



Songbird Monitoring at Sleeping Bear Dunes

Among the 240 bird species that have been recorded in the Sleeping Bear Dunes area, about 169 of them (70%) nest and raise young here each year. Birds are perhaps the most visible of all the park's wildlife. They fill the morning with song and the trees with color. This is the only one of the nine network parks where we find Upland Sandpipers, and it's one of only two parks in our network with Prairie Warblers.

Something so important deserves care, so each year in June, we set out before sunrise to spend our mornings doing songbird surveys at 41 points scattered throughout the national lakeshore. We recently analyzed the data collected during surveys from 2014 through 2018 to see how songbird populations are doing.

2014–2018

Three species occurred at occupancies of 50% or greater, meaning there was a more than 50% chance of hearing them at any given survey point: Red-eyed Vireo (66%), American Robin (56%), and American Redstart (50%). We also looked at population densities (the number of birds per square mile) and found the Common Grackle was the most densely populated species, with 205 birds/mi², followed by the Red-eyed Vireo (124 birds/mi²) and Red-winged Blackbird (105 birds/mi²).

There were two significant population trends at Sleeping Bear during this period. The Chipping Sparrow population increased at a rate of 5 birds/mi²/year over the five-year survey period, while the Eastern Wood-Pewee population showed a slight decline over four of the five years, losing 2 birds/mi²/year.

Trends among *guilds*—groups of species that share a common trait such as habitat type, nest location, or food source—were positive, with many guilds increasing in numbers, especially those that forage in shrubs and the lower branches of trees (+5 birds/mi²/year). This group includes many warblers, kinglets, and the Black-capped Chickadee. Also increasing were



Bird surveys are not always in the woods. A volunteer prepares to do a bird survey at the edge of a roadside field. NPS PHOTO/T. GOSTOMSKI



The Red-eyed Vireo, American Robin, and American Redstart (top) were the most common birds heard during surveys in 2014–2018, while the Common Grackle and Red-winged Blackbird (bottom) had two of the densest populations. NPS PHOTOS EXCEPT AMERICAN ROBIN COURTESY OF USFWS/L. KARNEY.

woodland species (+7 birds/mi²/year), and Neotropical migrants (+7 birds/mi²/year), birds like the warblers and flycatchers that nest here in the north but migrate south to spend the winter in Mexico and Central and South America.

What Will the Future Sound Like?

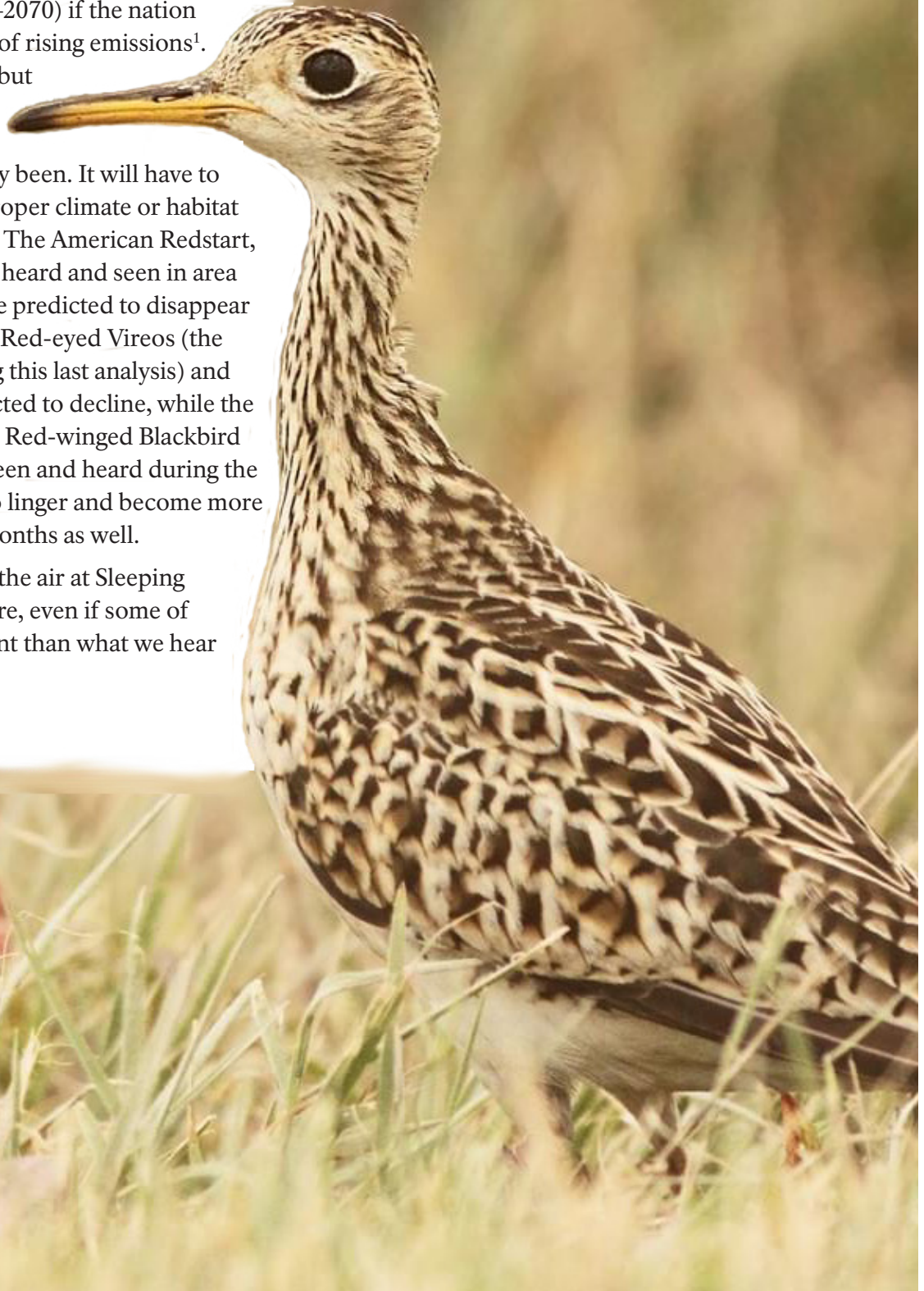
As climate change affects the temperature and amount of rain and snowfall we received throughout the year, bird populations will shift along with changes

in nesting habitat and food supply. The birds we hear today may not be the same ones we hear (or at least not in the same numbers) in the future.

One study comparing bird population changes under two different climate scenarios predicted a high potential for species extirpations at Sleeping Bear Dunes by mid-century (2041–2070) if the nation continues on its current path of rising emissions¹.

Extirpation is not extinction, but it does mean a bird species will no longer be found in a place where it has traditionally been. It will have to move elsewhere to find the proper climate or habitat for nesting and raising young. The American Redstart, that small warbler commonly heard and seen in area forests, is one of those that are predicted to disappear from the area. Populations of Red-eyed Vireos (the most common of birds during this last analysis) and Upland Sandpipers are predicted to decline, while the robin, Common Grackle, and Red-winged Blackbird will not only continue to be seen and heard during the summer, they are predicted to linger and become more common during the winter months as well.

Bird song will continue to fill the air at Sleeping Bear Dunes well into the future, even if some of the species are slightly different than what we hear now.



Upland Sandpiper

NPS PHOTO COLLECTION/MACAULAY LIBRARY-CLO/L. SEITZ

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.

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>.