



Insight into Garter Snake Die-off

Manitoba's Narcisse Wildlife Management Area (WMA) located approximately 100 kilometres north of Winnipeg is world famous for its red-sided garter snake (*Thamnophis sirtalis parietalis*) hibernaculae that house one of the world's largest concentrations of these snakes. In April of this year, Manitoba Conservation officers found several thousand dead snakes on the surface of two of the three major den sites in the WMA.

Typically, in the spring, the snakes emerge and breed but this year the emergence was delayed and fewer snakes were observed. "Where we should have been seeing thousands, we were seeing hundreds," said Ron Larche, a non-game protected species biologist with Manitoba Conservation.

Once the normal emergence period had passed, Larche and his co-worker Dave Roberts, regional wildlife technician, decided to investigate the bottom of the den sites. "It was a difficult decision," Larche said. "We were concerned we might permanently and negatively impact a hibernaculum site."

The dens are sink holes reaching depths of six metres below the surface. Once a few rocks were removed, the biologists found a concentration of dead snakes within a depth of 0.5 metres.

Larche and Roberts believe some snakes froze to death last fall when they

were caught in a sudden cold snap after unseasonably warm temperatures. They snakes did not travel deep enough into their dens and, as a result, were above the frost line. Increased amounts of silt in the den and the great numbers

of snakes using the dens may have contributed to their inability to reach the depth required to survive the winter.

The site was restored prior to the snakes' return this fall. Manitoba Conservation is considering erecting structures that will minimize siltation in the dens.

Historically, during spring and fall, approximately 65,000 snakes have amassed at the dens. A population count is being planned for the spring of 2000 to determine the impact of the die-offs discovered this year. ■



Photo by Manitoba Conservation

Tackling Orchid Issues

A working group that unites Canadian and American scientists has been developed to advance the research and recovery of the western prairie fringed orchid (*Platanthera praeclara*). Approximately 24 people, including CDC botanist/ecologist Jason Greenall, attended the group's first meeting held July 13 and 14 in Fargo, N.D.

The western prairie fringed orchid is listed as Endangered both provincially and federally in Canada and as Threatened in the United States. The working group intends to increase co-operative recovery efforts throughout the species' range and to pursue funding for these efforts.

The group reviewed current projects underway in North Dakota, Minnesota and Manitoba. Dr. Karen Johnson, curator of botany with the Manitoba Museum, joined Greenall in describing Manitoba's monitoring and recovery efforts.

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The Manitoba Conservation Data Centre was initiated by:

- Manitoba Museum
- Manitoba Conservation
- The Nature Conservancy of Canada
- The Nature Conservancy (United States)

Manitoba
Conservation
Hon. Oscar Lathlin
Minister



Species at Risk Program Monitors Shrike Populations

Updates on Other Grassland Birds At Risk

Ferruginous hawk (*Buteo regalis*)

Thirty-eight nesting pairs were found in 1999 representing a decline from 49 pairs in 1998. In the early 1990s, when these birds first returned to Manitoba after a 60 year absence, more than 50 pairs were observed.

The hawks' productivity declined slightly in 1996 as a result of reduced numbers of Richardson's ground squirrels, their main food source. Use of artificial nesting structures, wire baskets placed in suitable trees and filled with sticks, has been high in recent years. In 1999 over 80 per cent of nesting pairs used nesting structures.

Average nesting success and average brood size were both slightly below long-term averages. This bird is listed as Threatened under Manitoba's *Endangered Species Act*.

Burrowing owl (*Athene cunicularia*)

The Manitoba population of these birds increased very slightly in 1999. Three nesting pairs and one unmated male were sighted, the highest number recorded since four pairs were found in 1995. Despite wet conditions this summer, two pairs raised families of five to six young. This owl is listed as Endangered under Manitoba's *Endangered Species Act*. ■

Recent Publications

■ Blouin, F., Giroux, J.-F., Ferron, J., Gauthier, G., and G.J. Doucet. 1999. The use of satellite telemetry to track greater snow geese. *J. Field Ornithol.*, 70(2): 187-199.

Manitoba's Grassland Species at Risk Program strives to monitor and manage species at risk, maintain wildlife diversity in Manitoba's grassland ecosystem, raise public awareness of species at risk and support local interest groups and land-owners in their efforts to enhance the status of endangered grassland species and ecosystems. One species being monitored is the loggerhead shrike (*Lanius ludovicianus*), a bird that is listed as Endangered under the province's *Endangered Species Act*.

Ken DeSmet, endangered species biologist with Manitoba Conservation, monitors the loggerhead shrike in southwestern Manitoba. This year, he reported a total of 108 pairs of loggerhead shrikes in the province — down from 166 pairs in 1998, and less than one third of the population observed in 1993. "Nesting success and productivity in south-western Manitoba has been hampered by wet summer conditions," DeSmet said. A similar decrease in population was noted in 1994, a year similar to 1999 in that it followed a year of low productivity.

The majority of Manitoba's loggerhead shrikes are found within the south-western part of the province. Under DeSmet's supervision, CDC information manager Francois Blouin is

monitoring a small population north of Winnipeg. Eight pairs were found nesting in the area in 1998. This year, five pairs were confirmed nesting and three others were suspected nesting.

In addition to ongoing monitoring, DeSmet is also working with researchers from Ontario's Queen's University in an isotope analysis study to determine whether Manitoba's two populations of loggerhead shrike belong to two different subspecies. Feather samples taken from young birds during banding were sent to the university for

isotope analysis. Preliminary results indicate that both Manitoba populations are intergradations of the western and eastern subspecies.

The western or prairie subspecies (*Lanius ludovicianus excubitorides*) of shrike is listed as Threatened by COSEWIC, while the eastern subspecies (*Lanius ludovicianus migrans*) is listed as Endangered.

Monitoring and isotope analysis are expected to continue in the summer of 2000. The distribution and abundance data generated through this program supplement the CDC's databases and provide background information for provincial species status assessments, environmental impact assessments and population status over time. ■



Photo by Dean Berzanski

Feather samples were taken from juvenile loggerhead shrikes banded this summer.

■ CDC Project Updates

Surveying Colonial Waterbirds

CDC acting zoologist Bill Koonz spent eight days on Lake Winnipegosis with four other people who surveyed active colonial waterbird colonies. Thirty-nine colonies were visited this year during the survey that began June 4.

Colonial waterbirds include pelicans, cormorants, gulls, terns and herons. Where the risk of disturbing a colony was minimal, the survey crew counted nests for each species. If the birds were not nesting, the number of individuals present on the islands was recorded. Nest numbers were estimated from the shoreline if it was apparent that young birds had recently hatched. The last inventory of this type occurred on the lake 10 years ago.

"There were some marginal changes in species populations on the islands," Koonz said. "The points of particular interest generated from the survey were unusual species distribution and apparent colony disturbance."

Cormorants have historically been observed to nest on the ground. During this survey and one a decade earlier, a large proportion of cormorant nests were found in trees on islands not traditionally used. Koonz said these behavior anomalies may be attributed to the increase in the lake's cormorant population that is now near the highest levels ever recorded. The birds' great numbers combined with nest disturbance on traditional nesting islands may have forced the cormorants to seek new nesting areas.

Human disturbance was most apparent in easily accessible cormorant colonies. These colonies had fewer nests with hatched young and freshly built, empty nests were common.

Colonies active a decade ago still support birds except where higher water levels have submersed islands. Ice gouging, inclement weather, inadequate food sources, population changes and disease can also contribute to nesting island demise.

Manitoba's cormorants rarely nest by themselves, unlike cormorants studied in other areas of North America. Breeding gulls, terns and, in some instances, pelicans, joined cormorants on the nesting islands studied by Koonz and his team. Where cormorants started new nesting islands, Koonz noted the major role the birds play in the islands' ecology.

"Islands that have been newly pioneered by cormorants tend to have trees," he said. "Eventually, with bird use and the accumulation of excrement, the trees die creating more favorable habitat for the smaller birds. The excrement in the water creates algal blooms that attract fish. In this way, the islands are self-sustaining since the birds don't have to go far to find food."

Koonz would like to expand the survey and include areas northwest of Lake Winnipeg to confirm speculation that some species are pioneering nesting islands further north. ■

Orchid Working Group (cont'd from page 1)

Encouraging results were heard about the use of herbicides that can control leafy spurge, a key threat to orchid habitats, without harming orchid populations. Meeting attendees also discussed recovery efforts underway and compiled a list of priority projects and possible funding sources. Greenall said the meeting was timely and beneficial to all involved.

"At a time when species at risk and the need for recovery planning are gaining attention in Manitoba, this meeting provided invaluable insight and a number of excellent contacts," Greenall said. He intends to participate in future meetings. Tentative plans have been made to invite the group to Manitoba's Tall Grass Prairie Preserve where some of the best examples of the orchid's habitat can be found. ■



Caught in the Web

- The Nature Conservancy and the Association for Biodiversity Information have posted downloadable data sets for several native animal species groups. Visit this site at consci.tnc.org/src/overview.htm.

Medicinal Plant Assessment Underway

Three medicinal plant species native to Manitoba are the focus of a global status assessment being conducted for The Nature Conservancy (TNC) and the Association for Biodiversity Information. Barbara Dyck, a botanist, has been contracted to collect information on the abundance and current conservation status of tall hairy agrimony (*Agrimonia gryposepala*), fragrant water-lily (*Nymphaea odorata*), and Culver's-root (*Veronicastrum virginicum*).

"The herbal market is growing," Dyck said. "There is concern that harvest of medicinal species from the wild may result in pressure on these plants." She has contacted conservation data centres across Canada and their equivalent organizations in each state to determine the range of each species and identify trends and threats to the plants on a local and national scale. Dyck is also speaking with people who work with medicinal plants and who are familiar with wild populations.

The assessment will be complete by the beginning of January. The information Dyck compiles will be added to the TNC databases that are shared with the MBCDC and similar organizations across Canada and the United States. Anyone with information that will contribute to Dyck's assessment can E-mail her at bsdyck@hotmail.com. ■

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specializing in the province's plants,
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Staff and Volunteer Updates

Luc Blanchette joined the Biodiversity Conservation Section in November under the OnSite program. He is working with Ron Larche to update databases on bats, reptiles and amphibians with 1999 survey data. ■

Farewell to Marilena Kowalchuk who completed her seven month term under Environment Canada's Science

Horizons Youth Internship Program. Marilena's hard work on the Alonsa biodiversity inventory will result in the completion of the final report early in 2000. ■

The staff and volunteers of the Manitoba CDC would like to wish their clients and partners a happy holiday season and all the best in the year ahead. ■

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