Species at Risk Survey Report

Trumpeter Swan Roadside survey

Trumpeter swans observed west of Calgary (B. Boukall)

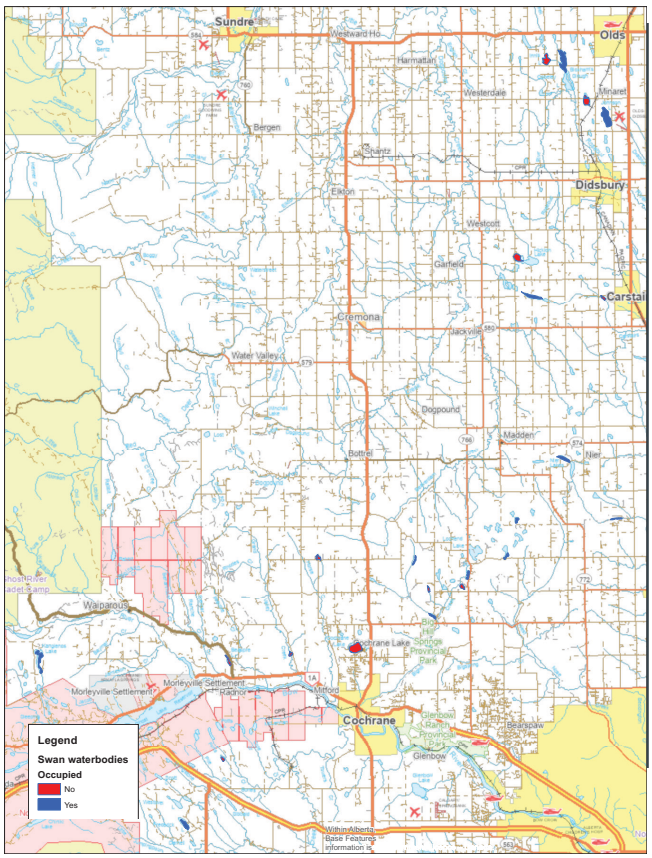
Background

Historically, trumpeter swans were found throughout Alberta, but due to both habitat loss and hunting pressures in the early 1900s, their populations were near extinction (Salt and Wilk 1958). Provincial populations of the trumpeter swan (*Cygnus buccinator*) have increased in recent years, and species status has been upgraded to *Special Concern* in Alberta (Alberta Environment and Protected Areas 2020). The majority of trumpeter swans breed in northwest Alberta surrounding Grande Prairie and Peace River, with smaller sub-populations east of Edmonton and south of Pincher Creek (Alberta ESRD 2013). Historical records of breeding trumpeter swan are few in the area surrounding Calgary and the breeding populations were believed to be locally extirpated. There have been longstanding observations of swans staging in the Calgary area as they migrate to breeding habitats in the northwest; however, prior to 2015, breeding swans were thought not to exist locally. A breeding pair was first observed in 2015 in the Foothills (Kangienos Lake) and subsequent observations of swans occupying wetlands during the breeding season, supported the notion that trumpeter swans were breeding in the area west of Calgary. This report summarizes results of a roadside survey conducted in the summer of 2023, documenting the presence, and breeding of trumpeter swans.

Survey Method

Large wetlands (> 8 ha) between Highway 27 and Highway 1 were identified using satellite imagery. This area was chosen based on previous observations of swans in the area. Additional surveys were conducted at previously known sites to the south (e.g., Fredrick Lake, and Chain Lakes reservoir) and west (e.g., Kanginoes Lake). Twenty-four wetlands were selected based on size of the wetland (> 8 ha) and proximity to roads (within 400 m). Surveys were largely conducted along roads where wetlands could be viewed using scopes and binoculars. In some cases, landowner permission was obtained to view some wetlands behind locked gates. Surveys were conducted from July 5th through to August 15th, and the number of swans and young were recorded.

Figure 2: Map of 2023 Trumpeter swan surveyed waterbodies, showing occupied (blue) and unoccupied (red) sites



Results and Discussion

Roadside surveys occurred at 24 identified wetlands. Swans were observed at 13 of the wetlands surveyed (Figure 2). Of those wetlands with swans present, 10 wetlands were observed successfully producing young. In total 22 young were observed during the 2023 roadside swan surveys (Table 1). As this was a roadside survey, it is possible that pairs may have been missed, due to vegetation and other obstructions. Repeated observations over time will assist in the determination of breeding wetlands. Engaging with local residents can also assist with identifying local breeding habitat.

Table 1: Summary of Trumpeter swan roadside survey results

Occupied waterbodies				Unoccupied Waterbodies	
Wetland #	Wetland Size (ha)	Adult #	Young #	Wetland #	Wetland size (ha)
1	51.6	2	1	14	10.0
2	33.3	2	2	15	87.8
3	15.9	2	1	16	15
4	225.8	2	2	17	8.4
5	74.8	2	5	18	15.0
6	33.0	2	3	19	9.2
7	29.1	2	2	20	40.3
8	99.7	2	1	21	40.9
9	795.0	2	2	22	47.0
10	29.9	2	0	23	16.3
11	27.7	2	3	24	9.4
12	27.2	2	0		
13	268.8	2	0		
Total	**Avg 131.7 ha**	**26**	**22**		**Avg 27.2 ha**

The observed occupation and breeding of trumpeter swans in the area west of Calgary is cause for optimism since breeding in this part of the province has not been observed for more than a century. Based on the presence of breeding swans, it appears that they have been able to habituate to human disturbances present on the landscape to the west and north of Calgary, breeding on large wetlands surrounded by roads and agricultural development. While breeding in habitat surrounded by development, swans observed appeared to be selecting habitat that was more surrounded by natural vegetation and cover. Further, waterbodies occupied by swans were larger than those waterbodies that were not occupied (*Mann Whitney U = 112, p < 0.01*).

Trumpeter swans were upgraded in 2014 to *Special Concern* status and increase in observations of trumpeter swans in this part of the province supports that decision. An apparent increase in the distribution of breeding trumpeter swans has also been observed near Pincher Creek (E. Anderson, pers. comm.). The increase of breeding trumpeter swans in the area west of Calgary is an important step in the recovery of this species in Alberta. Based on the breeding that was observed, it is expected that this population will continue to slowly increase over time. As Rocky Mountain sub-populations of trumpeter swans are still limited by the available overwintering habitat, it is important to minimize disturbance to these breeding wetlands by using existing best management practices and limiting the disturbance to these birds and their wetland habitats. Continued monitoring of the distribution and abundance of breeding trumpeter swans in the settled areas of the province will provide valuable information on the continued recovery of trumpeter swan in Alberta.

Literature

Alberta Environment and Sustainable Resource Development (2013). Alberta Trumpeter Swan Recovery Plan 2012– Alberta Environment and Sustainable Resource Development, Alberta Species at Risk Recovery Plan No. 29.

Alberta Environment and Protected Area, 2020. The general status of Alberta wild species 2020. https://www.alberta.ca/lookup/wild-species-status-search.aspx

Salt, W.R., and A.L. Wilk. 1958. The birds of Alberta. Department of Economic Affairs. Edmonton, Alberta. 501 pp.

Acknowledgements

We would like to thank the landowners for managing the land surrounding these wetlands, enabling the successful breeding of trumpeter swans.