

S

Sander, Heather A <heather-a-sander@uiowa.edu>

Mon, Jan 31,  
2022, 6:18  
PM

to me, Matt, Joel, RICHARD, Tom, Brandon

Dear John,

I am writing to report on the activities accomplished to date under the grant my colleague, Brandon Caswell, and I received from the Iowa Ornithologist's Union in 2021. We greatly appreciate this funding and the research opportunity it has facilitated. This research sought to identify changes in the breeding-season songbird community following massive forest loss associated with the August 2020 Derecho by resurveying 136 survey points on which we had conducted point count surveys between 2014 and 2017 in Cedar Rapids and Palisades Kepler State Park. These locations experienced high tree loss due to the Derecho.

During the summer of 2022, we conducted point counts twice on all of our 38 points in Palisades Kepler and 82 of our 98 points in Cedar Rapids. We were unable to resurvey 16 of our Cedar Rapids points due to remaining Derecho damage which made these points impossible or unsafe to visit. Many of these points we located in Faulkes Heritage Woods, a conservation area that was heavily-damaged by the storm and on which little to no debris collection had occurred.

We recorded a total of 2,154 songbirds of 53 species during our surveys. We observed 38 species in Palisades Kepler and 36 species in Cedar Rapids. We did not observe one species we had previously-recorded during our surveys of both Cedar Rapids and Palisades Kepler, the Cerulean Warbler, and did not observe an additional four species (Eastern Bluebird, Hairy Woodpecker, Northern Parula, Rose-breasted Grosbeak) we had previously recorded in Cedar Rapids and three species (Baltimore Oriole, Eastern Towhee, Ovenbird) we had previously recorded in Palisades Kepler. We observed several species for the first time in each location, although all species had been observed in our previous surveys of the full study area. In Palisades Kepler, these species included Hairy Woodpecker and Redheaded Woodpecker while in Cedar Rapids these species included Great Crested Flycatcher, Indigo Bunting, and Yellow-throated Vireo.

Our research group conducted vegetation surveys on the 50 m plots surrounding each point during the summers of 2016-2018. We had intended to revisit all plots during the summer of 2021 to record changes to tree and understory vegetation; however, a large number of plots in natural area parks and unmanaged areas remained heavily damaged and were impassible or unsafe to survey, although we were able to conduct brief point count surveys on some of these sites. We thus made the decision to derive tree canopy and understory vegetation data from remotely-sensed imagery for the pre and post-Derecho time periods. We have finished compiling vegetation attributes for Cedar Rapids sites and are currently working to complete our remote sensing analysis for Palisades Kepler State Park. After that analysis is complete, we will be able to proceed with abundance modeling for species observed. We will use the resulting models to identify habitat relationships and to estimate the true abundance (i.e., abundance

adjusted for imperfect detection) for each species on each plot during pre- and post-derecho surveys. We will then use these abundances to run analyses to identify changes in the bird community between pre- and post-derecho surveys and changes in the bird community on plots that experienced different levels of tree loss. We expect to complete this analysis in the spring of 2022 and will submit a manuscript summarizing our findings for peer review to the journal *Global Change Biology*.

We thank the Iowa Ornithologist's Union for its support of this research and will share a copy of the publication that results from this study with IOU once it is complete. If you have any questions, feel free to contact me.

Regards,  
Heather Sander