



Mid-Atlantic Network

Breeding Bird Resource Brief

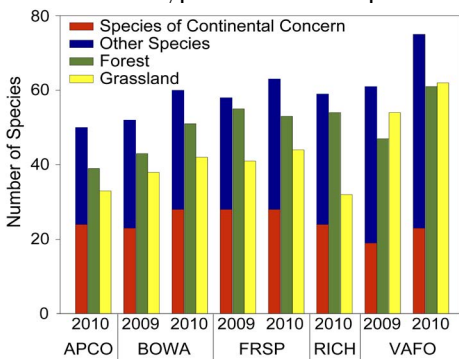


Blue-gray Gnatcatcher

2010 Status & Trends

This year, 36 local birders volunteered their time to survey bird communities at five Mid-Atlantic Network parks. Between May and July, a total of 361 surveys were conducted at 209 monitoring stations.

With the addition of Appomattox Court House NHP and Richmond NBP in 2010, the number of species detected for the region increased from 84 in 2009 to 100 in 2010. The number of species increased in the three parks sampled in the past two years and increased in each habitat type with the exception of



Total number of species and species of continental concern in Mid-Atlantic parks in 2009 and 2010

forested areas in Fredericksburg and Spotsylvania NMP.

The 10 most common species across the five parks in 2010 include the Red-eyed Vireo, Tufted Titmouse, European Starling, Barn Swallow, American Robin, American Goldfinch, Carolina Chickadee, Northern Cardinal, Acadian Flycatcher, and Common Yellowthroat.

Species of conservation concern, as defined by Partners in Flight (PIF), were prevalent in the parks this year including 18 species of continental concern and 19 species of regional concern. PIF defines two sets of species of concern, “watchlist” species that face immediate threats and “stewardship” species that are representative of avifaunal biomes that may or may not be in immediate danger. The 18 continental watchlist and stewardship species detected in the parks are shown to the right with their density and occurrence estimates. Density estimates could

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.

Species	Density (birds/ac)	% Sites Detected
Watchlist Species		
Blue-winged Warbler	-	0.5
Kentucky Warbler	0.002	1.4
Prairie Warbler	0.007	4.3
Red-headed Woodpecker	-	0.5
Willow Flycatcher	0.002	0.5
Wood Thrush	0.060	37.8
Worm-eating Warbler	0.002	1.0
Stewardship Species		
Acadian Flycatcher	0.124	25.8
Carolina Wren	0.034	21.5
Eastern Towhee	0.036	14.4
Hooded Warbler	0.005	1.4
Indigo Bunting	0.116	31.6
Louisiana Waterthrush	0.003	2.4
Pine Warbler	0.006	3.3
Red-bellied Woodpecker	0.102	45.5
Red-shouldered Hawk	0.003	2.9
Yellow-throated Vireo	0.015	8.1
White-eyed Vireo	0.015	2.4

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.



Eastern Towhee

Management Applications

- A total of 100 species were detected across the 5 parks including 37 species of continental concern.
- The Acadian Flycatcher, a continental stewardship species, was among the 10 most common species in the Network.
- Regional Wood Thrush density decreased by 56% between 2009 and 2010.

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 and soil characteristics with avian population trends.

During each 10-minute count, the volunteer records environmental condi-

tions, how the bird was detected (visually or aurally), and the distance (<50m or >50) and minute of first detection.

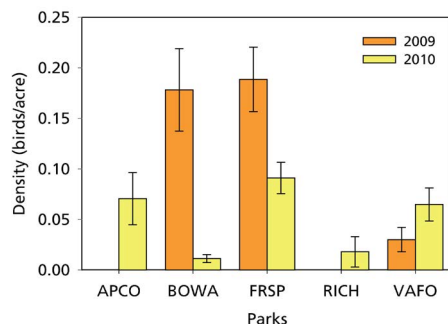
Each site is visited at least once, but volunteers are encouraged to make multiple visits in a season. Multiple visits are especially important for obtaining accurate density estimates as information on variability due to observers, weather, breeding status, etc. can be accounted for.

Status & Trends Continued...

not be derived for the Blue-winged Warbler and Red-headed Woodpecker as detections were too low.

Notably, the Acadian Flycatcher, a continental stewardship species, was detected in high numbers 0.12 birds/acre and was one of the 10 most common species for the region.

Unfortunately, the Wood Thrush, a continental watchlist species that was



Density estimates (birds/acre $\pm$ SE) of Wood Thrushes across five national parks in 2009 and 2010

fairly common throughout the region in 2009 (0.14 birds/acre), showed a dramatic decline in density in 2010 (0.06 birds/acre). Booker T. Washington NM showed the largest drop in Wood Thrush densities (see figure to the left), while the population at Valley Forge NHP showed a slight increase.

Although our data is preliminary and the decline may be attributed to environmental variation, North American Breeding Bird Surveys (Sauer et al. 2008) indicate that Wood Thrush populations have been showing declining trends over the past several decades. Recent studies suggest that the decline may be due to the leaching of calcium from soils by heavy acid rain and the subsequent scarcity of calcium rich foods needed for reproduction (Hames et al. 2002).

The network is also monitoring for-

est health and over the long-term may help us better decipher such population trends. Despite low densities, the Wood Thrush still appears to be well distributed throughout the region occurring at 37.8% of the stations monitored (versus 44.3% in 2009).



References:

Hames, R.S., K.V. Rosenberg, J.D. Lowe, S.E. Barker, & A. A. Dhondt. 2002. *Proc. Natl. Acad. Sci.* 99: 11235-11240.
Sauer, J.R., J. E. Hines, and J. Fallon. 2008. <http://www.mbr-pwrc.usgs.gov/bbs/>

Photos by:

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Brown Thrasher



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Parks monitored: Appomattox Court House NHP (APCO) • Booker T. Washington NM (BOWA) • Fredericksburg & Spotsylvania NMP (FRSP) • Richmond NBP (RICH) • Valley Forge NHP (VAFO)