

The appearance of irruptive species is called a flight year, and flight years vary in degree of irruptiveness. In some years, a few Snowy Owls may invade the mid-central states, a poor irruption. Other years may bring many owls. Swirling flocks of Common Redpolls, often numbering hundreds of individuals, winter in weedy fields and birch clumps during a good flight year. Crossbills are particularly sporadic, often being absent for many years, only to invade in large numbers during a good flight year. Irruptive species generally move from north to south but may also move west to east. The Evening Grosbeak was originally not an eastern species, but moved eastward during flight years. Its range is now firmly established in the East.

Irruptions of bird species are thought to be caused by periodic unpredictable food shortages in the breeding ranges of these species. Seed-eating species may irrupt in years following the cessation of masting. Many young are produced when seeds abound during masting, producing an overpopulation. When seed crops drop precipitously (in a crash), seed-dependent species such as crossbills, Pine Grosbeaks, and Pine Siskins are forced southward. Irruptive raptors such as the Snowy Owl, Great Gray Owl, and Rough-legged Hawk are dependent on lemming populations, which are highly cyclic. The appearance of large numbers of individuals of these species signals a crash in the arctic lemming population. Not all individuals of the irruptive species leave the nesting areas, however. Irruptive flocks tend to be comprised predominantly of young birds. Of adults, females seem to outnumber males, though data are not well established on this point.

### MEET OUR COVER ARTIST

For the second consecutive issue, Gordon Morrison's artwork appears on *Bird Observer's* cover. Gordon has been a writing and illustrating *Horticulture Magazine's* series, "Birds in the Garden," as well as a series on native American plant species. He hopes to write and illustrate a book similar to the "Birds in the Garden" series. He is also interested in working on children's books on nature-related topics. Gordon can be reached at 52 Bulfinch Street, North Attleboro, MA 02760.