

# **Fall Staging Swan Survey**

## **Kimiwan Lake**

**2006**

M. D. Heckbert  
Kimiwan Lake Naturalists

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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 2005a,b). 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 and in 2006, 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 16 surveys of staging swans were completed at the lake between September 28 and October 31, 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 0800 and 1915, but typically counts were completed in the afternoon. 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 28 and were recorded during each subsequent survey period until October 31 (Table 1, Figure 1). The minimum number of swans observed was 0 (October 31) and the maximum number of swans was recorded on October 8 (N= 9100). An average of 4004 swans were recorded during each survey day over the course of the program, and the highest count in 2006 (N=9100) is the highest historical count ever observed (Heckbert 2002, Heckbert 2003, Heckbert 2004, Heckbert 2005a,b). 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 2005a,b) (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 16 survey periods and a total of 68062 swans observed, an average of 4004 swans were observed during each survey. Multiplying this average by the total days included during the survey effort (N=33) shows that a potential total of 132132 swan-days were utilized at Kimiwan Lake during the 2006 fall staging period.

The lake level during the fall of 2006 appeared to be lower than it was in 2005, however it appears that the depth of the water was sufficient enough to sustain record numbers of staging swans. The lake froze permanently on October 31, 2006.

Surveys were carried out in the afternoon in order to obtain the maximum daily count. Surveys during 2001-2005 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 2006 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 28- October 31, 2006.

<b>Date</b>	<b>Total No. Recorded Swans</b>
28-Sep	2875
1-Oct	1946
2-Oct	3361
3-Oct	7310
5-Oct	8340
8-Oct	9100
9-Oct	5500
10-Oct	6900
12-Oct	5325
13-Oct	5100
16-Oct	2200
17-Oct	2700
20-Oct	1850
23-Oct	1510
29-Oct	42
31-Oct	0
<b>Total</b>	<b>68062</b>

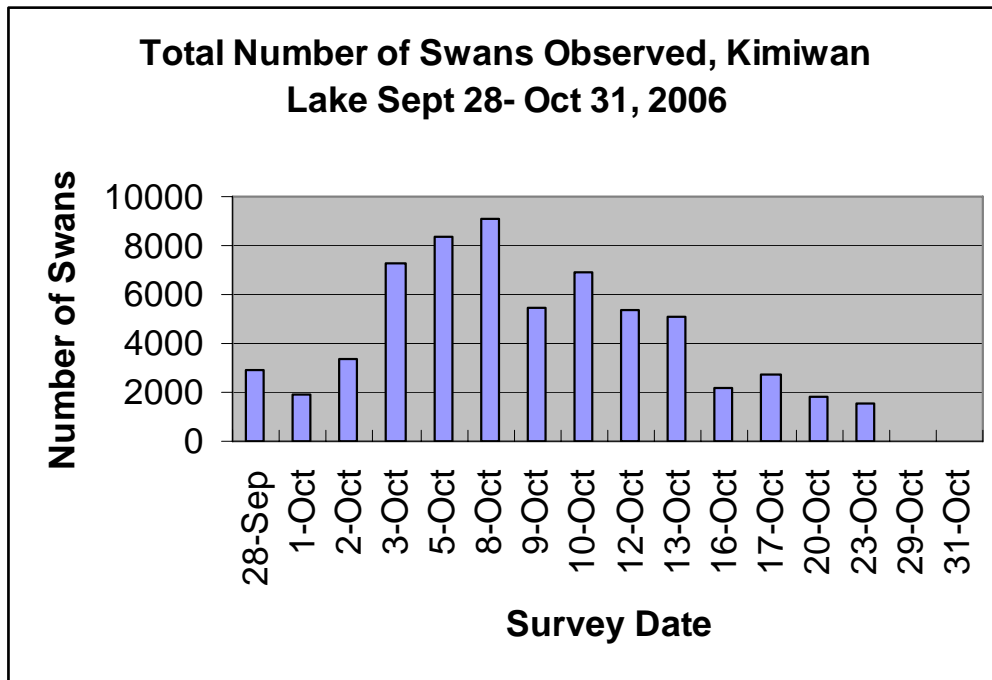


Figure 1 Total recorded swans at Kimiwan Lake, September 28 to October 31, 2006.

## Discussion

This survey was the sixth 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 2006 was much higher than in 2005 (+238 %), if measured in total swan-days (N=68062) and average number of swans observed per survey period in 2006 was also much higher (N=4004) than in 2005 with a total increase of 253 % between years.

The sufficient water depths in 2006 at Kimiwan Lake as well as a strong fall flight of young swans are believed to be the principal reason for the increase in swan use compared to documented use in years 2002-2005. 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 sufficient water levels to support migrating swans, similar to levels observed in 2005. 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. Kimiwan Lake continued to be a preferred migration stopover for swans in north western Alberta in 2006 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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