

Piping Plover

Scientific Name: *Charadrius melodus*

Federal Status: Threatened in Northern Great Plains and Atlantic Coast, endangered in Great Lakes. •

State Status: Threatened

Description

The Piping Plover is a small, stocky shorebird about 7 inches long with a wingspan of about 15 inches. Adults have a sand-colored upper body, white undersides, and orange legs throughout the year. A white rump, which is visible in flight, distinguishes this species from other small plovers. During the breeding season, adults acquire a dark narrow breast band, a dark strip across the forehead, and a black-tipped orange bill. The breast band is sometimes incomplete, especially in females. Juveniles are similar to nonbreeding adults in appearance.



Piping Plover
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Although post-breeding birds lose the dark bands and orange bills, they can be distinguished from Snowy Plovers (*Charadrius alexandrinus*) by their shorter bill and bright orange legs. Compared with the Semipalmated Plover (*Charadrius semipalmatus*), the Piping Plover's back is paler and more sand-colored.

Distribution and Habitat

The Piping Plover is a migratory North American shorebird. Historically, Piping Plovers were common in certain habitats along the Atlantic and Gulf coasts, along the river systems and lakes of the Northern Great Plains and Great Lakes region, and in the Bahamas and West Indies. Although populations have been drastically

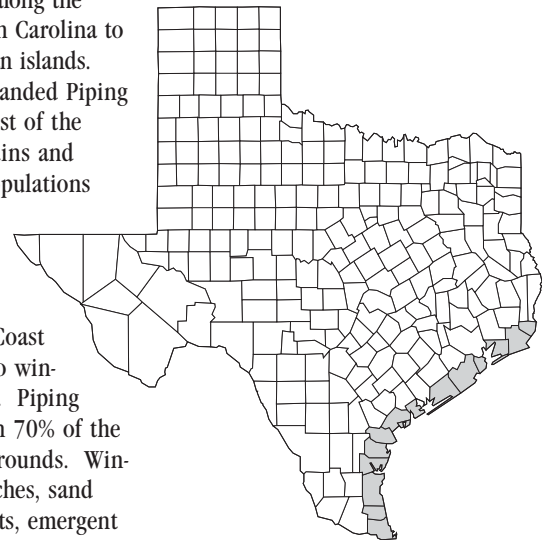
reduced, remnant populations occur throughout the historic range. Currently, Piping Plovers breed on sandy beaches along the Atlantic Coast from Canada to North Carolina, along the sand and gravel shores of Lakes Michigan, Huron and Superior in Michigan, and along Lakes Superior and Michigan in Wisconsin, and on river sandbars and islands, barren shorelines of inland lakes, and alkali wetlands in the northern Great Plains of Canada and the United States. They winter primarily along Gulf Coast beaches from Florida to Mexico, along the Atlantic Coast from North Carolina to Florida, and on Caribbean islands.

Sightings of color-banded Piping Plovers indicate that most of the birds from the Great Plains and Great Lakes breeding populations spend the winter along the Gulf Coast and adjacent barrier islands. However, some birds from the Atlantic Coast breeding population also winter along the Gulf Coast. Piping Plovers spend more than 70% of the year on the wintering grounds. Winter habitat includes beaches, sand flats, mudflats, algal mats, emergent sea grass beds, wash-over passes, and very small dunes where seaweed (*Sargassum*) or other debris has accumulated sand. Spoil islands along the Intracoastal Waterway are also used by wintering plovers. Texas is estimated to winter more than 35% of the known population of Piping Plovers.

Wintering Piping Plovers in Texas prefer bare or very sparsely vegetated tidal mudflats, sand flats, or algal flats - areas which are periodically covered with water and then exposed either by tides or wind. The soft sand or mud is rich with polychaete worms, a primary food of Piping Plovers. The extensive wind-tidal flats in the Laguna Madre of the lower coast are often covered with blue-green algae, which supports large numbers of insects and other invertebrates eaten by plovers. Tidal flats formed at the base of jetties and tidal

passes are also important feeding areas, especially along the upper Texas coast. Piping Plovers also feed on beaches, especially when high tides cover the flats.

Piping Plovers often roost on beaches huddled down in the sand, or behind driftwood or clumps of seaweed and other debris. They also roost among debris in wash-over passes created by hurricanes and storms on barrier islands and peninsulas.



Life History

Piping Plovers spend about 3 to 4 months on their breeding grounds in the northern United States and southern Canada, including St. Pierre and Miquelon off the coast of Newfoundland. They begin arriving from the wintering areas in mid-April. Courtship behavior includes aerial flights, digging of several nest scrapes, and ritualized stone tossing. Piping Plovers are monogamous, but mate-switching may occur both during the breeding season and between years.

Plover nests are shallow depressions in the sand, frequently lined with small pebbles or shell fragments. The nest cups are about an inch deep

and 2.5 inches in diameter. Females lay 4 eggs, which are gray to pale sand-colored with a few dark spots. The eggs blend almost perfectly with the sand, making them very difficult to see. Both parents incubate the eggs for about 27 days. Most adults raise only one brood per year, and occasionally they will renest if their nest is destroyed.

Eggs begin to hatch from late May to mid-June. The chicks can feed themselves within hours after hatching. Both parents attend the young. Broods generally remain on the nesting territory, expanding their movements as they mature or are disturbed. The young are able to fly about 30 to 35 days after hatching. Females commonly leave broods when the young are 14 to 20 days of age, but males often remain with them until after they have reached flight age.

The Piping Plover's activity (home range) during the breeding season is limited to the section of lakeshore or beach on which the nest is located. Both adults defend an area (territory) surrounding the nest against intruders. This territory sometimes includes their foraging area. Plovers in some areas defend both nesting and feeding territories. Piping Plovers commonly nest in association with Least Terns, Arctic Terns, Common Terns, Killdeer and American Avocets. Adults begin migrating south from the breeding grounds by July or early August. Adult females begin leaving the breeding grounds first, followed by adult males. Juveniles leave a few weeks later, and most are gone by late August. Although little is known of their migration, it is believed that they generally migrate non-stop from the breeding grounds to the wintering grounds.

Piping Plovers generally begin arriving on the Texas coast in mid-July. The number of plovers appears to increase on the Texas coast through October. Plovers begin migrating towards the breeding grounds in late February. Most birds are gone from Texas by mid May, although a few birds can be found along the coast year round. Birds found on the Texas coast during the breeding season may be adults, but

are non-breeders. When the plovers are on the wintering grounds, the numbers of plovers that are detected is generally correlated with seasonal high tides. Seasonal high tides cover extensive flats that would otherwise be available to the birds during periods of low tide, pushing foraging plovers into areas that are more visible to the public and researchers.

Sightings of banded Piping Plovers on the wintering grounds suggest that they show some site fidelity, returning to the same stretch of beach year after year. On the lower Texas coast, individual plovers are known to use areas about 3,000 acres in size, moving 2 miles or more between foraging sites as tidal movements shift the availability of productive tidal flats.

On the wintering grounds, the diet of the Piping Plover consists of marine worms, flies, beetles, spiders, crustaceans, mollusks, and other small marine animals and their eggs and larvae. Plovers are visual predators. Therefore, they feed primarily during the day, but may also feed at night, during full moons. They often run short distances, pausing to stare at the sand with a slightly tilted head, before picking a food item from the substrate. Plovers feed most aggressively during the falling tide, when the availability of exposed mud flats is greatest. When foraging on tidal flats, Piping Plovers are often observed in flocks. These flocks are sometimes large (200 or more birds), but are usually much smaller (5-30 birds). When foraging on beaches, individual plovers are usually distributed along the beach at intervals, and occasionally have aggressive encounters with other shorebirds or other members of their own species.

When not feeding, plovers rest and preen. Piping Plovers roost on beaches, in wash-over passes, or on tidal flats, often near the areas where they forage. They usually roost in spots somewhat sheltered by driftwood, accumulations of seaweed or sea grass, other debris, or small dunes. Plovers often roost together in small flocks. When roosting, Piping Plovers can be very difficult to see.

During the wintering period on the Texas coast, Piping Plovers are often seen with other shorebirds. These associated species include the Snowy, Semipalmated, Wilson's, and Black-bellied Plovers; American



Wintering habitat along the Texas coast
© TPWD Leroy Williamson



Feeding
© TPWD Glen Mills



Resting
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Oystercatcher, American Avocet, Willet, Marbled Godwit, Ruddy Turnstone, Sanderling, Dowitchers, Dunlin, and Sandpipers.

Threats and Reasons for Decline

Habitat alteration and destruction are the primary causes for the decline of the Piping Plover. Loss of sandy beaches and lakeshores due to recreational, residential, and commercial development has reduced available habitat on the Great Lakes, Atlantic Coast, and the Gulf of Mexico. Reservoir construction, channel excavation, and modification of river flows have eliminated sandbar nesting habitat along hundreds of miles of the Missouri and Platte Rivers. Winter habitats along the Gulf coast are threatened by industrial and urban expansion and maintenance activities for commercial waterways. Pollution



Residential development along the Gulf coast
© Leroy Williamson



Recreational use of beach habitat
© Phil Glass

from spills of petrochemical products and other hazardous materials is also a concern.

On the breeding grounds, reproductive success can be curtailed by human disturbance. Vehicular and foot traffic destroys eggs and chicks. The presence of people on beaches and sandbar islands inhibits incubation and other breeding behavior. Changes in land use such as agricultural development, urbanization, and use of beaches has brought an increase in the number of unleashed pets and other predators such as gulls, skunks, and foxes.

Increased recreational use of Gulf beaches may also threaten the quality of wintering sites. Beach traffic, including vehicles and ATV's, as well as the activities of unleashed dogs, can disturb birds and degrade habitat. Beach raking, a practice associated with high recreational use, removes driftwood, seaweed, and other debris used by roosting plovers, and may disrupt nutrient cycles and remove prey organisms from foraging areas where plovers forage on the beach.

In 2001, the total population of Piping Plovers in North America was estimated to be 5,945 breeding adults. The Texas Gulf Coast had the highest wintering population, with about 1,042 individuals detected. This represents about 44% of birds detected on the wintering grounds during the 2001 International Piping Plover Census. Most of the plovers

that winter on the Texas coast are found in the lower Laguna Madre, where tidal flats are extensive and productive. It is up to Texans to insure that the wintering habitat so vital to the survival of this species is protected.

Recovery Efforts

State, federal, and private organizations are collaborating to monitor Piping Plover populations and assess current and potential habitat on breeding and wintering grounds. Research concerning reproductive success, food habits, habitat selection, and limiting factors is underway. The results of these studies will help biologists develop management plans designed to benefit Piping Plovers. Protective measures, such as signs or fences, are being implemented to reduce human disturbance to breeding birds. Vegetation management, predator control, pollution abatement, and habitat creation/restoration are management strategies being used to benefit Piping Plover populations. Biologists continue to assess habitat availability and quality throughout the plover's range in Texas, and identify essential habitat for management and protection. Finally, public information campaigns concerning Piping Plover conservation are a vital part of the recovery process.

Critical habitat was designated for wintering Piping Plovers in July of 2001. This designation identifies areas that are important to the plovers on their wintering grounds, and provides the public and resource agencies with information that can be used to minimize impacts to these areas.

Where To See Piping Plovers

Piping Plovers can be seen along the Texas coast from about mid-July through April. Padre Island National Seashore, along with Galveston Island, Bryan Beach, Matagorda Island, Mustang Island, and Goose Island State Parks, are good places to visit and observe Piping Plovers and other shorebirds. The extensive tidal flats on the west side of South Padre Island, Mollie Beattie Coastal Habitat Community (near Corpus Christi), and Bolivar Flats Shorebird Sanctuary (near Galveston) are also good places to search for plovers. Look for them on large mud, sand, or algal flats, or on Gulf beaches. Since these birds

are sensitive to human disturbance, they should be observed from a safe distance with binoculars or spotting scopes.

How You Can Help

Whether you enjoy fishing, boating, swimming, or viewing wildlife, please remember that your actions, especially when multiplied by thousands of other recreational users, can have an immense impact on the bays and estuaries of the Texas Coast. Responsible recreational use should include proper disposal of trash and other potential pollutants, respect for private property rights, preventing harm to plants and wildlife, and generally keeping human impacts to a minimum. Minimize driving on the beach and keep pets on a leash. Extensive driving on tidal flats on the bayside of barrier islands should also be minimized, as significant rutting can alter the habitat required by these birds. Avoid disturbance to foraging shorebirds to the greatest extent possible.

You can be involved in the conservation of Texas' nongame wildlife resources by supporting the Special Nongame and Endangered Species Conservation Fund. Special nongame stamps are available at Texas Parks and Wildlife Department (TPWD) field offices, most state parks, and the License Branch of TPWD headquarters in Austin. Conservation organizations in Texas also welcome your participation and support.

For More Information Contact

Texas Parks and Wildlife Department
Wildlife Diversity Branch
4200 Smith School Road
Austin, Texas 78744
(512) 912-7011 or (800) 792-1112
or
U.S. Fish and Wildlife Service
Corpus Christi Ecological Services
Field Office
c/o TAMU-CC, Campus Box 338
6300 Ocean Drive, Room 118
Corpus Christi, Texas 78412
(361) 994-9005

For critical habitat designation info, see <http://plover.fws.gov>

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