Aspen Park Consulting
#12 2210 Qu'Appelle Boulevard
Kamloops BC V2E2S4

Potential for Sandhill Crane Migration Monitoring

Douglas Lake Plateau IBA

Prepared by
Rick Howie RP Bio

April 2, 2021

Tel. (778) 362-0195 Cell (250) 371-2551 E-mail: howierick@gmail.com
environmental services for sustainable development

1.0 Introduction

Sandhill cranes (*Antigone canadensis*) migrate across the Douglas Plateau in spring and fall with a small number of breeders scattered across the plateau during the summer months. An estimate of 22,000 - 25,000 birds use this route (Campbell et all 1990.) Potentially 3 subspecies may comprise the migrant populations observed on the Douglas Plateau - *A. c. canadensis, A.c. tabida* and *A.c. rowani* but there appears to be no specimen evidence for the latter subspecies using the interior flyway across the plateau. Groups with individuals of mixed sizes have been observed but identification of the larger individuals to subspecies based upon field observations is difficult. Those that stop to breed have been historically identified as *A.c tabida* but some authorities feel that *A.c. rowani* breeds at mid-latitudes in the BC interior (Campbell et al 1990.) The notion that interior breeding birds have started nesting around the time that lesser sandhill crane migration peaks has been advanced (Campbell et al 1990.) Assumed long-distance north-bound migrants generally arrive on the Douglas Plateau during the last week of March, but individuals or very small groups have been observed as early as March 1. The peak of migration is around the 2nd to 3rd week of April. Migration is generally finished by May 10. Local numbers increase from late July through early August and are presumably family groups of local breeders. Southbound migrants arrive about Sep. 1, with migration lasting until about Oct. 31, with stragglers throughout November. Wintering birds are extremely rare and may not actually survive.

The IBA program coordinator (L. Ragan) has expressed interest in conducting surveys for cranes and species at risk within the IBA that were instrumental in having the area declared an IBA in the first place. The following suggestions for methods to survey sandhill cranes are provided in order to help in kick-starting the survey process.

2.0 Existing Data

R . Howie has been making random observations of cranes during all seasons for the past 40+ years. This information will be made available to augment any more rigorous surveys that will be undertaken. For some recent years, the Nicola Valley Naturalists have been making an annual trip into the southern portion of the IBA and undoubtedly have data that could be shared from those trips. Wayne Campbell maintains a database of many bird sightings in BC which was used to create Volumes 1- 4 of "Birds of B.C. and undoubtedly the database contains observations of cranes in the interior. More recently, E-bird holds random observations of cranes and maps have been generated by others from this data but neither of these two sources has been accessed by Howie to summarize known observations. The maps confirm the presence of birds within the corridor across the Douglas Plateau that has been documented by our local initiatives.

3.0 Migration Behavior

It is felt that many of the cranes crossing the Douglas Plateau depart from staging areas in northern Washington. With favourable weather conditions and an early morning departure, these birds may easily reach various areas on the plateau and decide to touch down for the night or possibly continue flying without landing. Other birds starting farther south and/or encountering less favourable flying conditions may also land to feed and rest. The general route sees birds entering BC in the south Okanagan Valley and ultimately turning northwest to cross forested areas of the plateau in the vicinity of Pennask Lake. Once into grasslands, the birds turn generally northwest and follow the open country to about the latitude of Kamloops. There, birds angle more northwest and follow the Kamloops Lake valley westward and then angle northwest again to cross wooded areas into open country of the south Cariboo. Individuals of the breeding population travel more in a more northerly direction from Kamloops into breeding areas near the North Thompson and Clearwater River valleys and adjacent plateau areas.

The route taken by birds across the plateau may vary somewhat depending upon winds and perhaps other factors. To some degree, landing spots and staging areas are variable, with some locations being relatively consistent while others much less so. It seems that one can never be sure whether birds will be on the ground at traditional overnight sites or whether they are just over the nearest hill or nowhere nearby. Birds in flight may shift hundreds of metres or a kilometre or two in a different direction from where they were seen the previous week or year. Major movements are not predictable on any given day, but favourable winds from the south may suggest a potentially good day for observing. Conversely, strong headwinds may result in few or no birds moving or even birds landing to rest if they have been fighting winds for some hours. Data on conditions that influence local migration behavior are lacking. These somewhat erratic patterns are important to consider when planning surveys.

4.0 Monitoring Methods

I would suggest that the two major methods that have promise for surveying cranes are driving surveys and stand watches.

4.1 Driving Surveys

These surveys consist of driving routes used to access locations where cranes are frequently observed, particularly on the ground. The lengths and time spent can be adjusted to reflect observers schedules. Short routes could be driven 2x per day. Multiple routes could be driven in a longer day.

Advantages

- allow for coverage of large areas
- enable exploration of new areas not yet known to attract cranes
- results provide broad physical overview of a region

Disadvantages

- observers more likely to miss high flying aerial birds
- are biased towards locations where cranes have landed
- under Covid conditions, more difficult to have pairs of observers from different households due to closed confines of vehicles

Locations are suggested in Figure __.

Suggested routes are

- Goose Lake loop incl Jacko Lake
- Dewdrop
- Rose Hill
- Knutsford - Beresford
- Knutsford - Brigade Lake - Hwy 5a loop
- Knutsford -Beaver Ranch Flats along Hwy 5a.
- Merritt - Beaver Ranch Flats along Hwy 5a
- Nicola Lake - Chapperon Lake - Minnie Lk loop incl Hamilton commonage
- Lundbom commonage

4.2 Stand Watches

These surveys are based upon stationary observations from locations where cranes are likely to be seen either on the ground or particularly as individuals in flight, often at considerable elevations. The duration can be adjusted to suit observer availability.

Advantages

- more likely to capture birds in flight thereby counting a larger portion of the population
- counts can be done for a large portion of the daylight hours, thus able to document timing and patterns of birds passing specific locations
- other large migrant species can be counted at the same time such as geese and raptors
- can be a pleasant social gathering for a number of observers
- Covid spacing easier to maintain

Disadvantages

- limited geographic coverage unless more teams are available
- more likely not to capture birds on the ground
- require numerous locations to adequately cover a large geographic area
- some observers may find the shifts tedious if no birds are found or become disenchanted with the location if it is unproductive.

Possible locations are suggested in Figure __.

- Mt. Dufferin
- 6 Mile point
- Separation Lake
- Jacko Lake
- Brigade Lake
- Napier Lake Ranch?
- Stump Lake
- Beaver Ranch Flats
- Chapperon Lake
- Hamilton Commonage

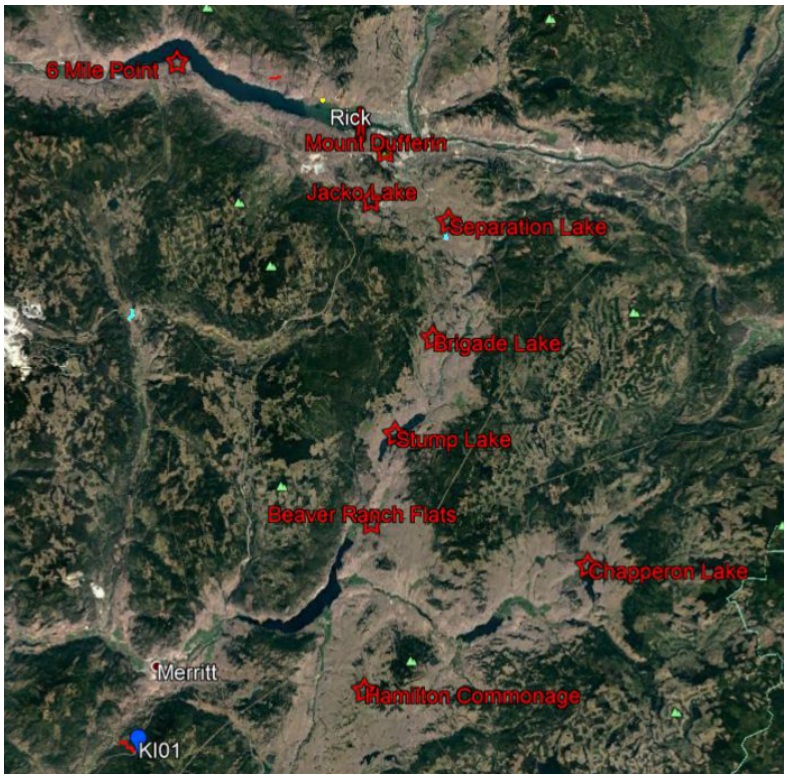

Figure__. Potential stand watch locations for sandhill crane monitoring

5.0 Survey Protocols

5.1 Data Collection

During the surveys, observers should collect the following information.

- date year/month/day
- # of cranes observed, flock sizes
- flight direction
- geographic location - UTM coordinates, NAD 83 or latitude & longitude. The locations can be determined from Google Earth for stand watches and we could generate field maaps for markup by observers who do not have GPS units. The coordinates for the markup spots along driving surveys can be later determined from Google Earth.
- nearest feature to observation with gazetted name
- times when cranes were seen - 24 hr clock
- temperature
- wind direction
- wind force in Beaufort scale
- precipitation conditions

Data sheets can be created to make the observations easier.

5.2 Survey Timing and Schedule

The frequency of surveys will be determined by the availability of observers. It would be ideal to have surveys conducted daily during migration in order to better understand migration chronology but this will likely be impossible to achieve. Because we are not certain about the timing of flights, peak periods during the day and other variables, it would be ideal to have coverage throughout the daylight period on survey days. Some cranes migrate at night but obviously obtaining numbers during those times is impossible.

If daily surveys cannot be undertaken, it is recommended that at least 3 surveys per week be conducted for both driving routes and stand watches. If coverage cannot be achieved throughout the daylight hours, coverage from 1000 - 1700 hours should be attempted or broken into 2 four hour periods.

6.0 Additional Thoughts