



Songbird Monitoring Along the Mississippi River

The Mississippi River corridor is one of North America's four major flyways. The Audubon Society estimates that more than 325 bird species use this route twice each year, flying between their breeding grounds in Canada and the northern United States and their wintering grounds along the Gulf of Mexico and in Central and South America. The public lands that comprise the Mississippi National River and Recreation Area benefit from this abundance and nurture it by protecting habitats for both migrating and nesting birds.

Songbirds are just one part of this large group of migratory species, and some of them stop in the Twin Cities area to nest during the summer months. We monitor songbirds along the upper Mississippi because they are important indicators of habitat quality and—because they are the most commonly observed wildlife—they are popular with park visitors.

There are 49 points scattered among nine city, county, and regional parks in the 72-mile length of the national park boundary. Each point is visited once in June to document all birds heard and seen. **A total of 88 species have been documented, (average of 62 species per year) since surveys began in 2015.**

While it has its share of forests, this set of survey points is unique for its coverage of grassland habitats. This is the only Great Lakes Network park in which the Bell's Vireo has been found (four heard or seen in 2019). And it is one of only two parks (the other is Sleeping Bear Dunes National Lakeshore in Michigan) that are home to nesting grassland birds such as Grasshopper Sparrows, Henslow's Sparrows, and Dickcissels. Still, based on an analysis of data collected from 2015 through 2018, the most common species were woodland and "urban" birds.

2015–2018

The Black-capped Chickadee was the most densely populated species at 139 birds/mi², followed by



Ranger Sharon and a group of visitors look and listen for birds along the trail at Coldwater Spring. NPS PHOTO/T. GOSTOMSKI

American Goldfinch (97 birds/mi²) and American Robin (84 birds/mi²). Eastern Wood-Pewee was the only species with a significant trend, increasing at 8 birds/mi²/year.



The Black-capped Chickadee, American Goldfinch, and American Robin are the most densely populated species along the upper Mississippi River. The Eastern Wood-Pewee is the only species that is significantly increasing. PHOTOS (CLOCKWISE FROM TOP LEFT): NPS/S. REECE, NPS/A. LAFEVER, NPS-MACAULAY LIBRARY-CLO/A. BRADFORD, NPS/J. GAMBLE.

There were no statistically significant trends in population density among the guilds along the river. (A *guild* is a group of species that share a common trait such as habitat type, nest location, or food source.)

However, small declines in some guilds will be watched in the future, including among insectivores such as the warblers and flycatchers, birds found in successional/agricultural/scrub habitats such as the Bell's Vireo, and urban species such as the robin and Blue Jay.

What Will the Future Sound Like?

One study comparing bird population changes under two different climate scenarios predicted high turnover of species populations along the upper Mississippi River by mid-century (2041–2070) if the nation continues on its current path of rising emissions¹. The goldfinch and robin, mainstays of the summer bird population, are predicted to not do as well in summer but better in winter. The Bell's Vireo is predicted to expand its range and become more abundant in the area, as is another bird of scrub habitats: the Great-tailed Grackle. This long-legged blackbird is predicted to move north into the area in both summer and winter. The closest population is just over the border in Iowa, but if predicted climate changes prevail, this showy bird could become a regular part of life along the upper Mississippi River.

The Mississippi Flyway has always brought birds of all kinds to the Twin Cities area, especially in spring and fall. The variety of habitats found in parks along the riverway are a haven for many birds who stay for the summer to nest and raise young. We monitor these nesting species to know more about the state of the riverway and to ensure that the birds themselves continue to be a part of the national park experience in the Twin Cities.



The Great-tailed Grackle can be found in open habitats with water nearby. The northern limit of their range is in Iowa, but they are predicted to move into southern Minnesota by mid-century.

PHOTO NPS COLLECTION-MACAULAY LIBRARY-CLO/D. CLARK

¹ Wu, J.X., et al. 2018. Projected avifaunal responses to climate change across the U.S. National Park System. [PLoS ONE 13\(3\): e0190557](https://doi.org/10.1371/journal.pone.0190557).

For more information on songbird monitoring, find this report and others on the Great Lakes Network website, www.nps.gov/im/glkn/landbirds.htm.

Roberts, S.G., Z.S. Ladin, E.L. Tymkiw, W.G. Shriver, and T. Gostomski. 2021. Songbird monitoring in the Great Lakes Network parks: 2014–2018. Natural Resource Report NPS/GLKN/NRR—2021/2217. National Park Service, Fort Collins, Colorado. <https://doi.org/10.36967/nrr-2283974>.