



## Nature Guides

### Witness the Snowy Owl Population Fluctuation

*Mid-Late December*

#### Featured Species: Snowy Owl

Sure you've seen [Hedwig the Snowy Owl](#) on screen (actually played by male owls), but have you seen one of these stunners in real life? It has been suggested that [2009/10 may be a good winter for sightings](#), as the appearance of white [adult males](#) often foreshadows an irruption and several have been reported in southern Ontario. So keep your eyes open and let's wait and see if the prediction comes true.

[Snowy Owls](#) are arctic breeders. Every winter some show up in the south, often [juveniles](#) whose plumage is more flecked with brown ([females](#) are even more barred). But every four years or so an irruption occurs. Why? Not because they aren't adapted to the cold winters – their thick down allows them to maintain a body temperature of 37.8–40.0°C when it's –57.0°C out (brrrr). The classic hypothesis posits a series of cycles. After all, [an owl has got to eat](#). It was thought that the irruptions are linked to crashes in lemming populations (their main food source) further north, which have a boom and bust cycle over three to four years. When lemmings peak in the summer, owls fledge several [chicks](#) instead of just one or two. This increase in population pushes [young-of-the-year](#) birds south. On top of that, when the lemming population crashes, adult Snowies have to migrate south as well. Some scientists have recently suggested there is more to the story, since Christmas Bird Counts show that the numbers fluctuate irregularly from year to year, and lemming crashes are often more regional than the large-scale geographically synchronous owl migrations. Other factors such as snowfall and extreme temperature conditions may play a role. Some Snowy Owls may also migrate between Russia and Canada!

The mechanisms of lemming population crashes are not completely understood either, but one sure thing is that [Disney](#) had it wrong – they don't commit suicide. Rather, population peaks lead to [mass migrations](#) (contains a good video), and the large numbers of lemmings become so focused on getting somewhere that they realize too late that there are accidentally enroute to fall off of stream banks and cliffs. It likely more complicated than this though, with many [other factors](#) contributing to the population crashes including infanticide, predation, starvation and disease.

Here is the south Snowies like open country with [Meadow Voles](#), so be on the watch for the occasional Snowy on a [fencepost](#), [stump](#) or rise of ground. They act remarkably tame, so while you can get quite close, please don't try – you may stress starving birds, and reduce their chance of survival. Be content with the large number of excellent, on-line [close-ups](#).

#### Other Happenings:

- Late this month, [Great Gray Owls](#) may also arrive for a winter sojourn. Great Grays are largely [rodent predators](#), and with their large [facial disk](#) and resulting sharp hearing, these owls can hear, and catch, rodents that are beneath 30 cm of snow. Here's their [call](#) (scroll down a bit) – it's the prototypical "hoo, hoo!".
- Our bird feeders have gotten very busy lately, with [American Goldfinches](#) and [Black-capped Chickadees](#) in

#### Top R4R Picks

Resources for extending the learning

##### [The Boreal Forest: Vol. 7– A Global Legacy](#)

Elementary, Middle, Secondary


See Lesson 8: Boreal Footprints

##### [Get to Know Your Wild Neighbours](#)

Elementary, Middle

See Lesson 3 and Lesson 8

particular. Other places to look are any areas of open water (gulls, eagles, ducks), open fields (Snowy Owls, [Red-tailed Hawks](#), [Snow Buntings](#)) and roadsides ([winter finches](#)).

- Recent snow means that fresh animal tracks  can be easily identified and followed. We may feature tracks later in the winter, but here's a good, short, basic [primer](#) on tracks and tracking (go in particular to *Tracks in the Snow*). [Here](#) are some simple track ideas for local field trips and the school yard.
- [Porcupines](#) and their sign are very evident now because they remain active throughout the winter and there are no leaves in the way. [This site](#) provides a good visual history, including tracks in the snow, winter dens and feeding sign.
- With the holidays, we turn our attentions to the [coniferous trees](#), analysing their shapes in debate on which to choose. [Balsam Firs](#) with their wonderful fragrance, steeple-shape, and long-lasting needles are favourites.
- In the Northern Hemisphere, the [Winter Solstice](#) occurs on December 21, 2009 at 12:47 PM EST. At that time, the North Pole is tipped farthest from the sun, marking it the shortest day of the year, and the beginning of winter. Days will begin to get longer - reason for [celebration](#) around the [world](#). It has been just three short months since the sun appeared to cross the equator during the fall equinox, and just eight weeks before the first spring bird song. Seasons occur because the earth's axis of rotation is tilted  $23.5^\circ$  relative to the plane of the Earth's orbit around the sun. No one knows why the Earth [tilts](#), but imagine if it didn't - the sun would always appear to be over the equator, and it would be spring/fall everywhere, all the time. No seasons.
- On average, December is only slightly milder than the deep winter period of January/February. The average daily maximum in the Kawarthas is  $-1.0^\circ\text{C}$ , and the average daily minimum is  $-10.4^\circ\text{C}$ . The amount of rain and snow is in rough balance with 33.9mm of rain and 41.5cm of snow (1 mm of rain is equivalent to 1 cm of snow). What about where you are? Find long-term averages for a [location](#) near you and compare them to this year.
- Happy holidays (catch the [first quarter moon on Christmas Eve](#), and the [full moon on New Years Eve](#)), and see you in January 2010 ([International Year of Biodiversity](#)).