

Hedwig may have been a trustworthy deliverer of messages in the make-believe world of Harry Potter. But a snowy owl (*Bubo scandiacus*) in the real world is a formidable, well-adapted predator. The fringed edges of the feathers on its broad wings muffle the sound of its flight, allowing it to glide silently over large areas, searching for prey. Stunning white feathers framing the owl's round face funnel sound waves to its ears, enabling it to detect the faint movements of small animals, even under layers of snow. Its large eyes have an exceptional number of light receptor cells and overlapping visual fields, equipping the owl with excellent sight and depth perception, which help it locate prey from a distance. And when this stealthy, keen-hearing, sharp-eyed predator descends on its target, four sharp talons on each strong foot easily snatch its meal. Lemmings are its food of choice, and a snowy owl can eat more than 1,500 of these rodents a year. A brood of growing snowy owl chicks requires a similar quantity of food, keeping the parents busy for two months after they hatch and before they fledge. Young snowy owls usually migrate from the Arctic to southern Canada or the northern United States for the coldest months. Their parents often remain behind, continuing to hunt through the dark, frigid winter, protected from the subzero temperatures by layers of fine feathers covering face, body, legs, and even feet.



Long-term studies of these remarkable birds of the arctic tundra have shown that the numbers of breeding pairs and the size of their broods fluctuate with the population cycles of lemmings. Recent research on snowy owls includes fitting the birds with tiny transmitters that track their migration patterns and breeding areas. Results of this research have shown that these nomadic birds range across huge areas, from northern Europe and Russia to North America. Continued research on snowy owls throughout these regions will help scientists monitor the effects of global climate change on arctic ecosystems. Understanding such interrelationships among species and the environment is just one example of how the study of biology touches every aspect of life on Earth.

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