

# WILDLIFE RESEARCH UPDATE

*Research, Analysis, and Inventory Section - Wildlife Division*



TABLE OF CONTENTS

---

**NEBRASKA'S CERT**

---

**DUCK MIGRATIONS IN NEBRASKA**

---

**NORTHERN SAW-WHET OWL BANDING STUDY**

---

## Enhancing the Delivery of Biodiversity Information through the Nebraska Conservation and Environmental Review Tool

*by Rachel Simpson, Natural Heritage Data Manager and GIS Specialist*

NGPC was recently awarded a federal grant which will improve delivery of information from the State Wildlife Action Plan through the Nebraska Conservation and Environmental Review Tool (CERT; [cert.outdoornebraska.gov](http://cert.outdoornebraska.gov)).

More than 700 species have been identified as at-risk in the Nebraska Natural Legacy Project, Nebraska's State Wildlife Action Plan (SWAP). The Nebraska Natural Heritage Program of the Nebraska Game and Parks Commission (NGPC) tracks species and natural communities, focusing on those that are most at risk of extinction or decline and places. This information aids in the conservation of Nebraska's biological diversity and informs conservation and land use decisions in Nebraska. The CERT is the state's online system for delivery of biodiversity information and regulatory project review, customized to the user's project. Use of the CERT has been growing substantially (Figure 1).

## **CERT Continued...**

While the majority of projects are not conservation related, over a quarter of them do have conservation as their primary objective (see table below). Typically, the users submitting these projects are interested in more than meeting the minimum regulatory requirement of avoiding impacts to listed species; they are seeking to perform proactive actions that benefit at-risk species and keep common species from becoming imperiled. Some of the information to help them do this is available in SWAP publications but is not readily available in the CERT.

Functionality to allow users to submit one project area and simultaneously run both environmental review and conservation planning reports will also be developed. Because SWAP activities are voluntary, they will not be included in the environmental review report, which contains information on actions that are required for regulatory compliance. Those users who require an environmental review but do want the additional SWAP-related information will be able to easily get both with the touch of a button.

The CERT was developed through a partnership of the NGPC and NatureServe, a nonprofit organization that connects science to conservation and coordinates the efforts of over 100 natural heritage programs in the U.S., Canada, and Latin America. With this funding, NGPC will continue this productive partnership. We plan to include key information about Tier 1 (highest conservation priority) species’ habitats, research needs, and threats. We’ll also be incorporating the more detailed information on the state’s Biologically Unique Landscapes from the SWAP. The result will be a CERT conservation planning report that makes key SWAP-related information more readily accessible. Work on this project will begin in the spring of 2022 and wrap up in 2024.

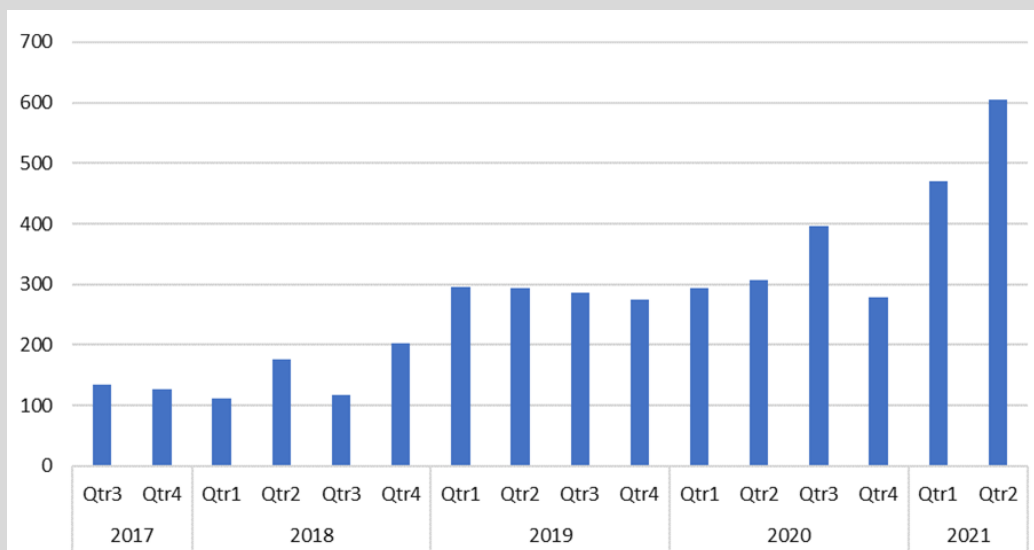


Figure 1. Number of projects submitted to the CERT from July 12, 2017 through June 30, 2021.

<b>Project Type</b>	<b>Number of Projects Submitted</b>	<b>Percent of Total</b>
Communications	112	5
Conservation Planning Report (not an environmental review)	49	2
Development	390	17
Energy Production/Storage/Transfer	365	16
Forest Management	9	<1
Habitat Conservation and Restoration (non-NRCS project)	616	26
NRCS Projects/Practices	81	3
Other (Agriculture, Hazard Mitigation, Hazardous Waste Cleanup/Remediation, Mining, Pest Control)	29	1
Other Projects, Type Unspecified	167	7
Recreation Areas	59	3
Research	5	<1
Transportation	293	12
Water Use/Transfer/Channel Activities	149	6
Waste Water Treatment/Disposal	25	1
<b>Total</b>	<b>2,349</b>	<b>100</b>

*Table 1. Number of projects submitted to the CERT by major project type category from January 2020 to June 2021. Projects have been submitted by over 300 unique users during this time period.*

## Estimating Migration Chronology of Ducks in Nebraska using eBird

*by Cynthia Anchor, Waterfowl Biologist I*

The Cornell Lab of Ornithology developed the eBird platform to offer birders a way to store and organize birding media, species lists and counts for single birding events, and “life lists”—complete lists of every bird species seen by an individual—at county, state, national, and global scales. Since its inception in 2002, birders have contributed more than 60 million complete checklists containing over half a billion bird sightings. A team of scientists at the Cornell Lab used eBird observations from January 2006 – February 2021 and outside-sourced habitat data to build predictive abundance and occurrence models neatly packaged and made available to the public as eBird Status and Trends (S&T) products.

Hunter opportunity is one of the many considerations that go into developing waterfowl hunting season recommendations. For Nebraska waterfowl hunters, that largely means recommending hunting season dates that are concurrent with when ducks are most abundant in the state. We assessed the efficacy of using eBird S&T weekly relative abundance to estimate migration chronology of ducks through Nebraska. We used known life histories to group 13 of the most common duck species found in Nebraska as early migrants (blue-winged teal and wood ducks), mid-season migrating dabbling ducks (northern pintail, American wigeon, northern shoveler, green-winged teal, and gadwall), mid-season migrating diving ducks (canvasback, redhead, ring-necked duck, lesser scaup, and common goldeneye), and late-migrating mallards.

## Duck Migration Continued...

At the statewide level, relative abundance of blue-winged teal and wood duck numbers show steep declines through October, with mallard numbers peaking in December. Weekly relative abundance for all species demonstrated two peaks in migration that predominately represented mallards and other dabbling ducks. Because the weekly relative abundance estimates are spatially explicit, we were able to repeat this process to estimate the timing of autumn duck migration in each of the four duck hunting zones. Average migration chronology was one data stream used to inform waterfowl hunting season date recommendations to maximize opportunities for duck hunters.

Visit [ebird.org/science/status-and-trends/](http://ebird.org/science/status-and-trends/) to learn more about available data products or S&T modeling methods.

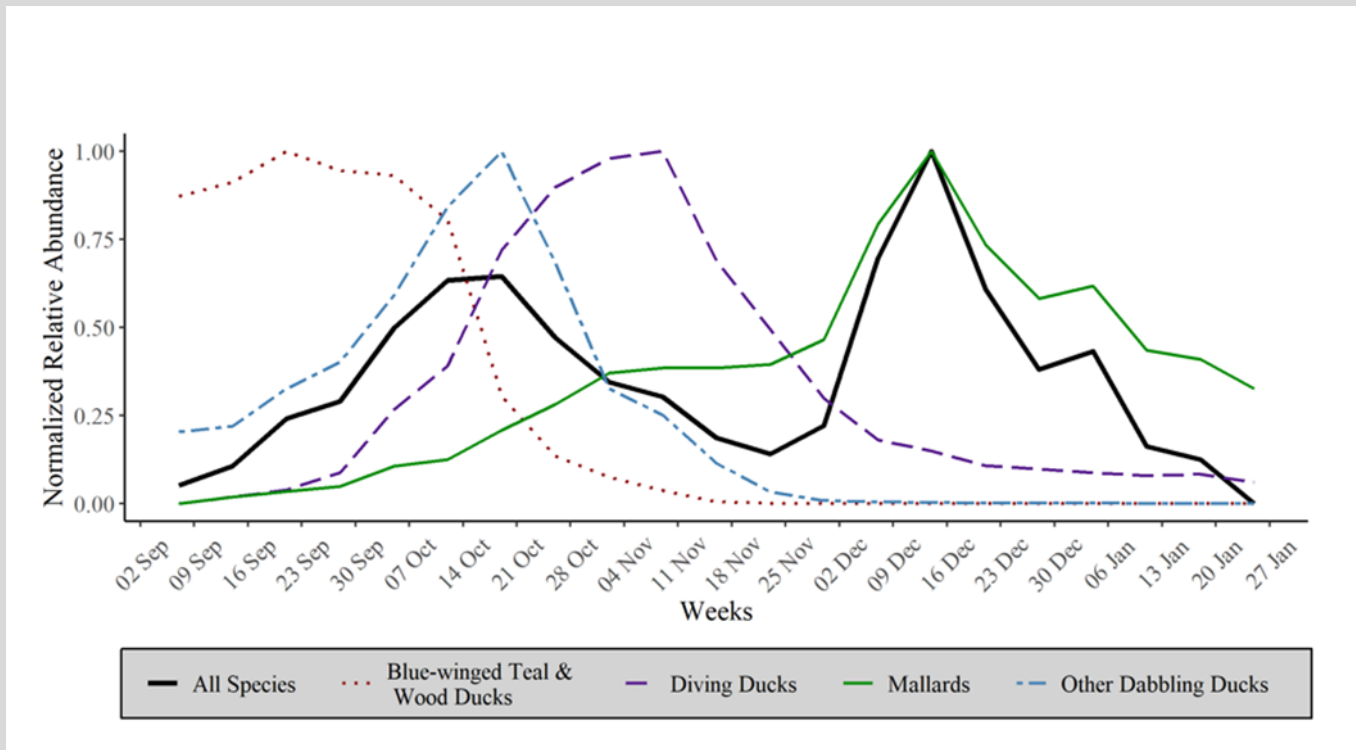


Figure 1. Statewide relative abundance of various duck species during the fall migration.

***“To those devoid of imagination a blank place on the map is a useless waste; to others, the most valuable part.”***

**-Aldo Leopold**

# Northern Saw-whet Owl autumn migration in eastern Nebraska: results from a three-year banding study

by *Stephen J. Brenner & Joel G. Jorgensen, Nongame Bird Program*

The Northern Saw-whet Owl (*Aegolius acadicus*; NSWO) is one of the smallest owls in North America. In Nebraska, breeding has been documented in the Pine Ridge and Wildcat Hills, and is suspected in the middle Niobrara river region, but its status over the remainder of the state is poorly defined. We recently concluded a three-year banding study at sites near Lincoln. Our objective was to determine whether and when NSWOs migrate through this area in fall.

Our approach included erecting mist nets centered on a nearby speaker playing NSWO calls on a continuous loop. The calls attract the owls to the trapping station and eventually into the nets. Once in the net, NSWOs are carefully removed, weighed and banded. All trapping and banding was done humanely and carefully under all necessary state and federal permits and authorizations.

We operated trapping stations for 22 evenings from mid-October to mid-November 2019-21. We banded 2 NSWOs in 2019, 20 NSWOs in 2020, and 10 NSWOs in 2021. When considering data from all three years of our study collectively, NSWO migration in eastern Nebraska peaked during the first two weeks of November (Fig. 1). Our earliest capture was on 15 October 2020 when one NSWO was banded, and our latest capture was 22 November 2021, also with one NSWO banded.

The combined three years of data provides a more definitive understanding about this species occurrence in the eastern half of the state and specifically demonstrates this species is a regular and not rare migrant away from the Missouri River. However, other questions about this species' distribution and occurrence in the state remain unanswered. NSWOs we captured likely originated from forested regions of the northern U.S. (i.e., Minnesota) and southern Canada. NSWOs in western Nebraska are presumably part of different populations and have different migratory movements which are not understood. Finally, the winter or overwintering status of NSWO in eastern Nebraska away from the Missouri River valley also remains undefined and a priority for future research. There are very few reports of this species during winter and our trapping efforts did not extend into December and January.



# Owls Continued...

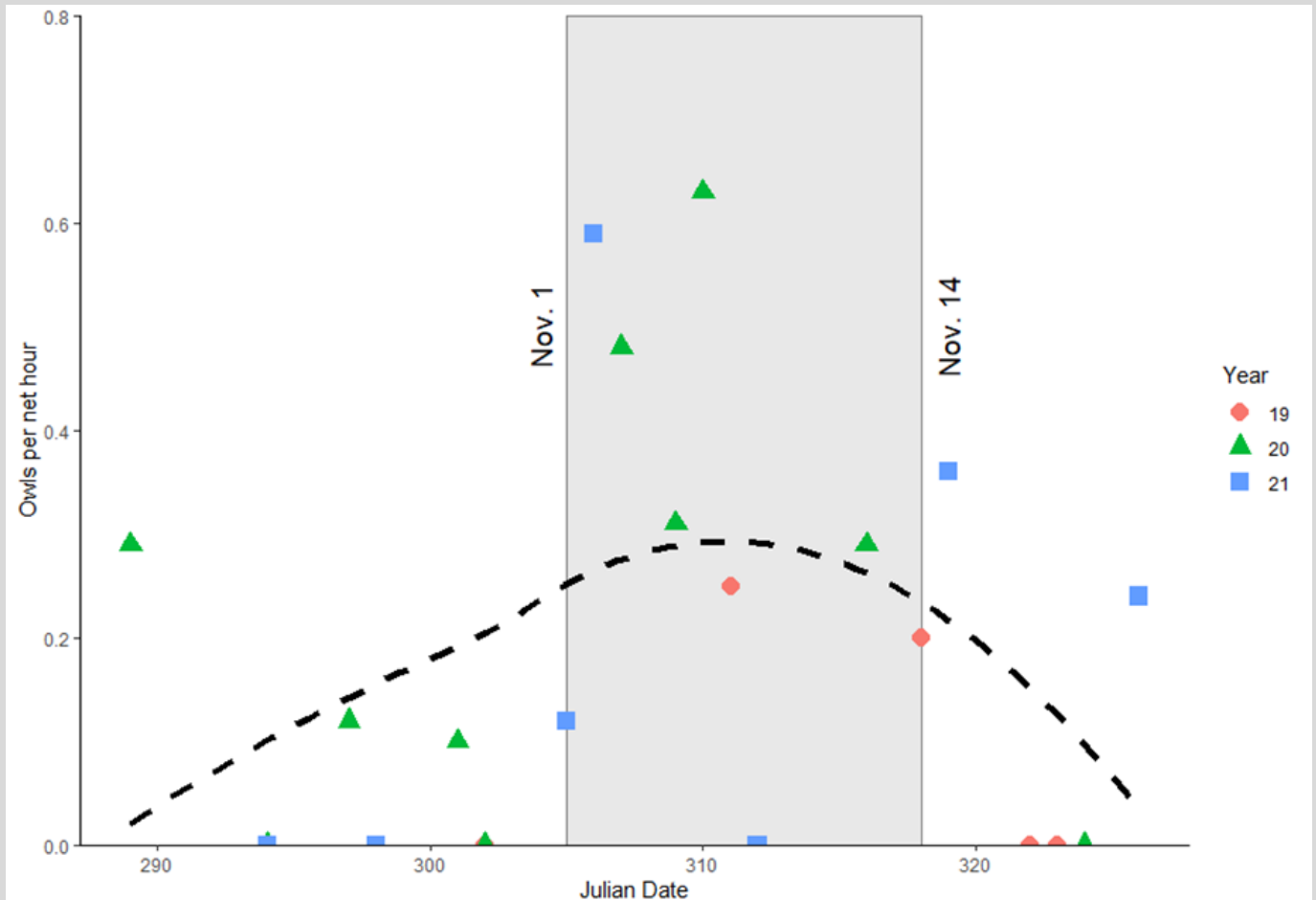
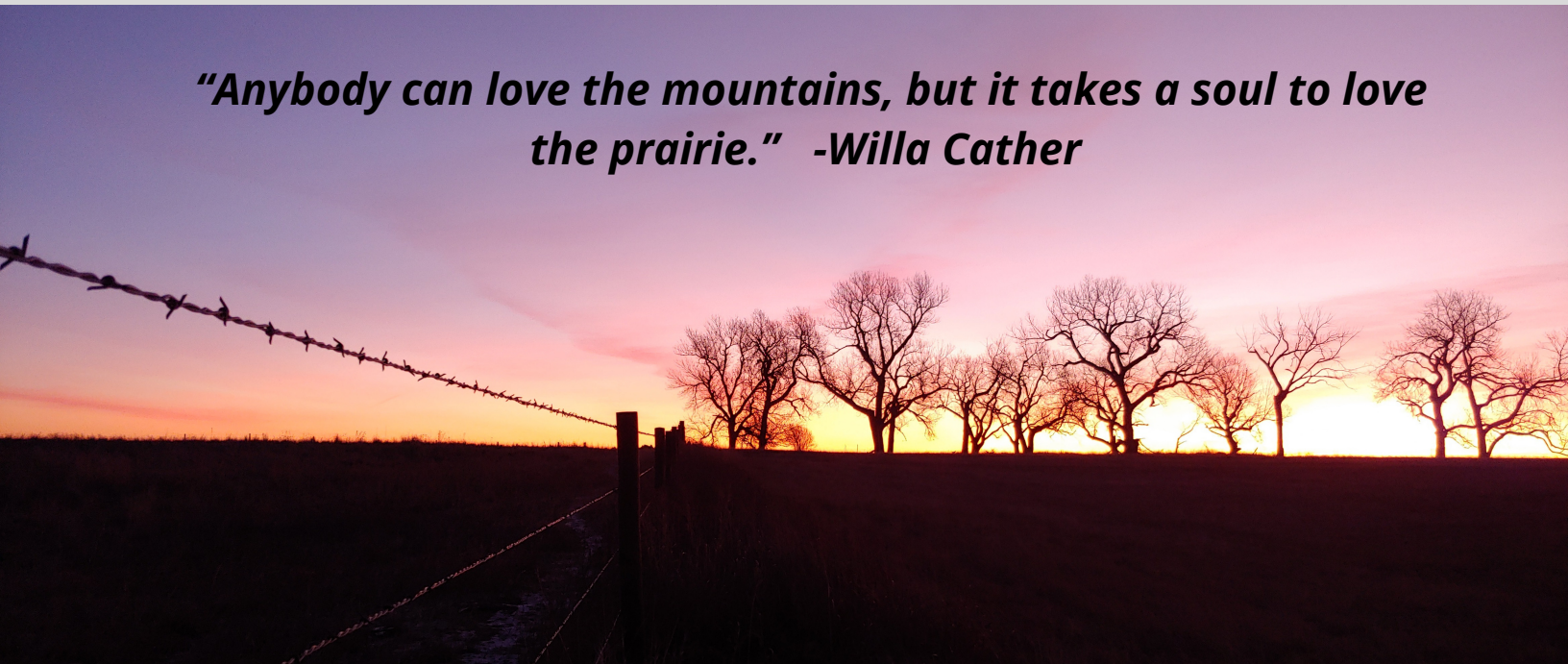


Figure 1. Northern Saw-whet Owls banded per net hour by date from 2019 (circle), 2020 (triangle), and 2021 (square) in eastern Nebraska. Trend line created using locally weighted scatterplot (LOESS) smoothing. The shaded gray box delineates the first two weeks of November, the apparent peak of NSWOW movements in eastern Nebraska.

***“Anybody can love the mountains, but it takes a soul to love the prairie.” -Willa Cather***



## **Contact Us**

### **Will Inselman**

Assistant Wildlife Division Administrator - Research  
will.inselman@nebraska.gov

### **Caroline Jezierski**

Heritage Program Manager  
caroline.jezierski@nebraska.gov

### **Jeff Lusk**

Data & Biometry Program Manager  
jeff.lusk@nebraska.gov

### **Joel Jorgensen**

Nongame Bird Program Manager  
joel.jorgensen@nebraska.gov

### **John Laux**

Upland Game and Access Program Manager  
john.laux@nebraska.gov

### **Matthew Garrick**

Waterfowl Program Manager  
matthew.garrick@nebraska.gov

### **Sam Wilson**

Furbearer Program Manager  
sam.wilson@nebraska.gov

### **Todd Nordeen**

Big Game Disease and Research Program Manager  
todd.nordeen@nebraska.gov