



FAQs Delaware Bay Shorebirds and Conflicts with Peregrine Falcons

Why are Delaware Bay beaches important to migrating shorebirds?

Large numbers of shorebirds migrate through Delaware Bay each spring on their way to Arctic nesting grounds. Along their migration from Central and South America, they make only a few stops to rest and feed. Delaware Bay is one of those “stopovers” where they deviate from their normal diet of small mollusks to feed on the eggs of horseshoe crabs that spawn in high density on bay beaches in NJ and DE. The peak of horseshoe crab egg laying occurs in the sandy beaches from late April to June, providing a valuable and reliable food supply that is unmatched in spring on other areas of the Atlantic Flyway.

What are the threats to shorebirds on Delaware Bay?

Shorebirds have a brief time period in Delaware Bay in which to feed and regain energy to continue their migration. Shorebirds begin arriving in early May and must depart by early June. Disturbances that interrupt their feeding and resting cycles can slow their recovery: people, vehicles, and unleashed dogs can keep birds off the best beaches by flushing flocks. Ground and aerial predators can also take a toll, whether directly through predation or indirectly through harassment that causes them to fly. Habitat loss and a horseshoe crab population reduced from its historic numbers also reduce the quality of the Delaware Bay shorebird stopover.

What is the status and range of peregrine falcons in this region?

Peregrine falcons are found throughout the U.S. The U.S. Fish and Wildlife Service and state wildlife agencies helped the species to recover from near-extinction that occurred in the 1960s due to the effects of DDT. Peregrine falcons historically nested on cliffs, and have recolonized many cliffs and quarries in the last decade. They have also adapted, over time, to nesting on many types of human structures, including bridges, buildings, and other structures, especially those near open water and including structures designed to attract and support nesting as part of the peregrine recovery effort. Their range has extended to include the coastal areas in the Atlantic states, where they nest and migrate. The peregrine is a Species of Greatest Conservation Need (SGCN) in the northeast region and in the states of NJ and DE. In NJ, the peregrine also has “endangered” status in breeding season, and “special concern” in the non-breeding season. In DE, the peregrine is a tier-one SGCN in the state’s wildlife action plan.

What is the effect of peregrine falcons on shorebirds?

The diet of peregrine falcons is almost exclusively smaller birds, including shorebirds, land birds, and occasionally small ducks. Falcons are adapted to hunt in wide open areas and over water where they capture their prey in mid-air. The recovery of the peregrine falcon population

means there are more falcons in the coastal habitats overlapping with shorebird habitats. Falcons hunting over large flocks of shorebirds can result in direct predation of shorebirds, and cause shorebirds to flush as an avoidance strategy. As with other disturbances, repeated flushing of shorebird flocks may be energetically demanding, and have a detrimental effect by reducing the time shorebirds can feed and rest. Persistent predator activity may also displace shorebirds from feeding areas, potentially forcing them into areas with less food or other unfavorable conditions.

A recent study in Virginia barrier islands found that red knots, a federally threatened and state endangered shorebird, avoided beaches within 6 km of active peregrine falcon nests. The effect was most noticeable within 3 km of a falcon nest. There is presently no data on the long-term effects of nesting or transient falcons on populations of red knots, but this is a topic that is the subject of current research.

What is being done to minimize negative impacts of peregrine falcons on shorebirds?

The state wildlife agencies in Delaware and New Jersey have taken steps to address the potential conflicts between peregrines and shorebirds:

- Peregrine falcon nest structures that were within 3 km of Delaware Bay beaches in NJ and DE have been removed. The effects of specific nest structure removals are also being monitored to assess peregrine response, and to document intended and/or unintended outcomes.
- Surveys are conducted to locate and document peregrine falcon nesting activity on any man-made structures on Delaware Bay and Atlantic coastal marshes.
- When and where appropriate, initiation of new nesting activity may be precluded through management intervention, in consultation with state and federal agencies. It is noted, however, that while such action may be effective in reducing or eliminating nest site conflicts associated building/structure maintenance or operation activities, such actions do *not* typically prevent a pair from nesting elsewhere in the immediate area. As such, displacing the pair can lead to establishment of a nest in a less desirable location.
- Where possible, peregrine falcons are banded to facilitate better understanding of species dispersal, range, habitat use, and specific patterns of behavior.
- Surveys are also being conducted to document peregrine falcon presence on Atlantic Coast and Delaware Bay beaches during shorebird surveys. Determining the locations, frequency, and patterns of peregrine falcon use of coastal habitats, as well as documenting the nature and characteristics of individual incidents of peregrine harassment of shorebirds, will help direct future management actions.
- Where peregrine falcons currently nest in the coastal zone, biologists are collecting data on diet and nesting success to document the prey that falcons take. In many similar studies, the vast majority of prey are the most common and abundant species that occur in the habitat, such as willet and blue jay. In the coastal habitats that host several endangered and threatened bird species, it is important to understand the extent of potential and direct conflicts.
- Where conflicts are identified *and* incidents of harassment are sufficiently documented to inform resource managers as to the age, pattern of behavior, and status as either a territorial or non-territorial peregrine, mitigative actions can be investigated to determine if they might reduce or eliminate the conflict. If approved by applicable agencies, this could include

hazing of non-territorial/transient falcons, trapping/relocation of non-territorial/transient falcons, and/or removal of nesting structures.

- Management actions must also assess the effectiveness of shorebird recovery, predation mitigation, and habitat restoration efforts. With the dramatically successful recovery of peregrine falcon, it is unrealistic to expect that the range overlap between peregrine falcon and shorebirds could be eliminated. Unassisted peregrine nesting activity in local metropolitan areas alone, such as the cities of Wilmington, Philadelphia and New York (the latter having as many as 46 urban peregrine nests), will continue to recruit transient juveniles into the adjacent coastal regions. While some conflict may be possible to mitigate by managing peregrines, it will continue to be necessary to take all measures possible to maintain, protect and restore widespread, highly suitable shorebird habitats and populations. This should include aggressive habitat protection, restoration and/or creation, and managing all other forms of shorebird harassment (e.g., restricting beach access, managing mammalian predation).