

## SHOREBIRD'S EYE VIEW

**Overview:** Using their imagination, visualization, geography, use of scale, and drawing, students will explore what it is like to be a migrating shorebird. They will learn about hazards that shorebirds encounter during their migration.

**Content Standards Correlations:** Science, p. 292

**Grades:** 2-6

**Key Concepts:** Shorebirds migrate seasonally from their nesting grounds in the north to their wintering grounds in the south. Shorebirds migration is long and difficult. They encounter many different human caused hazards during their journey including, powerlines, and oil spills.

### Objectives:

Students will be able to:

- discover what Earth looks like from a birds eye view
- understand that migration is long and difficult

### Materials:

- large sheets of drawing paper (one per student)
- photocopy of the Western Sandpiper on p. 162 (1 per student)
- map of North and South America (if available)
- pencils, colored pencils, markers, crayons, or paints
- tacks
- wall space

*Adapted from Quinlan, Alaska Wildlife Week.*

## SUPPORTING INFORMATION FOR THIS ACTIVITY

### Shorebirds

- People feel a sense of beauty and mystery watching a huge flock of shorebirds turning in the air over the water as their wing catch the light of the sun. Scientists are fascinated by them. How do they migrate thousands of miles, how do they find their way, how do they cope with living in such different environments from the Arctic tundra to mudflats in the tropics.
- Shorebirds are the small, beautiful birds of open land, they are adapted to live on sandy or rocky shores and in wetlands the fragile strips on earth where land and water meet. It is land which contains some of the greatest diversity (variety) of life on our planet.
- There are about 214 species of shorebirds in the world. Almost 80 of them are found in North America.
- Shorebirds have special adaptations to live in conditions where very powerful natural forces are at work. Their coloring is camouflage to help protect them from predators such as hawks, gulls, and foxes. They are usually speckled brown and rusty with some white on their backs. They blend in well with the sandy, muddy, or wetland areas where they feed and nest.
- They stand up very straight on long legs, which help them wade through water and mud. They have special bill shapes to probe in the mud or water for small animals to eat. Shorebirds with short bills probe for animals that live near the surface. They are strong, fast fliers with long pointed wings that help them when they travel long distances during migration.
- Twice a year, in the spring and fall, enormous flocks of shorebirds swarm along the coasts in great migrations. In the spring, as the snow melts and as soon as weather permits, they head north to their summer homes. They spend about two months each year nesting and raising their young in inland tundra or near the beach. In the fall, they migrate south and spend up to ten months of the year in their winter homes.
- More information on the Pacific Flyway, shorebird habitats, and threats to shorebirds can be found in Spotting Super Shorebirds on p. 275.

## Western Sandpiper

- The Western Sandpiper (*Calidris mauri*) is a very small shorebird, only 6 ½" from the tip of its bill to the tip of its tail. It has speckled rust and tan colors on its head and shoulders. Its belly is an off-white to light buff color. You can see dark, arrow shaped spots on its breast and sides. The slender, black bill droops a little at the tip.
- As the birds walk near the water's edge, they constantly probe in the mud for tiny clams, worms, and sand fleas. The movement of their busy little bills has been compared to the up and down motion of sewing machine needles.
- In the winter, Western Sandpipers are found along the coast from California to Peru. Early in April, they form huge flocks and begin the long migration to breeding grounds in the far north. Most fly to northwestern Alaska. Some even fly across the Bering Sea to the eastern tip of Russia.
- The Western Sandpiper has to be on the watch for predators like foxes, weasels, and gulls. The parent will sometimes pretend it has a broken wing, and drag itself away from the nest to distract a predator (Remember, if a predator attacks, the parents can fly but the chicks cannot). Another defense the chicks have is their instinct to "freeze," sitting perfectly still, when a parent gives an alarm call.
- Western Sandpipers rely on wetlands for feeding areas. Slowly, one by one, wetlands are being filled with gravel and concrete to make parking lots and building sites. Some towns in the United States and Canada have passed laws to protect wetlands.

## TEACHING METHOD

### Read

"On our field trip we observed shorebirds and the habitats that they use during their migration. Today we will be exploring what the Earth looks like from the view of a migrating shorebird."

### Ask

? **What is migration?** (Migration is the regular movement of animals between two different geographic locations. In most cases the movement is seasonal and involves moving to and from breeding grounds and then back again the following year.)

? **Why do shorebirds migrate?** (There are many different theories as to why shorebirds migrate. Shorebirds migrate seasonally to escape the onset of winter. If shorebirds did not leave their nesting grounds in the fall to migrate south, they would not be able to find food during the harsh winter months in the northern hemisphere. This seasonal migration also assists with the reduction of competition with other shorebirds so it is easier to find more food all year long. In addition, daylight hours are longer in the higher hemispheres which provides more daylight hours for feeding.)

? **When do shorebirds migrate?** (Shorebirds migrate with the seasons, therefore they migrate twice a year. In the spring, as the snow recedes shorebirds head north so that they may breed in the summer. In the late summer and fall, as the weather cools down in the north the shorebirds head south and spend up to 10 months of the year on their non breeding grounds.)

? **How do the shorebirds find their way from their winter home to their summer home?**

(Actually there are many different theories of how the shorebirds find their way. The most probable explanation is that migrating shorebirds use a combination of means including, senses, celestial clues (ex. Stars), landmarks, and instinct.)

? **We saw several different types of shorebirds on our field trip. How large were these shorebirds?** (The sizes of shorebirds vary. However, they generally range from 6" - 22" )

? **How high do these shorebirds fly?** (During migration a shorebird will fly between 5,000 and 20,000 feet!)

? **Have you ever looked down on the tops of trees, clouds, a river, or the ocean shore from an airplane, a tall building or a cliff?** (Take several answers)

? **What did the Earth look like? What would you imagine the Earth to look like from the sky?** (Take several answers)

? **Imagine what the world would look like to a migrating shorebird in the spring or the fall. What do you think they can see from the sky?** (The shoreline, estuaries, river deltas, the bay, the salt marshes, the salt ponds, ice and snow, other shorebirds flying or landing, feeding, or roosting below, large flocks of waterfowl or shorebirds, tree

tops, height of the tide, storms, clouds, people, towns, cities, fields, also hazards such as oil spills, power lines, etc.)

### Do

Write these objects on the board as the students continue brainstorming.

### Read

“We are now going to draw or paint a picture of the world from the view of a migrating Western Sandpiper. Imagine what the world looks like from the viewpoint of the Western Sandpiper. Include all of the different habitats, and other objects that the shorebird sees from the air.”

### Do

- Have the students draw a careful and complete aerial view of the world on drawing paper (8½" x 11" sheet of paper or whatever size is appropriate for your wall space). They should draw previously discussed landmarks, hazards, and habitats.
- Tack the students individual drawings side by side on the wall to create a large square shaped mural.

### Read

“Western Sandpipers are a very small shorebird, they are 6 ½” from the tip of their bill to the tip of their tail. They migrate along the coast from California to Peru. Early in April, they form huge flocks and begin the long migration to breeding grounds in the far north. Most fly to northwestern Alaska. Some even fly across the Bering Sea to the eastern tip of Russia.”

### Do

If you have a map of North and South America point out these locations as you describe the migration route of the Western Sandpiper.

### Read

“We are each going to color and cut out a Western Sandpiper to place on the mural that we just completed.”

### Do

Pass out the picture of the Western Sandpiper on p. 162.

### Read

“Western Sandpipers have different colored plumage

according to the seasons.

“In the fall, when they are migrating south to their wintering grounds their feathers are grey and white. In the spring, when they migrate north towards their summer breeding grounds their feathers are a mixture of brown, grey, black, and white.

“Our flock of Western Sandpipers are going to be migrating north towards their summer breeding grounds, so we will color their feathers with a mixture of brown, grey, black and white.”

### Do

- Have the students color the shorebird. (Bill-brownish/ blackish, Head-brown on the crown and underneath the eye, Eye-black, Wings and Back-mixture of brown, black and white.) *Note: If you have internet access, you can find a color picture of the Western Sandpiper on the Shorebird Sister Schools Program (see information on the next page) or in any bird identification book.*
- When the students are done coloring they can cut out their shorebird. It can be reinforced by gluing poster board to the back. Have the students write their names on the back of the shorebird.
- They can then pin the shorebird at the southern end of the mural in the wintering grounds.
- Over the next few weeks have the shorebirds migrate north across the mural. Label the mural like you would a map by indicating North, South, East, West. To indicate the distance that shorebirds fly place mile markers (every 100-200 miles) at the bottom of the mural. In addition, make large signs to indicate nesting grounds in the North and wintering grounds in the South of your mural.

### Ask

- ? **What hazards do shorebirds encounter on their migration?** (Oil spills, power lines, wind storms, predators, habitat destruction, pollution, etc.)
- ? **Can you identify any possible hazards on your drawing? If so, how many can you identify?** (Take different answers.)
- ? **Is it easy or difficult to be a migratory shorebird? Why/ Why not?** (Take different answers)

### Read

"A shorebird's migration is very difficult. Over 20 million shorebirds migrate each year. Shorebirds fly hundreds and even thousands of miles per day to reach their destination. Some shorebirds fly non stop to their breeding or wintering grounds. (Example: Hudsonian Godwits fly over 8,000 miles non stop!) When shorebirds do rest they must then be able to find food, water, and shelter. If the weather becomes poor, high winds and rain can blow shorebirds off course, making it more difficult for shorebirds to complete their migration. In addition, hazards caused by humans, such as power lines, oil spills, and pollution, can make it impossible for shorebirds to complete their migration."

### Ask

#### ? What can we do to protect shorebirds?

(Reduce, recycle, and reuse to reduce the number of landfills, don't dump down the storm drains, plant native plants, restore wetlands, write letters.)

### Internet Education Program

Shorebird Sister Schools Program is an Internet education program designed for students to track

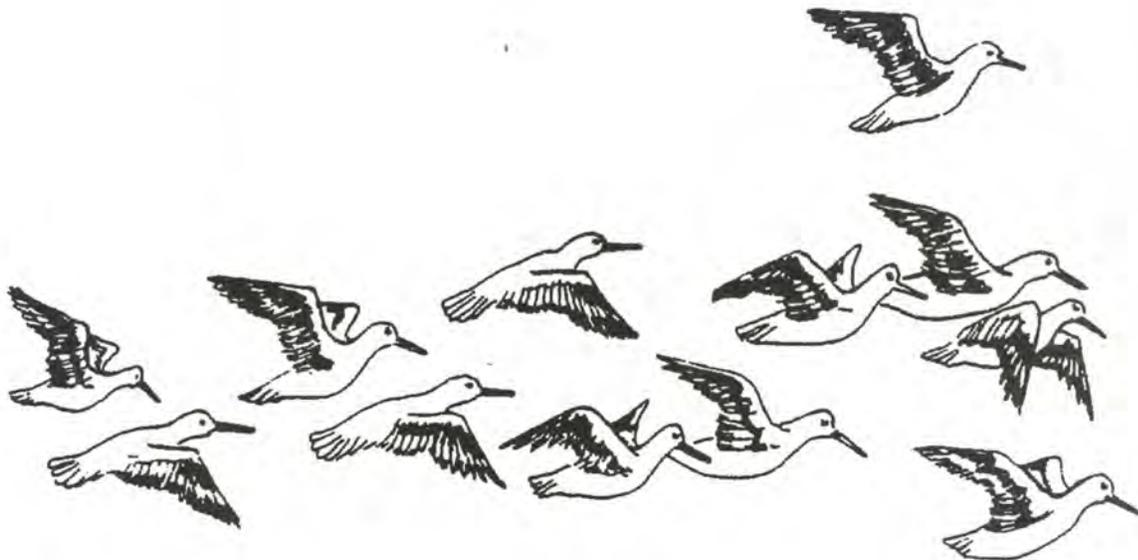
arctic nesting shorebirds as they migrate northward to their nesting grounds in Alaska. Students can post information about the shorebirds they spot on their field trip.

In addition, there are fun activities for the students, maps of migration routes, and pictures of shorebirds on the website. For more information please access the web site at <http://www.fws.gov/~r7enved/sssp.html>

### Ideas for Writing and Speaking Topics for Language Arts Content Standards

Students can explore:

- the journey of a shorebird other than the Western Sandpiper (including hazards it can encounter) through story writing (see animals list p. 26 and Shorebird Sister Schools Program for ideas).
- research how high and how far (name the locations) the smallest and largest shorebirds fly in the Pacific Flyway, and make a presentation of the findings to the class.



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## WESTERN SANDPIPER

