



ORI

FACT SHEET

# Snowy Owl

Angelic feathers almost belie its power and toughness; a gritty ability to exist in the world's harshest environments



## *Bubo scandiacus*

Since 1970, Snowy Owl populations are estimated to have declined by 64%\*

*\*Partners in Flight*

PHOTOS © DANIEL J COX

The Snowy Owl is one of the most captivating arctic animals. With sleek white plumage, impressive hunting capabilities, and iconic appearance, Snowy Owls capture the attention of the public and media like none other.

Despite their dazzling looks, Snowy Owls are among the hardiest of species, living in one of the harshest environments on the planet. How do they endure the extreme cold of the Arctic tundra? Like all birds and mammals, Snowy Owls are homeotherms, allowing them to regulate their internal temperature. Additionally, they have dense body (or contour) feathers that insulate their stocky bodies; long, thick feathers cover their toes and legs, helping to block arctic winds and offer protection from feisty prey.

Additionally, Snowy Owls maintain warmth through metabolic activity and rely on food to do this - lots of food! It is estimated that an adult may consume up to a full pound of food each day during the winter. That's the equivalent of a 170-pound man eating 45-pounds of food in a day! Small rodents called lemmings are the Snowy Owls most important food source on their breeding grounds: when plentiful, lemmings represent up to 95% of their summer diet. However, these birds can't always be so picky. When lemmings aren't as populous, Snowies also feed on ptarmigan, hares, carrion, sea ducks and shorebirds, fish, and other small mammals.

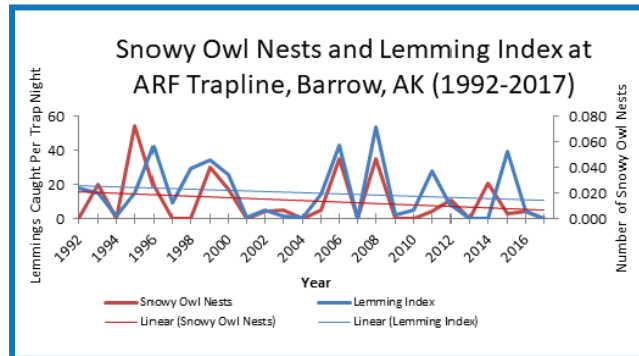
When lemming are scarce, Snowy Owls may not breed at all. Mating and raising chicks increases food demands and puts adult owls and their chicks at greater risk of starvation. During good lemming years, however, when food is abundant, females will cache extra food brought home by the male. Nests have been found with over 70 lemmings cached in, or around, them.

While Snowy Owls may be media stars of today, it isn't a new phenomenon: the white owl has attracted attention throughout history. In Alaska, the Inupiat people call the Snowy Owl *Ukpik* and once relied on the bird and its eggs as a food source - a cultural tradition evidenced in carvings of bone and ivory. The city formerly known as Barrow is now named Ukpiaġvik, which has been translated by some to mean "*place where snowy owls are hunted.*"

Instead of migrating, some Snowies remain in the Arctic through the winter. Although Snowy Owl migration is not well understood, over-wintering birds seem to be mature; whereas the irruptions sometimes seen in the lower U.S. are comprised mostly of young birds. The Arctic winter has constant darkness: the summer has constant light: so when do Snowy Owls hunt? Research suggests that, regardless of the season, theoretical nighttime hours are mostly used for hunting and activity, although Snowy Owls are still classified as diurnal - hunting in day and night.

# Snowy Owl Research

ORI's Snowy Owl research, now in 27th year, has documented a wide variety of behaviors and conditions. We are now working to understand how climate change effects Barrow, Alaska populations.



The Snowy Owl Breeding Ecology and Lemming Population Study began in Barrow, Alaska, in 1992. The initial research question was to evaluate the predator-prey relationship between the Snowy Owl and Brown Lemming – the owl’s primary food source. As with most studies, a host of other simple questions arose and we have conducted studies on topics such as: growth rates, tracking movement, plumage development, stress response to research, nest defense behavior, and activity budgets. To better understand nomadic movement, we were the first researchers in the world to track Snowy Owls by satellite.

Our growth and plumage development studies are the most comprehensive in the world. Our dietary studies provide the largest sample sizes in the world, highlighting the reliance of Snowy Owls on Brown Lemmings in

Barrow. Our simultaneous monitoring of Snowy Owls and Brown Lemmings is the longest running study of its kind in North America. Our discovery of an infectious disease in lemmings that can affect humans has direct human health implications. However, the most important objective still remains to continue long-term research and monitoring, and to ascertain the owls’ population fluctuations in response to fluctuating lemming populations. We sought to evaluate if purported lemming cycles exist in Barrow.

Snowy Owl and Brown Lemming number in Barrow are declining for reason we don’t yet understand. In a new, collaborative project, we hope to determine if these population changes are linked to a changing Arctic climate. Our study of Snowy Owls has evolved to include a message of advocacy for Arctic wildlife conservation.

## SNOWY OWLS AT A GLANCE

### HEIGHT

Males: 21 - 23 in  
Females: 22 - 26 in

### WEIGHT

Males: 1.5 - 5.5 lbs  
Females: 2 - 6.5 lbs

### WINGSPAN, BOTH

52 - 66 in

### POP. ESTIMATE

>30,000 US & Canada\*

### FEEDS ON

mostly lemmings, other small mammals, ptarmigan, carrion, shorebirds, fish



### RANGE, LEGEND

- Breeding range
- Wintering range

Cornell Lab of Ornithology

## SNOWY OWL FACTS

- Snowy Owls nest on small mounds in the arctic tundra
- One of the few species of owl that builds its own nest
- It takes several years for males to turn totally white
- *Irruptions* (great numbers of birds migrating to an area) take place in the northern US after a productive breeding year
- Use a ‘wallop’ hunting method - swooping down and snatching prey with their strong talons
- Fledglings leave the nest and spend nearly a month hiding & toddling around the tundra before they are able to fly
- Food is often delivered to the female by the male during courtship displays