

# **Fall Staging Swan Survey**

## **Kimiwan Lake**

**2005**

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## Acknowledgements

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## Introduction

The Kimiwan Lake Naturalists have completed fall staging counts of swans at Kimiwan Lake since 2001 (Heckbert 2002, Heckbert 2003, Heckbert 2004, Heckbert 2005). The surveys have provided quality data on swan use of the lake during the peak fall staging periods, typically late September until freeze-up. When water depths are favourable for foraging activities as observed in 2005, the lake stages high numbers of swans (Heckbert 2002).

Added value that results from the surveys is the ability to employ local resident surveyors for seasonal work and generation of local interest in swan monitoring and conservation at Kimiwan Lake.

## Methods

A total of 18 surveys of staging swans were completed at the lake between September 12 and October 27, 2005 (Table 1). Surveys were completed from the ground, using binoculars (10 x 50) and a spotting scope (15-45 X 60 mm) from a higher elevation point located on the south bank of the lake, within the Town of McLennan, at the corner of 2<sup>nd</sup> Street East and Lakeview Boulevard. Surveys were completed a minimum of three days per week, typically Monday, Wednesday and Friday. If inclement weather conditions prevented observation of the whole lake, the survey was completed on the next possible day.

Surveys were completed between 0930 and 1505, but typically counts were completed around 1200. Counts completed earlier than 1200 on scheduled survey days were completed at times when large numbers of snow geese were feeding in nearby fields and not loafing on the water. Swans observed were recorded on data sheets, with the approximate location of groups of swans marked on a grid map of the lake. No differentiation was made between tundra and trumpeter swans, although if trumpeter swans could be differentiated by their calls, they were recorded. Weather, time of survey and additional comments were also recorded on the data sheets.

## Results

Swans were first observed at Kimiwan Lake on September 16 and were recorded during each subsequent survey period (Table 1, Figure 1). The minimum number of swans observed was 0 (September 12 and 14) and the maximum number of swans was recorded on October 19 (N= 7250). An average of 1585 swans were recorded during each survey day over the course of the program, and the highest count in 2005 (N=7250) is the highest historical count ever observed (Heckbert 2002, Heckbert 2003, Heckbert 2004, Heckbert 2005). As observed in all previous surveys, swan staging peaked at the lake in

the second week in October (Heckbert 2002, Heckbert 2003, Heckbert 2004, Heckbert 2005) (Figure 1).

One measure of the value of Kimiwan Lake to staging swans is to calculate the total swan-days utilized at the lake during the recorded staging period. Using a total of 18 survey periods and a total of 28531 swans observed, an average of 1585 swans were observed during each survey. Multiplying this average by the total days included during the survey effort (N=46) shows that a potential total of 72912.5 swan-days were utilized at Kimiwan Lake during the 2005 fall staging period.

The lake level was much higher in 2005 than in previous survey years, the direct result of transfer of water from Winagami Lake into Kimiwan Lake via the Winagami-Girouxville Canal (October 2004 to November 2005). It appears that the depth of the water throughout the aquatic plant growing season was sufficient to supply forage growth in 2005 to sustain very large numbers of staging swans. The lake froze permanently on November 6, 2005.

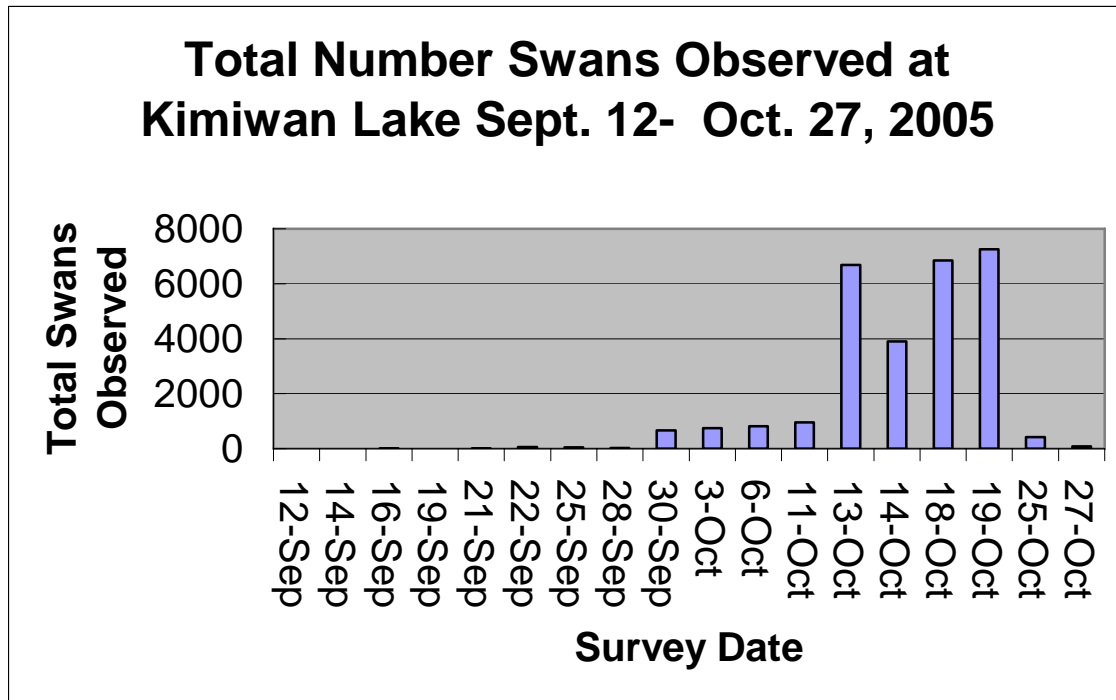
Surveys were carried out in the afternoon in order to obtain the maximum daily count. Surveys in 2001, 2002, 2003 and 2004 indicated that the optimal time to count resting swans at the lake was in the afternoon, in the best light and when daily movements of swans and other waterfowl were limited. Some counts in 2005 were completed in mid morning when large numbers of staging snow geese were away from the lake foraging in area fields so as to reduce the potential for confusing snow geese with swans.

Swans were typically recorded on the north, east and west areas of the lake, likely in the areas of greatest water depth. Swans were rarely recorded staging immediately north of the Town of McLennan. Spatial use of the lake by swans was not analysed for statistical differences.

Table 1 Observed swans at Kimiwan Lake September 12- October 27, 2005.

<b>Date</b>	<b>Total No. Recorded Swans</b>
September 12	0
September 14	0
September 16	13
September 19	5
September 21	15
September 22	59
September 25	44
September 28	26
September 30	658
October 3	750
October 6	820
October 11	960
October 13	6685
October 14	3900
October 18	6850
October 19	7250
October 25	420
October 27	76
<b>Total</b>	<b>28531</b>

Figure 1 Total recorded swans at Kimiwan Lake, September 12 to October 27, 2005.



## Discussion

This survey was the fifth comprehensive and systematic survey of staging swans at Kimiwan Lake and continues to be a very cost-effective method of quantifying the value of Kimiwan Lake to staging swans.

Daily average swan utilization at Kimiwan Lake in 2005 was much higher than in 2004 (+3376 %), if measured in total swan-days (N=28531) and average number of swans observed per survey period in 2005 was also much higher (N=1585) than in 2004 (N=34.2), for a total increase of 4534 % between years.

The increased water depths in 2005 are believed to be the principal reason for the increase in swan use compared to documented use in years 2002-2004. Swans require sufficient water depth (approximately 1 m) to forage for aquatic plants. Other area lakes that are important staging lakes for waterfowl such as Lac Magloire and Winagami Lake also contained higher than average water levels. While no systematic counts of swans were undertaken at other lakes, casual observations of staging swan numbers at these lakes showed much lower rates of swan use compared to Kimiwan Lake. Water levels at Kimiwan Lake in July 2005 were comparable with levels recorded in July 2001 (618.565 m in 2005, 618.567 m in 2001) (Alberta Environment, Water Monitoring Branch unpubl. data). Comparing counts between 2005 and 2001 shows that in 2005 there was a 202% increase in total swan days and a 189% increase in average swans/survey in 2005. So, despite similar water levels to 2001, it was apparent that Kimiwan Lake was a preferred migration stopover for swans in northwestern Alberta in 2005 and the high numbers of swans observed may have been a result of a strong fall flight.

## Recommendations

1. Continue with fall staging swan count annually.
2. Continue with surveys in the early afternoon.
3. Strive to utilize local surveyors if possible.

## References

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