

The Big Shorebird Picture

Through the activities in *Explore the World with Shorebirds!*, students have discovered that shorebird habitat is also our habitat. They have observed and learned about other species that coexist with shorebirds and understand that all living parts of the habitat depend on clean water, air, and soil. In the Big Shorebird Picture, students share their knowledge with each other and their community in creative and thought provoking ways.

Concepts

- Taking an active role in shorebird conservation requires that we apply knowledge.
- Sharing our knowledge about shorebirds with others is one way we can help shorebird conservation.
- Environmental stewardship is vital for the long-term conservation of our shared natural resources.

Activities

Shorebird Poetry

(upper elementary/middle school, upper middle school / high school)

Students assemble accurate scientific information about shorebirds and create a poem to share their feelings and thoughts with others.

Shorebird Wax Museum

(lower elementary)

Students create a “living wax museum” by pretending to be shorebirds and give a few facts about themselves to visitors as they pass through.

Shorebirds on Display

(upper elementary/middle school, upper middle school / high school)

Students create a shorebird display to inform people in their community about local shorebird species, shorebird habitat, and shorebird issues.

Shorebird Fair

(upper elementary/middle school, upper middle school / high school)

Students have had the opportunity to learn about shorebirds and their habitat through a variety of activities in this educator’s guide. Now they will assemble their shorebird projects into a “Shorebird Fair.”

Shorebird News

(upper middle school/high school)

Students research what makes a good newspaper article and then write a story for their local paper about their involvement in the Shorebird Sister Schools Program.

Shorebird Decision Dilemmas

(upper elementary/middle school, upper middle/high school)

In this activity, students draw cards that describe a shorebird or habitat issue and decide how they would work to resolve the problem. Through discussion, students examine their own values and beliefs as well as those of their classmates’.

What You Can Do for Shorebirds!

(upper middle school/high school)

Students participate in a conservation project to improve the environment and help wildlife. The situation may involve “hands-on” experiences like planting or picking up litter, or a political campaign in which students participate in influencing the actions of others.

Shorebird Values on the Line

(upper middle school/high school)

Students rank to what degree they “agree” or “disagree with” a set of statements pertaining to shorebirds and shorebird habitat. They compare their rankings with those of their classmates, examine the reasons behind them, and discuss what factors influence a person’s values.

Shorebird Poetry

Adapted with permission from Quinlan, "Alaska Wildlife Week."

Grade Level: upper elementary/ middle school, upper middle school/ high school

Duration: one 30-minute class period

Skills: application, communication, critical thinking, spelling, vocabulary, and using technology

Subjects: science, language arts, and technology

Concepts

- Sharing knowledge about shorebirds with others is one way to help shorebird conservation

Vocabulary

- haiku
- cinquain
- limerick

Overview

Students assemble accurate scientific information about shorebirds and create a poem to share their feelings and thoughts with others.

Objectives

After this activity, students will be able to:

- Create a haiku, cinquain, or limerick poem incorporating accurate scientific knowledge learned about shorebirds.
- Describe the different characteristics of line length, syllable number, and rhyming pattern for the haiku, cinquain, and limerick styles of poetry.

Materials

- An assortment of shorebird pictures
- A shorebird video, slide show, or assortment of photographs to use as "inspiration"
- An assortment of example poems to read aloud to the class

Introduction

Poems are often described as "word pictures." Poems can also present an author's feelings and concerns and generate deeper thinking and understanding on the part of the reader.

The following are just three examples of poetry styles to consider using in this activity. There are many more to choose from. Encourage your students to research other styles of poetry and to write several different types of shorebird poems.

Procedure

1. Introduce your students to the three different types of poems described here: the haiku, cinquain, and the limerick. Discuss how poems can be like "word pictures."
2. Read the three example poems listed in the **Introduction** and any others you have collected. Ask the students which poem they like the best. Why? Which form of poetry do they like the best? Why? How do they think the author was inspired to write the poem? What might inspire them to write a poem?
3. Ask them to write a poem about shorebirds with the goal of giving accurate information, stirring up feelings, and creating

<i>Poetry/Rhyme Form</i>	<i>Example</i>
Haiku (pronounced hi-koo): This is an unrhymed Japanese verse consisting of three lines containing five, seven, and five syllables, respectively.	Sandpipers skitter Probing for tasty morsels Ah! A juicy clam
Cinquain (pronounced sin-kwan): A five line poem. The first line consists of 1 word, the second line two words, and so on until the fifth line which contains five words.	Flock Busy crowd Searches the shore Tiny creatures are fuel For the long journey north
Limerick: This is a light humorous rhyme consisting of five lines of verse. Lines one, two, and five consist of roughly three metrical feet while lines three and four contain two metrical feet. (A metrical foot consists of two short, not accented, syllables followed by one long, accented syllable). Lines one, two, and five rhyme with each other, and lines three and four rhyme together.	There once was a Dunlin named Willie, Who thought that to migrate was silly; So he stayed up in Nome; Planned to make it his home, But he left 'cause he found it too chilly.

a mental picture for the reader. It can be a very general poem that describes shorebird feeding, migration, habitat, and wildlife neighbors or a very specific poem that focuses on one type of shorebird. They may also choose the style of poem they write.

4. To inspire your students, ask them to recall a recent field trip to watch shorebirds or show them a shorebird video or slide show. For another option, offer them the chance to look through the assortment of photographs you collected of shorebirds and habitat for “inspiration.”
5. Display the finished poems on a bulletin board; use them as part of the *Shorebird Fair* activity (described later in this section); consolidate them into a class book; or ask your local newspaper to publish them throughout shorebird migration season. Do not forget to send your poetry to the Shorebird Sister Schools Website to share with others. To submit your poetry, go to <http://sssp.fws.gov>, click on the “Get Involved” link.

Additional Activities

If There Were No Shorebirds.....
Ask your students to finish this sentence. Then take all their answer and put it in a poem or rap. To aid in their creative answers you could have them ponder these questions: What would it mean to them if shorebirds disappeared from our world? What repercussions would there be to other wildlife, people, and the habitats shorebirds live in? Which cultures would be changed if shorebirds were no longer part of their stories, songs, and artwork? Adapted with permission from *One Bird, Two Habitats*. Wisconsin Department of Natural Resources

A Year in My Life as a Shorebird
Give your students the opportunity to do more creative writing with the classroom activity *A Year (a Day or a Month) in My Life as a Shorebird* (found in the *Introduction to Shorebirds* activities section.) In this activity, students use the *Shorebird Profiles* (located in the *Appendix*) to learn specific life history information about a shorebird that is found in their area, then create a first person (or in this case, “first bird”) account of its life.



Shorebird Wax Museum

Special thanks to Carrie Fennimore, Galena City School, Galena, AK 1996

Grade Level: lower elementary
Duration: three 30-minute class periods for preparation and practice, one 45-minute session to conduct the wax museum
Skills: communication and presentation; using technology (with additional activity)
Subjects: language arts, science, and fine arts; using technology (with additional activity)

Concepts

- Sharing knowledge about shorebirds with others is one way to help shorebird conservation

Vocabulary

Since this is a review and sharing activity, there are no specific vocabulary words.

Overview

Students create a “living wax museum” by pretending to be shorebirds and giving a few facts about themselves to visitors as they pass through.

Objectives

After this activity, students will be able to:

- List three distinguishing facts about one species of shorebird and its habitat
- Memorize a three-line description of this shorebird
- Create an advertising poster that answers the questions “what,” “when,” and “where”

Materials

- Drawing paper
- Large sheets (at least 18” x 24”) of butcher paper or newsprint to create advertisement posters
- Drawing/painting supplies
- String
- Tape

Optional

- Costume materials

Introduction

Since this is a review and sharing activity, there is no introductory material.

Activity Preparation

1. Arrange a 45-minute period to allow the class to present its living wax museum to the school or other classes.

Note: This is an excellent opportunity for younger students to learn by teaching older students. Invite middle or high school students, as well as parents, to attend. Also, young students can present their “living wax museum” to even younger children: Invite preschool, kindergarten, and first grade students to attend your class presentations. *Because the wax museum is a one-on-one experience, this should not be presented as an assembly.*

2. Advertise “The Shorebird Wax Museum” to the school and to parents ahead of time. Visiting classes need only 10 to 15 minutes to walk through the “museum” during the time it is open.

Procedure

1. Assign each student a different species of shorebird.
2. Have each student make a sign to wear around his or her neck with his or her shorebird’s name on it. Provide pictures of the shorebirds so the students can make drawings on their signs. Ask them to take special note of shorebird features such as color, feathers, legs, and bill type, and spots or other markings on the birds.

3. Give each student a large piece of paper. This will represent his or her shorebird’s habitat. Have students draw big, colorful pictures of where their shorebirds live. Students can also include drawings of other wildlife that live in the habitat too.
4. Provide each student with two to three sentences of information about his or her shorebird to memorize and recite in the wax museum. Allow time to help them memorize their sentences so that they can recite them easily.
5. Have students brainstorm and create simple costumes or costume elements to wear-- like paper beaks or wings, paper breast panel with appropriate colors or streaking, paper feathers, or camouflage clothing.
6. At least one day before the presentation date, have students make advertisement posters to hang around the school. Be sure the signs include the date, time, and location of the wax museum.
7. Make a couple of signs to be posted at the entrance of the wax museum with the following instructions to visitors: *Touch a shorebird softly on the shoulder to hear about the bird. Please touch only one bird at a time.*
8. Present the *Shorebird Wax Museum* in the following way.

Preparing for the Shorebird Wax Museum

- Space the student “shorebirds” evenly around the room, allowing plenty of room for visitors to pass in between.
- Have the students tape their paper “habitats” onto the floor or

wall behind each “shorebird.” Let them stand on or directly in front of their habitats.

- Ask the students to wear the costumes and identifying signs they created.
- “Shorebirds” should stand very still and silently in place. (Have them try standing on one foot while they roost!)
- Explain that when a visitor touches them on the shoulder, they “come to life” and recite their sentences. When they are done, they should fall silent again and stand still until the next visitor touches their shoulder.

Practicing for the Real Show

- Divide the class in half to practice taking turns being the “shorebirds” and the “visitors” so all students get to practice the technique and their lines.

Facilitating the Visitors on the Day of the Show

- Station an adult at the door of the wax museum to give each group the following directions and to control the pace to avoid bottlenecks.

Place a hand on a shorebird’s shoulder, stand back, and listen.

When the bird falls silent again, move on to the next shorebird.

Additional Activities

Create a Shorebird Event

Combine the Shorebird Wax Museum with a Shorebird Fair.

Have the students set up their displays for the fair and then present their “wax museum” during the first opening 30 or 40 minutes.

Reach an Internet Audience

Use the information on shorebirds to make a posting on the *Shorebird Sister Schools Program* Web site. <http://sssp.fws.gov>, click on “Tracking”, then “Report Shorebird Sightings” or send an E-mail to the Shorebird E-mail Network: sssp@fws.gov.



Shorebirds on Display

Adapted with permission from Quinlan, Alaska Wildlife Week.

Grade Level: upper elementary/middle school, upper middle school/high school

Duration: two or three 30 to 40-minute class periods

Skills: communication/presentation and team building

Subjects: language arts, fine arts, and science

Concepts

- Taking an active role in shorebird conservation requires that we apply knowledge
- Sharing our knowledge about shorebirds with others is one way we can help shorebird conservation
- Environmental stewardship is vital for the long-term conservation of our shared natural resources

Vocabulary

Since this is a review and sharing activity, there are no specific vocabulary words.

Overview

Students create a shorebird display to inform people in their community about local shorebird species, shorebird habitats, and shorebird issues.

Objectives

After this activity, students will be able to:

- Identify local shorebird species and where they can be found.
- Create a visual display of information.
- Discuss local shorebird issues in their community.

Materials

- Drawings, photos, and written work produced and gathered during previous shorebird activity units

Introduction

Since this is a review and sharing activity, there is no introductory material.

Procedure

1. Locate a display or bulletin board in your school, local shopping center, government center building, library, or other central location with frequent visitors. Create a design to inform your community about the local shorebirds and shorebird habitat in your area. Decide on a theme for the shorebird information display. (some theme ideas are: shorebirds that migrate through the community, important shorebird habitats in your area, a local shorebird issue, or how people can help shorebirds and their habitat.)
2. Decide what written and visual information should be included in the display (for example, photographs, maps, student artwork, writing, or poetry). To accomplish this, have students brainstorm a “To Do List” and assign specific students to complete the work items.
3. Have each student research effective visual presentation techniques: simplicity, balance, letter size, and color. Have students incorporate what they learned into their display designs.
4. Have each student or student team complete its piece of the display by the class deadline. Decide if one student (with a parent’s help), the entire class, or just the teacher will assemble the entire display at the site where it will be located (if it cannot be done ahead of time in the classroom).

Additional Activities



Cultural Connection

As part of the display (outlined in the procedure), students can map the migration routes with pictures to help those viewing the display see some elements of the different cultures along the routes.

Community Shorebird Display Contest

If there are several places for shorebird displays in your community, arrange a contest between classes or schools. Ask community members to vote for the “best” display in a variety of categories (so everyone wins something, if possible). For example, categories could include “best overall design,” “most interesting information,” “best artwork, best photographs,” etc. Ask local businesses to donate prizes for each category. If possible, have this display contest coincide with the shorebird migration season.



Shorebird Fair

Grade Level: upper elementary/
middle school, upper middle school/
high school

Duration: 60-90 minutes for the fair,
several class period for planning
and set-up

Skills: communication, presentation,
and team building

Subjects: language arts, fine arts,
and science

Concepts

- Taking an active role in shorebird conservation requires that we apply knowledge.
- Sharing our knowledge about shorebirds with others is one way we can help shorebird conservation
- Environmental stewardship is vital for the long-term conservation of our shared natural resources

Vocabulary

Since this is a review and sharing activity, there are no specific vocabulary words.

Overview

Students have had the opportunity to learn about shorebirds through a variety of activities in this educator's guide. Now they will assemble their shorebird projects into a "Shorebird Fair."

Objectives

After this activity, students will be able to:

- Communicate with others what they learned about shorebirds
- Design an advertising poster that includes key event information--when, where, why, and how
- Outline the steps involved in planning an informational event

Materials

- Shorebird pictures from guidebooks, other resource materials, or copies of the *Shorebird Coloring Pages* (found in the *Appendix*)
- Tables

- Display boards
- Paper and drawing materials for constructing signs
- Completed shorebird projects (wetland models, shorebird illustrations, shorebird poems, habitat maps, stories, worksheets, paper bird bands, coloring pages, photos or video footage of students participating in activities and field trips, and audio tapes of shorebird calls)

Introduction

Since this is a review and sharing activity, there is no introductory material.

Activity Preparation

1. Decide on a time and date for the fair. If necessary, arrange to use the gym, multipurpose room, or library.

Procedure

1. Invite parents to the fair. Advertise the *Shorebird Student Fair* by creating advertising posters to hang around the school. Make sure they that include the location, date, time, and activity line-up for the fair. Have the students prepare parent invitations. Include an announcement in the school bulletin, inviting other classes to attend.
2. Develop a plan that outlines the organization and schedule of events for the fair. Have students gather all of their shorebird work together, decide how to organize it, and display it around the room. You may choose to group projects together according to themes. Theme possibilities are endless but can include local species, habitat, breeding information, threats, behavior, or how people can participate in shorebird conservation.

Shorebird Student Fair Ideas

Shorebird Gallery

Display shorebird drawings on 12" x 18" papers, hanging vertically as in a gallery. Include the name of each species and a caption, label, or statement with information about the bird's habitat. Arrange the drawings according to a theme such as location of breeding range, habitat, or shorebirds seen at your local wetlands.

Shorebird Wax Museum

Use this as an opportunity for students to create a shorebird wax museum or demonstrate shorebird calls and behavioral postures (directions found in *Shorebird Wax Museum* and *Behave Yourself!* classroom activities found earlier in this chapter).

Shorebird Questions/Answer Booth

Station students around the fair to play and narrate audio or video tape recordings or to answer questions on various themes.

Shorebird Games

Have students lead rounds of shorebird games such as *Build a Shorebird*, *What Can I Eat with This Beak?* *Behave Yourself!* or *It's a Tough Life* (classroom activities found earlier in this chapter).

Shorebird Arts and Crafts

Set up stations to make habitat models, color shorebird pictures, or create shorebird mobiles.

Shorebird Banding Station

Have students "band" visitors with paper bands as they pass a "banding station." Prepare a display or station students here to explain shorebird banding.

Shorebird News

Adapted with permission from Quinlan, "Alaska Wildlife Week."

Grade Level: upper middle school/
high school

Duration: two 40-minute class
periods

Skills: application, communication,
presentation, using technology

Subjects: language arts, science,
and technology

Concepts

- Sharing our knowledge about shorebirds with others is one way we can help shorebird conservation

Vocabulary

- press release
- style manual

Overview

Students research what makes a good newspaper article and then write a story for their local paper about their involvement in the *Shorebird Sister Schools Program*.

Objectives

After this activity, students will be able to:

- Write a newspaper article using the standard press release format
- Correctly incorporate quotes into a news story
- Explain the Shorebird Sister Schools Program and how the class has participated in the program.

Materials

- classroom copies of model newspaper articles
- a copy of the *Press Release Guidelines*

Optional

- photographs taken during shorebird field trips or activities

Introduction

Since this is a sharing and review activity, there is no introductory material.

Activity Preparation

1. Collect short newspaper articles, preferably on natural history (biological science) or natural resource topics. Make copies for the class.
2. Collect an array of articles that clearly represent different formats such as news articles, human interest stories, and editorials.

Procedure

1. Have students read the articles you collect. Compare the newspaper articles with editorials, human interest, and news stories. Have students brainstorm a list of elements found in newspaper articles.
2. Give each student a copy of the *Press Release Guidelines* reading. Ask them to write a press release for the school, local, or statewide paper about your class participation in the *Shorebird Sister Schools Program*, a recent shorebird field trip, or what they have learned about shorebirds and the local habitats they use. Be sure to submit this article to the Shorebird Sister School Website at <http://sssp.fws.gov>
3. Hold a class contest in which all the students vote on each other's articles in as many categories as possible (best format, most interesting, best punctuation, grammar, etc.) Submit the article voted "best overall" to the intended publication.

Additional Activities



Cultural Connections

- Students can be international correspondents and report on the cultures of other communities where shorebirds spend part of their time breeding, migrating, or wintering.
- Students can write an editorial column on the importance of understanding cultures.

"Covering" Shorebirds Throughout the Year

Give students an opportunity to try their hands at writing different styles of articles on as many shorebird topics as they can find within their communities. Have students pick stories and formats that interest them. Here are some ideas.

- An interview with a local or nearby shorebird artist or shorebird enthusiast
- A calendar of shorebird events each season (migration peaks, breeding cycles, festivals, classes, shorebird viewing outings etc.)
- A full-length article addressing all opinions and facts surrounding a shorebird controversy in the community.
- A student editorial on a shorebird controversy.

Press Release Guidelines

1. Lead sentence tells “who,” “what,” “where,” “when,” and “why.”
2. Keep it short, no longer than one page (double-spaced and typed).
3. Put the most important parts of the story first, followed by less important information. (If the article must be shortened, the last paragraphs can be cut without losing critical parts of the story.)
4. Keep aware of the difference between fact and opinion on all points.
5. Know your audience! A middle school student reading the school newspaper will have different expectations than a businessperson reading the city news.
6. Include accurate quotes that are properly cited. Make sure that the quotes enhance your article by adding something in a fresh way, not simply repeating the same words appearing elsewhere in the article. If a quote represents an opinion, does it seem to reflect a majority or dissenting opinion? Either is acceptable, but the writer needs to be aware of the difference so the quote is properly placed and introduced.
7. Check your spelling and grammar!
8. A short news release accompanied by photos will have the best chance of being printed.
9. For more information on writing for newspapers, consult a writer’s style manual such as *A Manual of Style*, published by University of Chicago Press.



Shorebird Decision Dilemmas

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Grade Level: upper elementary/middle school, upper middle school/high school

Duration: one 45 to 60-minute class period

Skills: critical thinking, application, discussion, evaluation, problem solving, team building, and communication

Subjects: science, social studies, and language arts

Concepts:

- Taking an active role in shorebird conservation requires that we apply knowledge
- Environmental stewardship is vital for the long-term conservation of our shared natural resources

Vocabulary

- dilemma
- compromise
- stewardship
- mitigation
- Army Corps of Engineers
- Environmental Protection Agency

Overview

In this activity, students draw cards that describe a shorebird or habitat issue and decide how they would work to resolve the problem. Through discussion, students examine their own values and beliefs, as well as those of their classmates.

Objectives

After this activity, students will be able to:

- Clarify their own values and beliefs related to the shorebird and habitat issues presented.
- Learn to identify different points of view related to the shorebird and habitat issue presented.

Introduction

The following activity is designed to help students identify different types of human concerns related to decisions affecting wildlife and wetlands and to practice making responsible and appropriate decisions. It is not intended to designate “right” and “wrong” answers for students. In fact, students are encouraged to understand that the real world is a place of many needs, views, and compromises based on the best and most complete information. The objective of this activity is to give students the experience of presenting and explaining their views, taking responsibility for their own reasoning, and teaching them how to question and learn about other points of view. The activity is not meant for the students to reach a consensus.

It would be beneficial for students to do additional research about each *dilemma* so that decisions are based on the best facts available. Habitat protection laws change. Students might discuss potential changes and research legislative action.

For example, knowing more about the agencies involved in wetlands management, the *United States Environmental Protection Agency (EPA)* and the *Army Corps of Engineers*, will help students understand how and why decisions are made. In reality, the decisions to preserve or sometimes destroy wetlands come after careful consideration and consultation with

the public and state and federal agencies. These agencies must weigh and balance the concerns as well as the benefits, often reaching a *compromise* among interest groups. Legally, they are required to consider:

- Environmental Concerns: conservation, economics, aesthetics, environmental fish and wildlife values, flood damage prevention, welfare of the general public, historic values, recreation land use, water supply, water quality, navigation, energy needs, safety, and food production
- Human Concerns: religious, cultural, political, social, educational, survival/physical health, scientific, personal history, and personal use

Materials

- A classroom set of the Shorebird Dilemma Cards

Activity Preparation

1. Copy and cut out a set of the *Shorebird Dilemma Cards* so that each group will have one copy of each dilemma.
2. Consider writing your own shorebird dilemma scenarios specific to problems in your area. Ask each student to research a local shorebird or habitat dilemma and then create a dilemma card. Select the best cards to include in this activity.

Procedure

1. Divide the class into groups of four and give each group a stack of *Shorebird Dilemma Cards*. Place the cards face down in the center of the group.
2. Instruct the first player in each group to draw a card from the top of the deck. Next, she or he reads the situation out loud to the group; he or she should not read the “options” yet. Give

the first player two minutes to consider her or his situation, decide what to do, and formulate reasons for her or his decision. At the same time the other students in the group should contemplate the issue silently.

3. When the time is up, ask the first player to read the situation and options aloud to the rest of the group and then explain his or her decision to the group and the reasoning behind it.
4. This first player now leads the group in a discussion. Each of the other members of the group takes turns commenting on the dilemma and what he or she would do in the situation. The discussion of the dilemma by the group should be limited to five minutes. The group leader has the opportunity to ask questions of other members of the group and to offer clarification about their original decision to the dilemma. Have each group discuss the following questions:
 - What will the results of their decisions and related actions be in ten or twenty years?
 - If the dilemma involved a plot of land they owned, how will their decision affect neighboring land?
5. After the dilemma has been discussed, return the card to the bottom of the stack and the next player selects a card from the top of the deck. Continue this process until all students have had a chance to draw a card, express their decisions and rationales, and lead the group discussions.

Additional Activities

Wetland and Grassland Protection Agencies

Ask students to brainstorm a list of the types of information that would have helped them make their decisions. Urge them to consider gathering a wide array of information. When a group tries to make a decision together, everyone makes his or her decision based on an individual set of concerns and beliefs. How could they solve a problem if the players do, in fact, have conflicting concerns? How might they develop a common set of beliefs about the situation? Is consensus always a reasonable expectation? Discuss the process used by the Army Corps of Engineers and Environmental Protection Agency to decide whether or not to allow an activity to occur on wetlands. Which of the reasons given by students would the Army Corps of Engineers or EPA use to make their decision?

Plan a Public Information or Education Campaign

Have your students identify a shorebird or wetland issue within your community. Ask students to research the facts surrounding the issue and the points of view of those involved in the decision-making process. What are the benefits and costs involved? From here, develop a plan that will help the people in their community make an informed decision on this issue. Students may choose to write articles or editorials, make presentations, design information booths or kiosks, or put up posters about the issue. How will they know if their efforts made a difference? Discuss ways they can evaluate their plan.

You Be the Scientist

This activity, also found in this section, gives more ideas for formulating a study plan.

A Scientist's Perspective

Invite a representative from the Army Corps of Engineers, the Environmental Protection Agency, or your state's pollution control or natural resources agency into your classroom to explain how they make their decisions on wetland and wildlife issues.

Shorebird Decision Dilemma Cards

Shorebird Decision Dilemma One

You own land and would like to build a home on it. You will need to place a pad of gravel on the land to provide a stable foundation for the house. You find out that the land is legally classified as a wetland.

Possible Solutions

- Find out which part of your land is used by fish or wildlife or has other wetland functions and plan your home for the area that has lower use or fewer functions.
- Find out whether placing gravel on the wetland requires a permit.
- Apply for a permit.
- Build your house without getting any permits.
- Sell your land to someone else and buy another piece of land for your home.
- Learn as much as you can about this land that you are a *steward* of:
 1. Ask a local biologist (from the university, the government, private industry, etc.) for information and advice about the need to protect organisms or habitats on your land.
 2. Ask the same of local land-users or native elders.
 3. Inquire about low-impact land development options or ways to enhance wildlife habitat.

Shorebird Decision Dilemma Two

You are the owner of an oil company that has leased part of the North Slope of Alaska. You plan to construct a gravel pad and drill an oil well on tundra wetlands. When you apply for a wetland permit, you learn that the place you want to fill with gravel is very important to nesting shorebirds and waterfowl, and feeding caribou in the summer. The gravel will destroy the habitat.

Possible Solutions

- Study the area to find out if there is an area close by which is not as important to the birds and caribou and where drilling the well would cause less harm to wildlife.
- Find out whether it is possible to drill the well in a different location and how much more that would cost.
- Follow your original plan and apply for permits.
- Redesign the gravel pad to make it as small as possible.
- Follow your original plan but offer to improve the wetland habitat somewhere else (research the concept of *mitigation*).

Decision Dilemma Three

A plover, endangered in your state, is found to nest only on beaches that are open to recreational use of off-road vehicles (ORVs or ATVs). The few nests that shorebirds build are frequently destroyed by off-road vehicles. You own a four-wheeler and like to ride on that beach.

Possible Solutions

- Decide that many of the small, inconspicuous plovers would be protected by re-routing traffic if the public was *informed* about their nests and habitat needs. Take the initiative to begin a public information campaign, perhaps via the placement of signs on the beach, letters to the editor of local papers, or the Internet.
- Get involved with a committee made up of the public, users of ORVs, and wildlife protection agencies and groups to come up with a solution that protects the plover and allows for some recreational use, perhaps by building an alternative trail.
- Find other places to ride your four-wheeler.
- Retire your four-wheeler from recreational use and resolve to use it only for work or subsistence.
- Disregard the issue and continue to ride on the beach with an ORV/ATV.

Decision Dilemma Four

The state where you live has recently decided to open up a large tract of grassland to grazing and farming. Right now, several species of shorebirds are nesting in this area in fairly high concentrations. Many people in your community are concerned about the impact grazing and farming will have on the shorebirds. You have heard that grazing cattle often trample nests and young chicks and that haying equipment is often responsible for killing many young birds hiding in the tall grass. Those that avoid the machines are now easy targets for predators because the grass they hide in is gone. You are the son of a cattle rancher and understand that opening this land to grazing is critical to your family's business.

Possible Solutions

- Identify what areas of the grassland shorebirds are using for nesting and propose that those areas be considered "off-limits" to cattle and farming from the mid-April through mid-July breeding season.
- Establish a committee to look for other land options where grazing or haying would not impact nesting shorebirds--such as using rotational grazing methods or providing water troughs and fences to keep cattle out of wetlands and streams.
- Convince your family that it is time to go into a different business.
- Ignore the concerns about nesting shorebirds and move your cattle onto the new "open" area.

What You Can Do For Shorebirds!

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Grade Level: upper middle school/ high school

Duration: varies, a long-term project (generally one semester or more) for older students but perhaps just 30 minutes for younger participants.

Skills: application, discussion, problem solving, evaluation, vocabulary, presentation, team building observation, prediction, using technology

Subjects: social studies, language arts, science, and technology

Concepts

- Taking an active role in shorebird conservation requires that we apply knowledge
- Sharing our knowledge about shorebirds with others is one way we can help shorebird conservation
- Environmental stewardship is vital for the long-term conservation of our shared natural resources

Vocabulary

- problem
- projects
- responsibility
- authority
- compromise
- alternatives
- political action

Overview

Students participate in a conservation project to improve the environment and help wildlife. The situation may involve “hands-on” experiences, like planting or picking up litter, or a political campaign in which students participate in influencing the actions of others.

Objectives

After this activity, students will be able to:

- Identify a local wildlife or habitat problem.
- Suggest ways they can help solve or at least lessen the problem.
- Identify at least one other activity they can get involved in to help shorebird conservation.

Introduction

Perhaps one of the most powerful environmental lessons a student can learn is that he or she does have the power to make a difference. For some, all they need to understand this lesson is one positive experience. A good experience not only gives them the confidence to participate in conservation and stewardship projects, but it also teaches them the tools of planning, presentation, design, and follow through.

If your students have difficulty thinking of a local project, offer them some of the suggestions below to get them thinking. Check with your local land-use planners, natural resource agencies, volunteer organizations, or local environmental or hunting clubs for other ideas.

Conservation Project Examples

Initiate or Participate in a Wetland Water Quality Testing Program

There are several programs available:

- Adopt a Stream: <http://www.streamkeeper.org>
- Adopt a Wetland: There are numerous state and federal agencies involved in region-specific programs. Do a search on the World Wide Web for an Adopt a Wetland program in your state.
- Adopt a Watershed: <http://www.adopt-a-watershed.org>

Initiate a Recycling Program in Your School

Help preserve wildlife resources by reducing the demand for mineral resources often found in wildlife habitats.

Plan a Litter Clean-up Day

This might focus on your own school grounds or an important shorebird habitat. Advertise your efforts in your local school and community newspapers.

Create a Wetland or Grassland Plan

Map the wetlands and grasslands around your school or local community. Evaluate their functions. Are they being protected from polluting run-off, pesticide spraying, littering, disturbing recreation? If not, create a plan that offers solutions to these problems.

- Contact your local U.S. Fish and Wildlife Service office to learn more about the Schoolyard Habitats program or go to <http://partners.fws.gov/OurPartners/schools.htm>

Propose a Wildlife Enhancement Project

If there are no wetland or grassland habitats around your school or in your community, can you find areas where they might be created? Is there a stream or beach that needs improvement? Propose your suggestion for a wildlife enhancement project to the appropriate government agency. Grants may be available from local civic groups, government organizations, or sport-fishing organizations to help you. To get more positive publicity and support, develop your project around a theme such as Arbor Day, Earth Day, or International Migratory Bird Day.

Develop an Information Program

Educate others in your community about the danger litter is to local wildlife and shorebirds. Address local wetland problems. Bring attention to threats to the shorebirds of your area. Whatever the conservation topic, make sure you let people know what they can do to help. Create informational posters, flyers, displays and newspaper articles.

Develop a Wildlife Calendar

Focus on a local wetland or grassland, wildlife observation spot, or park. Interview people in the community; or make your own observations to determine when, and which, species of migratory birds migrate through, feed, nest, and roost in the area. Present this information in a wildlife calendar and post it at the site.

Materials

- This will vary with the project your class selects

Procedure

1. Have the class brainstorm a list of activities on the school grounds or in the community that may be negatively impacting wildlife or, more specifically, shorebirds. Some possible answers are: litter, spraying pesticides that kill the “pest” but perhaps affect other plants and animals too, and removing food and cover plants.

Note: It may also be appropriate to consider helping with habitat-improvement projects identified by the local community or participating in ongoing conservation projects.

2. Select one of the problems to work on--something the students think they could realistically handle and do something constructive about in the time they have available. If they have difficulty coming to a consensus, allow them an opportunity to speak in support of their choices. If necessary, have the class vote and select the project with the most support.

Note: Assist students in selecting a project that is realistic, constructive, and possible. If not, the students may experience an activity that contributes to their thinking that they “cannot do.” Encourage community involvement to help tackle a potentially large project, and give students an opportunity to learn from others and about other points of view. If adults take part, make sure that students are still allowed to take leadership roles and “own” their plans and actions. Through proper evaluation, students can learn from failures, as well as from successes.

3. Once the problem has been selected, ask the students to work alone or in small groups to generate ideas for possible solutions to the problem and ways to implement the project. Each individual or small group should come up with a plan, including written descriptions and sketches (perhaps in the form of a “flow chart” with arrows indicating the order of procedure) illustrating how to accomplish the project, step-by-step.
4. Have the groups present their plans to the rest of the students. Students may ask questions of the groups. Once all the plans have been presented, ask the students to select the plan that seems the most (a) constructive, (b) realistic, (c) helpful to wildlife and (d) likely to make a lasting contribution.
5. Have the students select one or more alternate plans in case their first choice is not acceptable to school or community leaders. Check that the selections are well thought out, include time lines, and are complete.
6. Once a plan and backup alternatives have been selected, have the students select a delegation to present their proposal to the school principal or the appropriate authority. Remember to include anyone who would be physically or officially involved (maintenance people, ground keepers, school board, etc.). Plan a “dry run” in front of a test audience and respond to any audience questions that might come up. Make adjustments in the presentations as needed.



7. Have the students make an appointment to present their proposal and then report back to their classmates. If their plan is accepted, they should know whom to contact next in order to successfully complete their project. Once they have all the necessary permissions, the students should begin work.
8. Once the project is complete, ask the students to analyze their results. Did things work out the way they wanted? Were there any surprises or unforeseen problems? How might the students or plans have been more effective?

Additional Activities



Cultural Connections

Through the Shorebird E-mail Network, your class can connect with another class along the flyway to share what it is doing to help conserve habitat for shorebirds and other wildlife species.

How To Do a Community Service Project

Document the entire process of developing and completing a community service project on video or photographs for other students. Include the mistakes you made, as well as the successes. Submit your video/pictures to the Shorebird Sister Schools Website <http://sssp.fws.gov>

Shorebird Values on the Line

Adapted with permission from “Values on the Line, Project Learning Tree Pre K-8 Activity Guide.”

Grade Level: upper middle school/ high school

Duration: one class period

Skills: evaluation, discussion, critical thinking, comparison, and vocabulary

Subjects: science, social studies, and language arts

Concepts

- Taking an active role in shorebird conservation requires that we apply knowledge.
- Environmental stewardship is vital for the long-term conservation of our shared natural resources.

Vocabulary

- values
- beliefs
- facts
- opinion

Overview

Students rank to what degree they agree or disagree with a set of statements pertaining to shorebirds and shorebird habitat. They compare their rankings with those of their classmates, examine the reasons behind them, and discuss what factors influence a person’s values.

Objectives

After this activity, students will be able to:

- Clarify the difference between a belief, a fact, and a value.
- Identify the need for balanced information when forming opinions.
- Explain to what degree they agree or disagree with environmental issues related to shorebirds.

Introduction

The process of searching for truth involves identifying and assessing facts; distinguishing substantial from insubstantial evidence; separating the search for truth from the acceptance of propaganda; and examining controversial subjects such as politics, ethics, and religion in a constructive and unbiased manner.

To make decisions, students need to resolve ambiguities, balance the advantages and drawbacks of alternative solutions, and project the likely consequences of a particular choice. By combining such a decision-making procedure with pertinent scientific and technological information, students move toward achieving scientific literacy.

Materials

- One copy of the *Shorebird Values Statements* handout (included here) for each student
- Large open space

Activity Preparation

1. Make a copy of the Shorebird Values Statements handout for each student.

Procedure

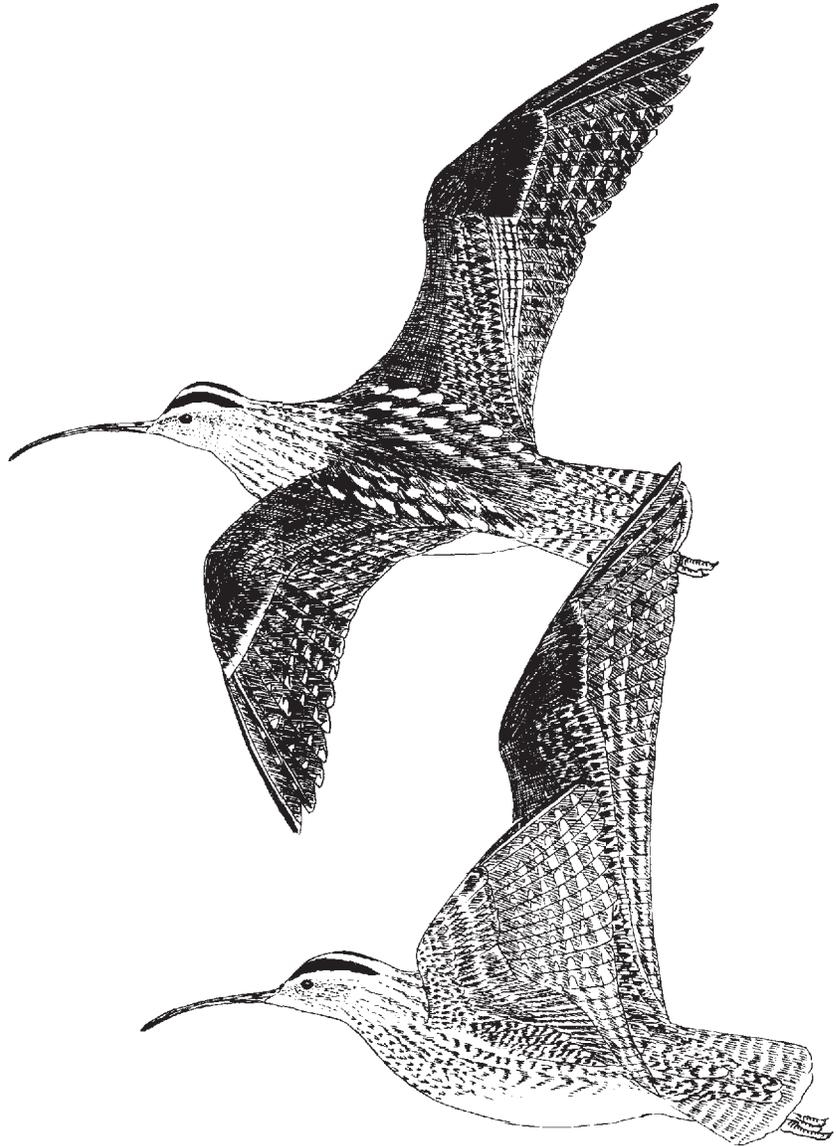
1. Pass out a copy of the *Shorebird Values Statements* handout to each student. Ask them to rank how much they agree or disagree with each statement by circling a number, under each statement. A “10” represents strongest agreement and “1” the strongest disagreement.
2. Find an open space and have the students stand in a line. Tell them that the line represents the scale of 1 to 10 that they used to rank the value statements (one end of the line being “strongly agree” and the other end “strongly disagree”).

3. Read one of the value statements aloud and have students position themselves in line according to how they ranked the statement. They will need to communicate with each other to make sure everyone is in the right place. Once they are settled, point out how the line reflects the range of opinions in the class.
4. Next, break the line at midpoint, and have half the students stay in place while the other half moves down so each student has a partner.
5. Give each person in the pair one minute to explain to his or her partner the ranking he or she chose. Then give the other partner half a minute to paraphrase what was said. Have the partners switch roles, giving the other person a minute to explain his or her ranking and the partner half a minute to paraphrase what was said.
6. Repeat steps three through five for as many of the value statements as you like.
7. Discuss each value statement with the students, using the following questions as a guide:
 - What reasons did they have for the rankings they chose?
 - What reasons did their partners give for the rankings they chose?
 - Did any of them support their rankings using examples or specific information from real-life situations?
 - Did anyone feel like changing his or her ranking on a particular statement after pairing with someone else and hearing his or her opinion?
 - Did students feel they needed additional information to judge an issue? If so, what did they need?



- Where do people's values come from? What kinds of experiences change or strengthen people's values?

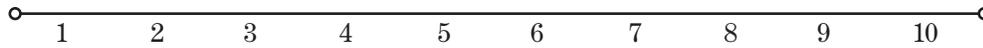
Alternative: Using chalk, string, or tape, create a scale of 1 to 10 on the ground. Make the scale 10 yards or meters long with the numbers one yard or meter apart. For a particular value statement, have the students place themselves as close as possible to the ranking they chose. When everyone is settled, make a diagram on the chalkboard or easel paper of how students are distributed on the scale. Have them do the exercises in steps three to five, and allow them to change their ranking based on what they learn. Have students once again position themselves on the scale. Draw another diagram showing their revised positions. Compare the diagrams and discuss the changes with the entire group.



Shorebird Values Statements

1 (strongly disagree) – 10 (strongly agree)

1. Beachfront property that is valuable shorebird habitat should not be protected if development would bring more jobs and tourist dollars into the community.



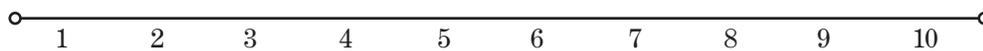
2. It is important to protect tundra wilderness areas even if most people will never visit them.



3. The world's natural resources exist for people to use. Preserving these resources for shorebirds is a luxury we cannot afford.



4. The loss and degradation of habitat is the biggest problem facing shorebirds today.



5. Shorebirds can always find another place to rest and feed if a traditional migration stopover site is lost to development.



6. People have a responsibility to protect all life forms on Earth, including shorebirds.



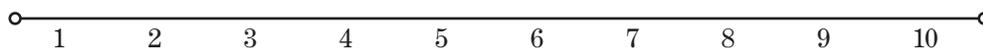
7. Protecting shorebirds and their habitat is primarily the responsibility of the government of the United States.



8. People should be able to use their own land in whatever way they want (that is farming, grazing cattle, housing, logging, wildlife habitat).



9. The fate of the human race is tied to the fate of other living things, including shorebirds. If people are to survive, we must protect all species and their habitats.



10. People will eventually develop alternative farming and grazing practices and machinery that will allow farmers and cattle ranchers to successfully coexist with grassland-nesting shorebirds.

