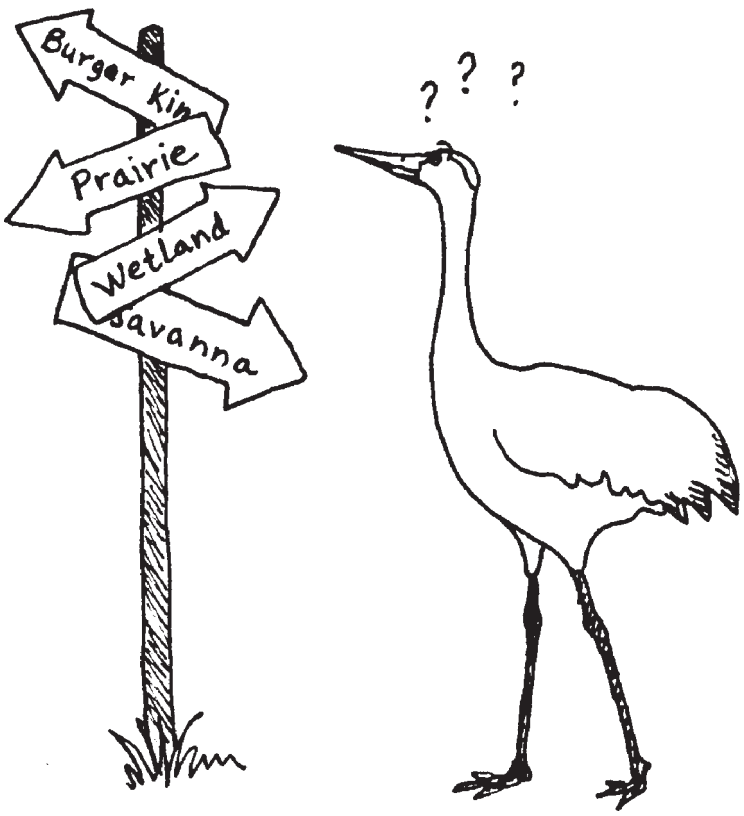
Cranes, Communities & Cultures



Classroom and
field trip activities
for grades 6-8

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Introduction

We're delighted that you are planning a field trip to the International Crane Foundation (ICF). This packet includes everything that you will need for a successful class trip, including field trip instructions, reference materials, student activity sheets, and post-field trip activities. The activities are designed to complement your field trip to ICF, providing an introduction to crane biology and natural community ecology, as well as an exploration of the relationship between humans and the natural environment. Please review the instructions on the following pages to ensure that you, your students, and their chaperones get the most out of your visit to ICF.

The materials for teachers, chaperones, and students are organized seperately You have permission to make as many copies as necessary of these materials.

Please fill out the evaluation provided and return it to us—we're anxious to improve our materials, and your comments are very helpful. If you would like to involve your class in the evaluation, ask your students to write a letter to ICF, explaining what they liked or didn't like about the field trip. If you would prefer to email us, please address your correspondence to the Visitor Programs Coordinator at ed@savingcranes.org.

Again, thank you for visiting the International Crane Foundation!

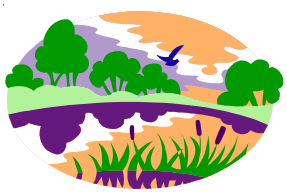
Table of Contents

The success of any field trip depends on how well prepared you, your chaperones, and your students are. The more background information your students have, the more questions they will ask, and the more they will learn. While it is not necessary to do anything in this packet prior to coming, it is helpful for students to have a fundamental understanding of what they will see and for your chaperones to understand their responsibilities.

This packet supplies instruction sheets, reference materials, and student activity sheets for you to use in preparation for your field trip, as well as post-field trip activities to use after you return to your classroom. We have listed the student activities in a suggested order, however you may wish to rearrange the activites to accomodate your lesson plans. The student activites are divided into 2 units that may either be used separately in your natural and social science classes or, alternately, may be used together for an interdisciplinary study of cranes in your classroom.

Teacher Instructions and Materials

Student Activity Sheets



Unit 1: Cranes and Biological Communities

Unit 1 focuses on the topics of crane biology and biological community ecology. The activities are divided into 5 sections that may be easily incorporatated either individually or as a complete unit into a variety of Science classes.

Cranes and Adaptations

The following activities introduce students to cranes, their common physical characteristics, and their adaptations for living in wetland and grassland habitats.

- Crane Facts
- What Is A Crane?
- Amazing Adaptations

Biological Communities and Habitat

Use these activities to explore the concepts of "habitat" and "biological community" with your class. The activities will guide your students in identifying key biological communities in southern Wisconsin, their importance as habitat for cranes and other wildlife, and their historic and present distribution in the state.

- Wetlands: Home Sweet Home
- What Community Are You In?
- The Conquering Heroes

Wetland Communities

The following activities provide a detailed examination of wetland communities, including a discussion of key wetland characteristicss and their benefits to wildlife and people.

- What Makes A Wetland?
- Understanding Soils: From Muck to Sand
- The Value of Wetlands
- Creepy Crawly Critters

Prairie and Savanna Communities

Use these activities to explore the components of prairie and savanna communities and the linkages between organisms within these communities.

- Where Is The Prairie?
- Oak Savanna
- To Save a Butterfly

Discussion / Written Questions

Use this set of activities to guide a discussion on the impact of personal values and human action on the natural environment. The third activity, "Using the Old Cranium," may be used as a review of crane biology and biological communities.

- You Make The Call
- Changes: Good or Bad?
- Using The Old Cranium

Unit 2: Cranes and People

Unit 2 introduces students to the role of cranes in human cultures. The activities are divided into 5 geographic sections representing the continents where cranes are found.

The activities examine how both ancient and modern people have incorporated cranes into their daily lives through symbolism, music, dance, and myth. Through these topics, the activities explore the larger theme of the relationship between humans and the natural environment. The activities are appropriate for Language Arts, Social Studies, Art, and Music classes.

North America

- Myth and Folklore
  How Crane Got His Long Legs
- People and the Natural Environment
- Whooping Cranes in the Red Earth Region

Asia

- Cranes for Peace
- Haiku
- Cranes and Music

Australia

- Myth and Folklore
  Brolga, the Dancing Girl
- Do a Dance…A Crane Dance
  Crane Dances
- As Time Goes By…

Africa

- Myth and Folklore
  Arap Sang and the Cranes

Europe

- A Snow Wreath?

Teacher Instructions

Preparing for the field trip:

*Brief students on the field trip. Students should be properly dressed for the weather. This includes comfortable shoes, raincoats, and warm clothing. **We will go outside even if it is raining**.

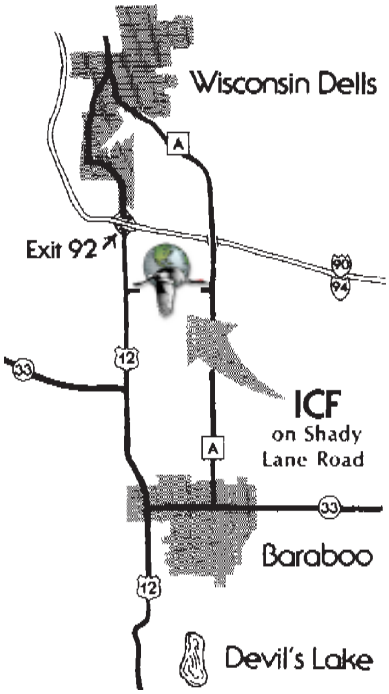
*Collect admission fees from students.

*Recruit as many chaperones as possible. Prior to the field trip, give each chaperone a copy of the "Chaperone Instructions" and "Introduction to Cranes."

*If you have any questions about the activities or the field trip, please call the ICF Education Department at (608) 356-9462, ext. 127 and we will be happy to help you.

1. Arrival and Introduction

A map to ICF is located to the right. Have the bus drop your students off at the Cudahy Visitor Center before parking. Please plan on arriving 15 minutes prior to the start of your tour to organize your group and to allow time for a restroom break, if needed. Note that there are restrooms only at the Cudahy Visitor Center. An ICF Naturalist will greet you, show the students into the theater, and direct you to the Gift Shop where you can pay for the group. The Naturalist will welcome your class, show a short slide show, and brief everyone on the activities to follow. After the introduction, your class may be divided into two or more groups. Each group will be led by a Naturalist and will participate in all of the activities, though not necessarily in the same order.



2. Observing the Cranes

The Naturalist will lead your group to the Johnson Exhibit Pod, where you will see thrirteen species of adult cranes on display. Two other species will be observed at the Wattled Crane Exhibit and the Amoco Whooping Crane Exhibit (see ICF Site Map). The Naturalist will lead the discussion on crane biology, current threats to cranes, the role of habitat protection in endangered species conservation, and ICF's work in international crane conservation.

3. Nature Trail

The Naturalist will lead the students on a short hike to view our on-site restoration work. At various stops, students will learn about the ecology of wetlands, prairies, and oak savanna ecosystems, their importance to cranes and other wildlife, how they have changed over time, and how ICF works to preserve or restore these ecosystems. Students will also view Crane City, our main breeding facility, from a distance.

4. Donnelley Family Education Center

Each group will visit the Donnelley Family Education Center to learn about raising crane chicks at ICF, and how we prepare young cranes for reintroduction into the wild. Other exhibits may also be featured during your visit to the Center.

Chaperone Instructions

Thank you for leading a group of students on this International Crane Foundation field trip!

Your involvement with the students is helping to foster stewardship and appreciation for our natural world that will last a lifetime. Your main responsibility will be to supervise your group. To help prepare for the trip, please obtain a copy of "An Introduction to Cranes" from the teacher and read it before the day of your visit. This introduction will allow you to answer questions that students commonly ask, but don't worry, we don't expect you to be an expert! You will probably learn a lot during the trip, too, so if you have questions about these magnificent birds or the places where they live, please ask!

We organize the field trip as follows:

An ICF Naturalist will welcome your group and show them into the auditorium. After a brief introduction and slide show, he or she may divide the class into smaller groups. Each group must have one or more chaperones. From the auditorium, each group will visit the following areas, though not necessarily in the same order.

1. **CRANE TOUR**
   The Naturalist will lead your group to the Johnson Exhibit Pod, where you will see thirteen species of adult cranes. The two other species of cranes will be found at the Wattled Crane Exhibit and the Amoco Whooping Crane Exhibit. The Naturalist will lead the discussion on crane biology, current threats to cranes, the role of habitat protection in endangered species conservation, and ICF's work in crane conservation.

2. **NATURE TRAILS**
   Exploring our nature trails gives students an opportunity to learn about the ecosystems that cranes use in the wild. The Naturalist will introduce your students to ICF's restored wetland, prairie, and oak savanna ecosystems, and will explain the importance of Crane City, our main breeding facility.

3. **DONNELLEY FAMILY EDUCATION CENTER**
   Each group will visit the Donnelley Family Education Center to learn about raising crane chicks at ICF, and how we prepare young cranes for reintroduction into the wild. Other exhibits may also be featured during your visit to the Center. An ICF Naturalist will lead the discussion.

When finished with the tour, the Naturalist will ask for final questions and then lead your group back to the Cudahy Visitor Center. If your students plan on shopping, please do not allow more than 10 students in the shop at one time. Please help supervise students in the Gift Shop after the tour.

We hope you enjoy being a chaperone, and **THANK YOU** for volunteering!
HAVE FUN ON YOUR TOUR!

An Introduction to Cranes

Cranes are one of the most vulnerable families of birds in the world, with ten of the fifteen species considered threatened with extinction. The two species of cranes in North America demonstrate the range of population sizes: over half a million sandhills live here, while fewer than 300 whooping cranes survive in the wild. Sandhill cranes are considered to be one of the oldest known living species of bird, with fossil evidence showing sandhills in North America almost ten million years ago. Of the seven continents, only South America and Antarctica lack cranes.

Herons, storks, and spoonbills also have long legs, necks, and bills and look similar to cranes, but are not closely related. Rather, the different families have evolved similar adaptations to a common wetland habitat. In actuality, the smaller coots, rails and limpkins are the closest relatives to cranes.

Individual and Social Behavior

Cranes pursue each other, or small prey, by running. A running crane takes one to three steps per second and may extend its wings for more speed or balance. While ungainly looking, cranes can outrun a human. All cranes can swim, but adults usually avoid it unless necessary. Chicks are active a few hours after hatching, and must swim if they are to follow their parents, since most cranes nest in wetlands.

Feathers give cranes both the ability to fly and to regulate their temperature. Made of the same material as human fingernails and hair, feathers require constant attention. A crane preens by nibbling the base of a feather and then drawing it through the bill. This is particularly true for the large flight feathers. Feathers are replaced during a seasonal molt, when old feathers are pushed out by emerging new feathers. Most species of crane are flightless during this period, and usually molt during chick-rearing. It is not unusual for flightless cranes to stay near heavy cover until they and their young can fly.

When preening, cranes smear their feathers with oil from an oil gland located on the upper side of the tail. Contrary to previous belief, the oil does not serve as waterproofing, but helps condition the feathers and may have fungicidal and antibacterial properties. Prolonged preening follows water or dust bathing.

Some sandhill cranes also "paint" themselves by preening mud into their feathers prior to the breeding season. Painting is an important camouflage tactic that helps sandhills hide amid the brown vegetation in a springtime marsh. Siberian cranes also paint themselves near the base of the neck as part of a breeding ritual.

Displays and Vocalizations

Cranes are aggressive birds. When fighting, they leap into the air to rake opponents with their sharp claws. This continues until one bird runs or flies away. But fighting is dangerous, so cranes have developed a complex system of warning behaviors to prevent combat.

Communication with other cranes includes physical postures and vocalizations. Crouch threats, ruffle threats, drop-wing threats, and flight intention postures are some of the behaviors you may see during your visit to ICF. Most crane species use a red patch of skin on the head as a warning display. Cranes can pump extra blood to the patch, turning it a bright crimson, and then point the patch at an invader or opponent.

The contact call is a soft, purring call made by adult cranes. This call alerts other cranes to the caller's whereabouts. The young have a high-pitched, peeping contact call. Chick distress calls are louder than their contact call, and parents react quickly to them. Beyond an age of about three months, chicks are able to perform the guard call, a single loud call that warns other cranes of danger.

The most significant vocalization is the "unison call." A pair gives the unison call together either to form and strengthen pair bonds or to enforce territory boundaries. In many species, the female has a two-note call while the male has a single-note call. Males of some species, such as the white-naped crane, Siberian crane, and brolga, may flex their wings while unison calling. Members of a pair usually stand within a few feet of each other while unison calling.

A unique call made by the grey crowned cranes is "booming." The birds use their gular sacs to develop resonance. The gular sacs are the small red pouches hanging below their chins. Crowned cranes also use a "quack" call to locate their mates.

Flight and Migration

Cranes typically run into the wind to achieve the speed necessary for flight. Cranes may fly as fast as fifty two m.p.h. without a helping wind during level, flapping flight. When soaring in thermals (updrafts of warm air), cranes will circle until they reach a desired altitude, usually between 3,000 and 5,000 feet. They then leave the thermal and glide forward while losing altitude. Next, they find another thermal and repeat the procedure. Some species, though, fly much higher to clear mountain ranges.

Flapping flight is an energy-intensive activity. Although soaring in thermals is slower than level flapping flight, it conserves energy. Cranes usually spend two days feeding for every day they fly during migration. Daily flights may range from a few miles in bad weather to several hundred miles if suitable stopover points are unavailable. Cranes also fly further on days when there are favorable winds. Cranes begin their migration in families or small groups. As migration progresses, however, groups join to form flocks of up to several thousand birds.

At night, migrating cranes roost at "staging areas" in water that is deep enough to cover their toes. Staging areas consist of safe roosting sites in shallow marshes or on submerged sandbars in rivers. There are usually good foraging areas within a short flight of the roosting sites. Examples of staging areas used by sandhills include the Platte River (Nebraska), Jasper-Pulaski State Wildlife Area (Indiana), and the Sandhill Wildlife Demonstration Area (Wisconsin).

Nesting and Reproduction

Cranes have low reproductive capabilities. A pair will produce only one or two chicks each year, but that production will continue through most of their twenty to thirty year life-span. Their survival strategy is the opposite of short-lived animals, like rabbits or mice, with high reproductive rates. Cranes typically do not begin breeding until three to four years of age, and some species, like the Siberian crane, may not nest until they are five to seven years old.

Cranes are territorial during the breeding season, with each pair defending an area in which it will attempt to raise young. Sandhills may nest in areas of less than five acres, but the average territory size is larger than fifty acres. Larger crane species typically have larger territories. Territories will tend to be smaller in areas of abundant food, good nesting habitat, higher population densities, and little disturbance from predators or humans.

It takes a crane pair from one to seven days to build a nest. Once the female lays the eggs, the pair shares incubation duties. The "nest exchange," or switching of incubation duties, occurs about every two hours, giving both birds a chance to feed and exercise.

The time of hatching coincides with the emergence of insects that the young will feed on. This timing is particularly important for migratory cranes so the young can grow and gain enough size and strength to migrate before winter sets in. Timing of nesting is less important with non-migratory cranes.

Most species of crane lay two eggs, but usually only one chick survives. The chicks are aggressive and often fight until one is driven away from the family group or dies from lack of attention. The remaining chick then has the complete attention of both parents and has a very good chance of surviving, even when food is scarce.

Both parents feed the chicks, but the male usually feeds them first. The newly hatched chick may be offered small pieces of the egg shell. The rest of the shell may be eaten by the female or carried away and discarded. Both parents brood, or sit over, the young birds to protect them from cold and precipitation. Brooding is important, since the chick cannot control its body temperature for the first few days after hatching. The family may leave the nest a day after the second chick hatches, but return to the nest in the evening for several days. The young birds may beg for food by "bill-touching" with their parents.

Cranes as "Flagship" Species

Biological communities are a complex web of life, incorporating all the organisms that exist in an area. In many of these communities, cranes occupy one of the upper levels of the food pyramid. Since they are dependent upon so many other species below them, biologists consider cranes to be flagship species; the health of the crane population is often a good indicator of the health of the ecosystem as a whole. By working to protect cranes, we work to protect all the other community members which may not be as conspicuous or easily recognized.

Wetlands

Most of the world's crane species rely on wetlands for their survival. Within these complex ecosystems, cranes find the necessary resources to survive.

Feeding is one of a crane's most time consuming activities. In wetlands, food is abundant in many forms: seeds, small mammals and reptiles, eggs of other birds, insects and other invertebrates, such as worms, clams, and crayfish. In addition, cranes find valuable carbohydrates in the starchy tubers growing on the roots of many wetland plants. Cranes are well-adapted to such food sources, with long beaks and necks which allow them to probe deep into the water and muck of a wetland.

The tall vegetation of a shallow marsh also helps hide cranes from predators, especially while nesting. In deeper marshes, cranes build massive nests sometimes five to six feet across and high enough that the water doesn't touch the eggs. Often a "moat" forms around the nest because the cranes use so many of the nearby plants for constructing the nest. The standing water protects the birds, as the noise of splashing will alert the parents of an approaching threat.

Many other creatures also make their homes in the wetland community. It is estimated that over one third of all threatened or endangered species in the U.S. are found in wetlands. Mammals such as beavers, muskrats, rabbits, and deer depend on the food and shelter of wetlands, as do waterfowl and other migratory birds.

Humans, too, reap many benefits from wetlands. Wetlands are known to reduce or prevent flooding and remove pollutants and sediment from surface water. As a source of food for humans, wetlands provide spawning grounds for about 90% of the fish and shellfish harvested in the coastal U.S.

Despite these benefits, wetlands continue to decline throughout the world. Often considered only as useless waste areas, wetlands have been drained, filled, plowed, and developed. Their seasonal nature can make them difficult to identify, and many are destroyed during dry periods when it appears they are no longer functional. Yet in most cases, dry spells of a few months to a few years are natural, and do not reduce the value of the wetland.

Wisconsin retains only about 54% of its original wetlands. Since the 1800s, almost half of the wetlands in the contiguous U.S. have been destroyed, and approximately 300,000 additional acres are lost every year. Not only does this trend threaten the plants and animals which live in wetlands, but it also threatens human communities which rely on wetland processes.

Prairies

In addition to their reliance on wetlands, most cranes will also use upland areas for feeding. Demoiselle and blue cranes nest in upland areas, and show physical adaptations, such as their shorter bills, for feeding on insects and seed pods that they find there.

Prairies were common throughout the Midwest before Europeans settled here in the 1800s. Prairie communities host hundreds of species of grasses and flowers, which support many mammals, insects, and birds, including cranes.

Specifically adapted to survive the Midwest's extremes of temperature and moisture, prairie plants invest two-thirds of their growth underground. Roots may reach up to eighteen feet down in the soil to insure that the plant will be able to find water during times of drought. This deep root system is one reason why prairie soils were resistant to erosion before being cut by the plow. Ironically, the rich soils which prairies developed made them very attractive as farmland and pasture. In Wisconsin today, only 0.1% of the original two million acres of prairie remains.

Another factor in the decline of prairies has been the disappearance of the forces that sustain them. Fires periodically swept the landscape and removed woody vegetation. Large herbivores such as bison and elk also removed young trees by grazing and browsing. Both processes served to remove above-ground vegetation and return minerals to the soil where roots could gain access to them. Removal of fire, bison, and other large herbivores from Wisconsin allowed woody vegetation like sumac, cedar, and aspen to invade the prairies.

Oak Savanna

One tree that is able to survive the effects of fire is the bur oak. This tree has evolved a thick, corky bark, which insulates living tissue from the extreme heat of a wildfire. The resulting mosaic of open grown trees widely scattered over a landscape of grasses and flowers, called savanna, was once the dominant ecosystem in the lower half of the state, with over seven million acres present in 1840.

In this oak savanna setting, light conditions on the ground vary from open sun to complete shade. Both sun-loving prairie plants and shade-tolerant forest species will thrive in very close proximity. The result is an incredibly rich diversity of plant and animal life. Unfortunately, savannas are also extremely rare. Today, only 1,360 acres remain in Wisconsin.

Academic Standards

To assist you in planning your visit to the International Crane Foundation, we have compiled the following list of Wisconsin Model Academic Standards fulfilled by a field trip to our site and the completion of the provided student activities. An asterisk (*) next to the standard indicates that a field trip to our site aids in fulfilling the standard. All other standards require both a site visit AND completion of pre-visit and/or post-visit student activities.

To assist you in identifying the activities that satisfy your classroom needs and goals, the standards that apply to each of the 2 units are identified separately. Note that the stardards apply to the unit as a whole and do not apply to individual activities within the unit. The standards for Unit 1are reproduced from *Nature Net's Guide to Wisconsin Model Academic Standards* (Grade 8), which is also available on Nature Net's website at www.naturenet.com.

Unit 1: Cranes and Biological Communities

Environmental Education: A.8.1*, A.8.2, A.8.4, B_1.8.2, B_1.8.3, B_1.8.5*, B_1.8.6, B_1.8.8, B_2.8.4*, B_2.8.5, B_2.8.6, B_2.8.10*, C.8.1, D.8.1, D.8.2, D.8.5, D.8.6, D.8.7, E.8.1

English: A.8.1, A.8.2, A.8.3, A.8.4, B.8.1, B.8.3, C.8.1, C.8.2, C.8.3, D.8.1, D.8.2, E.8.1, F.8.1

Mathematics: A.8.1, A.8.2, A.8.3, A.8.4, A.8.5, A.8.6, B.8.1, B.8.2, B.8.3, B.8.5, B.8.7, E.8.1, E.8.2, E.8.4, F.8.2, F.8.3, F.8.4

Science: A.8.1, A.8.4, A.8.8, B.8.2, B.8.4, B.8.5, C.8.1, C.8.11, E.8.1, E.8.5, E.8.6, F.8.2*, F.8.7, F.8.8, F.8.9*, F.8.10*

Social Studies: A.8.4, E.8.15

Unit 2: Cranes and People

Environmental Education: A.8.1*, A.8.4, A.8.5, B_1.8.5*, B_1.8.9, B_1.8.10, B_2.8.1, B_2.8.4*

English: A.8.1, A.8.2, A.8.3, A.8.4, B.8.1, B.8.3, C.8.1, C.8.2, C.8.3, D.8.1, D8.2., E.8.1, F.8.1

Mathematics: A.8.1, A.8.2, A.8.4

Science: B.8.1, B.8.2, B.8.4, B.8.6, E.8.6, F.8.8, F.8.10*, G.8.3

Social Studies: A.8.8, A.8.9, B.8.1, B.8.10, E.8.3, E.8.9, E.8.10, E.8.13, E.8.14

Activity Answers

Unit 1: Cranes and Biological Communities

The Conquering Heroes?

Currently, it is estimated that 54% of original Wisconsin wetlands, 0.1% of prairies, and 0.01% of savanna remain.

If Wisconsin has a surface area of 56,153 square miles and there are 640 acres per square mile, then 56,153 x 640 = 35,937,920 acres in Wisconsin. To calculate a classroom model of Wisconsin, first find the area of your classroom in square feet or square meters. Find the percent of Wisconsin land still existing as wetland, (5,400,000 wetland acres / 35,937,920 total WI acres = 0.15) and then multiply this ratio by the size of your class room. A 1,000 square foot classroom would have about 150 square feet of wetland, 8 square inches of prairie, and 5.5 square inches of savanna.

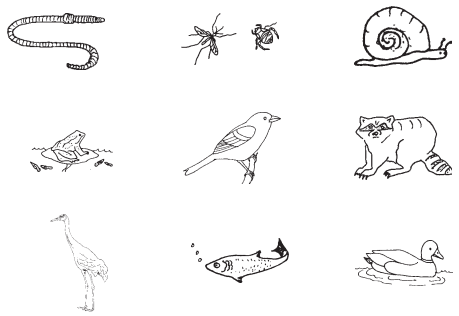
If there were 200 million acres of wetlands in the U.S. at the time of European settlement and only 52% remain, then 200,000,000 x .52 = 104,000,000 acres are left today.

Creepy Crawly Critters

1. Fish, snails, cranes, frogs, and waterfowl benefit from wetlands with permanent water. Raccoon and some insects would prefer lower water on occasions.

2. See the diagram to the right for the food web answers. Six of these animals (frogs and tadpoles, insects, snails, worms, fish, and even young red-winged blackbirds) would be eaten by cranes. Many birds, reptiles, amphibians, and mammals live in wetlands.

Food web answers



Oak Savanna

1. Bur oaks will have a better chance of surviving because their bark protects them from the fire's intense heat.

2. Because it grows faster, the maple will shade out the shorter oaks in an area where no fires occur.

To Save a Butterfly

1. The Karner blue butterfly depends directly on nectar plants, ants to tend larvae, and wild lupine for egg-laying. Indirectly, the Karner blue also depends on the relationships which sustain the lupine: insects for pollination, bacteria for seed germination, and ants for creating open patches of ground. If any of these organisms disappear and the relationships are broken, the Karner blue will disappear, too.

2. Cranes will not be able to raise chicks and will not adapt to nesting in other biological communities.

3. Relationships between different species are often difficult to understand. Yet they may have far reaching consequences. By trying to preserve an entire community, many of the relationships that we are not even aware of will be preserved as well.

Discussion / Written Questions

The student discussion questions have no simple answers, but should stimulate thinking about natural systems and the ways people can interact with nature. Whether or not students write down their own answers to the worksheet questions, the exercise should include a group exchange of ideas.

You Make the Call

This page is intended to encourage students to think about the effect of values on decision-making and to identify which values might compete with ecological values.

Changes: Good or Bad?

1. It depends on the type of change! Cranes are adapted to many natural changes; they migrate in spring and fall as the seasons change, they move from one part of a wetland to another as water levels change, they find different foods as seeds ripen, insects hatch, and cornfields are harvested. But cranes will disappear if all wetlands are rapidly converted by people to cornfields or parking lots.

2. People change the environment too quickly for cranes and many other animals to adjust. When people change almost all the wetlands or prairies, some animals and many plants disappear. They have nowhere else to go.

3. No. In order for people to survive, they need to find food, homes, and clothing. In pursuing these things, we change our environment--sometimes so much for our benefit that wildlife must move. But if we leave some places wild and are careful with our natural resources, there will be room for wild plants and animals.

4. When naturally occurring fires were stopped by early European settlers, shrubs and trees began to invade the prairies and savannas. Fires now need to be set in the remaining prairies to simulate these natural fires to prevent trees and shrubs from invading. Also, people need to help limit the growth of exotic plants from other continents, which can dominate native species. By collecting and planting native seed, people can recreate natural areas where they no longer exist.

5. Students will have their own answers to this question. While some people like change more than others do, everyone needs a mixture of change and stability to be happy.

6. People can learn the skills to live almost anywhere. For instance, people live from the freezing cold winters of Siberia to the hot, humid wetlands of Southeast Asia, and from the high mountains of Tibet to the tropical islands of Hawaii. Our success at living in these very different areas is often dependent on our ability to modify our environment by building houses to protect us from bad weather, farming both plants and animals, fashioning clothes to protect us from the elements, or developing tools to aid in extracting precious resources, such as water, from sometimes hostile environments. Most cranes, however, are far more specific in their habitat needs. For instance, most species need wetlands in which to nest. If wetlands are destroyed, the cranes must move to undisturbed areas, or die.

Using the Old Cranium

1. Worms, insects, mice, frogs, tadpoles, fish, bird eggs, young birds, leeches, snakes and salamanders are some of the animal life cranes will eat. Cranes will also eat tubers, roots, and new shoots of many plants. Chicks need a diet with lots of protein content during their early growth, and adults need extra protein during egg-laying and incubation. A high-carbohydrate diet is needed to supply energy and endurance during migration.

2. In North America raccoons, wolves, coyotes, foxes, bears, bobcats, eagles, owls, and hawks are threats to crane eggs and the young birds.

3. Predators trying to approach roosting or nesting cranes are likely to splash water alerting the cranes to their approach.

4. Long legs, beaks, and necks are adaptations allowing the cranes to forage beneath the water in areas where many other birds have difficulty reaching. Most large wading birds have the same physical adaptations, including herons, spoonbills, egrets, and storks.

5. The beak of a crane is long, slender, and pointed. This makes it an effective tool for probing beneath the surface of the wetland looking for food.

6. Humans have adaptations as well. A *physical adaptation* would be our thumb that allows us to grasp tools and a brain which allows us to reason out problems. *Behavioral adaptations* might include driving less by combining trips to conserve gasoline.

7. Texture, because it tells us about its water-holding capabilities; the color, because color indicates the amount of organic material in it; and the soil profile, because that tells us the soil's history. Topsoil is black because it has a high amount of organic matter in it.

8.
   a. groundwater recharge; direct
   b. flood control; direct
   c. pollution control; direct and indirect
   d. food sources; direct
   e. commercial fishing opportunities; direct
   f. recreational fishing; indirect
   g. home to 1/2 of all endangered animals and 1/3 of all endangered plants; indirect

9. Oak savanna. Because it grew here.

10. This layer of soil contains many of the nutrients needed by plants to grow--it is the layer in which almost all of our food crops grow.

Unit 2: Cranes and People

Many of the activities within this section are exploratory in nature and allow for a variety of interpretations. We have included the following suggestions for selected activities to help guide class discussion and examination of the activity themes.

North America: People and the Natural Environment

Using the account of the history of whooping cranes near the Red Earth Indian Reserve in Saskatchewan, this activity examines how people learn about the natural environment through personal experience and observation, as well as the impact of humans on the natural landscape.

The account describes a historically close relationship between the Cree and the natural environment. This relationship is a result of direct observations and experience due, in part, to the Cree's traditional dependence upon their local natural resources for survival. Following are selected excerpts from the account that students may use in illustrating this relationship between the Cree and the environment.

• **Observation of crane habitat**: "they [whooping cranes] were walking in the water on the edge of the marsh;" "saw white cranes out on the prairies"

• **Observation of crane nesting behavior**: the nest was "just a few sticks on the ground in the swamp" with three eggs

• **Cree use of natural resources**: "My grandfather, Okimawipimotew, tried to kill them [whooping cranes]...He got very close but they flew before he shot;" "I was with a hunting party that was after moose on Kennedy Creek;" "he found three eggs in the nest and he took them to be eaten"

The account contains several possible clues as to why the whooping crane is no longer found in the region today. Students may cite hunting or egg collection as the most obvious possible cause. However, the account also refers to more subtle historical changes in the landscape that may have directly affected the whooping crane's habitat. For example, the following excerpts describe changes in the human landscape with the arrival of European settlers, and the resulting changes in the natural landscape as local land use practices changed in the region.

• "Miikwanaakeskam said he saw lots of white cranes **out on the prairies before the white man came**."

• "My grandfather saw whooping cranes here a long time ago in the spring. They were walking in the water on the edge of the marsh. **That was before the willows grew up there**."

Two factors that may have contributed to the growth of the willows in the marsh are fire suppression and soil erosion. Prairie fires set by lighting and Native Americans historically limited the growth of woody trees like willows, which may use up the water that feeds a wetland. With the arrival of European settlers in the Red Earth area, fire suppression may have resulted in the establishment of willows in the wetland. The second factor, soil erosion, may have resulted from changes in land use around the area, such as agriculture or cattle grazing introduced by the new settlers. Increased soil erosion into the wetland would encourage the establishment of larger shrubs and trees, such as willows. With the change in vegetation in the marsh, suitable habitat for the whooping cranes was reduced.

North America cont.

• "In the 1930s there was a big forest **fire**, which burned through the whole territory to the north of Red Earth. If came from the west, from the **farming settlement**, and it burned across Kennedy Creek and as far east as the Sipanok Channel. **After the fire we didn't see the whooping cranes anymore**."

Fire suppression also leads to the accumulation of high fuel loads that, when a fire does start, can burn much hotter than normal. The resulting fire could destroy both crane nests and habitat, such as the vegetation near Kennedy Creek, that might otherwise recover from a fire.

Asia: Cranes as Symbols

This activity examines the characteristics and values that people identify with abstract symbols. People often choose birds as symbols because they represent certain characteristics, such as strength, intelligence, or beauty that we feel are important or valuable. For example, the bald eagle is equated with strength and courage, and, as the symbol of our country, it imparts these characteristics to the people of the United States.

Australia: Crane Dance

People may incorporate the crane dance into their cultures for a variety of reasons. They may admire the beautiful movements of the crane and naturally copy these motions in their dances. People may also copy crane dances because the birds have a special meaning to them, or they believe that by dancing like the crane they take on the spirit of the bird to perform special traditions or prepare for important events.

Africa: Arap Sang and the Cranes

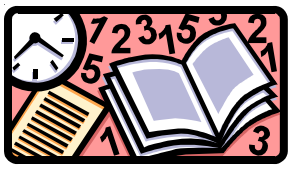
The moral of "Arap Sang and the Cranes" is to think carefully before bestowing a gift upon a person. As Arap Sang laments at the end of the story,

"I'm old and I'm foolish," he said, "and I harm my friends. I had forgotten that men also were greedy and selfish and that they'll do anything for gold. Let me undo the wrong I have done by **giving without thought**."

Europe: A Snow Wreath?

To the soldier in the poem "Cranes," the birds symbolize fellow soldiers lost in battle. This belief may stem from the meaning that the cranes hold for the soldier as both a pure and somewhat otherwordly creature. For example, the poem contrasts the white plumage of the Siberian crane with the soldiers who died in "bloody fight" - a gruesome death that is made pure by the symbolism of the white bird. The crane is also both a part of the soldier's world (the soldiers often see the cranes), as well as distant (the cranes are described flying in the sky far overhead). This contrasting view of the crane may reflect the feelings that he has for his fallen fellow soldiers, who are both close in his memories and very much removed in death.

After the Field Trip...



PROJECTS, PROJECTS, AND MORE PROJECTS

Have your class choose one or several projects to continue their environmental involvement and education. We have provided several suggestions for you on the following page.

READ ON!

Talk with your school librarian and have a table arranged with books on wildlife and environmental issues. The books and magazines listed on the sheet provided are ones which your students could pursue independently. You may want to provide a copy of this list to your school librarian, as well.

SPECIES DATA SHEET

Assign students a species of crane and have the students research their species. The data sheet provided guides the students in composing a biography of the species, complete with drawing, range map, status, and threats. This activity can be completed with the help of references from the "Read On" sheet and may be done either before or after your visit to ICF. After completing the data sheets, teams of students can put together a compendium of all 15 species with their own introduction and summary.

EVALUATION

Please fill out the evaluation provided and return it to us—we're anxious to improve our materials, and your suggestions are very helpful. If you would like to involve your class in the evaluation, ask your students to write a letter to ICF, explaining what they liked or didn't like about the field trip. If you would prefer to email us, please address your correspondence to the Visitor Programs Coordinator at ed@savingcranes.org.

Notes...

Projects, Projects, and More Projects!!

1. Become a member of a conservation organization. Your donation will support conservation programs, and you'll receive additional materials, such as a quarterly magazine or newsletter. Most organizations accept memberships with a donation as low as $15.00. We have provided a list of possible organizations to get you started:

• International Crane Foundation
E-11376 Shady Lane Road
Baraboo, WI 53913
www.savingcranes.org

• The Nature Conservancy*
4245 N. Fairfax Drive, Suite 100
Alington, VA 22203-1606
www.nature.org

• National Audubon Society*
700 Broadway
New York, NY 10003
www.audubon.org

• World Wildlife Fund-U.S.
1250 Twent-Fourth Street, NW
P.O. Box 97180
Washington, DC 20090-7180
www.worldwildlife.org

• National Wildlife Federation
11100 Wildlife Center Drive
Reston, VA 20190
www.nwf.org

• American Museum of Natural History
Central Park West at 79th Street
New York, New York 10024-5192
www.amnh.org

• Cornell Laboratory of Ornithology
159 Sapsucker Woods Road
Ithaca, NY 14850
www.birds.cornell.edu

*These organizations have local chapters that may provide opportunities to become involved in conservation projects in your area. When you become a member of the national organization, the local chapter will also send you additional information.

2. Adopt a crane! By making a donation to ICF, your class can help support our captive breeding, reintroduction, habitat protection, and education projects around the world. Classes have raised money with bake sales, popcorn sales, dances, raffles, labor auctions, aluminum can drives, paper drives, and "Coins for Cranes" collections. To adopt a crane, contact the Visitor Programs Coordinator at ICF.

3. Plant a prairie garden. This is something you can do in your own backyard or school grounds to protect rare plants and learn more about native prairies. Besides, prairie flowers are beautiful and interesting. A good reference on how to start your own prairie is *The Prairie Garden*, by J.R. Smith.

4. Participate in the Annual Midwest Crane Count. Each April, ICF recruits volunteers from Wisconsin, Minnesota, Michigan, Iowa and Illinois to survey wetlands for sandhill and whooping cranes. For more information, write to: Outreach Coordinator, in care of ICF.

5. Build bird houses. Many birds like to nest in hollow trees. But since dead trees are often cut down, there is often a shortage of nesting cavities. If you build boxes of the right size and put them in the right kind of habitat, you can attract birds such as bluebirds, wood ducks, kestrels, house wrens, or screech owls. You can find plans for bird boxes in the following books: *How to Attract, House, and Feed Birds*, by Walter E. Schutz and *Homes for Wildlife*, by Edmund J. Sawyer.

Read On!

The more you know, the more you can help! To keep learning about wildlife and the environment, find the following books at your school or public library.

Cranes

Doughty, Robin. *Return of the Whooping Crane.* University of Texas Press. 1989. This book charts the recovery story of the whooping crane from the brink of extinction.

Grooms, Steve. *The Cry of the Sandhill Crane.* Northword Press. 1991. Detailed natural history of the sandhill crane, with a short chapter on the other 14 crane species.

Johnsgard, Paul. *Cranes of the World.* Indiana University Press. 1983. Detailed reference book, including a comprehensive description of crane biology, range maps, history, habitats, and behavior.

Schoff, Gretchen. *Reflections: The Story of Cranes.* International Crane Foundation. 1991. All 15 species of cranes and the problems they face are described in this concise book.

Environmental Action

Environmental Action Coalition. *It's Your Environment.*

The Earth Works Group. *50 Simple Things Kids Can Do to Save the Earth.*

Getis, Judith. *You Can Make a Difference.*

Love, Ann and Ann Drake. *Take Action: An environmental book for kids.*

Miles, Betty. *Save the Environment: An ecology handbook for kids.*

Newkirk, Ingrid. *Save the Animals: 101 easy things you can do.*

Field Guides

Audubon Society Pocket Guides. *Familiar Butterflies*, *Familiar Insects and Spiders*, and *Familiar Reptiles and Amphibians.*

Benyus, Janine. *The Field Guide to Wildlife Habitats of the Eastern U.S.* and *Northwoods Wildlife.*

Reader's Digest Association. *North American Wildlife.*

Stokes Nature Guides. *Observing Insect Lives*, *Nature in Winter*, and *Bird Behavior I and II.*

Nature/Ecology

Burroughs, John. *Songs of Nature.*

Durrell, Gerald. *A Zoo in My Luggage and Birds, Beasts, and Relatives.*

George, Jean. *My Side of the Mountain.*

Kipling, Rudyard. *Elephant's Child and The Jungle Book.*

Maser, Chris. *Forest Primeval.*

Maxwell, Gavin. *Ring of Bright Water.*

Mitchel, John and The Massachusetts Audubon Society. *The Curious Naturalist.*

Teale, Edwin. *The Wilderness World of John Muir.*

Watts, Mary. *Reading the Landscape.*

White, E.B. *Trumpet of the Swan.*

Wong, Ovid. *Hands-On Ecology.*

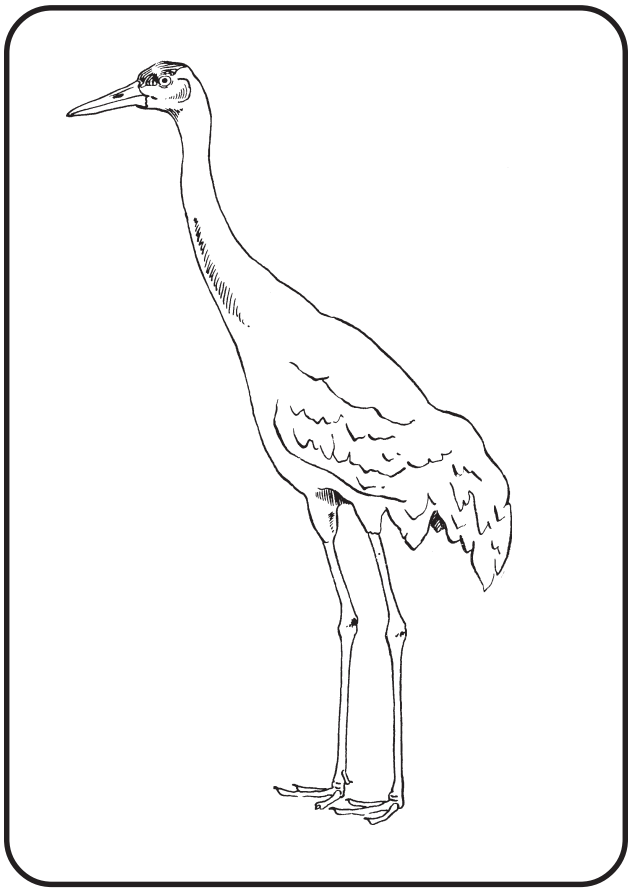
Magazines

Audubon	Living Bird Quarterly	National Wildlife
Natural History	Nature Conservancy News	International Wildlife

Species Data Sheet

Crane Species

Status (threatened/non-threatened)

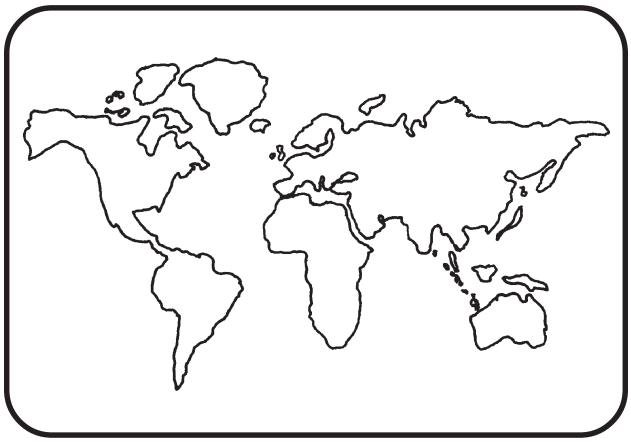


Description (height, wingspan, distinguishing marks and coloring):

Habitat:

Threats:

Management:



Range Map

Oh, My Words

ADAPTATIONS: (PHYSICAL and BEHAVIORAL): Changes in body form or behavior that allow an animal or plant to survive and reproduce more successfully. Long legs, necks, and beaks are *adaptations* that cranes have that allow them to feed in wetlands.

BIODIVERSITY: The variety of life forms, the ecological roles they perform, and the genetic diversity they contain. Prairies generally contain more *biodiversity* than parking lots.

BIOLOGICAL COMMUNITY: A collection of plants, animals, and other commonly interacting organizims in the same area. Cattail marsh, oak savannas, and tallgrass prairies are examples of *biological communities* found in Wisconsin.

CONSERVATION: Planned management of natural resources to retain natural balance, diversity, and evolutionary change. To *conserve* a national park means to preserve it in its natural condition. But to *conserve* gasoline, means to find ways of reducing our consumption of it.

CROWN: The upper part of a tree, including leaves and branches. The *crown* of an oak is rounded and full if the tree grows in the savanna.

DROUGHT: An unusually long period without precipitation, during which the water content in the soil drops. In severe *droughts* some plants and animals may not be able to find enough water to survive. Most *droughts*, however, are less severe with only weak or sick individuals dying; some plants and animals may not reproduce due to the added stress of drought. *Droughts* are more common in sandy areas, since these soils do not readily hold water.

ECOSYSTEM: A system made up of a community of animals, plants and bacteria and its interrelated physical and chemical environment.

ENDANGERED: When there are very few of a plant or animal species left and the remaining few individuals are also in danger of disappearing. Siberian cranes are *endangered* due to hunting and habitat loss.

EXTINCT: When there are no more of a species of plant or animal left. Dinosaurs are an example of an *extinct* group of animals.

FAMILY: A group of closely related plant or animal species which share many basic characteristics. Cranes all belong to the same *family* of birds.

FLAGSHIP SPECIES: An animal species that is an indicator of the health of an ecosystem as a whole. Because this animal species is generally located at or near the top of a food chain, it is dependent on many other species for it survival. Therefore, by protecting this particular animal, many other plant and animal species in that ecosystem will be protected.

FLOODPLAIN: An area along a river or around a lake that is subject to occasional flooding. As rivers rise, the water spreads across the *floodplain*.

GERMINATE: When a seed sprouts. When placed in soil and watered, many seeds will *germinate*.

GROUND WATER: Water found on the bedrock below the surface of the ground. Many people draw water from the *ground water* to drink and irrigate crops.

HABITAT: The local area where a plant or animal lives and satisfies needs such as safety, food, water, and shelter. *Habitat* loss is one of the primary causes of extinction in today's world.

HERBIVORES: Animals that eat plants. Bison, elk, and cattle are examples of *herbivores*.

INDICATOR SPECIES: A species of organism which is characteristic of a certain community, and can be used as a label for that community. The bur oak tree is an *indicator species* for the oak savanna in the Midwest.

KETTLEHOLE: A depression in the land formed when a chunk of ice breaks off a glacier, becomes buried under sand and gravel, and melts slowly allowing the ground to slump. *Kettleholes* often fill with water and become wetlands.

LARVA: The wingless stage of insect development between hatching and attainment of adult form. The *larvae* of butterflies are caterpillars.

MUCK: Dark, fertile soil containing decayed plant material and minerals. *Muck* is often found in wetlands.

NODULES: A small knot-like growth on the roots of some plants. *Nodules,* on the roots of certain plants, contain bacteria that can take nitrogen from the air and make it into a nutrient that can be used by the plants.

NUTRIENTS: Materials that nourish plants or animals. The *nutrients* in grasses provide a healthy diet for the animals that eat it.

ORGANIC MATTER: Decayed plants and animals. Muck soils are high in *organic matter*.

PRAIRIE: An area of flat or rolling grasslands. On the *prairie* you can find many species of plants and animals.

PREEN: To clean and arrange feathers. Birds usually do this by nibbling at the base of each feather with their beaks, then drawing the feather through the beak. Birds spend much of their time *preening*, since their feathers allow them to stay warm and to fly.

PRESERVE, PRESERVATION: To protect from injury or peril; to keep in perfect or unaltered state. National parks should be *preserved* to protect their natural beauty and wildlife.

REMNANT: A remaining piece of an original ecosystem, like prairie or savanna. There are small *remnants* of prairie along railroad tracks in the Midwest.

RESTORE, RESTORATION: To return an area as closely as possible to its original condition. ICF *restores* old farm fields to prairie and savanna.

ROOST: A place where birds rest, or the act of resting. In the late afternoon, cranes return to the *roost*. At dusk, the cranes return to the wetland to *roost* for the night.

SAVANNA: A grassland with widely scattered trees. *Savannas* covered much of the Midwest at one time.

SOIL HORIZON: The area in a soil profile where two different layers of soils meet. Topsoil is found in the uppermost *soil horizon*.

SOIL PROFILE: A column of soil showing the soil horizons from top to bottom. A *soil profile* can reveal much about the history of a particular area.

SPECIES: A distinct type of plant, animal, or other organism. Similar types of plants or animals are considered different *species* if they do not normally breed together.

TERRITORY: An area which an animal defends, usually for breeding and/or feeding. The *territory* of a red-crowned crane pair is very large, and no other cranes are permitted to live within it.

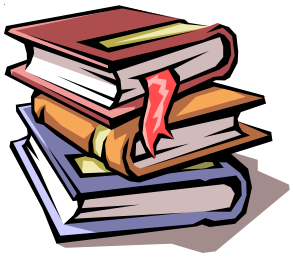
TOPSOIL: The uppermost layer in undisturbed soils. The *topsoil* has eroded off the plowed field on top of the hill.

UROPYGIAL GLAND: A small gland found on the upper surface of the tail on birds. The *uropygial gland* secretes an oil that the bird uses to condition its feathers.

VALUE: A principle, standard, or ethic considered worthwhile or desirable. Friends and spouses often share similar tastes and *values*.

WETLAND: An area in which the soil is saturated with water for much of the year, and where water tolerant plants and animals live. Many *wetlands* also exhibit occasional periods of dryness.

WILDFIRE: A raging fire that travels and spreads rapidly. In the past, *wildfires* were set by Native Americans to clear fields, attract bison and elk, and to promote the growth of vegetation.



Cranes in Folklore & Fiction:
An Annotated Bibliography for Teachers

ASIA

Bodkin, Odds. *The Crane Wife*. Harcourt Brace. 1998. A poor sail-maker finds happiness with a lovely wife who mysteriously appears at his door after he helps a wounded red-crowned crane. (Grade 1-5)

Chen, Kerstin. *Lord of the Cranes: A Chinese Tale.* North South Books. 2000. In this traditional Chinese story, the Lord of the Cranes is aided by a poor innkeeper, who is later rewarded for his kindness by the Lord. (Grade 1-5)

Ching, Emily and Ko-Shee Ching. "The Crane-Riding Immortal." In *Chinese Children's Stories.* Series No. 47. 1991. This story recounts one of the many tales of Lye Dungbin, one of the eight immortals of Chinese legend. Lye Dungbin's birth is associated with the appearance of a crane, whose image he uses as an adult to reward a virtuous tavern owner. This story is one of two legends involving Lye Dungbin in the bilingual volume that is written in both Chinese and English. (Grade 3-5)

"The Cruel Crane Outwitted." In *Indian Folk and Fairy Tales.* Edited by Joseph Jacobs. G.P. Putnam's Sons, New York. 1968. In this Indian story, a Siberian crane develops a plan to trick several fish in a small pond so that he may eat them. Unfortunately, the crane is outwitted in the end when he attempts to trick a crafty crab into becoming his meal. (Grade 3-5)

"The Lion and the Crane." In *Indian Folk and Fairy Tales.* Edited by Joseph Jacobs. G.P. Putnam's Sons, New York. 1968. This Hindu story describes an encounter between a Siberian crane and a lion in India. The crane frees a bone that has become stuck in the lion's mouth and learns to be wary of the "King of the Beasts" after the experience. (Grade 3-5)

Matsutani, Miyoko. *The Crane Maiden*. Parents' Magazine Press, New York. 1968. The story is also retold in *The Crane's Gift: A Japanese Folktale*, by Steve and Megumi Biddle. Shambhala/Banefort Books. 1994. After rescuing a red-crowned crane from a trap in the mountains of northern Japan, an old man and his wife are visited by a beautiful and mysterious young woman, who lives with them until they discover her true identity. (Grade 1-5)

AFRICA

Harman, Humphrey. "Arap Sang and the Cranes." In *Tales Told Near a Crocodile*. The Viking Press, Inc., New York. 1967. The great chief Arap Sang rewards a flock of crowned cranes for helping him cross the hot African plain near Lake Victoria by granting the cranes golden crowns. Unfortunately, the cranes are pursued for their precious crowns, and Arap Sang must rethink the meaning of his gift to the cranes. This story is also available in the Junior Great Books Curriculum, Series 2, published by The Great Books Foundation. 1992. (Grade 3-8)

AUSTRALIA

Clement, Rod. *Olga the Brolga.* Harper Collins Publishers PTY Limited. 2004. Olga the brolga, after trying to get her friends to dance with her, discovers the value of being an individual. (Grade pre-K-3)

Leach, Maria. "How Crane Got His Long Beak." In *How the People Sang the Mountains Up*. Viking Press, New York. 1967. An Aboriginal story from the Gumaitj Tribe describes how Emu's spear became Crane's long beak. (Grade 1-5)

Meeks, Arone Raymond. *Enora and the Black Crane: An Aboriginal Story*. Scholastic Inc., New York. 1991. Enora, a young Aboriginal child, discovers a rainbow of colors in the rainforest and is transformed after he kills a crane while trying to learn the meaning of his discovery. (Grade 1-5)

Roberts, Ainslie. "Brolga, the Dancing Girl." In *The Dawn of Time: Australian Aboriginal Myths in Paintings*. Rigby Limited, Adelaide, Australia. 1969. This Aboriginal story describes the transformation of a young girl who loved to dance into a crane by an evil magician who was spurned by the girl and her Tribe. (Grade 3-12)

EUROPE

"The Fox and the Crane," "The Peacock and the Crane," and "The Wolf and the Crane" are from the popular collection of stories known as *Aesop's Fables*. The collection is traditionally attributed to Aesop, a man who is believed to have been a Greek slave. Through the interaction of the main characters -- birds and animals who talk and behave like humans -- the stories teach important morals and values. The three stories that feature a crane depict the tall bird as clever, kind, and noble in his encounters with other animals. Aesop's Fables have been translated into many different languages and have been retold for centuries. The stories are available in a variety of edited volumes and can also be found in online collections. A recommended online collection of over 600 fables may be found at www.aesopfables.com/. "The Fox and the Crane" and "The Wolf and the Crane" can also be found in *Aesop's Fables Coloring Book* published by Dover Publications Inc. (Grade 1-12)

EDITED COLLECTIONS

Hayward Scott, Dorothea. *A Flight of Cranes: Stories and Poems from Around the World.* The Denvil Press. 1990. This excellent collection of stories and poems about cranes underscores the influence of cranes on cultures from throughout the world. Included in the collection are the stories "Arap Sang and the Cranes" and " Brolga, the Dancing Girl." (Grade 3-12)

NORTH AMERICA

Belting, Natalia. "Why Crane's Feathers Are Brown and Otter Doesn't Feel the Cold." In *The Long-Tailed Bear and Other Indian Legends.* The Bobbs-Merrill Company, Inc., Indianapolis. 1961. An Assiniboin story tells why the sandhill crane has brown feathers and a dark bill. (Grade 3-8)

Bruchac, Joseph. *The Great Ball Game: A Muskogee Story.* Dial Books for Young Readers, New York. 1994. This traditional story from the Muskogee, or Creek, Indian Nation recounts the story of a ball game between the birds, who are lead by Crane, and the animals to settle a dispute between the two groups. The conclusion of the story also explains why birds migrate south in the winter. (K-Grade 3)

"The Frogs and the Crane." In *Wigwam Evenings: Sioux Folk Tales.* Retold by Charles and Elaine Goodale Eastman. University of Nebraska Press. 1990. Several frogs learn a valuable lesson about pride after they are frightened by a hungry crane in this Sioux story. (Grade 3-8)

Mooney, James. "The Race Between the Crane and the Hummingbird." In *History, Myths, and Sacred Formulas of the Cherokees.* Historical Images, Asheville, North Carolina. 1992. Crane challenges Hummingbird to a race around the world to win the affections of a beautiful woman in this Cherokee story. Unfortunately, both suitors loose in the end when the young woman decides to remain single after she learns who won the race. (Grade 3-12)

Wood, Douglas. *Rabbit and the Moon.* Simon & Schuster. 1998. A Cree story tells how the whooping crane was rewarded with a red patch on the top of its head after carrying Rabbit to the moon. This story is also retold in Belting, Natalia. "How Crane Got His Long Legs." In *The Long-Tailed Bear* and *Other Indian Legends.* The Bobbs-Merrill Company, Inc., Indianapolis. 1961. (K-Grade 2)

FICTION

Bang, Molly Garrett. *The Paper Crane.* Greenwillow. 1985. A mysterious man pays for his meal with a paper crane and brings prosperity to the restaurant. (K-Grade 2)*

Byars, Betsy. *The House of Wings.* Viking Press, New York. 1993. In this perceptive novel, a young boy left with his grandfather learns to deal with the physical needs of a bird and gains a trusting relationship with both the whooping crane and his grandparent. (Grade 3-5)*

Coerr, Eleanor. *Sadako.* Putnam. 1993. Backed by Ed Young's soft, gentle illustrations, Coerr retells the story of Sadako and her battle against leukemia. (Grade 3-5)*

----------. *Sadako and the Thousand Paper Cranes.* Putnam. 1999. Coerr's classic story combines

with Ronald Himler's soft artwork to tell of Sadako's determination to fold a thousand paper cranes as she struggles with leukemia. (Grade 3-8)*

Dana, Jane. Jane on a Crane. Green Troubadour Press. 2005. This compelling story about the cranes and culture of Bhutan blends science and fantasy with spectacular Himalyan landscapes and ancient traditions. (K-Grade 3)

Hamanaka, Sheila. *Peace Crane*. Morrow. 1995. After learning about Sadako and the Peace Crane statue, a young African American girl wishes a crane would carry her away from the violence of her own world. (Grade 1-5)*

Keller, Holly. *Grandfather's Dream*. Greenwillow Books, New York. 1994. After the Vietnam War, Nam shares his grandfather's dream of bringing back the sarus crane to his village and learns the importance of making the land safe for their return. (K-Grade 3)*

Laurin, Anne. *Perfect Crane*. Harper Collins. 1981. A lonely Japanese magician gains friends through the paper crane that he brings to life, and through kindness, is rewarded by the loyalty of the crane. (K-Grade 3)*

LeBox, Annette. *The Princess Who Danced with Cranes*. Second Story Press, Toronto, Canada. 1997. Princess Vivian learns the value of the beautiful marsh near her home after it is drained and the whooping cranes that formerly visited the area no longer return. (Grade 1-5)

Martenova, Charles and Veronika. *The Crane Girl*. Orchard. 1993. Yoshiko goes to live among the cranes, whose magic transforms her into one of their young until she is ready to return to her family. (Grade 2-4)*

Owens, Mary Beth. *Counting Cranes*. 1992. A poetic counting book that introduces readers to the whooping crane as the endangered bird's numbers grow from 1 to 15. (K-Grade 2)

Say, Allen. *Tree of Cranes*. Houghton. 1991. A story of a Japanese mother who melds her early life in America with Japanese tradition as she shows her young son the meaning of an American Christmas. (K-Grade 2)*

Schrack, Ward. *Shimingo: The Rites of Passage*. Morris Press, Kearney, Nebraska. 1993. Set in central Nebraska in the mid-1980s, this story relates the experiences of a Pawnee boy as he cares for an injured sandhill crane and makes the difficult journey into adulthood. (Grade 3-8)

Spinelli, Eileen. *Song of the Whooping Crane.* Eudmans Books for Young Readers, Grand Rapids, Michigan. 2000. Delicate watercolor illustrations complement this poetic story of the seasonal migration of the whooping crane. (K-Grade 2)

*Citations from *Flying with the Cranes* in Booklinks March 1996 by Carolyn Wiseman. Permission to use granted from Book Links: Connecting Books, Libraries, and Classrooms, the American Library Association.

Evaluation

THANK YOU for taking the time and effort to fill out this evaluation form. This information will be used to better serve you and others in the future.

Please mail your completed evaluation to:
International Crane Foundation
Visitor Programs Coordinator
P.O. Box 447
Baraboo, WI 53913

Tour Date: **Weather Conditions:**

School: **Grade(s):**

Please indicate with a check which categories were applicable to your tour. Please indicate with a circle how useful each was, using the following scale:

1 – Excellent/Very Helpful **2- Adequate** **3–Poor/Not Helpful**

Use the space provided or an extra sheet of paper for additional comments regarding any of the activities.

Preparation Activities: Activity Packet

____Teacher Instructions.	**1**	**2**	**3**
____Chaperone Instructions	**1**	**2**	**3**
____Student response to the activity packet	**1**	**2**	**3**
____How did the activity packet fit into your lesson plans?	**1**	**2**	**3**
____How useful was the curriculum packet and field trip in assisting you in satisfying the Wisconsin Model Academic Standards in your classroom?	**1**	**2**	**3**

How much time did you spend on preparation activities? _____

Evaluation of Activities:

____How useful were the activities? **1** **2** **3**

____Was the organization of the activities useful? **1** **2** **3**

How could our activities be improved?

Field Trip:

____Tour format **1** **2** **3**

____Duration of tour **1** **2** **3**

____Tour content **1** **2** **3**

____Student response to tour **1** **2** **3**

____Instructor response to tour **1** **2** **3**

____How likely are you to come again? **1** **2** **3**

How could the field trip be improved?

Projects:

____How useful were the additional projects? **1** **2** **3**

Which one(s) did you choose?

Additional comments:

ICF Site Map