



Songbird Monitoring on the St. Croix Riverway

The St. Croix Riverway may host the most diverse birdlife of any of the nine Great Lakes Network parks. Flowing through two broad habitat types known as the boreal hardwood transition and the prairie hardwood transition, one can see birds of the far northern boreal forest such as Canada Warblers and Northern Parulas, the more temperate hardwood forests (Wood Thrush and cuckoos), prairies and savannas (Grasshopper Sparrow and Lark Bunting), and those who sing from within the vast, tangled backwaters of the lower St. Croix River like the Prothonotary Warbler.

This place offers a unique birding experience, and we monitor some of that with annual songbird surveys conducted at set points along the river. This is the only park where surveys are done by canoe, and given the 200-mile length of the river, it's the only place where only half of the six transects are done each year.

2014–2018

In 2021, we analyzed five years of songbird survey data to assess trends in species populations. Two species were both the most common and had the largest calculated population densities. Red-eyed Vireos and Song Sparrows occurred at occupancies >50%, meaning there was a more than 50% chance of hearing them at any given point. All other species occurred at <50% occupancy. Red-eyed Vireo and Song Sparrow also appeared to have the densest populations along the riverway, though they switched places, with Song Sparrow exhibiting the greatest density (95 birds/mi²), followed by the Red-eyed Vireo (87 birds/mi²).

What Will the Future Sound Like?

One study comparing bird population changes under two different climate scenarios predicted a high

potential for species extirpations along the St. Croix Riverway by mid-century (2041–2070) if the nation continues on its current path of rising emissions¹.

Extirpation does not mean extinction, but it does mean the species will no longer be found in the area. There are 46 species on the list of predicted extirpations from the St. Croix Riverway, including the Red-eyed Vireo. Song Sparrows, the other common species during the period of 2014–2018, will still be around but the population status is predicted to “worsen” by mid-century.

Populations expected to improve under either climate scenario are birds of open spaces and hardwood forests. Birds like Baltimore and Orchard Orioles; Eastern Towhee; Field, Grasshopper, and Lark Sparrows; Northern Bobwhite, Ring-necked Pheasant, and Upland Sandpiper; Barn and Northern Rough-winged Swallows; Brown Thrasher; Dickcissel; Eastern Bluebird; Eastern Kingbird; Eastern and Western Meadowlarks, House Wren, and Indigo Bunting. It may be that bird populations in the northern reaches of the Namekagon and St. Croix change the most. Birds will still fill spring and summer days with song, but the tunes may sound different.



The Song Sparrow and Red-eyed Vireo were the most common species (occupancy >50%) during the 2014–2018 surveys, and they have the densest populations along the riverway. But that might change by mid-century.
PHOTOS USFWS/G. SMITH, WIKIMEDIA COMMONS/J. BENSON.

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.