

Coloured Bands and Feathers

By Renee Levesque

The guest speaker at the Bird Wing meeting on February 23 was Kevin Hannah, biologist with Canadian Wildlife Service, Environment and Climate Change Canada. Kevin was in our area February 23 to 25 banding finches and taking feather samples to help determine the comings and goings of these winter birds.

Kevin's main task with Canadian Wildlife Service is to monitor and report on the status of birds in Ontario and to help keep common species common. Monitoring is done repeatedly to estimate population changes or trends over time by accessing the results of surveys, such as the Breeding Bird Survey, a huge source of data; eBird; and winter counts, such as Project FeederWatch (data collected over many years by the same FeederWatchers at the same sites is invaluable), as well as the Christmas Bird Count.

Kevin's main focus at this time is on winter finches, an irruptive species. Their movements are irregular and not always predictable. They move in flocks during the winter months to wherever food is available.

There are 10 species of finches, family Fringillidae, in Canada, and hundreds of species worldwide. Although each differs in colour and size, all finches have short conical-shaped bills and compact bodies. They are shy birds that live in flocks or loose groups.

Kevin's particular winter finch focus is on the Common Redpoll, Pine Grosbeak and Evening Grosbeak, and all three species were found in our area this winter, in particular the Common Redpoll, seen by many in flocks of 20 to 40.

This is Kevin's second year of winter finch research and in addition to his assessment in North Bay, he has done assessments in Ottawa, Timmins, Wawa, Thunder Bay and New Liskeard, where he is being helped by Bruce Murphy at Hilliardton Marsh



Kevin setting up trap over nyjer feeder at Lori Anderson's home, photo by Renee Levesque

through the banding of finches.

Kevin uses coloured bands, with a different colour of band for each species, for each year and for each area. The advantage of coloured bands is that a bird does not have to be recaptured to determine what year and where the bird was banded. If you see a Common Redpoll, an Evening Grosbeak or a Pine Grosbeak with a coloured band, be sure to note the colour of the band and where you saw the banded finch and contact Kevin at kevin.hannah@canada.ca.

To obtain further data for his assessment, Kevin contacted Dick Tafel to do banding and take feather samples in our area, and Dick arranged for Kevin to set up his traps at the homes of Lori Anderson, Mary Young, and Ernie Frayle. Kevin reports he did catch and collect quite a few Common Redpolls and Evening Grosbeaks to band and obtain feathers from. Although he saw Pine Grosbeaks on Peddler's Drive, he didn't manage to catch any.



Ground trap and two Common Redpolls at Lori Anderson's, photo by Rénee Levesque

Common Redpolls breed in the Arctic and in the Boreal forests of Northern Canada and so are generally seen in more populated areas of the south only in the winter. They tend to head south in search for food during the winter on a fairly regular basis, generally every second year, in search for birch and alder catkins, their preferred food. If you don't see them at your nyjer feeders, check out birch trees where you will often see them feeding at the tips of branches hanging upside down. Common Redpolls are widespread and abundant. Their populations have changed little since the 1960s.

Pine Grosbeaks were not seen in great numbers in our area this winter, but there were some. This handsome bird is the largest of the winter finches. It breeds in the open coniferous forests of Northern Canada, as well as Northern Eurasia, and like all irruptive species, winters where the food is plentiful. It prefers the buds, seeds and fruits of spruce, pine, maple and mountain ash. According to the North American Breeding Bird Survey, Pine Grosbeak numbers have declined since the late 1960s, with the largest decline in New Brunswick.

Evening Grosbeaks were seen in large flocks of up to 40 in some areas here this winter. They have now been identified by the Committee on the Status of Endangered Wildlife in Canada as a high priority for conservation. Kevin's research could help determine what may be happening here and lead to a decision by Environment Canada on what can be done to prevent a further decline. Evening Grosbeak numbers were either stable or increased until 1980 when their numbers began to decline significantly from 1980 to 1998, with the steepest



decline in the Northeast and the Great Lakes region. Many long-time birders in Northern Ontario will tell you that there are simply not the numbers there once were.

Kevin with female Evening Grosbeak at Mary Young's, photo by Dick Tafel

The cause of this decline is not known. It may be simply that Evening Grosbeaks are not going as far south in the winter; it may be related to food availability; and it may be their numbers have stabilized since they came east.

Prior to the late 19th century, Evening Grosbeaks did not occur east of the Great Lakes. Since then, they have gradually expanded their range from western to eastern North America - to Ontario, Quebec, the Canadian Maritimes and New England. It is believed they moved east because of the planting of box elder trees, a favourite winter food source, and because of spruce budworm outbreaks, the larvae of which is another favourite food supply. It should be noted that Evening Grosbeak numbers remain stable in the west, in the Rocky Mountain region, so it may be Evening Grosbeaks are undergoing regional declines only. Kevin's assessment will help map the changes in distribution of wintering populations.

Only a small portion of the bird population is ever banded and the recovery rate of recapturing or, in the case of coloured bands, seeing a bird with a coloured band is very low and, therefore, it can take decades to accumulate data from banded birds. From 1955 to 1995, 69,079 Evening Grosbeaks were banded, but only 1,174 were recovered (1.7%). Of the 2,044 Pine Grosbeaks banded, only six were recovered (0.3%); and of 98, 123 Common Redpolls banded, only 98 were

recovered (0.1%). These numbers are for Canada only, with about 65 to 75% of the birds banded in Ontario and Quebec.

So that is where stable isotope signatures enter the picture and why Kevin plucks a single feather, the first primary feather (P1) located around the middle of the bird's wing. (Not to worry, the missing feather has no impact on the bird's ability to fly and is completely re-grown in about three weeks.) Obtaining an isotope signature is like taking a fingerprint. Carbon, hydrogen and nitrogen isotope ratios can be measured in feathers, providing information with evidence to where birds have been, thus helping to solve the mystery of migration and movement.

Hydrogen isotope ratios are found in the water and food birds drink and eat and, therefore, can determine where the birds have been; carbon isotope ratios vary because there are different growing conditions for plants depending on the latitude; and nitrogen isotope ratios can be altered by fertilizers used in agricultural areas. (The feathers Kevin collected will be analyzed at the University of Western Ontario.)

Although this method of migratory tracing will provide migration data at a far greater rate than banding, it will not replace banding. Banding will tell us exactly where the bird has been. Stable isotope signatures will give only a region.

The most accurate method of tracking birds is satellite telemetry, but it is expensive and many birds are too small to be fitted with a satellite transmitter.

Because Canadian Wildlife Service has many species to assess and few assessors to do so, it has to first be determined which species are a priority for additional research. Often species which have been, or are being, assessed by the Committee on the Status of Endangered Wildlife in Canada as being endangered, threatened, or of special concern status are the highest priority. The assessment results are then forwarded to Environment Canada to determine what needs to be done to prevent further declines and determine the best strategy for recovery.

Kevin will keep us informed of his assessment results.

Kevin, who grew up in Hamilton, has been working with birds for the past 20 years, 15 of those years in Alberta before moving to Ottawa in 2010. His study of birds has also taken him to Alaska and Jamaica.