

# Trial for Terns

Nebraska  
Rare Species  
Educator Packet  
grades 5-12

## **OBJECTIVES**

• Students will (1) learn about one endangered bird species - Least Tern - including their life history and the reasons Least Terns are endangered and, (2) Students will evaluate the habitat requirements of Least Terns and how this effects the population of Least Terns.

## **METHOD**

Students conduct a class trial to learn other points of view and determine what is being done to help save Least Terns.

## **MATERIALS**

- access to research materials about Least Terns, endangered species, the Platte River, etc.
- access to the internet

## **BACKGROUND**

The Platte River has a long history in Nebraska. Its name comes from the French word "Plat" meaning "flat." Before this name, the river was known as "Nebraskier", after its Oto Indian tribe name, meaning "flat water".

The river forms from two tributaries - the North

Subject Areas: Science, Environmental Education, Language Arts

Duration: two or three 40-minute session

Group Size: 6-30 students

Setting: indoors, classroom

Vocabulary: sandbar,

Platte River and the South Platte River. The North Platte River starts in Colorado and flows into Wyoming before heading into Nebraska. The South Platte River begins in Colorado and flows into Nebraska. The two rivers join to form the Platte River near North Platte, Nebraska.

From here, the Platte River forms a wide, shallow, meandering river which flows across the entire state before draining into the Missouri River near Plattsmouth.

Along its journey across Nebraska, the shallow river forms hundreds of sandbars. The size and location of the sandbars change almost constantly due to the flow of water down the river. Larger sandbars may remain for years, but smaller sandbars may come and go in one season.

Historically, the sandbars were bare stretches of sand void of all vegetation. Any vegetation which did grow on the sandbars during the summer and fall months was washed away by high spring waters flowing down the river. These high waters were caused by the melting snow draining from the mountains of Colorado and Wyoming. Once the high waters receded in late May, the sandbars were ready for Interior Least Terns to nest.

Least Terns chose to nest on sandbars because of the lack of predators. Typical predators of Terns eggs and chicks include foxes, coyotes, skunks, domestic dogs, raptors, and river otters. These predators typically do not cross the water to sandbars and if they do, the wide open, vegetation-free environment allows Terns to easily see predators while still at a distance.

In the early 1900's, dams were build on both the



North Platte and South Platte Rivers. These dams and subsequent reservoirs were created to supply water for agriculture and the growing towns in the areas.

Because these dams held back much of the water from the spring snow melt, the Platte River did not receive the typical scouring rush of water each spring. This allowed the plants growing on the sandbars to remain and grow year after year.

As this vegetation grew, the vegetation-free sandbars decreased. Thus decreasing usable nesting habitat for Terns. The Terns either did not nest, or if they did, the nest was victim to predation. Either way, the population of Terns along the Platte River significantly decreased.

In 1985, the Interior Least Tern was officially listed by the U.S. Fish & Wildlife Service as an endangered species.

Since this time, the three states which impact the Platte River - Colorado, Wyoming, and Nebraska - have formed a group to help protect the river and ensure its flows are adequate for four threatened and endangered species which use the Platte River - Whooping Crane, Piping Plover, Interior Least Tern, and the Pallid Sturgeon. This group - The Platte River Cooperative Agreement - has used data from the U.S. Fish & Wildlife Service to determine how much water needs to be released from dams along the North and South Platte Rivers to ensure the Platte River has enough water for each of the four species.

Interior Least Terns are the smallest tern in North America. Characterized by a black crown, white forehead, and gray and black wings, Least Terns are long-lived bird with the average lifespan being 20-24 years. Beginning in late May, mating pairs lay 2-3 buff-colored, spotted eggs in shallow scrapes in the sand. Both the male and female incubate the eggs for 3 weeks. Chicks usually leave the nest within 2 days of hatching and begin flying at about 20 days.

Interior Least Terns nest along dry, exposed sandbars and beaches along the Platte and Missouri Rivers; occasionally a nest may be located along tributaries of the Platte and Missouri Rivers.

With the introduction of sand and gravel mining along the Platte River, Terns have begun using these areas to supplement their traditional river habitat. These sand and gravel pits provide additional habitat. And, with the help of local sand and gravel companies, the bird's nests are often protected from the industry.

## **PROCEDURE, PART I**

1. Begin the activity by talking to students about endangered species. Have students list several threatened or endangered species in Nebraska.
2. Discuss why species become threatened or endangered. Many times, the reason for a species' population decline is habitat loss.
3. Explain to students that they will be partaking in a classroom trial. In this trial, Interior Least Terns are suing the Platte River for not providing enough water to scour the sandbars and create suitable nesting habitat.
4. Divide the class into two groups - the Terns and the River.

Have the "Tern Group" research the following questions:

- What is the range of the Interior Least Tern? Where is it found in the winter? Where is it found in the summer?
- What habitat requirements does the Interior Least Tern have? Are there specific habitat requirements for nesting?
- What does the Interior Least Tern eat? And, what animals would prey upon them?

- Why does the Interior Least Tern prefer to nest along sandbars and gravel pits?
- What was the historic population size of the Interior Least Tern? What is its current population size? Why has the population decreased?
- Is the Interior Least Tern a threatened or endangered species? If so, when was it listed?
- What is being done to help protect the Interior Least Tern?
- Why is the Platte River so important in the natural history of the Interior Least Tern?

Have the "Platte River Group" research the following questions:

- Where is the Platte River? Where does it start, where does it end?
- What does this river look like? Why is the river known to have a "braided channel?"
- How does the water flow in the river change throughout the year? When is the river's water levels the lowest? When are they the highest?
- How does this change in water flow effect the land surrounding the river?
- What did historic water levels look like for the Platte River? What do water levels look like today?
- What is a hydrograph? Find a historic and current hydrograph for the Platte River.
- Why has the water flows of the Platte River changed over time?
- What has caused declines in the water levels of the Platte River? List several.
- How have humans effected water levels in the

Platte River?

- What animals use the Platte River? What animals are found year-round? What animals are only there during the spring? Summer?
- How has the Platte River effected the cultural history of Nebraska?
- What is being done to protect water levels in the Platte River?

## **PROCEDURE, PART II**

5. Ask each group - The Least Terns and The Platte River - to develop an opening statement for the trial. This opening statement should be 3-4 minutes in length and explain why their "side" of the story is correct. For example, the Least Tern group should explain why they are suing the Platte River and why the Platte River is at fault for the population declines of the Least Terns. The Platte River group should use their opening statement to detail why they are not at fault.

6. Also ask each group to prepare a list of witnesses to take the stand. Examples could include:
- a Least Tern
  - a Piping Plover, friend of a Least Tern also affected by low water levels
  - A Red Fox, a predator of Least Tern eggs and chicks
  - the Platte River
  - Platte River water consumers
    - farmers
    - ranchers
    - power companies
    - fish and wildlife
    - boaters
    - urban residents
  - a dam (several dams can be found upstream from Least Tern habitat)

7. Ask each group to provide the list of the witnesses they plan to call to the other group.

8. Each group should prepare a list of questions for their own witnesses and a list of rebuttal questions for the other group's witnesses.

9. Set-up the classroom in the style of a courtroom. Ask each group to select 1-3 students to be part of the jury. Each group should pick the same number of students. If your groups are larger, have each group pick 3 jury members, if your group sizes are smaller, have each group choose 1 or two jury members.

10. Officially open the trial and ask the Terns to give their opening statement. Then, have the Platte River give their opening statement.

11. Proceed with the trial asking the Terns to call witnesses followed by the Platte River witnesses.

12. Following the testimony of all witnesses, give groups 5 minutes to prepare their closing statements. Closing statements should be limited to 2-3 minutes.

13. Allow the jury 5 minutes to discuss and give their ruling.

14. Close the activity by discussing the trial with the students? Discussion questions could include:

- Is the Platte River really at fault?
- Who is at fault?
- How can this problem be solved? Is there just one solution?
- How can students help conserve water and wildlife habitat?

## **EXTENSIONS**

1. Ask an environmental lawyer to come talk to the class about water laws or water rights.

2. Ask a biologist or natural resource professional to come talk about managing water resources for both wildlife and human use. Or, talk about what is being done to help threatened and endangered species along the Platte River.

3. Have students look at other Nebraska threatened or endangered species and develop a trial to determine who is responsible for their population decline.

## **EVALUATIONS**

1. Evaluate students based on their participation in the research, preparation and conducting of the trial.

2. Have students prepare a simple report before the activity describing their beliefs as to who or what is responsible for the Least Tern's population decline. Then, have students write another simple report following the activity describing what they believe now, if their opinion changes and why or why not.

## **RELATED WEBSITES**

[Tern & Plover Conservation Partnership](http://ternandplover.unl.edu)  
[ternandplover.unl.edu](http://ternandplover.unl.edu)

[Nebraska Game & Parks Commission, Wildlife Species Guide](http://outdoornebraska.ne.gov/wildlife/wildlife_species_guide/ltern.asp)  
[outdoornebraska.ne.gov/wildlife/wildlife\\_species\\_guide/ltern.asp](http://outdoornebraska.ne.gov/wildlife/wildlife_species_guide/ltern.asp)

[Project BEAK](http://www.projectbeak.org)  
[www.projectbeak.org](http://www.projectbeak.org)

[U.S. Fish & Wildlife Service, Nebraska Field Office](http://www.fws.gov/nebraskaes)  
[www.fws.gov/nebraskaes](http://www.fws.gov/nebraskaes)

[Nebraska Game & Parks Commission, Natural Legacy Project](http://www.outdoornebraska.ne.gov/wildlife/programs/legacy)  
[www.outdoornebraska.ne.gov/wildlife/programs/legacy](http://www.outdoornebraska.ne.gov/wildlife/programs/legacy)

## **BOOKS & PRINTED MATERIAL**

[Can We Save Them? Endangered Species of North America](#) by David Dobson. ISBN-13: 978-0881068221

[National Geographic Rare: Portraits of America's Endangered Species](#) by Joel Sartore  
ISBN-13: 978-1426205750

## **PERMISSIONS & CREDITS**

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