Alberta Conservation Association
2008/09 Project Summary Report

Project name: *2008 Loggerhead Shrike Survey in Alberta*

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Partnerships:
Alberta Sustainable Resource Development - Fish and Wildlife division
TD Friends of the Environment Foundation

Key findings

- Most shrike observations occurred in areas with mixed trees and shrubs with native grass present. All nests were found in either willow shrubs or thorny buffaloberry.
- The number of pairs of shrikes per 100 linear kilometers is down by almost 15% compared to 2003, and by > 22% compared to 1998.
- The apparent decline in shrike numbers in Alberta is consistent with declining trends in Saskatchewan and Manitoba.

Abstract
The Alberta population of loggerhead shrikes (*Lanius ludovicianus*) is listed as "Special Concern" by the Alberta government and as "Threatened" by the Committee on the Status of Endangered Wildlife in Canada. These designations are based largely on the belief that loggerhead shrike populations in North America declined by about 10% a year between 1950 and 1990.

Every five years since 1987, a roadside survey of loggerhead shrikes is completed across the Canadian prairies. The federal Prairie Loggerhead Shrike Recovery Team has endorsed these surveys an efficient means of monitoring population trends and distribution of this low-density species across western Canada.

Roadside surveys were conducted along 31 established routes between mid June and mid July. Observers recorded the presence of shrikes along the route and each occupied site was assumed to represent a pair if they were >300 m from another known pair and were in suitable nesting habitat. Other information, such as distance from the road to the shrike when first observed, general habitat description, and percentage of grass type was also collected.

A total of 19 observers from Alberta Conservation Association and Alberta Fish and Wildlife spent 174 hours surveying the 31 shrike routes between 17 June and 14 July 2008. The total

road distance surveyed was 7869 km and represented approximately 10.1% of available roads in the provincial study area.

Observers encountered 151 shrikes (97 single birds, 27 pairs) at 121 unique sites, for a total of 1.54 indicated pairs /100 km of route. Comparing these counts with previous surveys suggests a 15% decrease in pairs of shrikes per 100 km compared to 2003, and down by > 22% compared to 1998.

Introduction

Loggerhead shrikes (*Lanius ludovicianus*) are listed as "Special Concern" by the Alberta government. The Committee on the Status of Endangered Wildlife in Canada lists loggerhead shrikes as "Threatened" in Alberta, Saskatchewan and Manitoba and lists the eastern population (Ontario and Quebec) as "Endangered". These designations are based largely on the belief that loggerhead shrikes populations in North America have declined by about 10% a year between 1950 and 1990.

Every five years since 1987, a roadside survey of loggerhead shrikes is completed across the Canadian prairies. Three such surveys have been conducted in Alberta (1987, 1998, 2003). Alberta did not participate in the 1993 survey that was conducted in Manitoba and Saskatchewan. The Prairie Loggerhead Shrike Recovery Team has endorsed these surveys as an efficient means of monitoring population trends and distribution of this low-density species across western Canada.

Methods

Roadside surveys conducted in 2008 followed the same routes as those used during the 2003 provincial loggerhead shrike survey (Prescott 2004). The majority of routes followed lightly traveled back roads, with observers (1 driver, 1 passenger) driving routes at speeds of 50-70 km/ hr. Surveys were conducted along 31 established routes between 07:00 and 19:00 from mid June to mid July. Observers recorded the presence of shrikes along the route and each occupied site was assumed to represent a pair when they were >300 m from another known pair and in suitable nesting habitat. Other information, such as distance from the road to the shrike when first observed, general habitat description (e.g. abandoned farm, shelterbelt etc), percentage of grass type (e.g. native, cultivated) was also collected.

Results

Six observers from ACA spent 14 hours conducting three roadside surveys between 7 and 9 July. Total road distance surveyed was 674 km. An additional 13 observers from Alberta Fish and Wildlife spent 160 hours conducting 28 roadside surveys between 17 June and 14 July 2008. In total, 31 routes were completed over 174 hours of surveying time, along 7869 km of roads. These survey routes represented approximately 10.1% of available roads in the provincial study area.

ACA observers found a total of 19 adult shrikes at 11 sites and observers from Fish and Wildlife encountered 132 shrikes at 110 sites. In total, 151 shrikes were located at 121 unique sites (97 single birds, 27 pairs), for a total of 1.54 indicated pairs (IP) per 100 km of route.

Characterization of habitat was based on 118 sites (110 on roadside routes, 8 during incidental observations) where shrikes were observed during the 2008 survey period. The majority of woody features where shrikes were found was described as mixed treed and shrubs (30.5%), followed by occupied farmsteads (17.8%). Native grass (60.9%) was most prevalent at sites where shrikes were observed, followed by tame pasture (57.3%) and cultivation (53.0%). All nests found (n=14) were located in willows (64.0%) or thorny buffaloberry (36.0%).

Conclusion

Trend estimates from three roadside surveys since 1998 suggest a continued decline for loggerhead shrikes in Alberta. The 1.54 IP/100 km observed in 2008 is 14.9% less than the 1.81 pairs/100 km reported in 2003, and 22.6% less than in 1998. From 1998-2003 Saskatchewan reported a decline of 6.5% (Prescott 2004), and breeding bird survey data from 1993-2002 shows an annual population decline of 6.8% in Alberta, 6.3% in Saskatchewan and 2.6% in Manitoba (COSEWIC 2004).

Although no one threat has been implicated at the primary cause of the decline, a number of factors are believed to be contributing. Shrike declines have been linked to loss of native prairie and pastureland habitats. Pesticides are also thought to be negatively impacting shrikes through egg shell thinning and by reducing prey availability. West Nile virus is known to have killed a number of shrikes in Ontario and collisions with vehicles are also thought to be a large source of mortality amongst adult and fledglings (COSEWIC 2004).

Communications

None

Literature cited

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COSEWIC 2004. COSEWIC assessment and update status report on the Loggerhead Shrike excubitorides subspecies Lanius ludovicianus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

Prescott, D.R.C. 2004. The 2003 Loggerhead Shrike Survey in Alberta. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Report No. 93, Edmonton, AB. 10pp.

Adult loggerhead shrike (Photo: ACA)

Loggerhead shrike nesting habitat (Photo: ACA)