2024 Fall Staging Survey of Swans

Kimiwan Lake, Alberta

Photo Credit : Nelson Lutz

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Classification: Protected A

Introduction

Kimiwan Lake is a well-known staging lake for waterfowl (Macdonald 1987) with regional and national importance (Poston et. al. 1990). For many years, the lake staged the highest numbers of swans in the fall in north western Alberta and likely was, at times, the most utilized fall staging wetland for tundra swans in all of Alberta. However staging use in the fall at the lake has declined dramatically in recent years.

Both Tundra Swans and Trumpeter Swans stage at the lake, with increasing numbers of Trumpeter Swans as the Rocky Mountain subpopulation continues to show positive population trends (M.Heckbert pers. comm). Trumpeter swans are observed daily at the lake during the fall migration now (M.Heckbert pers. comm.) Fall staging swan counts at Kimiwan Lake have been undertaken by the Kimiwan Lake Naturalists consecutively since 2001 (Kimiwan Lake Naturalists, 2001-2023).

Historical waterfowl staging counts at the lake were conducted intermittently between 1962 and 1985 by Alberta Fish and Wildlife Services and Ducks Unlimited Canada, however the timing of the surveys (generally August and early September annually) missed the staging swans. Only one survey on October 17, 1985 resulted in the observation of 91 swans at the lake (Macdonald 1987).

Continent-wide surveys for Trumpeter swans were completed every 5 years (1985-2015) and were designed to inventory breeding and nonbreeding Trumpeter swans throughout their known breeding range. However Kimiwan Lake was not located in an active survey block area for any of the surveys.

Past conservation planning for the Kimiwan Lake Important Bird Area completed by the Kimiwan Lake Naturalists, identified the need for accurate inventories of staging swans as part of an ongoing program of bird population data collection and monitoring. The Kimiwan Lake Naturalists felt that these inventories were important information to support continued efforts to maintain and secure staging habitats that were free of disturbance at the lake. It is possible that human-caused disturbances during the important staging period for swans may disrupt vital feeding and resting behaviours of swans. The Kimiwan Lake Naturalists believe that they can play an important role in the collection of staging information and as such, have funded the annual staging swan census.

Methods:

A total of 18 surveys of staging swans were completed at the lake between September 25th and November 7th, 2024 (Table 1). Surveys were completed from the ground, using a spotting scope (15-45x) from a higher elevation point located on the south bank of the lake, within the Town of McLennan, at the corner of 2nd Street East. Surveys were completed a minimum of 2 days a week. If inclement weather conditions prevented observation of the lake, the survey was completed the next possible day. Typically surveys were completed in the late afternoon or evening when light conditions were most favourable.

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Table 1. Numbers of Staging Swans Observed at Kimiwan Lake, 2024

Date	Time (minutes)	Number of swans	Cloud percentage	Light Intensity	Temperature (℃)
09/25/2024	17	0	90	medium	13
09/28/2024	15	165	30	medium	12
09/30/2024	16	112	40	bright	11
10/4/2024	19	79	10	bright	14
10/7/2024	9	17	90	medium	17
10/10/2024	18	216	20	bright	11
10/11/2024	15	142	10	bright	10
10/13/2024	11	128	50	bright	9
10/14/2024	15	54	100	medium	16
10/16/2024	15	28	100	medium	9
10/17/2024	13	54	80	medium	7
10/20/2024	18	103	30	medium	4
10/25/2024	12	492	70	bright	6
10/28/2024	16	106	100	medium	2
10/29/2024	11	124	80	medium	2
10/31/2024	20	82	50	medium	5
11/03/2024	14	68	90	medium	3
11/07/2024	17	47	60	bright	9

Results

Swans were first observed at Kimiwan Lake on September 28, 2024 (165 swans). The last swans observed were recorded at Kimiwan Lake on November 7, 2024 (47 swans). The minimum number of swans recorded was 0 (September 25, 2024) and the maximum number of swans recorded was 492 (October 25, 2024).

When swans were recorded on the lake, the average number of swans recorded at each survey was 119 swans.

Swans were spotted at a much more congruous rate when compared to the previous year. The average number of swans per day of the entire survey was 112. The largest in-week fluctuation was between October 20th and October 25th as the number of swans increased from 103 to 492. No swans were recorded after November 7th. The lake was covered by ice by November 10th. As observed in previous years, early arrival and delayed migration of staging swans are sometimes observed at Kimiwan Lake. The exact reasons behind this are most likely related to agreeable weather and prolonged ice structure. Staging times and occupancy during migration depends on food availability and environmental factors. The conditions at Kimiwan Lake appear to still be very suitable for staging swans albeit the daily number of staging swans in 2024 was significantly lower than the numbers observed in the mid 2000's.

Comparison (2024 and 2023)

The latest survey revealed a significant increase in the staging swan population during peak migration. In 2023, only 51 swans were observed, compared to 2017 swans in 2024. The highest daily count in 2023 was 27 swans, while in 2024, the daily maximum reached 492. On average, 2.8 swans were recorded per survey in 2023. By multiplying the average with the total number of possible survey days (35) resulted in a potential of 98 swan-days in 2023. The total number of possible survey days (43) multiplied by the average number of swans recorded in 2024 resulted in 4,816 swans-days in 2024. The swans documented in 2024 arrived during the typical peak migration in the second week of October and in significantly greater numbers than the previous year, indicating a shift in the swan traffic to Kimiwan Lake.

Overall, the average number of swans recorded on Kimiwan Lake in 2024 was substantially larger than that of 2023. The swans arrived earlier and stayed longer than in 2023 as well.

Discussion

This survey was another comprehensive and systematic survey of staging swans at Kimiwan Lake and has turned out to be a very cost-effective method of quantifying the value of Kimwan Lake to staging swans. Kimiwan Lake has historically been a highly utilized staging location for swans, although the extent of use by each swan species has not been quantified.

A number of potential reasons for continued decline in fall-staging swan observations at Kimiwan Lake were identified in the 2021 report (Heckbert and Heckbert 2021). It is hypothesized that aquatic macrophyte resources are likely the current limiting factor when evaluated against the likelihood of other factors such as population decline, water depths and shoreline disturbance. It may be useful to complete a few surveys each fall going forward on other area lakes to document the overall attractiveness of the area to fall staging swans. The return of swans to Kimiwan Lake this fall could offer valuable insights into changes in the lake's biology, decline in water levels and subsequent habitat quality at other area lakes such as Lac Magloire, and habitat in regards to swan preferences. Water levels were notably lower during this year's survey, despite consistent temperatures and climate conditions compared to previous years.

Recommendations

1. Continue the annual survey. Although the numbers of staging swans has declined dramatically, lower trends are part of the documenting the biological story at the lake.
2. Counts should be completed near the middle to late part of the day during the peak of swan population on the lake.
3. Use local surveyors when possible that can complete the counts accurately and complete surveys according to local weather conditions.
4. Complete a few counts during the staging period at Lac Magloire in 2025.

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