

BIRDS

Status: Native Migrants

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## CONSERVATION OF NEOTROPICAL MIGRANT LANDBIRDS

### What Is A Neotropical Migrant?

If you were to walk in a woodland or grassland area in South Dakota looking for birds, you would find that there are a lot more birds in summer than there are in winter. This is because many birds migrate south for the winter to areas where the climate is warmer and food is more abundant. Many of the landbirds nesting in South Dakota migrate to spend the winter in the *Neotropics* (Mexico, Central America and northern South America) and are, therefore, called Neotropical migrants. Some Neotropical migrants that occur in South Dakota don't nest here. They just pass through during spring and fall migration periods because they nest farther north. Figure 1 gives typical examples of summer and winter ranges for Neotropical migrants.

### How Many Birds Are Neotropical Migrants?

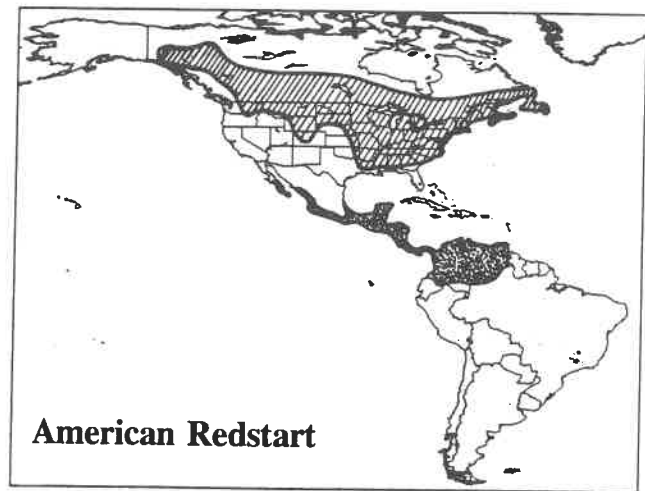
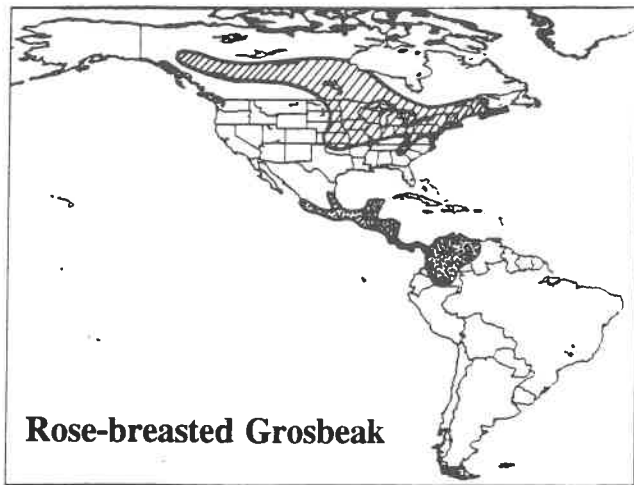
Of all birds nesting in North America, a little more than half spend the winter mainly in Mexico or farther south, and thus qualify as Neotropical migrants. For the northern Rocky Mountains and northern Great Plains regions of the United States, more than 75% of the

nesting landbird species spend their winters in regions extending south of the United States border.

More specific to our area, Neotropical migrants make up 49% of nesting species in wooded draws in North Dakota, and 53% of nesting bird species in *deciduous* forests along the Missouri River in southeastern South Dakota. At least some members of the following bird groups are considered to be Neotropical migrants: hawks, shorebirds, cuckoos, swifts, hummingbirds, flycatchers, swallows, wrens, thrushes, vireos, warblers, tanagers, orioles, and sparrows.

### Status Of Neotropical Migrants

Recent studies have documented declines in populations over much of the North American range for many species of Neotropical migrants, particularly for those species inhabiting eastern *deciduous* forests, like the wooded areas of eastern South Dakota. Examples of this habitat are Newton Hills State Park, Big Sioux State Recreation Area, Oakwood Lakes State Park, and Sica Hollow State Park. Many grassland species of



**Figure 1:** Breeding (diagonal lines) and Wintering (stippling) ranges of Rose-breasted Grosbeak and American Redstart.

| Habitat/Location                       | % Nesting Birds That Are Neotropical Migrants |
|--|---|
| Eastern deciduous forest               | 68  |
| Eastern <i>evergreen</i> forest        | 64  |
| Midwest oak-hickory forest             | 45  |
| Tallgrass prairie                      | 47  |
| Wooded patches in prairie              | 49  |
| Streamside woodland/South Dakota       | 53  |
| Rocky Mountain deciduous forest        | 70  |
| Rocky Mountain <i>evergreen</i> forest | 18  |
| Streamside woodland/California         | 25  |
| Tundra/Alaska                          | 36  |

**Table 1:** North American habitats and percentages of nesting bird species made up of Neotropical migrants. The listing of habitats/locations is generally from east to west.

Neotropical migrants are also experiencing population declines. In South Dakota, examples are northern bobwhite, lark bunting, grasshopper sparrow, Baird's sparrow, dickcissel, and bobolink.

### Why Are The Populations Decreasing?

There are three possibilities for these population declines: problems on the breeding grounds, problems on the wintering grounds, and problems during mi-

gration between wintering and breeding grounds.

**Problems on the Breeding Grounds:** *Habitat fragmentation* decreases nesting success and therefore causes declines in population. There are two main reasons for this effect: (1) Fragmentation of natural habitats leads to an increased amount of *habitat edge* (where the human-altered landscapes border natural habitats) relative to "interior" regions of the habitat. This increased edge increases predation on Neotropical migrants and their nests because their

major predators (crows, jays, raccoons, opossums, and domestic cats) all favor "edge" habitats. (2) Brown-headed cowbird populations are higher around forest edges than in the forest interior and cowbird populations are much higher now than in past times. This increase is due to the conversion of forests to agricultural lands (particularly pastures) that cowbirds prefer. Cowbirds are nest parasites, which means they lay their eggs in the nests of other birds (parasitized birds are called "hosts"), including many Neotropical migrants, and leave their eggs for the other bird to hatch and raise. Usually, the cowbird chicks grow faster than the chicks of the host species, resulting in the cowbird chick getting most of the food so that often the host chicks die. Thus, both higher predation rates and cowbird parasitism result in lower numbers of Neotropical migrant chicks surviving to adulthood, and this results in population declines. One of the major ways to slow or eliminate declines of Neotropical migrant populations is to conserve large continuous areas of forest or grassland for the birds to use for nesting.

#### **Problems on the Wintering Grounds:**

The problems of increased predation and *nest parasitism* that Neotropical migrants face on the breeding grounds are very likely not the only factors contributing to their population declines. An equally serious threat to Neotropical migrants is the destruction of tropical forests where these birds spend their winters. *Deforestation* (clearing of the tropical forest for conversion to pasture or cropland) in the *Neotropics* is occurring at an alarming rate, a rate that is projected to continue to increase into the future. This *deforestation* is driven by the needs of the rapidly expanding human populations of the countries making up the Neotropical region. Estimates of the percentage of remaining forests that are lost each year in the *Neotropics* are generally around 1 to 2%, although this percentage may be higher in certain countries. For example, *deforestation* rates in Costa Rica have been estimated at 7% per year. These *de-*

*forestation* rates may not sound very alarming. After all, if only 2% of the forest is destroyed 98% still remains. However, if current rates of *deforestation* continue (actually they are projected to increase in the near future), no tropical forest will remain in only 50 years. As the amount of tropical forest decreases, more birds will become concentrated in a smaller area, including not only Neotropical migrants, but also all of the many birds that live in the tropics year-round. As bird populations are concentrated in small areas, the available food resources cannot support all of these birds, and many will starve.

**Problems During Migration:** Not only do Neotropical migrants face problems on their breeding and wintering grounds, but migration between them produces its own set of unique problems. It takes a lot of energy for the birds to fly from Mexico (or farther south) to northern breeding grounds and back again every year. Most of this energy for migration is supplied by fat that the birds gain before and during migration. However, Neotropical migrants cannot store enough fat to fly all the way from wintering grounds to breeding grounds (or the reverse) in a non-stop flight, so they must eat along the way. The areas where the Neotropical migrants stop to "refuel" are known as *stopover sites*. Fragmentation and removal of this important stopover habitat can, therefore, also lead to population declines. In South Dakota, appropriate stopover habitat (as well as breeding habitat) for most Neotropical migrants is mainly limited to areas of *deciduous forest* along rivers (although shelterbelts may provide some acceptable habitat). Much of this habitat has been cleared for agriculture or flooded by the construction of reservoirs. Such habitat destruction may limit the amount of suitable stopover (or breeding) habitat, and if migrants are unable to "refuel" successfully during migration, they will not reach breeding grounds. This could contribute to population declines in Neotropical migrants moving through South Dakota and the Great

Plains, even though the birds may nest farther north.

## Conservation Measures

Many Neotropical migrants are experiencing declines in population. The main problems stem from destruction of appropriate habitat, whether for nesting, wintering, or stopover during migration. Probably the single most important conservation measure is to set aside large tracts of appropriate habitat for Neotropical migrants in breeding areas, in wintering areas, and along migration routes. In addition, programs to reduce

predator populations or remove cowbirds from nesting areas have been effective in slowing population declines for some species (e.g., Kirtland's warbler and black-capped vireo). Finally, the public needs to be reminded that most bird species are protected by law. It is illegal to harm most Neotropical migrants or disturb their nests. If such conservation measures can be maintained over the long-term, then we can be reasonably sure that we will always have Neotropical migrant birds to brighten our spring, summer, and fall days.

## Glossary

- Deciduous forest** - type of forest made up of trees that lose their leaves in the winter.
- Deforestation** - destruction of forested habitats for conversion to other uses.
- Evergreen forest** - a forest made up of trees that do not lose their leaves or needles in the winter.
- Habitat edge** - region where one type of habitat (for example: forest) borders on another type of habitat (for example: grassland or cropland).
- Habitat fragmentation** - breaking up large areas of continuous natural habitat into smaller patches of natural habitat isolated from each other by human-altered habitats.
- Neotropics** - the region including Mexico, Central America, and northern South America. This region serves as the wintering area for Neotropical migrant landbirds.
- Nest parasitism** - breeding strategy used by brown-headed cowbirds and several other species where eggs are laid in the nest of another bird species (the host) and left for the host to raise.
- Stopover sites** - areas where migratory birds stop to replenish fat reserves depleted during the previous leg of migration. For many Neotropical migrants, appropriate stopover habitat in South Dakota is limited to *deciduous* forest areas along river courses.

## References and Resources

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Publication of the *Neotropical Migrants* fact sheet was funded by the South Dakota Department of Game, Fish and Parks, Division of Wildlife, Pierre, SD.