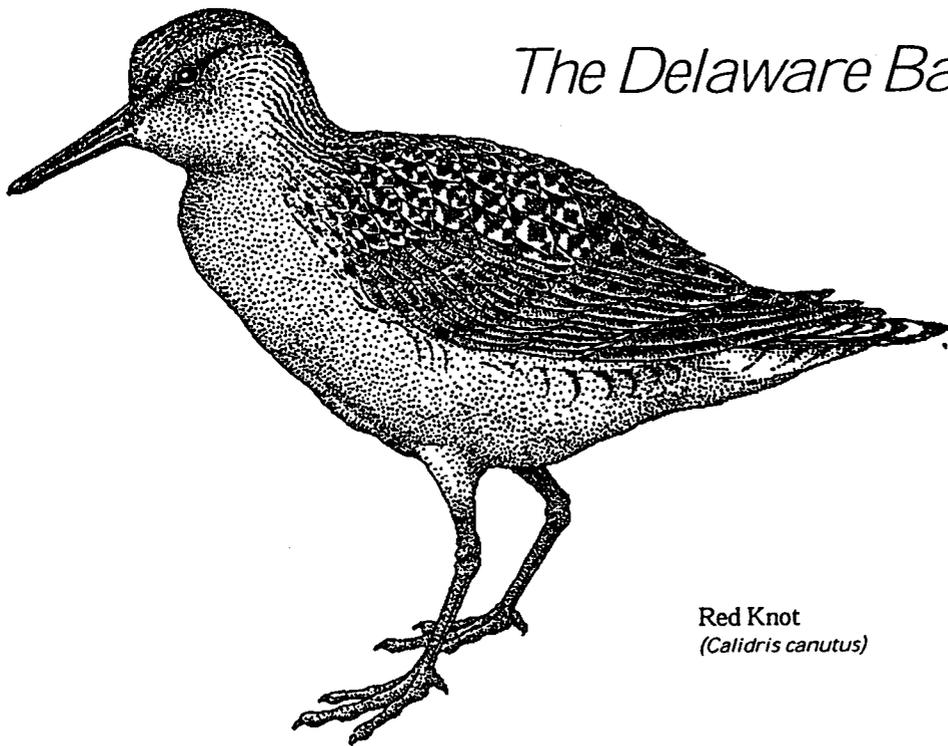


Shorebirds

The Delaware Bay Connection



Red Knot
(*Calidris canutus*)

Shorebirds occur throughout the world and are a familiar sight to visitors and residents of our coastal shores and waterways. Although many species of shorebirds often inhabit inland areas, those of Delaware Bay are truly coastal. These birds—sandpipers and plovers—typically are the size of sparrows and robins.

Delaware Bay's sandy beaches with their abundance of food, combined with its location along a migratory route, makes it the single most important feeding site for one species of shorebird, the red knot (*Calidris canutus*). It is also an important feeding stopover for three other species that make long-distance migrations: the sanderling (*Calidris alba*), ruddy turnstone (*Arenaria interpres*), and semipalmated sandpiper (*Calidris pusilla*).

These four species make up more than 95 percent of the shorebirds that stop here in the spring. From 500,000 to 1.5 million of these and other shorebirds converge on Delaware Bay during a short period each spring. More than 80 percent of the Western Hemisphere populations of red knot and ruddy turnstones make Delaware Bay their only stopover on their northward migration, making it an immensely

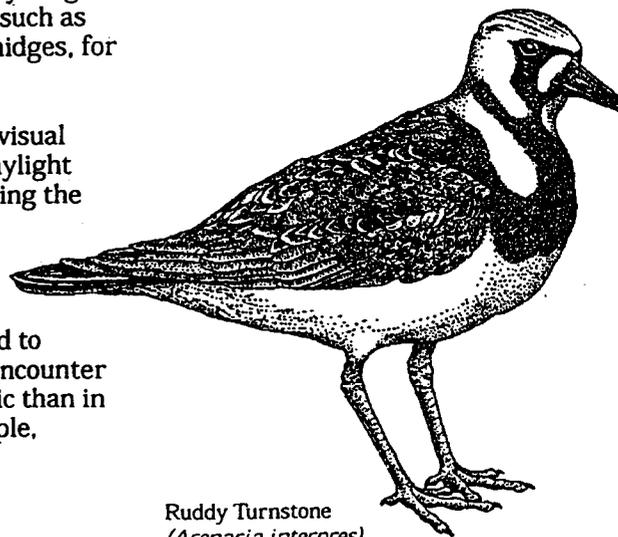
important habitat site. Many migrate from wintering grounds in Central or South America to summer breeding grounds in the Arctic.

Although some Western Hemisphere shorebirds reside year round in tropical and subtropical regions, many migrate south in the fall to avoid harsh Arctic winters and lack of food, and north again in the summer for three reasons:

- **Food:** The Arctic contains more abundant insects for both adult shorebirds and their young. Since shorebirds do not feed their young, they need plenty of insects, such as black flies, crane flies and midges, for the young to catch.
- **Light:** Most shorebirds are visual hunters. They have more daylight hours to forage for food during the long Arctic days.
- **Safety:** Since shorebirds nest on the ground, their nests and young are exposed to predators. Generally, they encounter fewer predators in the Arctic than in warmer climates. For example, snakes do not occur in northern Canada.

A cost of this migration, however, is that shorebirds need huge amounts of food to fuel the trip. The flight can be as long as 10,000 miles each way, or 20,000 miles per year, or the equivalent of a human riding a bicycle 10 miles an hour for 2,000 hours.

These long-distance migrants fuel their trips by making rest stops at places and times when food is abundant. The massive shorebird concentrations in May and early June clearly illustrate that Delaware Bay is an ideal natural rest stop for the birds.



Ruddy Turnstone
(*Arenaria interpres*)

Horseshoe crabs

Breeding horseshoe crabs (*Limulus polyphemus*) are what brings the shorebirds to Delaware Bay in such numbers. The bay is the main breeding ground on the East Coast for this relative of spiders and scorpions. The tiny eggs laid by the crabs look inconsequential, but they are laid in such profusion that they provide a feast for the shorebirds.

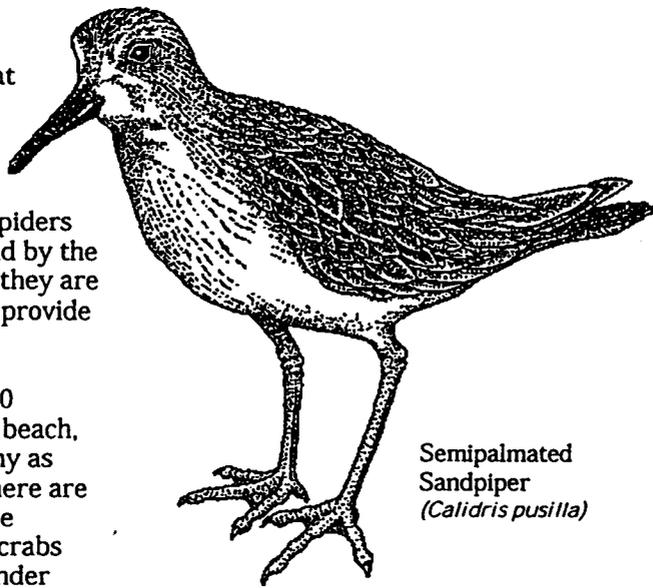
There may be more than 150,000 horseshoe crabs along a mile of beach, and each female may lay as many as 88,000 eggs in a season. Thus there are billions of eggs available to these energetic birds. The horseshoe crabs attempt to bury the eggs, but under such crowded conditions many are left awash on the surface where they are scooped up by famished birds.

Threats

The concentration of so many shorebirds and horseshoe crabs in one place makes them extremely vulnerable to environmental and natural dangers such as oil spills and loss of habitat.

Eggs are only readily available on the surface of the beach when there is an abundance of horseshoe crabs nesting at the same time and place. Horseshoe crab harvesting may already be having a serious impact on the numbers of horseshoe crabs and their eggs.

When humans approach birds too closely on the beach or in their roosting areas the birds use energy fleeing. When observing shorebirds, keep a safe distance so the bird will not flush or become anxious and nervous. Always use binoculars or a telescope and view

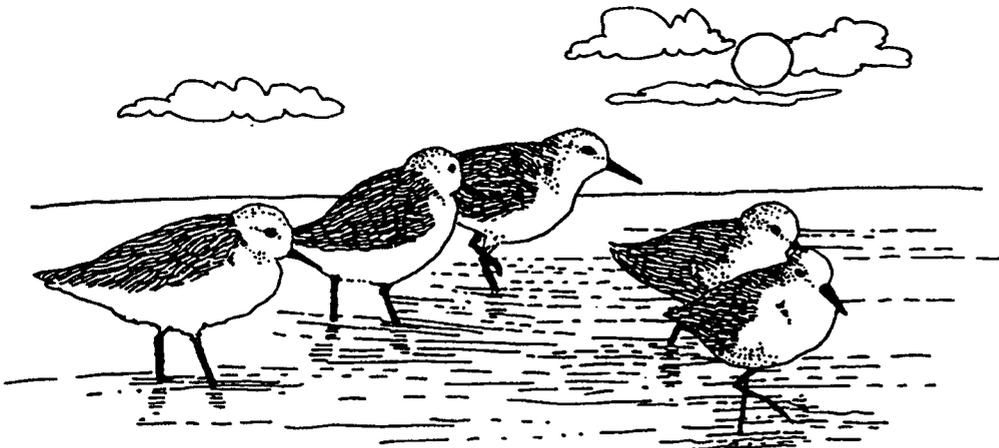


Semipalmated
Sandpiper
(*Calidris pusilla*)

them from a distance. If you have a dog with you, always keep it leashed and away from the birds when on the beach. Do not drive motorized vehicles on the beach.

Best viewing times and places

The best times to observe the masses of shorebirds feeding on horseshoe crab eggs are on weekdays during the last 10 days of May, during daylight hours within two hours of new or full-moon low tides. The tides affect both the arrival of the horseshoe crabs and the shorebirds feeding - the crabs come ashore at high tide, but the shorebirds are most concentrated during a rising tide in the afternoon.



Sanderling
(*Calidris alba*)

For information on the best viewing places for foraging birds use information available from both New Jersey and Delaware or call the numbers listed:

New Jersey

U.S. Fish & Wildlife Service
Cape May National Wildlife Refuge
609/463 0994

Cape May Bird Observatory
609/884 2736

New Jersey Division of Fish,
Game and Wildlife
609/292 9400

Delaware

U.S. Fish & Wildlife Service
Bombay Hook National Wildlife Refuge
302/653 9345

Prime Hook National Wildlife Refuge
302/684 8419

Delaware Department of Natural
Resources and Environmental Control
302/739 4506

For a copy of the Delaware Viewing
Guide call: 302/739 5297

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April 1998

