

Open Your Eyes to Wildlife

Field Trip Preparation

The U.S. Fish & Wildlife Service educates the public about the environment in order to work together on conserving, protecting and enhancing plants, animals and their habitat. The Two Ponds National Wildlife Refuge teacher-led environmental education program enables students young and old to learn the value of our ecosystems. When we collaborate with schools and other educational groups, we extend the learning process beyond conventional classroom limits, allowing students to make connections with their natural environment.

Environmental Education Goals

- Respect for all life forms
- A basic understanding of the total environment
- A sense of belonging to a special human niche within the environment
- A feeling of responsibility toward life and accountability for human impacts on the environment
- The skills to identify and resolve environmental problems
- Participation in all levels of environmental stewardship

Environmental Education Objectives

Awareness

To help individuals and groups acquire an awareness and sensitivity to the ecosystem – the total environment and its interactions.

Knowledge

To help individuals and social groups gain a variety of experiences in nature and acquire a basic understanding of the natural environment and its associated problems.

Attitudes

To help individuals and groups acquire a set of values and feelings of concern for the environment and to help motivate them toward active participation in environmental improvement and protection.

Skills

To help individuals and social groups acquire the tools for identifying and solving environmental problems.

Participation

To provide individuals and groups with opportunities to be actively involved in all levels of working toward the resolution of environmental problems.

Key Ecological Concepts

- At the Refuge, wildlife needs come first.

Wildlife etiquette requires people to stay on the trails, to harvest nothing from the habitat, and to be quiet and un-alarming. Wildlife depends upon habitat for food, shelter, clean air and clean water.

- Healthy ecosystems are diverse.

A diversity of life indicates that the ecosystem is intact, and that plant and animal populations have a better chance of surviving in our changing environment.

- Organisms adapt to habitat conditions in order to survive.

Each habitat is its own mini ecosystem, providing different needs for different organisms.

- Life is interdependent.

Ecosystems exist in a delicate balance. A single change, such as the introduction of a non-native species, can upset the balance and threaten plant and animal populations.

- Many birds migrate, flying north in the spring and south in the fall.

Birds use particular routes called flyways. Two Ponds National Wildlife Refuge is on the Central Flyway, and provides important feeding, nesting and resting areas for all sorts of birds. As habitat is lost to development, it is important to save these key habitats for migratory birds.

- Every living thing is born, matures and dies, transferring its energy to new life.

The process of birth, death and rebirth is reflected in the endless cycle of the seasons.

- Two Ponds National Wildlife Refuge came about through a grassroots effort to preserve habitat and wildlife.

The establishment of this Refuge in 1992 was largely a community-driven effort. Today, habitat restoration enhances the area for wildlife. People everywhere make decisions that affect wildlife. We all are responsible for our impacts upon the environment.

Refuge Resources & Assistance

Field trips to the Refuge are focused primarily on an educator-led concept. Educators and group leaders are expected to plan and lead their own field trips. For students to have the most productive educational experience, teachers must attend a field trip orientation workshop and have clearly defined field trip goals. Two Ponds National Wildlife Refuge offers resources and assistance in meeting field trip learning objectives.

Teacher Workshops

Field trip orientation workshops help prepare teachers to conduct a quality environmental education experience on the Refuge. Workshops will be offered twice a year. Fall workshops will typically be held in late-September to early-October and spring workshops in early- to mid-April. The Refuge has a limited amount of field equipment available for loan on the day of your field trip.

Volunteers

Trained volunteer naturalists will be paired with field trips to the greatest extent possible. When available, volunteers will welcome and orient your group and sometimes accompany your class during your entire visit.

Environmental Education Center

Currently, there are no indoor facilities at the Refuge beyond a restroom. A proposed Environmental Education Shelter is currently being sought by our Friends groups for class interactions. This center will provide an indoor classroom and laboratory for classes to enhance their visit to the Refuge during inclement weather.

Special Considerations

Trails and facilities have been designed to accommodate individuals with physical impairments. For further information, please contact the Refuge at 303-289-0867 for additional information and assistance.

Refuge Facilities

Parking

A visitor parking lot is available at the Refuge, including designated bus parking.

Restrooms

The Refuge has a single restroom with no running water. There are NO restrooms along the trails. Have students use the restrooms before setting out for the day.

Water

Drinking water is not available. Please bring water for your group. Water bottles may be taken on the trail.

Telephone

There are no pay phones at the Refuge. In case of emergencies, please bring at least one cell phone for your group.

Trash Cans

Although there is a trash can located at the entrance of the Refuge, we request you take all trash with you and recycle, especially lunch trash! Please bring your own trash and recycling bags for the field trip.

Lunches

Lunches are allowed on the Refuge; however, no Picnic tables are available.

Making Reservations

To accommodate as many groups as possible, advanced registration is required for all school groups participating in the Refuge's environmental education program.

How Do I Register?

- First, attend a teacher workshop. You will receive a "Field Trip Reservation Application." Read form directions carefully.
- Complete and return the "Application for Field Trip Reservation" form. The completed application form must be returned to the Refuge at least two weeks prior to the field trip.
- You will receive a confirmation of your registration from the Refuge by email or phone.
- All reservations are made on a first-come, first-serve basis. Applications will be accepted only during the school year of the field trip date requested.
- Your registration is not confirmed until you are contacted by the Refuge.
- Any registration forms received within two weeks of your field trip can be cancelled per the Refuge Manager's discretion. The Refuge cannot guarantee confirmation in less than two weeks.

Why Are Reservations Required?

Two Ponds National Wildlife Refuge is a popular place with limited facilities. By having teachers register their classes we can:

- Schedule classes so they do not conflict with another group. This reduces overcrowding of Refuge facilities, minimizes wildlife disturbance, and ensures a better opportunity for wildlife observation.
- Coordinate Volunteer Naturalist(s) if/when available who may provide orientations, lead certain lessons, and promote nature awareness in groups.
- Determine the number of people participating in various activities on the Refuge. This information may be used to obtain funding for improvements to our public use programs.

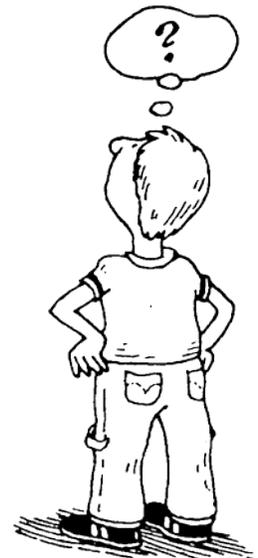
How Many Groups May Visit Daily?

The total number of students is limited to 75 at any given time on any given day from one school. Typically this would accommodate two to three classes from a school. This is in addition to the individuals and families who are on the Refuge without reservations.

What About the Entrance Fee?

For a fee waiver, groups must meet the following criteria:

- The educational activity of the group is formally structured, using activities from this approved curriculum.
- Educators are prepared to lead their students through their field trip.
- Groups that qualify for a fee waiver will be exempt, noted on their confirmation.



Guidelines for Refuge Field Trips

Certain rules are necessary to help protect the wildlife and facilities at the Refuge.
Important: Go over all guidelines with your parent volunteers and students.

Take Only Memories, Leave Only Footprints

All plants, animals and artifacts on the Refuge are protected by federal law. Students may take only photographs, drawings and memories. Please replace anything you pick up.

Pre-trip Activities

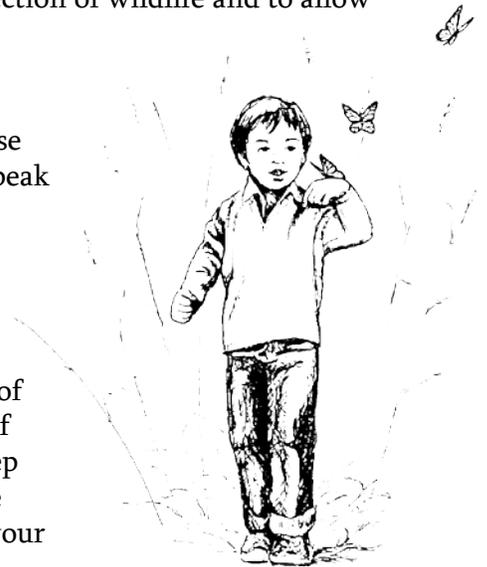
Pre-trip activities can best prepare your students for a rich and rewarding visit to the Refuge. Please, at the minimum, complete the pre-trip activity called “Developing Nature Observation Skills.” This lesson teaches students how to behave in nature, both for the protection of wildlife and to allow them the best opportunity to experience wildlife.

Walk and Talk Quietly

This will give you a better chance to see wildlife! Never run or chase any animals. When speaking to a group outdoors, face them, and speak clearly, but keep volume down so wildlife isn't scared away.

Stay With the Group

Please stay with your group on the trails! There should always be an adult present with students. Adults should always be the first and last people on the trail in the group. An adult-to-student ratio of 1:5 is required for 3rd grade and under. An adult-to-student ratio of 1:10 is required for 4th grade and up. Think of creative ways to keep students' attention when walking from site to site. Use the “Sample Chaperone Letter” as a starting template for communicating with your chaperones.



Lunch & Trash

Lunches should be stored in student's backpacks. Lunches are not allowed on the trails or at the overlooks. Please bring trash bags with you, avoid littering on the trails, and pick up any trash that you see. Please transport all lunch trash back to school on your bus.

Keep the Animals Healthy

Do not feed ANY food to ANY animal.

Do Not Do “Extra” Experiments

Obey all posted signs and follow the instructions of Refuge volunteers and staff. If you wish to perform any activities not found in our curriculum, you must receive approval from Refuge staff. Note: Due to the delicate nature of the pond study ecosystem, a volunteer naturalist must accompany field trips that utilize pond study lessons. During the reservation process, please request a volunteer naturalist to accompany and lead these lessons.

Encourage Curiosity

Don't feel like you need to have all of the answers. It's okay to say, “I don't know.” The process of asking questions is more important than knowing all the answers. Capitalize on teachable moments. If you spot a coyote in the middle of a discussion on aquatic insects, stop and observe the animal, discuss what you saw, then continue on with your original lesson.

Planning a Field Trip?

If you are planning a trip to the Refuge, the following tips can make your experience a meaningful learning experience for your students. Think of the Refuge as an outdoor classroom that can enhance your students' understanding of many scientific and environmental concepts. Remember that you will need a reservation in order to visit the Refuge with your class.

To the greatest extent possible, the Refuge will strive to have a volunteer naturalist greet you as you arrive, introduce your group to the Refuge, and provide you with field equipment that you requested. Teachers and adult group leaders will be expected to lead students on the trails and coordinate any activities.

FIELD TRIP CHECKLIST:

- ___ 1. Attend a teacher workshop
- ___ 2. Review curriculum guide
- ___ 3. Determine the field trip objectives
- ___ 4. Select the activities that you would like to conduct
- ___ 5. Coordinate and reserve a field trip date with the Refuge
- ___ 6. Develop your field trip schedule
- ___ 7. Send in Reservation Form to Refuge
- ___ 8. Recruit parent volunteer leaders (see "Guidelines for Refuge Field Trips" for adult-to-student ratios)
- ___ 9. Complete & distribute your parent volunteer information letter
- ___ 10. Divide students into small groups (10 students or less)
- ___ 11. Provide name tags for all students and color (blue, green, yellow, red, orange, purple) code each group for easier organization upon arrival at Refuge
- ___ 12. Compile a list of materials (clipboards, journals, water, snacks, pencils, trash bags for finished lunches, etc.)
- ___ 13. Obtain student materials and worksheets
- ___ 14. Distribute permission slips
- ___ 15. Plan activities for the bus and during transition areas along the trail
- ___ 16. Do pre-visit activities and conduct "Developing Nature Observation Skills" activity
- ___ 17. Review materials list and supplies needed for lessons (remember to bring water bottles for field trips over 2 hours or on hot days)
- ___ 18. Review safety procedures
- ___ 19. Use restroom and fill water bottles before leaving school
- ___ 20. Board the bus and have a great Refuge visit



Group Management Tips

A great handout to copy for co-teachers, parent volunteers and adult group leaders.

If you have apprehensions about leading a group of children away from the four-walled constraints of a classroom, relax! There are several techniques you can use to keep the group's attention and still maintain the feeling of freedom and open exploration.

Be Prepared!

Read over the activities before coming to the Refuge. The more comfortable you are, the more comfortable the students will be.

Be Enthusiastic!

Enthusiasm is a greater catalyst than knowing a bunch of names. Whatever you are doing, do it with gusto! Get down on your hands and knees to look at the plants. As the leader, you set the tone for the students' experience.

Have a Focus

When you stop for observation, focus on something concrete. Gather the group in a semicircle with everyone facing toward the object of attention.

Ask Questions

Encourage thinking and group interaction by asking questions; spark their imagination. For example, "Why is there a hole in the ground here?" "How did it get here?" "What would you need to live here if you were a _____?" Whenever possible, ask questions instead of giving information.

Speak with the Group

Speak clearly and quietly, facing the group. Talk with the group, not at it.

Make Eye Contact

Make eye contact with your students. If necessary, you should face the sun, rather than having the students look into the sun.

Be Patient with Answers

Give students time to think and answer questions. Count to 10 before revealing the answer.

Demonstrate

Keep it simple. Demonstrate an activity as you explain it.

Encourage Curiosity

Encourage your students to pursue their natural curiosity. Any observation they make is a good one. If they come up with questions you cannot answer, have them write the questions down; they can look up the answers later or ask a Refuge volunteer.

Safety and Medical Considerations

Insect Stings

This is an outdoor field trip so teachers and group leaders need to be prepared to deal with insect stings and bites. Teachers and group leaders need to know if any students are allergic to insect stings, and those students need to bring their own medicine. Mosquitoes can be abundant during warmer months, so consider bringing insect repellent.

Water Safety

Water is present in many places on this Refuge. Extreme care should be taken when near water. Wash hands after every contact with water in the field.

Poison Hemlock, Stinging Nettle and Poison Oak

These plant species are present on the Refuge. By staying on the trails, you should avoid contact with these plants, but everyone should know what they look like.

Poison Hemlock – Of Socrates' fame, poison hemlock is deadly when ingested. It looks similar to wild carrot plants and grows to over 6 feet tall.



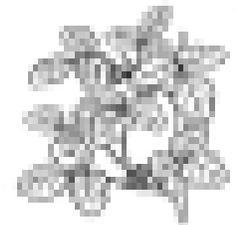
Poison Hemlock



Stinging Nettle

Stinging Nettle – These are typically found in shady, moist places and are usually 3-5 feet tall. Touching a nettle can result in a burning sensation that lasts for hours.

Poison Oak – This plant grows nearly anywhere as a shrub or a vine. The leaves cluster in groups of three and may be shiny. Touching the plant can result in a pervasive itchy rash.



Poison Oak

Wash Hands

ALWAYS have students wash their hands before consuming any food as well as after their field trip. Consider bringing hand sanitizer to help clean hands in the field.

First Aid / Emergencies

Teachers need to bring their own first aid kits.

In an emergency, dial 9-1-1.

Preparation for Day of Field Trip

To make the most of your Refuge field trip, please make sure students are prepared.

1. Watch weather forecast and be prepared for all weather.
2. Dress in layers – students can tie a sweatshirt around their waist if they get too hot.
3. Wear sturdy shoes or boots that can get dirty & wet. Some of the trails may be muddy.
4. Bring disposable lunches (minimal packaging). Groups need to take their garbage with them so bring trash bags to transport garbage back to school. Please recycle as much as possible.
5. Make sure teachers, parents, and students bring all needed equipment & worksheets.
6. Complete some of the pre-field trip activities. The more your students know about the Refuge in advance, the better experience they will have on their field trip.
7. Have students use the restrooms and fill up water bottles prior to leaving school. There are toilets & drinking fountains available in our Environmental Education Shelter.
8. Hand out copies of curriculum activities to parent volunteers.
9. Make sure students are divided into groups and have color coded name tags corresponding to their group.

Prompts & Quick Activities

Use these ideas for quick activities to fill time in between rotations or whenever you have a few extra minutes. This is great information to share with parent volunteers.

Short Observations

- Find a bird and watch it as you count to 25. Describe what you noticed about the bird's color, flight, size, or other characteristics
- Stop! Close your eyes and listen. Try to block out the sounds of the cars going by. Describe the nature sounds that you hear in 30 seconds.
- Do you see tracks in the mud? Can you guess who made them? Which way were they traveling? What were they doing?
- Find an insect and watch it as you count to 25. Describe what you noticed about the insect: Can it fly? Is it eating? Where is it going? Anything else?

Find Something

- Find three human-made things around you. What are the positive and negative aspects of each object?
- Find two to five things that have been changed by an animal. Find two to five things that have been changed by humans. Explain these to a partner.
- Find two animals or an animal and a plant that have a relationship with one another (heron-fish, duck-grass, minnow-algae, wasp-cottonwood). Explain the relationship.

- Find the largest and the smallest objects in a given area (animal, plant, flower, bird, stone). Find different things that are the same size.
- Find a bird that:
 - walks on edge of the wetland
 - dives to get its food
 - soars as it flies
 - sits in a tree

Do Something

- Do you see any litter? If it is safe to do so, pick it up and put it in the class garbage bag
- Move the way an animal moves.
- Write two descriptive sentences about something you see right now. Use as many adjectives and adverbs as possible.
- Compare the colors of animals with their surroundings. What do you notice?
- Push a pencil point into the soil with the open palm of your hand. Measure the distance it has gone into the soil when your hand begins to hurt. Try the measurement in different areas. If you were a burrowing animal, where would you like to live? Why?
- Predator/prey game: choose one student to be the prey. He/she is blindfolded and set in the center of a large circle formed by the other students (predators). One at a time, the leader points to a predator, who then tries to sneak up quietly and touch the prey. The prey has to use its ears to listen for predators and point to the predator when it is heard. Let several students try and switch roles.

Pretend / Imagine

- Pretend you are 1 inch tall and live in the wetland. What would you like to eat? Who would like to eat you? Where would you hide?
- Let's pretend it suddenly started to rain hard. Where would you go if you were an animal (rabbit, squirrel, bird, fish, butterfly, etc.)?
- Pretend it is 500 years ago. What do you think this land looked like? What lived here? Did people live here? What do you imagine was the same? What do you imagine was different? (Imagine what this looked like as the Native Americans started a controlled burn of the oak savannah. The low grassy area would burn but the large oak trees would be protected)
- Pretend it is 500 years in the future. What do you think the land will look like? What will live here? Will people live here? What do you imagine will be the same? What do you imagine will be different?

Teacher Guidelines for Parent Volunteers

The following are guidelines to help teachers guide and manage parent volunteers during field trips.

Certain expectations are required of parent volunteers. It is important to let them know these expectations prior to your field trip. This can be done as an after-school meeting with your parent volunteers, or as a take-home packet. We recommend supplying them with a map of the Refuge, Refuge guidelines, the breakdown of student groups, itinerary for the day with specific timeframes, equipment list, and lesson directions for each study site. You can use the sample Parent Orientation Packet found in our curriculum, but you must insert information from your application before distributing. The sooner parents have this information, the better!

The primary roles of a parent volunteer are to monitor the movement of students from one study site to the next, to facilitate the educational lessons included in their packet (provided by the teacher), and to keep their group with them at all times, with no one wandering ahead or falling behind.

Chaperones must be prepared to conduct lessons when they reach designated study sites.

Be sure to follow the required parent volunteer/student ratios.

Chaperone responsibilities and expectations are similar to those in an indoor classroom:

- Keep the focus on the students and wildlife not on other adults. Discourage social talking amongst adults.
- Remind everyone to stay on trails.
- Keep track of your students — count your own small group at least every 10 minutes.
- Watch and assist all the children in your small group, not just your own children
- Share your enthusiasm for discovering nature with your students
- Teachers & chaperones are responsible for supervising students and teaching planned lessons. Volunteer Naturalists are added resources*
- School teachers and school chaperones are responsible for supervision students and teaching planned lessons. Volunteer Naturalists are added resources.*

Volunteer Naturalist's Role

Volunteer Naturalists have been trained in nature observation skills, they know Refuge guidelines, have spent many hours exploring the Refuge, and are familiar with the variety of birds, plants, trees, and animals that call the Refuge home.

The Refuge attempts to provide a volunteer naturalists per school visit – but they are not always available. They do not lead the field trip nor follow lesson plans except as noted below.

Here is a list of a volunteer naturalist's field trip role when available:

- Greet bus upon arrival at Refuge
- Provide an opening statement for field trips
- Help get student groups and chaperones into their assigned field trip groups
- Provide any additional equipment available to teacher at beginning of field trip and return equipment to Refuge after all equipment has been checked back in
- Accompany groups on the trail and alert them to nature observations
- Volunteer Naturalists do not supervise students or teach lesson plans