

WHERE HAVE THE BIRDS GONE ?

Where Have The Birds

Gone? is a mapping activity that will allow students to discover where South Dakota birds spend their winters.

Objectives

This lesson is designed to be incorporated into elementary or middle school (grades 4 to 8) curriculum units on birds. This activity integrates science, mathematics, and geography. Students will gain an understanding of South Dakota bird migration, learn the geography of the western hemisphere, and develop their mapping skills by plotting locations using latitude and longitude coordinates.

Materials

For this activity, you will need a large map of the western hemisphere with latitude and longitude lines indicated, a field guide to North American birds, a copy of the **Banding and Site Records List**, string, scissors, and thumb tacks or other markers. Optional: a magazine photo of each species listed on the **Banding and Site Records List**.

Background

Very few of the birds that can be seen in South Dakota during the spring, summer or fall stay through the long, cold South Dakota winter. Most of the birds head for warmer locations. *The Birds of South Dakota* will provide information about the birds' departure and return dates. Not all

species leave and return during the same month. By November, most migratory species have left South Dakota. Many ducks and geese will return in the spring, as early as February and March, while most warblers won't return until April or May. In some species, red-winged blackbirds for example, males of the species will return in the spring before the females.

The species records marked with an asterisk on the **Banding and Site Records List** are actual records from the U.S. Fish and Wildlife Service Bird Banding Laboratory for birds banded in South Dakota and recovered in their wintering grounds. The unmarked records are indications of where the birds are found during the winter according to information reported in *The Encyclopedia of North American Birds* and *The Birds of South Dakota*. **Please be aware that the species have a greater winter distribution than that listed in this activity; the yellow warbler, for example, is found throughout Central and South America, not just in Cuba and Peru.**

Much of our knowledge of bird migration has come from bird banding records. Bird banders must have a Federal license to trap and band birds. Each small aluminum band has a number that is registered with the U.S. Fish and Wildlife Bird Banding Laboratory. Information on banded birds is maintained in computers

at the Lab. If someone finds a banded bird, the finder should send the number, date, and location of the recovery to the U.S. Fish and Wildlife Service, Office of Migratory Bird Management, 12100 Beach Forest Road, Laurel, Maryland, 20708. The laboratory will record the information in their computer, notify the original bander of the recovery, and let the person who found the band know the species of bird, and when and where it was banded.

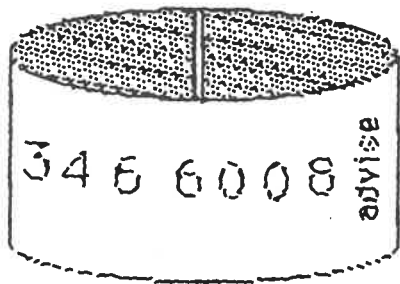


Fig. 1: A Federal Bird Band

Many towns in South Dakota participate in a Christmas Bird Count during late December or early January to tally the species that remain for the winter. Christmas Bird Counts are held each year at Aberdeen, Badlands National Park, Brookings, Deuel County, Madison, Pierre, Rapid City, Sand Lake National Wildlife Refuge, Shade Hill, Sioux Falls, Sturgis, Waubay, Wilmot and Yankton. The June issues of the quarterly journal of the South Dakota Ornithologist's Union (SDOU) contain the records for each year's Christmas Counts for all the South Dakota locations. Individual students who are particularly interested in birds and would like to participate in this activity or subscribe to the SDOU journal can contact Dan Tallman at NSU Box 740, Aberdeen SD 57401 for information.

Some common bird species that spend the winter in South Dakota are: bald eagle, golden eagle, rough-legged hawk, ring-necked pheasant, wild turkey, rock dove, eastern screech-owl, great horned

owl, downy woodpecker, hairy woodpecker, northern flicker, horned lark, blue jay, american crow, black-capped chickadee, red-breasted nuthatch, white-breasted nuthatch, brown creeper, cedar waxwing, northern shrike, european starling, american tree sparrow, dark-eyed junco, red crossbill, common redpoll, pine siskin, american goldfinch, evening grosbeak, and house sparrow. In places such as Pierre, where there is open water throughout the winter, some ducks and geese will remain.

Method

Provide students with a field guide to birds and a large map of the western hemisphere that has clearly marked longitude and latitude lines. Photocopy the **Banding and Site Records List**. Have the students look up the listed bird species in a field guide so that they know the bird's size and appearance. Provide students with a photocopy of the **Migration Data Chart**. Students should enter each species' name and body length on the chart in order, from smallest to largest. For each species on the **Banding and Site Records List**, draw a line or attach a string on the map beginning in South Dakota and extending to each location identified by latitude and longitude. These winter locations for the species can be marked with pins, or with names or pictures of the birds. Using the map scale, students should determine the approximate length of the trip made by each individual bird included on the list. As they are completing the map, students should enter, onto the **Migration Data Chart**, the country name and length of migration for each species record.

After the map and chart have been completed, have students look for migration patterns. What directions do most birds migrate? Where do most of these South Dakota birds go? Do larger birds migrate farther than smaller birds? Do all birds of the same species go to the same location for the winter? Do similar

species have similar migrations? (Compare, for example, the migrations of all duck and goose species.)

Extensions

Encourage students to investigate where additional species migrate and which species remain in South Dakota for the winter (see the References section for

resources). Have students find out what foods the birds eat and their habitat. Discuss why it might be important for the migratory species to leave the state. What do our winter resident birds eat and what is their habitat? Why can they stay? What percent of the bird species known from South Dakota remain here during the winter?

KEY

<u>Bird Species</u>	<u>Country or State</u>	<u>Bird Species</u>	<u>Country or State</u>
Franklin's Gull	Guatemala	W. Meadowlark	Louisiana
"	Texas	"	Texas
"	Peru	Pintail Duck	Mexico
*Bullock's Oriole	Costa Rica	"	Cuba
*Marsh Hawk	Texas	Canada Goose	New Mexico
"	Louisiana	"	Texas
*Red-tailed Hawk	Louisiana	Snow Goose	Texas
"	Texas	"	Mexico
*Burrowing Owl	Texas	Wood Duck	Texas
"	Texas	"	Louisiana
*Blue Jay	Oklahoma	Yellow Warbler	Peru
"	Texas	"	Cuba
"	Texas	Wilson's Phalarope	Falkland Islands
*Harris' Sparrow	Texas	"	Argentina
"	Oklahoma	Barn Swallow	Panama
*White-throated Sparrow	Louisiana	"	Argentina
"	Texas	Bobolink	Brazil
*Chipping Sparrow	New Mexico	"	Argentina
*Red-eyed Vireo	Costa Rica	Swainson's Hawk	
*Warbling Vireo	El Salvador	Ruby-throated Hummingbird	Mexico
*Robin	Arkansas	"	Costa Rica
"	Texas	Great Blue Heron	Louisiana
"	Oklahoma	"	Columbia
"	Louisiana	"	Venezuela
Yellow-headed Blackbird	Mexico	Eastern Bluebird	Louisiana
"	Texas	"	Texas
Red-winged Blackbird	New Mexico	Chimney Swift	Peru
"	Louisiana	"	Ecuador
Common Grackle	Louisiana	Purple Martin	Peru
"	Mississippi	"	Bolivia

Banding and Site Records List

<u>Bird Species</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Bird Species</u>	<u>Latitude</u>	<u>Longitude</u>
Franklin's Gull	14.1 N	91.5 W	W. Meadowlark	32.0 N	93.2 W
"	33.5 N	98.2 W	"	33.1 N	95.5 W
"	3.9 S	80.9 W			
*Bullock's Oriole	9.5 N	84.0 W	Pintail Duck	19.0 N	98.2 W
			"	21.5 N	77.0 W
*Marsh Hawk	33.5 N	98.2 W	Canada Goose	35.5 N	105.2 W
"	29.9 N	92.9 W	"	32.1 N	98.4 W
*Red-tailed Hawk	29.8 N	92.8 W	Snow Goose	28.5 N	95.5 W
"	28.5 N	95.5 W	"	25.4 N	105 W
*Burrowing Owl	29.1 N	97.1 W	Wood Duck	29.2 N	98.4 W
"	32.4 N	100.5 W	"	31.0 N	92.5 W
*Blue Jay	36.2 N	96.4 W	Yellow Warbler	11.2 S	75.5 W
"	30.4 N	96.4 W	"	21.5 N	77.0 W
"	35.5 N	97.3 W			
*Harris' Sparrow	32.1 N	98.4 W	Wilson's Phalarope	52.0 S	60.0 W
"	35.0 N	98.2 W	"	41.0 S	68.5 W
			Barn Swallow	8.0 N	83.0 W
*White-throated Sparrow	32.5 N	93.5 W	"	41.0 S	66.4 W
"	30.1 N	97.5 W	Bobolink	20.4 S	50.0 W
			"	30.2 S	61.3 W
*Chipping Sparrow	35.5 N	105.2 W	Swainson's Hawk	32.4 S	65.1 W
*Red-eyed Vireo	10 N	84.5 W	Ruby-throated Hummingbird	25.5 N	105 W
*Warbling Vireo	13.4 N	89.1 W	"	10.0 N	84.5 W
*Robin	35.4 N	93.3 W	Great Blue Heron	32.3 N	92.5 W
"	33.1 N	95.5 W	"	3.0 N	71.3 W
"	35.4 N	94.3 W	"	8.0 N	65.0 W
"	31.1 N	92.1 W			
Yellow-headed Blackbird	23.5 N	103 W	Eastern Bluebird	32.0 N	93.1 W
"	29.5 N	98.2 W	"	32.4 N	100 W
Red-winged Blackbird	33.2 N	105 W	Chimney Swift	5.0 S	73.2 W
"	32.1 N	93.5 W	"	1.5 S	76.2 W
Common Grackle	32.1 N	93.5 W	Purple Martin	10.0 S	74.5 W
"	32.5 N	89.2 W	"	17.0 S	63.5 W

References

SDOU, 1991. *The Birds of South Dakota*. NSU Press, Aberdeen, S.D.
Terres, John, 1980. *The Encyclopedia of North American Birds*. Alfred A. Knopf, New York, NY
U.S. Fish and Wildlife Service Bird Banding Laboratory Records, 12100 Beach Forest Road, Laurel, Maryland 20708-4037.

Selected Resources For Teachers

A Guide to the Field Identification of Birds of North America by Robbins, Bruun, Zim and Singer, 1983, Golden Press, New York.
Field Guide to the Birds of North America published by the National Geographic Society, 1983.
Migratory Songbird Conservation, a 27-page brochure on migratory bird from Nongame Bird Coordinator, U.S. Fish and Wildlife Service, P.O. Box 25486-DFC, Denver, CO 80225.
Peterson Field Guides, Eastern Birds and Western Birds by Roger Tory Peterson, 1990, Houghton Mifflin Co., Boston MA.
The Birds of South Dakota, a reference book with distribution and migratory dates for all South Dakota birds. 1991. SDOU, NSU Press, Aberdeen, SD 57401.

Written by:

Dr. Erika Tallman, Northern State University, Aberdeen, SD 57401.

Reviewed by:

Dr. David Swanson, Biology Department, University of South Dakota, Vermillion, SD 57069.

Publication of the *Where Have The Birds Gone?* fact sheet was funded by the South Dakota Department of Game, Fish and Parks, Division of Wildlife, Pierre, SD.