

Fish and Wildlife of Alaska's North Slope

SHOREBIRDS

The diverse wetland and coastal habitats in the North Slope oilfield region come alive with bird life during the three-month arctic summer. Hundreds of thousands of different shorebirds migrate to the Beaufort Sea coast to take advantage of the vast wetlands and abundant food to raise their young. About 180 species of birds have been recorded on the Arctic Coastal Plain within and adjacent to the North Slope oilfields. Around 24 shorebird species are common visitors to this region, and about 17 of these nest there annually. Three species of loons occur in the oilfield region, and about 17 species of waterfowl are common. When the northern prairies are dry, puddle duck numbers and nests in the oilfield region increase significantly. Shorebird numbers occurring in the oilfield region also show high annual variation, most often related to weather patterns and to events and changes occurring in their winter ranges.



Dunlin (*Erolia alpina* or *sigukpaligauraq*).

Over the years, ConocoPhillips has conducted and supported many studies of the life histories and habitat preferences of these birds and the impacts of oilfield activities on them.

Because these birds show natural fluctuations in numbers and nesting activity, many of these research programs have been long-term, and have compared experimental areas to adjacent undisturbed control areas.

Gravel Placement and Habitat Loss

While most shorebirds do not use tundra that is covered with gravel for roads and pads, studies have documented use of abandoned gravel pads by upland shorebirds and songbirds. Several long-term studies of habitat loss and nesting displacement have shown that shorebirds and songbirds displaced by gravel roads and pads nest on nearby undisturbed habitat and are not lost from local breeding populations. These studies also found that nest success of displaced individuals was similar to that of birds nesting away from disturbances, indicating that new nest sites were located in suitable habitat.

One study of tundra-nesting birds before and after construction of gravel roads and pads found that nest densities for semipalmated sandpiper (*Ereonetus pusillus* or *livilivillakpak*) and dunlin (*Erolia alpina* or *sigukpaligauraq*) increased after

gravel placement, but nest density for all species in the study combined (15 total species including 10 shorebird species) decreased. These changes in nest densities of some species coincided with annual cycles that occurred throughout the birds' ranges and which were not related to oilfield development in the study area. One species, Baird's sandpiper (*Erolia bairdii* or *puviaqtuuyaaq*), had not nested in the study area prior to gravel placement, but after gravel placement three nests were found in disturbed tundra with scattered gravel near gravel infrastructure.

This study and other similar studies in other parts of the oilfield region have shown that suitable nesting habitat for shorebirds and songbirds is not limited.

Noise Disturbance

Another concern regarding oilfield activities and their impacts to shorebirds includes potential effects of noise on normal activity and habitat use patterns. Possible impacts include changes in nest distribution or habitat use to avoid areas of high distur-



Sabine's gull (*Xema sabini* or *iqirgagialq*).

bance, and disruption of feeding or normal incubation behavior. Over the years, ConocoPhillips has conducted three major studies to investigate these issues. These studies were conducted in cooperation with the state and federal resource agencies. The studies include the five-year monitoring study of the Lisburne oilfield development; the three-year review of the impacts to birds from construction and operation of a new large gas conditioning plant (GHX 1 and GHX 2); and the most recent, a four-year study of the impacts of the Alpine oilfield airstrip on local nesting birds. All studies established a baseline condition for nesting and brood-rearing activity within different distance zones from future facilities, and compared construction and operations impacts to those patterns. Noise meters were used in all three studies to establish noise levels as a function of distance from the facility. All three studies found that, although there were some seasonal alterations in use patterns, overall no significant impacts to nesting success or densities could be attributed to the noise generated from these facilities.

Oil Spills

Shorebirds typically congregate in large flocks in spring and fall and feed intensively in wetlands and marshes. During these times, if an oil spill occurred and contaminated some of these important shorebird staging areas, large numbers of birds could be affected. ConocoPhillips has long recognized the importance of these sensitive habitats and has conducted studies throughout all of its oilfields to identify these areas. These areas are mapped, with seasonal bird use documented and then catalogued with other sensitive habitats in spill planning documents. Response personnel are then

trained on the unique aspects of each habitat, including best seasonal access routes and methods, typical seasonal bird activity patterns, most useful spill containment equipment and techniques, and local physical drainage patterns for each habitat. At many of these areas, the correct response equipment is stored at each site, and at some locations, preventative gear is predeployed during the summer open-water season. This knowledge of bird use and sensitivity, and planning to ensure these areas are not contaminated, have avoided major impacts to these habitats and birds.

Concluding Comments

Without correct mitigation, numerous factors related to oilfield infrastructure have the potential to affect the abundant shorebird community that returns to the oilfields each summer. However, extensive study and long-term monitoring of these factors have provided ConocoPhillips with the knowledge of how to best mitigate these potential impacts and maintain healthy avian populations in the oilfields. All studies to date have found no indications that oilfield activity leads to any population-level effects.

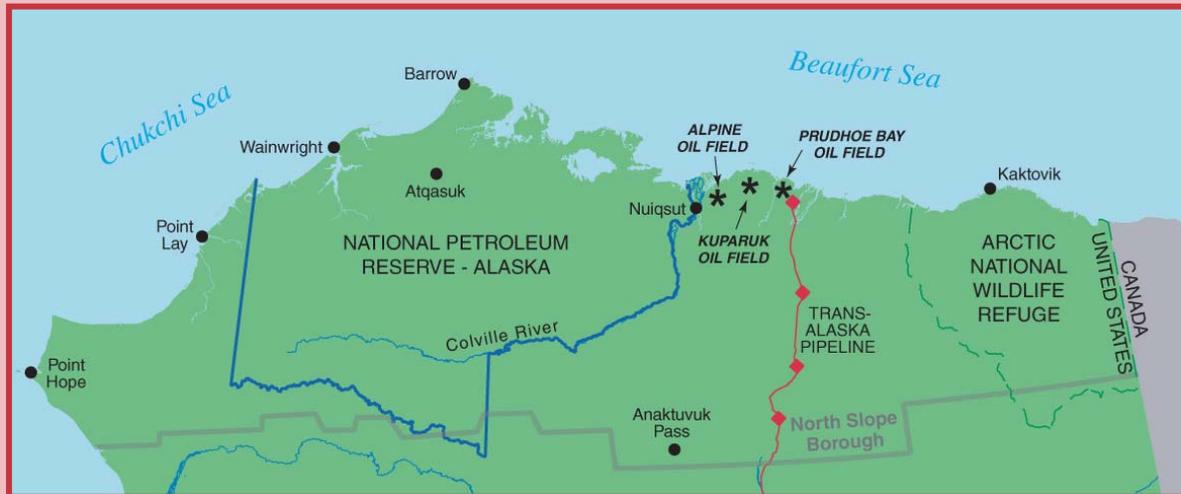
In a major review of the 30 years of bird studies on the North Slope oilfield region, scientists concluded that routine oilfield activity has a minimal influence on bird activities. They further concluded that the most likely avenue for oilfield impact is through enhancement of predator populations. Arctic fox in particular can have a large influence on ground-nesting birds. Thus, it is important that ConocoPhillips and other oilfield operators continue to practice wise waste-food management. ConocoPhillips has recently initiated programs to install bear- and fox-proof dumpsters, to eliminate landfills, and to require that all food taken out of camp dining rooms is in sealed containers. These programs help prevent attracting gulls and foxes to oilfield facilities.



American golden-plover (Pluvialis dominica or tuullik).



Shorebirds in a North Slope pond.



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