

Alberta Conservation Association 2010/11 Project Summary Report

Project Name: *Sage Grouse Recovery*

Wildlife Program Manager: Doug Manzer

Project Leader: Paul Jones

Primary ACA staff on project:

Jennifer Carpenter, Brad Downey, Paul Jones and Layne Seward

Partnerships

None

Key Findings

- Average distance between an active sage grouse lek and the nearest fence is 601.12 ± 98.9 metres.
- Average distance between an active lek ($n = 18$) and the nearest fence is greater than that between inactive leks ($n = 19$) and the nearest fence.
- Marked 7.2 km of fence lines on two properties with vinyl reflectors to reduce potential sage grouse mortalities. The one fence line (4.8 km) was built in 2010 to reduce grazing pressure around an active sage grouse lek in the south half of the pasture.

Introduction

Sage grouse (*Centrocercus urophasianus*) is arguably the most critically imperiled species in Alberta, and may be at, or very near, the minimum level for sustaining a viable population (Canadian Sage Grouse Recovery Team 2001). The Alberta Sage Grouse Recovery Team developed a plan to recover sage grouse within Alberta (Alberta Sage Grouse Recovery Action Group 2005). One of the possible steps in the recovery strategy is the concept of augmenting the current population with birds from Montana. Although not specifically mentioned in the Alberta recovery plan, it has been shown in other areas that fence collisions are a significant mortality factor for grouse species and in particular sage grouse (Christiansen 2009, Wolfe et al. 2009). Thus, the sage grouse population in Alberta should benefit from efforts to reduce this potential source of mortality.

Our primary objectives for this program included: 1) assessing our potential role in the possible augmentation of sage grouse with individuals from Montana, and 2) assessing the need for marking fences to reduce sage grouse mortality and marking fences in strategic locations with reflectors. All objectives supported the *Alberta Greater Sage-Grouse Recovery Plan 2005 – 2010* (Alberta Sage Grouse Recovery Action Group 2005).

Methods

We completed a review of the literature pertaining to collisions by grouse with fences and related mortalities. From this review, we concluded that marking fences with reflectors would assist in reducing potential sage grouse mortalities related to fence collisions. We used a geographic information system (GIS) to determine distance to nearest fence from active and inactive sage grouse leks and used these distances to prioritize potential fences to mark. We marked fences using markers cut from vinyl undersill (Wolfe et al. 2009) along a newly-constructed fence line near an active lek and along the west and south boundary fence of the Silver Sage Conservation Site.

We met with Alberta Sustainable Resource Development (ASRD) and other interested parties to discuss the potential augmentation of the current Alberta sage grouse population with birds from Montana. At these meetings, we discussed potential roles for various organizations in the delivery of an augmentation program, as well as the habitat conservation needs fundamental for a successful recovery.

Results

We determined that there is an average of 0.0009 km of fence line per km² within the current range of sage grouse in Alberta. On average, inactive leks tend to be closer to fence lines than active leks (Figure 1). For active leks, the three closest fences are 22, 208 and 278 m from the lek. For inactive leks, the three closest fences are 15, 151 and 154 m from the lek.

Figure 1. Mean (\pm standard error) distance to a fence line from an active and inactive sage grouse lek in Alberta

We marked a total of 7.2 km of fence line with reflectors on two properties, 4.8 km of which were on a newly-constructed fence on the J Bar J Ranch. The fence line was constructed to reduce grazing pressure around an active sage grouse lek in the south half of the pasture. The 2.4 km of marked fence on the Silver Sage Conservation Site will be used for demonstration purposes with information incorporated into a proposed sign for the property.

From our discussions with ASRD and other groups interested in sage grouse recovery, we determined that we would not take a role in the augmentation of sage grouse into the existing population in 2011. Our interests support the restoration of habitat conditions that would sustain sage grouse recovery and will be achieved through Alberta Conservation Association's Land Management Program and MULTISAR.

Conclusion

Our analysis of the distance to the nearest fence line from an active lek produced some startling results with one fence line only 22 m away from an active lek. We will continue to work with MULTISAR co-operators to mark fences, where needed, as well as provide our results to ASRD to assist in their efforts to recover sage grouse in Alberta. Our completion of the signage for the

Silver Sage Conservation Site will highlight the value of marking fences to reduce potential collisions by sage grouse.

Communications

- Summary report: Fence collisions and sage grouse: reason for concern? P.F. Jones and J. Carpenter. Alberta Conservation Association, Lethbridge, Alberta.

Literature Cited

Alberta Sage Grouse Recovery Action Group. 2005. Alberta greater sage-grouse recovery plan 2005 – 2010. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Recovery Plan No. 8, Edmonton, Alberta. 33 pp.

Canadian Sage Grouse Recovery Team. 2001. Canadian sage grouse recovery strategy. 55 pp.

Christiansen, T. 2009. Fence marking to reduce greater sage-grouse (*Centrocercus urophasianus*) collisions and mortality near Farson, Wyoming – summary of interim results. Wyoming Game and Fish Department. 2 pp.

Wolfe, D.H., M.A. Patten, and S.K. Sherrod. 2009. Reducing grouse collision mortality by marking fences (Oklahoma). *Ecological Restoration* 27: 141-143.

Photos:

Vinyl reflector used to mark fences to make them more visible to sage grouse. (Photo: Paul Jones)

Alberta Conservation Association staff member, Jennifer Carpenter, marking perimeter fence on the Silver Sage Conservation Site with reflectors. (Photo: Paul Jones)

Greater sage grouse in winter. (Photo: Mike Swystun)

Greater sage grouse flying towards a fence. (Photo: Mike Swystun)