U.S. Fish & Wildlife Service / Alaska Maritime National Wildlife Refuge / Aleutian Islands Unit

FROM THE WILDSIDE

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No harvest this year...

c Neil Hayward

Emperor geese nest on the Yukon-Kuskokwim Delta and winter on Kodiak, the Alaska Peninsula, and along the Aleutians. Here on Adak these beautiful and regal geese are easiest to find foraging on the mud flats in Clam Lagoon or gathered on beaches and offshore rocks. Often you'll see family groups: adults with noble white heads and napes, and youngsters with sooty patches on their faces.

Numbers of emperor geese have increased steadily to the point that they have now met the threshhold (>80,000 birds) set by the Pacific Flyway Management Council to allow limited hunting, for the first time since 1986. The Alaska Migratory Bird Co-Management Council proposed a subsistence harvest of 3,500 birds for this spring, but has been having a difficult time agreeing on how to allocate the harvest between and within regions. Another point of contention is the harvest season, since the proposed spring and summer harvest would not be fair to regions where the geese are present only in late fall, winter, and very early spring. Thus, the Council decided it needs more time to come to an agreement on how the geese should be managed, and has postponed a subsistence harvest until 2017.

Joel Schmutz, a research biologist with the USGS Alaska Science Center, is currently conducting a multi-year project to address several other issues. One is that though emperor goose numbers have been generally stable on their breeding grounds and have continued to increase in the Kodiak archipelago, they have remained below management goals along the Alaska Peninsula. Sometimes an apparent change in population is actually a shift in distribution.

In addition, Schmutz has hypothesized that breeding success and population growth of the emperor goose population is constrained by the wintering environment, and that where a goose winters may significantly influence its ultimate fitness. He identifies two ecological factors that likely affect emperor goose population trends, but have not yet been adequately investigated. The first is the role of cross-seasonal effects, or, simply, that conditions on wintering areas or spring staging areas may impact breeding. For example, some winter foraging environments might not be sufficient to allow all adults to breed. Linking knowledge of where a particular goose wintered to breeding success could help identify which winter habitats promote breeding success.

The second ecological factor Schmutz considers is disease. It was recently found that about 30% of nesting emperor geese were infected with blood parasites, which may affect clutch size, and may also become more prevalent in years of high goose density, thus hindering population growth. Because other species of geese breeding in the same area as emperors but wintering elsewhere are less infected with these parasites, it is possible that the infection may be a function of cross-seasonal effects. Other diseases may also affect the success of emperor geese. For example, during summer, more than 90% of emperor geese carry antibodies to avian influenza virus (AIV), indicating recent past exposure to live virus. In contrast, only 45% of geese of three other species sharing the emperors' breeding grounds carry AIV antibodies. Active infection with AIV in winter or spring may lessen the breeding success of emperors.

c Jay Lehman

One component of Schmutz's research comprises two visits to each of three wintering islands to evaluate habitat and physiological condition of geese, this winter and next. Adak was selected as one of the sites; two researchers will be here for a week in January and another week in March, conducting replicate population counts and age ratio scans, recording intensive time budgets, scoring abdominal profiles via digital photography, surveying beaches to assess habitat composition, and collecting fecal samples to evaluate active AIV presence. As Brian Uher-Koch, who will be leading the fieldwork this winter, put it, "Very glamorous work..."

Data collected this winter and next should help Schmutz answer a few questions: Are emperor geese really increasing in numbers, or is their distribution changing? When and where are the geese being exposed to AIV? What is the physiological condition and habitat quality for geese in different sectors of their wintering range? What are they eating? Combined with information collected on the breeding range (including evaluation of stress hormone levels, types of nutrient investment in different seasons [via stable isotope analysis], and quantification of migration patterns [using geolocators]), these data should reveal whether breeding status, clutch size and disease state are related to regions within the wintering areas. Understanding whether and how emperor goose numbers are constrained by their wintering environment will enable objective decisions about future hunting and conservation measures for the species.

Murre madness

c Dave Irons

Thousands of dead and dying murres have been washing up on beaches this year, from California up the coast to the Gulf of Alaska. In the first two days of January, 8,000 dead common murres were counted along a single mile of beach in Whittier. Murres have been turning up unusually far inland this winter, as far as Fairbanks, and have been observed swimming and apparently foraging in fresh water streams and lakes. What is causing this strange behavior? So far the main cause of death appears to have been starvation, probably due to warmer than usual sea-surface temperatures caused by an El Nino weather pattern and by the "Pacific Blob," both of which alter the ocean ecosystem as cold-water species die or migrate beyond their usual range. Are the birds found inland simply searching further afield for food, or are they disoriented due to some other cause? Investigations are still underway. If you find dead or distressed seabirds, please call the Refuge office at 592-2406.