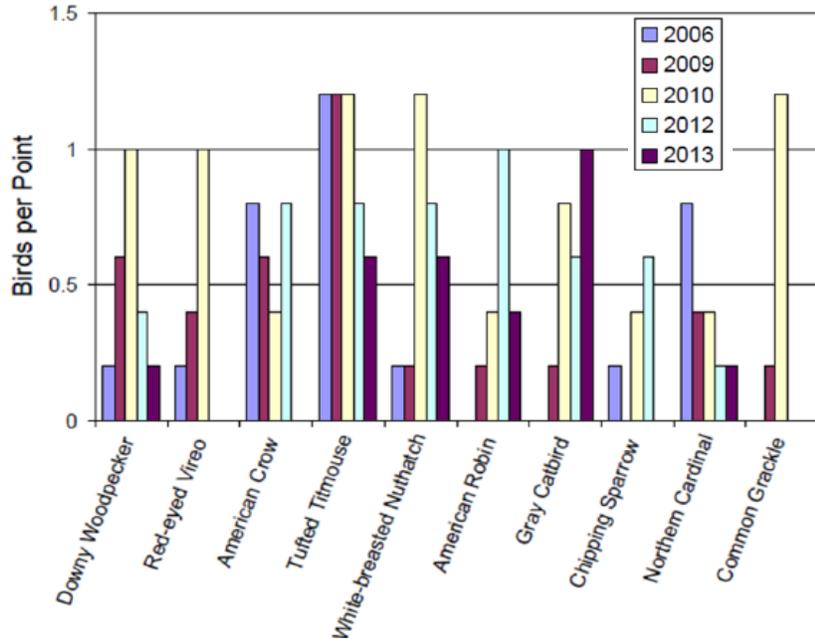
Five point count stations were established at Weir Farm National Historic Site in 2006.

Two annual surveys have been conducted in 2006, 2009, 2010, 2012, and 2013. A volunteer birder visits each point between late May and June, and records the species of each

Two



Northern Flickers can climb up tree trunks and hammer away at wood just like other woodpeckers, but it prefers searching for food on the ground. They dig in dirt to find ants, their main food, and then use their long barbed tongue to lap them up. Chuck Roberts photo.



Most commonly detected species in the park.

individual bird as well as the time and distance away when they were first detected.

The recently published 2013 Landbird report includes an assessment of the ecological integrity of the forest breeding bird community at each park. The ecological integrity assessments are based on groups of bird species that require similar habitat, food, or other elements for their survival. Over time, these assessments will help to shed light on changes in a broad landscape context and indicate the direction that breeding bird habitat may be going (either towards "highly disturbed" or "pristine").

The forest avian ecological integrity assessment consists of 13 guilds in three ecological integrity categories, with each guild being broadly categorized as "specialist" or "generalist." A specialist is a bird species with very specific habitat needs, or one that has a low rate of population growth. If there are a relatively wide variety of specialist guilds in a park, this indicates a high-integrity habitat condition usually associated with large areas of mature forest. On the other hand, a dominance of generalist species indicates a low-integrity condition. The integrity categories are compositional (indicating species diversity), functional (highlighting ecological processes), and structural (related to the presence of important physical elements, such as tree snags and a shrub layer).

For forest breeding birds, a rank of *Good*, *Caution*, or *Significant Concern* is assigned based on species richness

American Crow	House Wren
American Goldfinch	Louisiana Waterthrush
American Redstart	Mourning Dove
American Robin	Northern Cardinal
Baltimore Oriole	Northern Flicker
Black-capped Chickadee	Ovenbird
Black-throated Green Warbler	Red-bellied Woodpecker
Blackpoll Warbler	Red-eyed Vireo
Blue Jay	Red-tailed Hawk
Carolina Wren	Red-shouldered Hawk
Chipping Sparrow	Red-winged Blackbird
Common Grackle	Scarlet Tanager
Common Yellowthroat	Song Sparrow
Downy Woodpecker	Tufted Titmouse
Eastern Bluebird	Warbling Vireo
Eastern Phoebe	White-breasted Nuthatch
Eastern Wood-Pewee	Wood Thrush
Gray Catbird	Yellow-billed Cuckoo
Great Crested Flycatcher	Yellow-throated Vireo
Hairy Woodpecker	Yellow Warbler
House Finch	

All species that have been detected in the park's forests since 2008.

thresholds and ranks. "Good" represents acceptable or desired conditions; "Caution" indicates a problem may exist; "Significant concern" indicates undesired conditions that may be in need of management actions. Project organizers recognize that the assessment is based on ecological criteria, and that park management goals may not always seek to attain "ecological integrity." In the future, a management assessment may be developed by park staff and NETN scientists that could reflect progress towards avian and ecological management goals for individual parks. For more information about the Avian Ecological Integrity Assessment, as well as project methodologies, sampling scheme, etc., see the Breeding Landbird Monitoring Protocol available on NETN's website.

Results and Findings

A total of 32 individual birds of 12 species were detected in 2013, a significant drop in both metrics compared to all other survey years. These totals include House Finch, which was detected for the first time during park surveys, and three species that were only detected on the second site visit (Black-capped Chickadee, Common Grackle, and Song Sparrow). In total, 41 species have been recorded over the 5 survey years with an average abundance of 6.9 birds per point. In

2013, relative abundance decreased significantly from 7.6 birds per point in 2012 to 3.8 birds per point, a record low for the survey. In addition, species richness decreased from 17 in 2012 to nine, also a record low. Among the 10 most commonly detected species across all years, the relative abundances of four equaled or increased from 2012 and the relative abundances of three were at or above the 5-year average. In addition, three of the 10 most common species were not detected in 2013 (Red-eyed Vireo, American Crow, and Chipping Sparrow), while Common Grackle was only detected on the repeat survey. Although five species of USA/Canada conservation concern (Eastern Wood-Pewee, Yellow-throated Vireo, Wood Thrush, Scarlet Tanager, and Baltimore Oriole) have been detected during the 5-survey years, only Baltimore Oriole was detected in 2013. A list of species, their relative abundances, and other summary statistics are provided in the full report.

The forest avian ecological integrity assessment for all years combined resulted in three categories ranked as "Good," seven ranked as "Caution," and three ranked as "Significant Concern". This represents a slight change from the 2012 assessment, with the proportion of Exotic species detected increasing from 0 to 3 percent, bumping that guild from "Good" to "Caution." As in previous years, guilds within the structural category earned no "Good" rankings, while "Significant Concern" ratings reflected low abundance of canopy and single brooded species, and high abundance of shrub nesting species, indicative of the park's location within a suburban, fragmented landscape.

More Information

To get a "bird's eye" view of all the park's monitoring sites, visit the Google Earth Park Maps web page (accessible through the leftmost suite of menu choices on NETN's homepage), which also contains bird monitoring routes, Avian Ecological Integrity Assessments and species detection frequencies for all participating NETN park units.

Contacts and Websites

Steve Faccio
Project Lead Scientist

E-mail
sfaccio@vtecostudies.org

Brian Mitchell
NETN Program Manager

Phone/E-mail
802-457-3368 ext. 37
brian_mitchell@nps.gov

Full Report online at:
<https://irma.nps.gov/App/Reference/Profile/2208494>

NETN Website
<http://science.nature.nps.gov/im/units/NETN/index.cfm>



Northeast Temperate Network
54 Elm Street, Woodstock, Vermont 05091
802-457-3368
<http://www.science.nature.nps.gov/im/units/netn/>



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