

# People and Wetlands

NEBRASKA





# Grace Gaard

Aquatic Ecology Education Specialist

**Nebraska Game and Parks Commission**



Mariah Lundgren / Platte Basin Timelapse

# Fish and Wildlife Education Division



Educator workshops, professional development, and classroom programming



Creation of educational resources that can be used in formal and informal settings



Programming like trivia, webinars & community science designed for adults



Partnerships and community focused programs and activities

<http://outdoornebraska.gov/learn/educator-resources/>

# A Disconnect Exists

Can you think of any examples of the disconnect between people and wetlands?

Nature in general?

Where do you encounter it most? What does it look like?

# A Disconnect Exists

- 97% of Nebraska is privately owned, ranking us 48th in the country for available public land that people can explore
- Children's free time is much more regulated than it once was (sports, etc.)
- Screen time has increased
- Nature connectedness declines with age into the early teens, leveling back off into adulthood
- Schools often struggle to incorporate local examples into student learning in the classroom

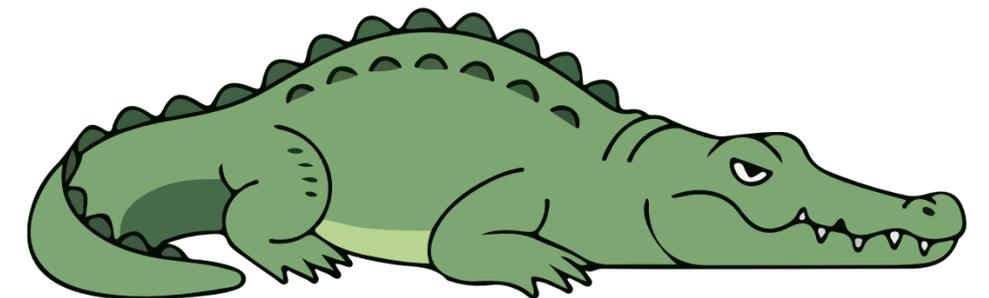
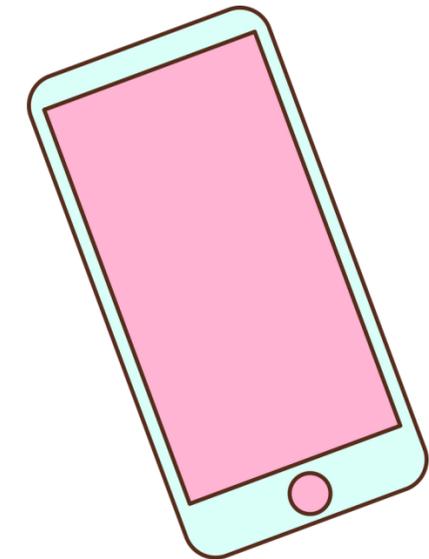
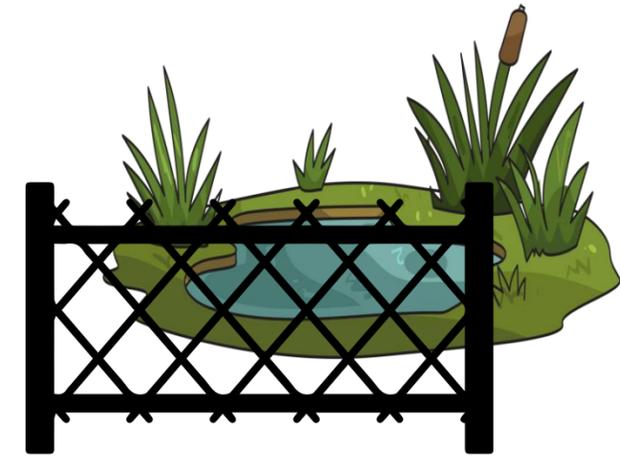
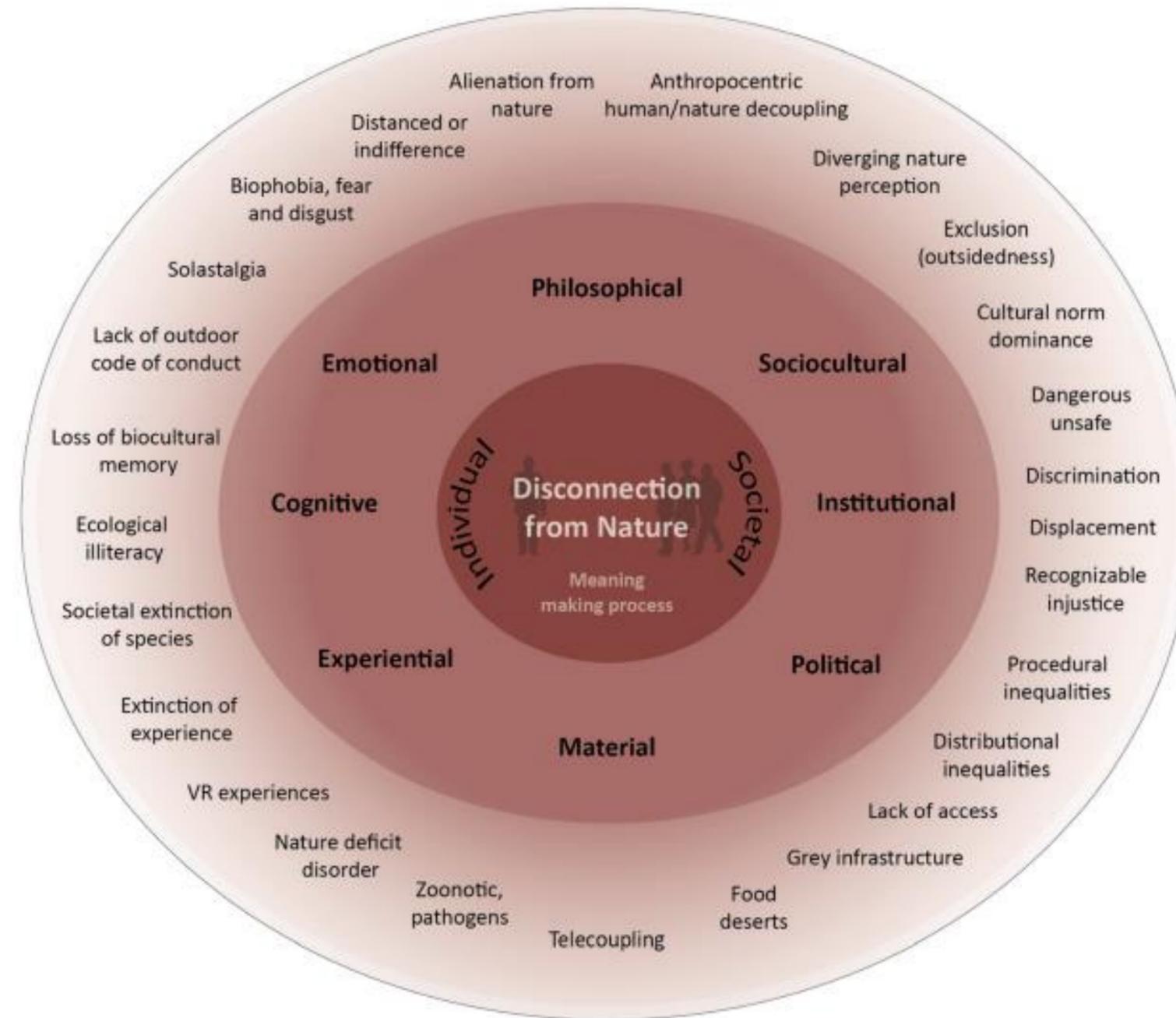


Image: Wheel of Disconnection.  
 Out of People and Nature, titled Disconnection from nature: Expanding our understanding of human-nature relations, by Beery et al., 2023.  
 Retrieved from <https://besjournals.onlinelibrary.wiley.com/doi/pdf/10.1002/pan3.10451>.

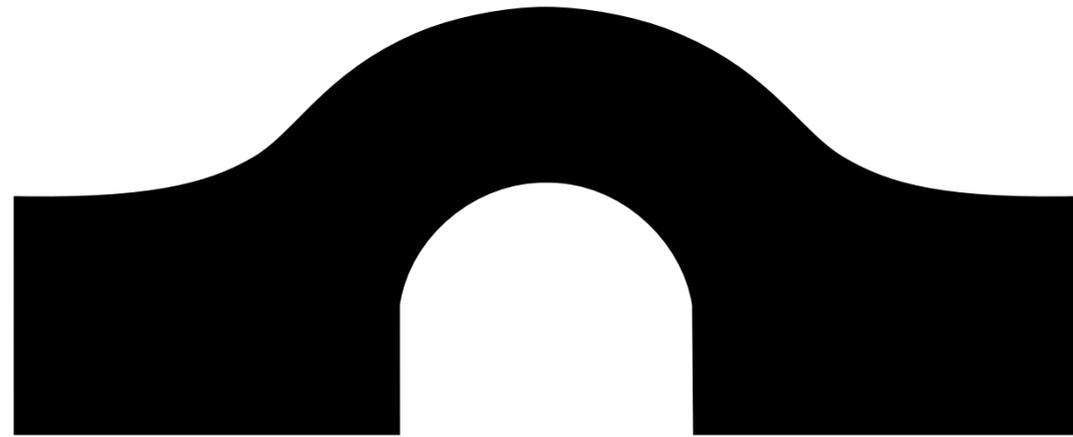


**FIGURE 1** Wheel of disconnection. The figure illustrates how disconnection from nature takes place through interrelated processes of individual (Table 1) and societal (Table 2) drivers and dimensions of disconnect. These processes might result in different types of disconnection, as summarized by terms and concepts in the outer circle.



How Do You Bridge the Gap Between  
**People and Wetlands?**

# Building Bridges



**Wetlands Outreach and Education Project**

# Wetlands Outreach and Education Project

## What is it?

- A compilation of educational resources that offer the opportunity to learn about Nebraska's diverse wetland types, as well as grow one's understanding of wetlands' importance and value to Nebraskans and Nebraska wildlife. Conserving them is important for everyone and everything living here.

## Who was Involved?

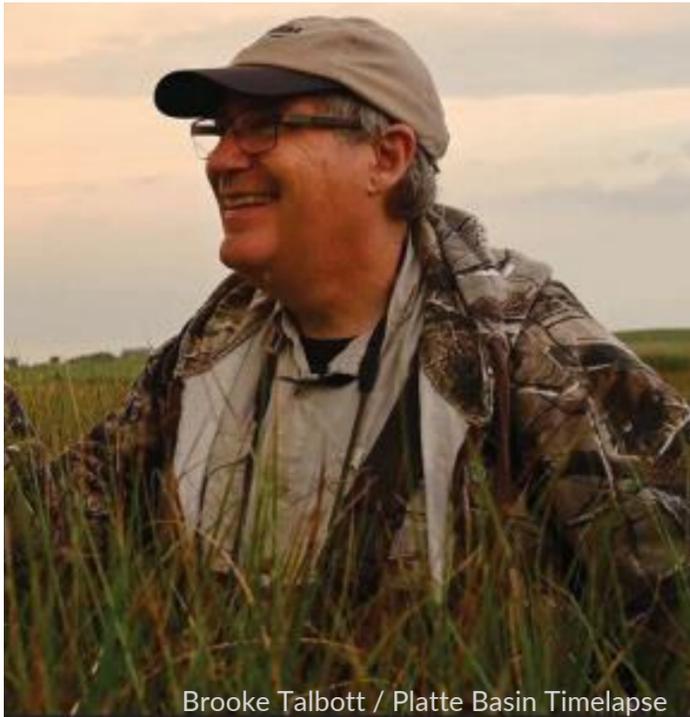
- This project was led by the Nebraska Game and Parks Commission and was funded by a grant from the U.S. Environmental Protection Agency. Partners on the project included:
  - Platte Basin Timelapse at the University of Nebraska-Lincoln
  - Nebraska Cooperative Fish and Wildlife Research Unit
  - Ducks Unlimited



Ethan Freese / Platte Basin Timelapse

# Project Team

**Ted LaGrange**  
Wetlands Program Manager



Brooke Talbott / Platte Basin Timelapse

We are photographers and filmmakers, writers and designers, developers and technicians, scientists and researchers, educators and students.

**We are storytellers.**

Michael Forsberg  
Co-Founder +



Michael Farrell  
Co-Founder +



Mariah Lundgren  
Producer III & Project Manager +



Ethan Freese  
Producer II +



Grant Reiner  
Producer II +



Dakota Altman  
Producer I +



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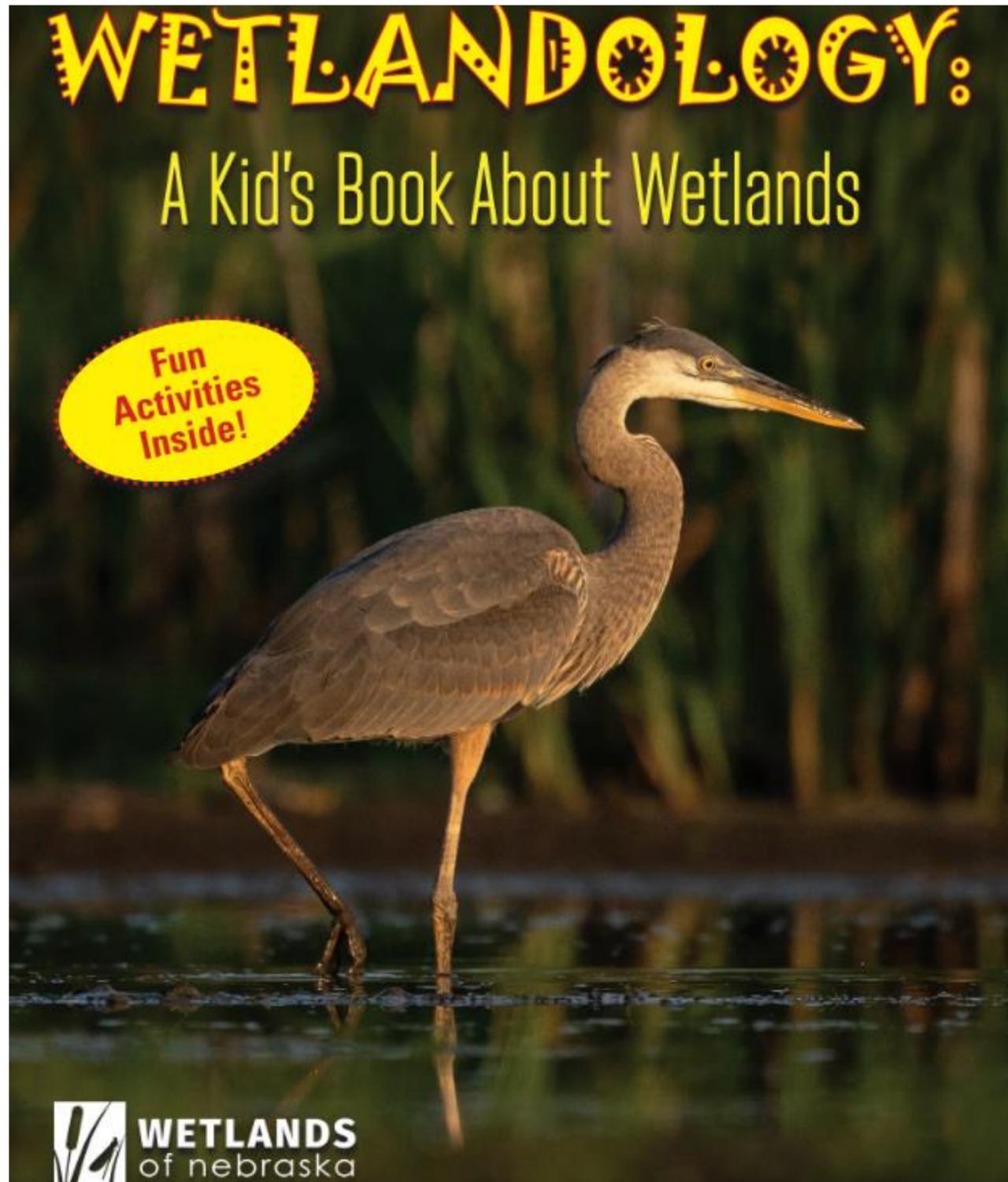
GUIDE TO  
NEBRASKA'S  
WETLANDS  
and their conservation needs

NEBRASKA  
- GAME PARKS -



# Guide to Nebraska's Wetlands

- Defines and describes Nebraska wetlands and discusses wetland functions, dynamics, classification, inventory and conservation efforts. Fourteen wetland complexes are covered in depth.
- A listing of wetland plants and animals is provided as well as literature references.



# Wetlandology: A Kid's Book About Wetlands

- This magazine gives students a closer look at Nebraska's different wetland types, the creatures that live in them, and tips about how you can explore wetlands
- Designed for educators to use with students in the classroom, after school and beyond

# A feature film for each wetland type



**Nebraska Wetlands**

Nebraska Game and Parks Commission  
6 videos 89 views Updated 4 days ago

≡+ ↗ ⋮

▶ Play all    ↻ Shuffle

Nebraska contains more acres of wetlands than any surrounding state. These wetlands are very diverse and dynamic and include marshes, lakes, river and stream backwaters, oxbows, wet meadows, fens, forested swamps, and seeps.

To help you explore the varying roles that

-  **Wetlands of Nebraska - Trailer**  
Nebraska Game and Parks Commission • 121 views • 5 days ago
-  **Sandhills Wetlands of Nebraska**  
Nebraska Game and Parks Commission • 82 views • 13 days ago
-  **Saline Wetlands of Nebraska**  
Nebraska Game and Parks Commission • 28 views • 13 days ago
-  **Playa Wetlands of Nebraska**  
Nebraska Game and Parks Commission • 77 views • 13 days ago
-  **Riverine Wetlands of Nebraska**  
Nebraska Game and Parks Commission • 53 views • 12 days ago
-  **Urban Wetlands of Nebraska**  
Nebraska Game and Parks Commission • 35 views • 13 days ago

A person wearing a camouflage jacket and a cap is sitting on a large, conical pile of harvested reeds in a wetland. The reeds are partially submerged in water, and their reflection is visible in the calm surface. The background shows a vast field of tall, golden-brown grasses under a clear sky. The overall scene is peaceful and natural.

**295 Days in the Field**  
**590 Days in the Office**

A macro photograph of a pond. The scene is dominated by green lily pads with numerous water droplets on their surfaces. A single, dark feather with a lighter base is positioned in the upper left quadrant. The background is dark and out of focus, showing more lily pads and water. The overall lighting is soft, highlighting the textures of the leaves and the droplets.

# Understanding Our Audience

# Who is being engaged in our message?

Consider the  
following regarding  
your audience:

- Demographics
- Size
- Setting
- Expectations
- Motivations
- Knowledge
- Attitudes

# What do they need to know?

# Why do they need to know it?

Ethan Freese / Platte Basin Timelapse

Ethan Freese / Platte Basin Timelapse

Dakota Altman / Platte Basin Timelapse

# Audience Examples



**4th graders**

**21+ adults**

**65+ adults**

What do each of these audiences have in common?  
What makes them different?  
What are their motivations?



# Recent NGPC Efforts in Nebraska Wetland Education

# Education we Need for the World we Want

**Environmental Education (EE) has the power to transform lives and society. It informs, inspires, and influences attitudes. It motivates action. EE is a key tool in expanding the environmental movement and creating healthier and more civically-engaged communities.**

- North American Association for Environmental Education (NAAEE)



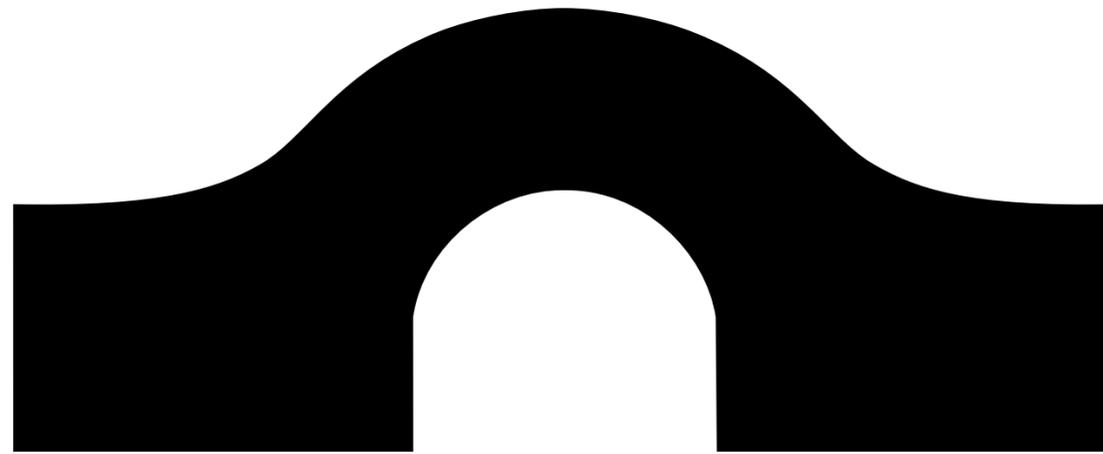
# Core Principals of Environmental Ed

- Systems and Systems thinking
  - Human Well-being
  - Equitable for all lived experiences
  - Connection to Place
  - Rooted in the Real World
  - Interdisciplinary
  - Lifelong Learning
  - Sustainability and Stewardship
  - Learner Centered
- 

**Connection**

**Awareness**

**Understanding**



**Connecting Nebraskans to Wetland  
Resources and Experiences**

# Project Team

**Fish and Wildlife Education Division**  
Nebraska Game and Parks Commission  
4 Team Members



**Wildlife Division**  
Nebraska Game and Parks Commission  
2 Team Members



**DAKOTA ALTMAN**  
PRODUCER & INSTRUCTOR | HE/HIM



**CARLEE MOATES**  
PRODUCER & INSTRUCTOR | SHE/HER



## PLATTE BASIN TIMELAPSE

# NEBRASKA



# Project Summary

## Outcomes Include:

- Increasing connection to and awareness of Nebraska's wetlands
- Greater knowledge of available wetland resources and education opportunities
- Quality information related to wetlands, their functions, and why they matter

- **Teacher Needs expressed in Survey**
  - In-person wetland experiences for students
  - Videos
  - Visits from a resource professional (in-person or virtual)
- This project will provide teachers support through workshops and funding, aligning products to state standards, and guiding interactions with wetlands and wetland conservation from start to finish

**Video  
Content**

**Lesson  
Plans**

**Educator  
Workshops**

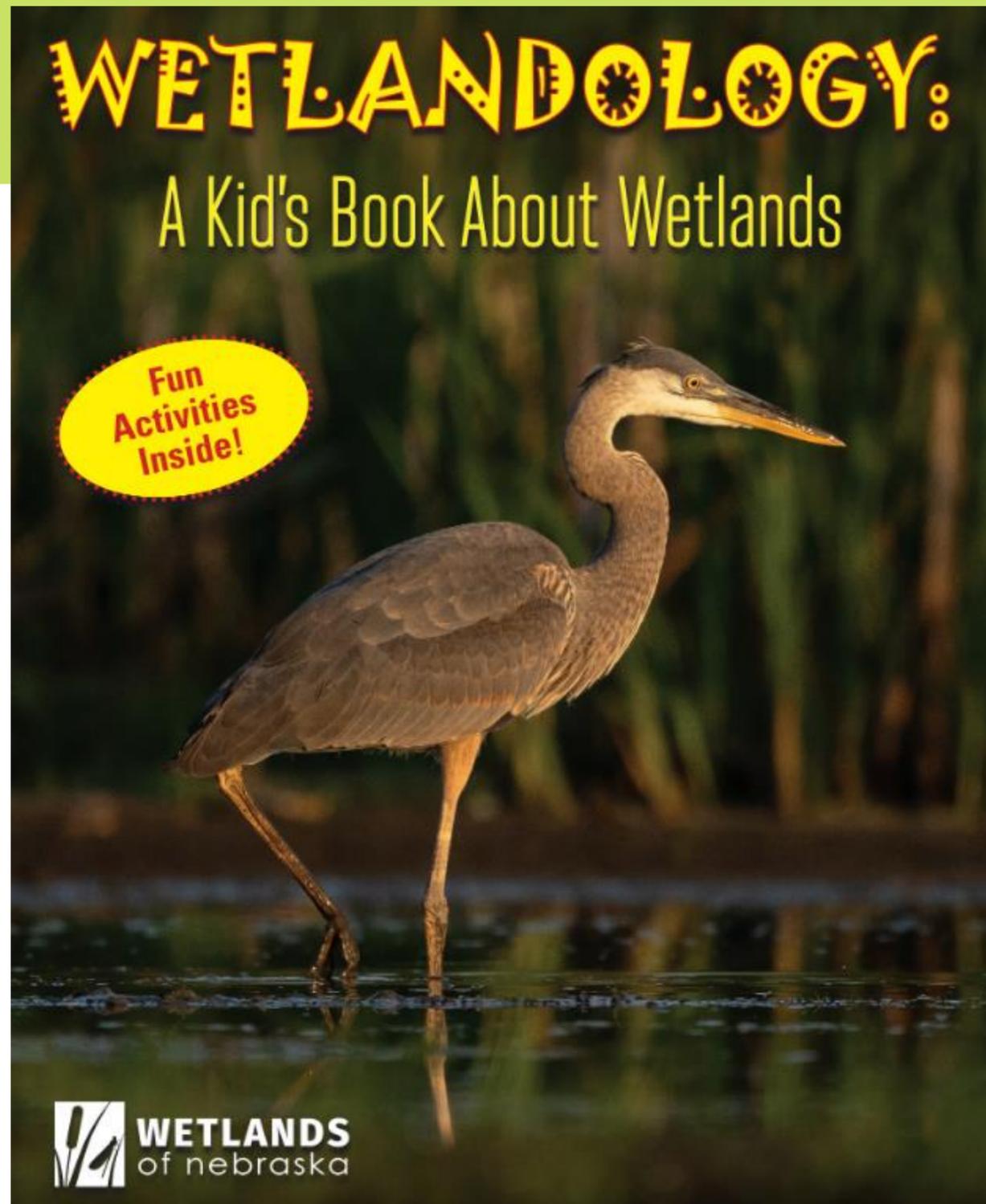
**Printing  
Resources**

**Wetland  
Education  
Coordinator**

**Student  
Field Trips**

**Public  
Wetland  
Experiences**

**Project Outcomes**



## Printing Resources

- During the 2019 project we developed a magazine for grades 3-6
- This resource is designed to be as evergreen as possible
- Project funds the printing of around 5,000 magazines per year of the grant

# Videos for Classrooms



- **Research in Nebraska's Wetlands**
  - Goose Banding
  - Salt Creek Tiger Beetle
  - Fisheries, Invasive species and more!
- **Cultural Connections to Wetlands**
  - Explores everyday people and their connection to wetlands and differing perspectives
- **Wetlands and Water Quality**
  - Understanding watersheds
  - Quantity, quality, nitrates, and how wetlands can be a solution



# Lesson Plans for Classrooms

## LESSON AT A GLANCE

### GRADE LEVEL

- 9th - 12th grades

### CORRELATING STANDARDS

- SC.HS.7.2.C
- SC.HS.10.5.D & E
- SC.HS.10.5.C

### ACTIVITY TIME

- 5-10 min - Warm Up:
  - Wetland Challenges
- A Few Weeks - Main Activity:
  - Research Project

### MATERIALS

- Wetlands of Nebraska Outreach and Education Guide
- YouTube Channel with wetland videos: <https://youtu.be/mwcnwSNwqBM>
- Resources to research Nebraska Wetland plant species
- Access to natural resource professionals as needed
  - Contact [ngpc.wildlifeed@nebraska.gov](mailto:ngpc.wildlifeed@nebraska.gov)
- Materials as needed by students for projects

## INTRODUCTIONS

Wetlands are unique aquatic ecosystems in Nebraska. The plants that live there have amazing adaptations that allow them to thrive! Using their special structures like roots, stems, and flowers they are able to function and reproduce, continuing the cycle of life in wetland habitats.

## OBJECTIVES

This lesson was designed to be used in partnership with the video "Wetland Plant Adaptations". The video and lesson will allow students to better understand that many plants can be found in Nebraska wetlands. Students will see that changing environments like wetlands can lead to changes in populations within that habitat. Plant growth can be affected by this phenomena.

### As a result of this lesson:

- Students will provide evidence that changes in environmental conditions may result in a change in the number of species.
- Students will understand that wetland plants are unique depending on where they live in Nebraska by taking a deep dive into researching one type of plant that interests them.

- Lessons will pair intentionally with each video
- One set will address grades 6-8 science standards
- One set will address grades 9-12 science standards
- Each may also include language arts and social studies standards
- Lessons feature local phenomena

# Hiring a Wetland Education Coordinator

- Hired in October 2025, second year of the project
- Position allows us to:
  - Maintain quality of the project
  - Build relationships with partners
  - Plan and develop lessons, workshops, field trips, and community events
  - Facilitate field trips
  - Coordinate volunteers and staff
  - Visits to classrooms
  - Communication with teachers, partners, NGPC staff and more



# Educator Workshops



- In 2025 we piloted our first “Educator Field School”
- These workshops are a chance for teachers to explore the wetlands of Nebraska and bring the resources and their experiences back to the classroom
- Coming Up
  - 2026 - Niobrara Valley Preserve
  - 2027 - 2 workshops
  - 2028 - 2 workshops

# Student Field Trips



- Educators that participate in the workshop will have the opportunity to apply for funds that will pay for them to bring their students on TWO, fall season, in-person wetland field trips.
  - **The first field trip** will be focused on:
    - Building student's connection to the wetland and giving context to wetland resources they may have encountered in class
  - **The second field trip** will focus on:
    - Students taking action to help with conservation of the wetland
    - Activities could include collecting data about the wetland, doing a clean up, invasive species removal, or some sort of community science project/bioblitz



# Public Wetland Experiences



Kayak Clean Ups, Partnerships, Wetland Exploration and more!

A macro photograph of a pond. The scene is dominated by green lily pads with numerous water droplets on their surfaces. A single white feather with a dark tip lies on one of the lily pads. The background is dark and out of focus, showing more lily pads and water. A white rectangular box with a thin border is centered in the image, containing the text 'Coming Soon' in a bold, light green font.

**Coming Soon**



# Educator Field School 2026

- Application is open to all teachers that work with grades 6-12 until March 22nd
- Transitioned into an application process this year
- Sitting at 32 applicants so far! 12 Spots Available

\* New location and activity:  
Niobrara Valley Preserve,  
kayaking the Niobrara River



# Videos + Lesson Plans

- Platte Basin Timelapse will finalize interviews this spring and dive into the editing process
- NGPC Education team is working to structure lesson plans around the videos with attention to state science standards and compatability in the classroom



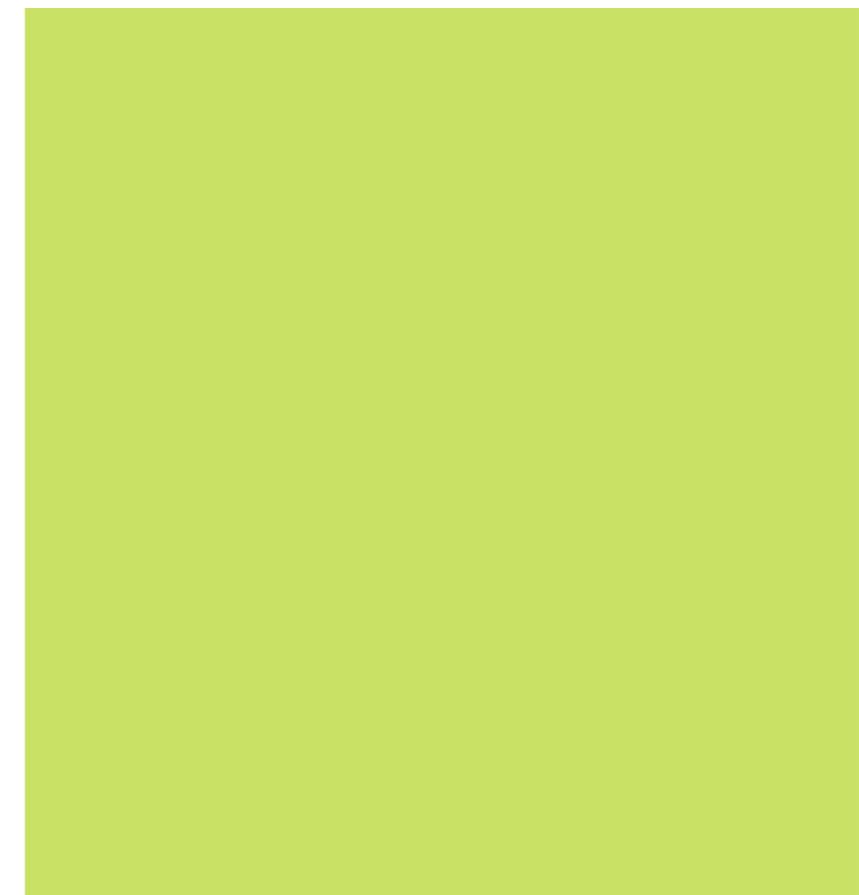
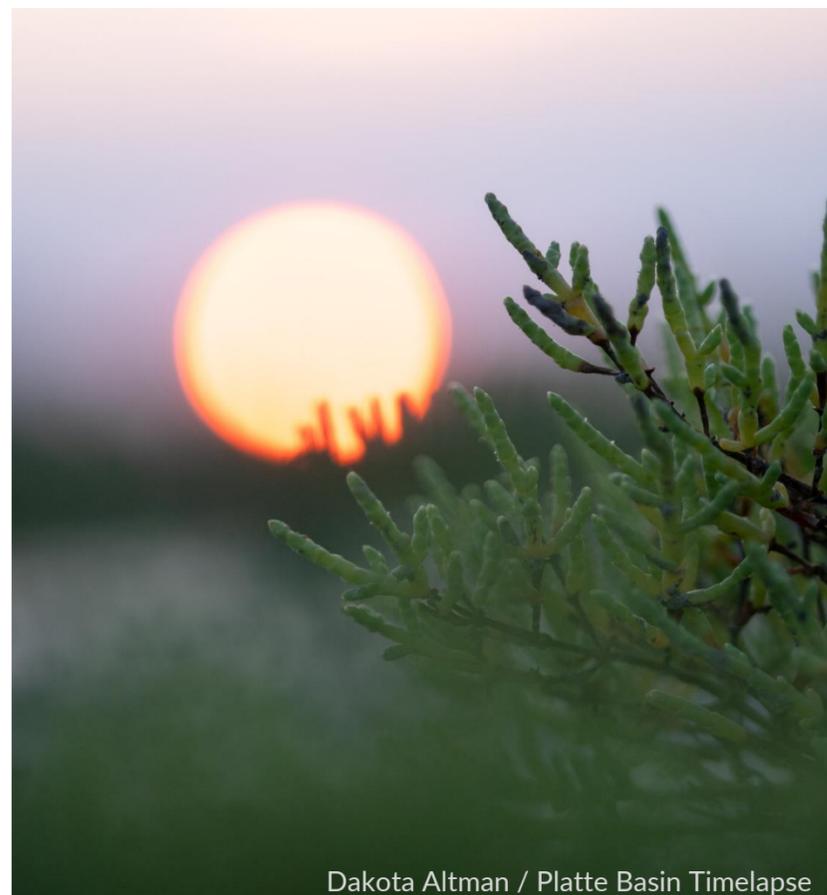
# Community Events

- Exploring wetlands
- Kayak programs
  - Kayak Clean Ups - Pro Environmental Behaviors
- Innovative ideas - accessibility, biking wetland tour, art/journaling



# Tracking Our Efforts

- Number of Community Events
  - Evaluate participants
- Evaluate Educators
  - Pre field school?
  - Post field school
- Evaluate Students
  - Pre field trip
  - Post field trip





# Making an impact for Wetland Conservation

How does the research support an approach like this project?

# Environmental Education methods used in this project Support Conservation

- Researchers at Stanford University analyzed 105 peer-reviewed studies to assess environmental education's effects on conservation outcomes.
- **This study offers compelling evidence that environmental education contributes to conservation and environmental quality in five key ways:**
  - (1) building knowledge, skills, and intentions to adopt environmental behaviors;
  - (2) adopting pro-environmental behaviors in participants' personal lives;
  - (3) taking direct environmental actions during the educational programs;
  - (4) building community conservation capacity; and
  - (5) measurably improving the environment.



Ethan Freese / Platte Basin Timelapse



Ethan Freese / Platte Basin Timelapse



Ethan Freese / Platte Basin Timelapse

“Based on a growing body of research foregrounding behavioral complexity, environmental education has moved away from suggesting a linear path from environmental attitudes to knowledge to action, now emphasizing a dynamic, complex ecosystem of relationships that influence behavior rather than earlier ideas derived from an information-deficit perspective (Marcinkowski and Reid, 2019; West, 2015).”

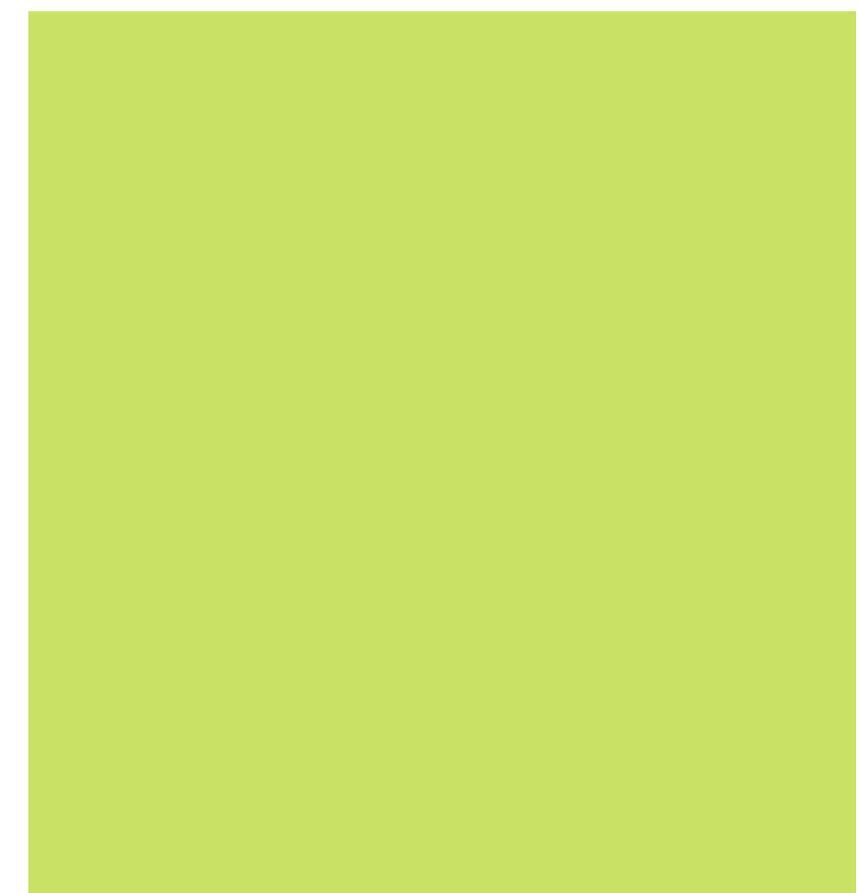
Ardoin, N. M., Bowers, A. W., & Gaillarde, E. (2020). Environmental Education Outcomes for Conservation: A Systematic Review. *Biological Conservation*, 241(10822), 1-13. <https://doi.org/10.1016/j.biocon.2019.108224>



**“...while educational initiatives clearly have a role to play in increasing ‘ecological literacy’ (Pitman and Daniels, 2020), evaluations show that simply increasing knowledge about conservation and environment issues does not necessarily lead to behavior change (Steg and Vlek, 2009; Moss et al., 2017; Otto and Pensini, 2017; Charles et al., 2018; Green et al., 2019)...**

**Nature Connectedness is a multidimensional psychological trait that refers to a person’s belief about the extent to which they are part of the natural environment, their emotional relationship with it, and their experience with it (Schultz, 2002; Mayer and Frantz, 2004).”**

Price et al. (2022). Factors associate with nature connectedness in school-age children. *Ecological and Social Psychology*, 1-13.  
<https://doi.org/10.1016/j.cresp.2022.100037>



# Building Bridges and Behaviors



This project aims to scaffold our wetland resources and experiences in a way that leads to changes in behavior that leave a more positive impact on wetlands conservation and biodiversity in Nebraska.

This takes time. It is multidimensional, collaborative, and requires communication, organization, intentionality, measurable data and a knowledge of both natural and social sciences.

We are prioritizing:

Community connections. Educator experiences. Local phenomena. Student-led exploration. Building bridges between each other and our wetlands.

# Check out all the Wetlands Outreach and Education Project has to offer & watch for more to come!



Videos that tell the story of each wetland type and two student centered videos



nebraskawetlands.com  
plattebasintimelapse.com



Guide to Nebraska Wetlands Publication  
Wetlandology Student Magazine



Conference presentations, educator workshops, community events, and more!



PLATTE BASIN  
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**Thank You!**

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