

ENDANGERED SPECIES

Status: Federal Threatened
State Threatened

PIPING PLOVER

(*Charadrius melodus*)

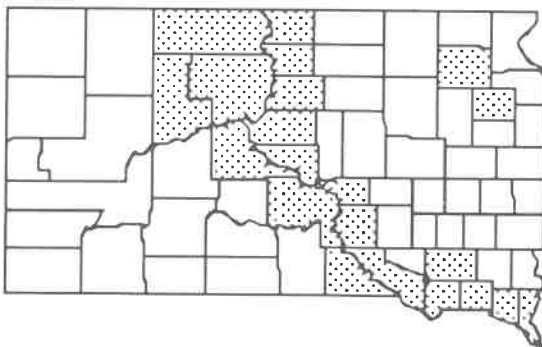
Description

The piping plover's species name is Latin for "pleasantly singing," describing its pleasing call. Plovers are a type of shorebird related to killdeer and avocets. North American plovers are classified as banded or unbanded, depending on whether they have a neck band. Adult piping plovers are sandy-gray on the back and white below. During the breeding season, adults have a dark forehead stripe and a single, sometimes partial, dark neck band, giving the piping plover one of its nicknames, the ring-neck. Other distinguishing characteristics are its short, stout bill, orange legs, and a white rump that is visible during flight. This bird measures 6 to 7 inches long (17-18 cm) and weighs 1 to 2 ounces (43-63 gms). The piping plover is commonly confused with the killdeer, which has two breast bands and is larger and more darkly colored.



Distribution

Piping plovers breed in parts of the prairie provinces, along major prairie rivers of the northern Great Plains, on the shores of the Great Lakes, and along portions of the Atlantic Coast. Some birds nest along *alkaline wetlands* of the Dakotas, Montana, Nebraska, and Iowa. Piping plovers have declined in many parts of their range, including the Great Lakes and parts of the Midwest. Less is known of piping plover wintering sites, although many winter along the Atlantic and Gulf coasts and some Caribbean islands.



Piping Plover Nesting Habitat

In South Dakota, piping plovers nest mainly along the unrestricted stretches of the Missouri River below the Gavins Point and Fort Randall dams. Some birds also nest along Oahe Reservoir and on shorelines of *alkaline wetlands* in northeastern South Dakota. During high water years, piping plovers have nested on gravel-covered parking lots and campsites.

Natural History

Piping plovers usually begin arriving in South Dakota to nest in mid-May. The male performs courtship displays to attract a female. He also performs a nest-scraping display. A mated pair is usually *monogamous* during the nesting season, but piping plovers frequently switch mates between years. Both adults defend their territory, which includes the nest site and possibly a feeding area along the shoreline. After selecting a *nest scrape* for a nest site, the male and female perform another bonding ritual of tossing stones into the nest bowl.

Piping plovers favor open, sparsely vegetated areas with a sand or gravel surface. They nest near water, sometimes near grass clumps or objects such as small rocks or driftwood. In South Dakota, piping plovers commonly nest with least terns. In other places, piping plovers may nest with Arctic terns, common terns, or American avocets.

The female usually lays four eggs in the nest (see Figure 1). Since both adults *incubate* eggs, both have *incubation patches*. After approximately 28 days, the eggs hatch, usually within four to eight hours of each other. Both parents care for the *precocial* chicks, but some females desert broods after a few days, leaving the male as a single parent. The brood leaves the nest and begins feeding a few hours after hatching. Young plovers grow quickly and are capable of sustained flight when three to four weeks old. The family group of at least the male and his chicks may stay together until the time arrives to migrate south. Southward migration begins in late July with most birds gone from South Dakota by late August.

Piping plovers feed by running along a lake or river shoreline, giving rise to such nicknames as beach bird and beach plover. Their diet includes *invertebrates* such as beetles, crustaceans, marine worms, and mollusks, which they probe from just below the surface. Their *cryptic* coloration is advantageous on a gray, sandy background. Piping plovers move short distances by running or walking more often than flying.

Significance

This bird is only one of many species that have suffered from drastic ecosystem changes, such as river *channelization*, *impoundment*, and shoreline development. Rather than being significant as an impediment to other conflicting uses, the piping plover will hopefully come to signify a conservation success story where human uses are harmonized with the needs of species that depend on natural habitats.

Conservation Measures

Beyond protection as a state and federal threatened species, other measures can help in managing this species. In places where predators are destroying nests, *predator exclosures* are placed around the nest site. Predator control is also used to discourage individual problem predators, such as mink, red fox, raccoons, or



Figure 1. Piping Plover Nest with Eggs.

skunks, from destroying entire colonies. Strobe lights discourage *nocturnal* predators, such as great horned owls. Unleashed dogs are also a problem at nest sites, and signs are commonly posted to discourage people and their pets from roaming through nesting colonies. In places where information signs are ineffective, nesting areas are sometimes completely closed to human activity until after young birds are mobile. As nesting areas become more vegetated, tilling, spraying herbicides, or flooding can help recreate the open, sparsely vegetated areas the plovers favor.

On a larger scale, water level management is an important tool. In South Dakota, the Missouri River no longer functions as in the past when high spring flows eroded land and created new bare areas for least tern and piping plover nesting habitat. The U.S. Army Corps of Engineers is responsible for managing water levels for the benefit of endangered species along with other objectives, such as flood control, irrigation, navigation, and recreation. In some locations where management techniques have been ineffective or are not practical, habitat has been created by building higher nesting areas that are less vulnerable to changes in water levels.

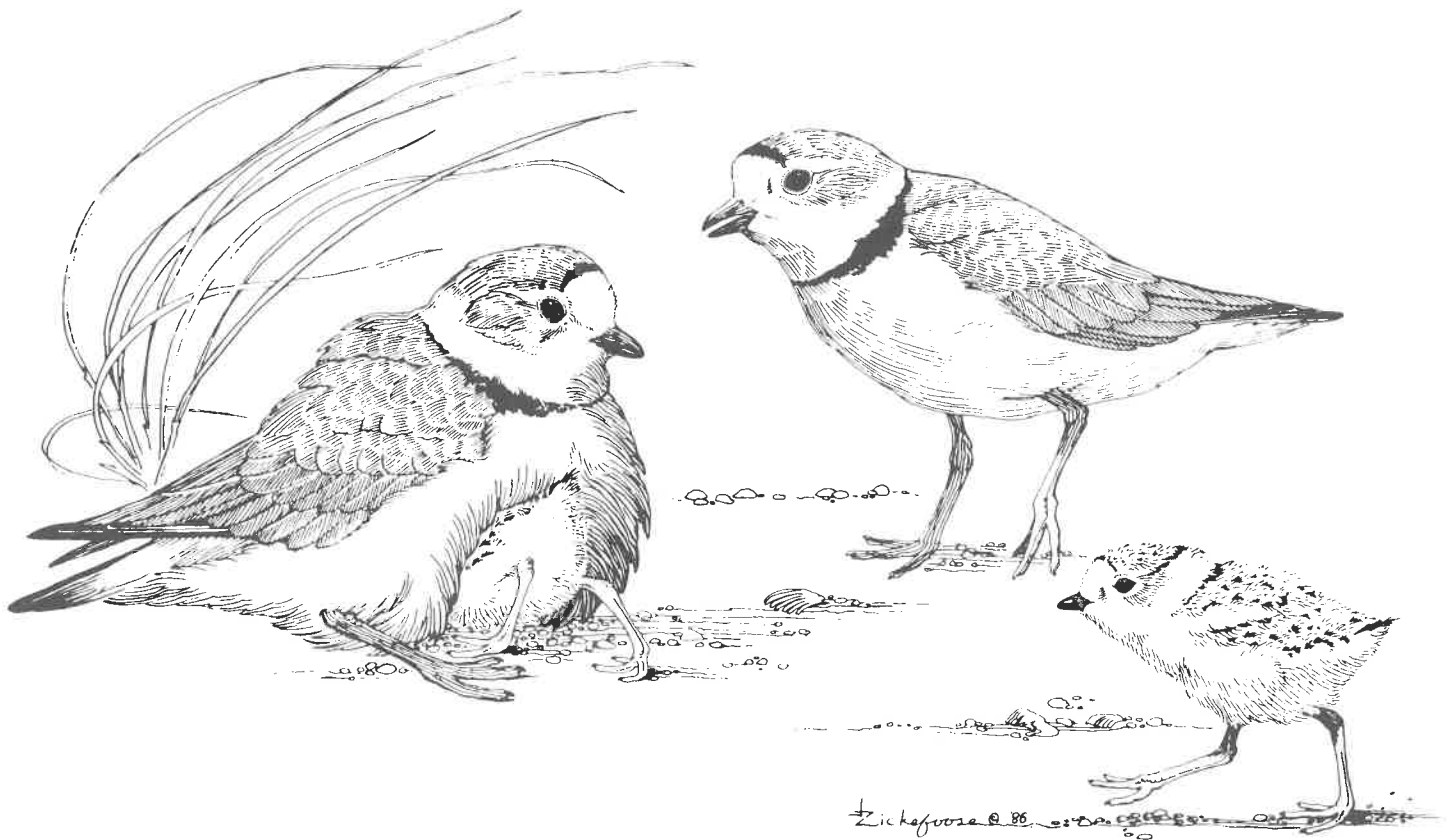


Figure 2. A Family of Piping Plovers

Glossary

- Alkaline wetland** - a wetland with a high concentration of salts. The shoreline may be sparsely vegetated and have white salt deposits.
- Channelization** - the act of straightening and sometimes deepening a water channel to encourage a more controlled and predictable flow.
- Cryptic** - concealing.
- Incubation patch** - also called brood patch. An area of bare skin on a bird's belly that is spongy and inflamed with blood vessels. This area allows a transfer of heat from an incubating adult to the eggs.
- Impoundment** - the act of damming or confining water, resulting in the creation of a reservoir.
- Incubate** - to keep eggs in a favorable environment for hatching. In birds, this is accomplished by the adult sitting on the eggs in the nest to keep them at the appropriate temperature.
- Invertebrates** - those multi-celled animals that lack an internal skeleton.
- Monogamous** - paired with only one mate for at least one breeding season.
- Nest scrape** - that area of ground prepared for nesting by the male plover by scraping the ground with his bill.
- Nocturnal** - active or occurring at night.
- Precocial** - young that hatch from the egg covered in down and with well-developed legs. Soon after hatching they are able to feed themselves.
- Predator exclosures** - structures placed around an area to keep predators out.

References

- Haig, S.M. 1992. Piping Plover. *in* The Birds of North America, No. 2 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.
- U.S. Fish and Wildlife Service. 1988. Great Lakes and Northern Great Plains Piping Plover Recovery Plan. U.S. Fish and Wildlife Service, Twin Cities, MN.

Selected Resources for Teachers

- Fragile Legacy - Endangered, Threatened and Rare Animals of South Dakota* by D.E. Ashton and E.M. Dowd. 1991. South Dakota Department of Game, Fish and Parks, Wildlife Division Report No. 91-04.
- South Dakota Outdoor Guide Segment 205*, featuring a story on the least tern and piping plover in South Dakota. Produced in 1989, this video is available for loan from the South Dakota Film and Video Library, PO Box 5910, Sioux Falls, SD, 57117-5910, Title No. 02774.
- Informational posters and leaflets on the piping plover and least tern are available from the U.S. Fish and Wildlife Service or the Department of Game, Fish and Parks, Pierre, SD.

Written by:

Eileen Dowd Stukel, South Dakota Department of Game, Fish and Parks, Pierre, SD, 57501. © 1996.

Illustrated by:

Julie Zickefoose, Route 1 Box 270, Whipple, Ohio, 45788.

Reviewed by:

Casey Kruse, U.S. Army Corps of Engineers, Omaha District, P.O. Box 710, Yankton, SD 57078.

Publication of the *Piping Plover* fact sheet was funded by the South Dakota Department of Game, Fish and Parks, Wildlife Division, Pierre, SD.