



GPS: Extinctions

Sustainability Competition

Model the Snowy Owl



By Shannon Henderson and Colette Webster



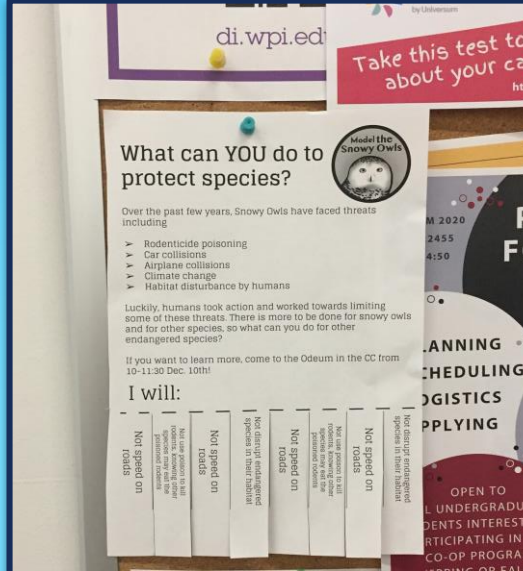
Colette Webster

Overview of Project

Purpose: Use evidence from our research about the conservation efforts already in place for snowy owls to be adjusted and applied to other endangered species.

Research: Details about threats facing bird species in general, including rodenticide poisoning, car collisions, climate change, and habitat disturbance by humans.

Response: We created posters to raise awareness of these threats with tear-away promises that the



**Rising
Global
Temperatures**

=

**Less Land
for Cold
Biome**

Dwindling Arctic Sea Ice





The Snowy Owl *Nyctea scandiaca* breeds in remote areas of the Canadian Arctic. In winter it visits many parts of southern Canada, providing most Canadians with the opportunity to observe one of the most striking and distinctive of the world's 146 species of owls. In December 1988, the Snowy Owl was voted the official bird of Quebec.

Distribution

Snowy Owls breed on the arctic tundra of both Eurasia and North America. The Canadian breeding range includes the islands of the Arctic Archipelago, from Ellesmere Island in the north, to Baffin Island in the east, to Banks Island in the west, and along the northern coast of the continent from the Yukon to Labrador.

Some Snowy Owls remain over the winter in the areas where they nest. Owls have been seen in midwinter as far north as 82° on Ellesmere Island, where darkness is continuous at this season. Snowy Owls also migrate to more southerly latitudes. In certain parts of their wintering range (on the prairies of western Canada and in the unforested parts of southern Ontario and Quebec, as well as in adjacent regions of the northern United States), they are regular visitors, although their numbers vary from year to year. In other wintering areas, along the Pacific coast of Canada and the northern United States and in the Atlantic Provinces and New England, their occurrence is less regular. In these regions, a winter with a large number of owls may be followed by several years in which none are seen. It is mostly first-year birds that visit these less frequented areas, with relatively few adult owls appearing. Individual Snowy Owls have been recorded as far south as central California, Texas, and Georgia,

various parts of North America fluctuate irregularly from year to year.

Appearance and habits

The heaviest of North American owls, the Snowy Owl stands almost half a metre tall, with a wingspan of almost 1.5 m. The female is larger and heavier than the male (average weight of 2.3 kg versus 1.8 kg), as is the case with most diurnal birds of prey and owls. This is the reverse of the situation in most other families of birds, where males are typically larger than females, and has been the subject of much speculation.

Adult males may be almost pure white in colour. Adult females are darker, their white feathers barred with dark brown. First-year birds of both sexes are more darkly marked than their adult counterparts. Immature males resemble adult females, whereas immature females are heavily barred and may appear dark grey when seen from a distance. The light coloration provides camouflage when the owls are perched on snow, but this advantage is lost in summer. As spring approaches and the ground becomes bare, owls move to sit on patches of snow or ice. No one knows whether they do this to camouflage themselves or whether they are merely keeping cool.

A dense layer of down, overlaid with thick feathering, insulates the Snowy Owl's entire body, including the legs and toes, and enables the bird to maintain a body temperature of 38–40° C, even when the air temperature reaches -50° C. In strong wind, owls may seek shelter by crouching on the ground behind a windbreak, such as a pile of stones, snowdrift, or bale of hay.

The ear-like feather tufts characteristic of many species of owls are greatly reduced in




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Snowy Owl

Bubo scandiaca

CITATION

BirdLife International. 2017. *Bubo scandiaca* (errata version published in 2018). *The IUCN Red List of Threatened Species* 2017: e.T22689055A127837214. <https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T22689055A119342767.en>. Downloaded on 27 April 2020.



NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	< VULNERABLE >	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	EW	EX


 A photograph of Martha Gach, a woman with blonde hair and glasses, wearing a blue vest over a white long-sleeved shirt. She is standing in a garden with several bird feeders hanging from a black pole. There are trees and a wooden bench in the background.

Norman Smith, Martha Gach, and Images of Websites and Research Papers that helped us increase our knowledge and form our Research Report

Norman Smith

- Used to run the Snowy Owl Project
- Relocated snowy owls off of Logan Airport to nearby coastline
- Research:
 - Secured identification bands and satellite transmitters to captured owls from Logan Airport
 - Collected Data on their flight patterns





Piping Plover



Endangered
Bird Species
of
Massachusetts



Red Knot



**Roseate
Terns**

What can YOU do to protect species?



Over the past few years, Snowy Owls have faced threats including

- Rodenticide poisoning
- Car collisions
- Airplane collisions
- Climate change
- Habitat disturbance by humans

Luckily, humans took action and worked towards limiting some of these threats. There is more to be done for snowy owls and for other species, so what can you do for other endangered species?

If you want to learn more, come to the Odeum in the CC from 10-11:30 Dec. 10th!

I will:

Not speed on roads	Not use poison to kill rodents, knowing other species may eat the poisoned rodents	Not speed on roads	Not disrupt endangered species in their habitat	Not speed on roads	Not use poison to kill rodents, knowing other species may eat the poisoned rodents	Not speed on roads	Not disrupt endangered species in their habitat
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Raising Awareness around the WPI Campus

Thank You!

Professor Bakerman

Professor Spanagal

Ashli Silvera

References

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