

**Alaska Department of Fish and Game  
State Wildlife Grant  
ANNUAL INTERIM PERFORMANCE REPORT**

**Grant Number:** T-1 **Segment Number:** 6  
**Project Number:** 8  
**Project Title:** Factors affecting the past, current, and future, production and distribution of trumpeter swans in Alaska  
**Project Duration:** July 1, 2004 – June 30, 2007  
**Report Period:** July 1, 2005 – June 30, 2006  
**Report Due Date:** September 30, 2006  
**Partner:** University of Alaska Fairbanks

**Objectives:**

Statewide:

1. Estimate spatial and temporal rates of population change in Trumpeter swans;
2. Describe variation in size, elevation, and latitude of water bodies used by breeding Trumpeter swans;
3. Estimate spatial and temporal patterns in Trumpeter swan production rates;
4. Project maximum sustainable breeding populations for Alaska;
5. Provide recommendation for future surveys.

Minto Flats State Game Refuge:

6. Describe variation in temporal patterns of nesting distribution of trumpeter swans prior to (before 2004) the start of natural gas exploration on this refuge;
7. Describe variation in temporal patterns of trumpeter swan production prior to the start of natural gas exploration on this refuge;
8. Develop spatially explicit models of the relationship between development activities and changes in trumpeter swan nesting distribution and production.

**Summary of Accomplishments:**

1. Objectives 1 and 3 are nearly complete. The data from 2005 became available in late spring of 2006 and the final analysis has begun. All models have been written and the final runs on the entire data set are in progress. This may take several weeks, after which the final results will be written up and submitted for publication in the Fall 2006. Preliminary results indicate that after accounting for increasing survey area, populations increased at a rate of 1.5-4% per year and fewer swans were estimated to be present at higher latitudes. The initial results from these analyses were presented at both the 20<sup>th</sup> Trumpeter Swan Society Conference in Council Bluffs, Iowa, in October 2005, and at the Pacific Flyway Study Committee in Otter Rock, Oregon in February 2006.

2. In the Fall 2005 work also began on objectives 2,6, and 7. As was detailed in the 2005 report, we have acquired data for 3 additional areas around the state; Cordova, Tetlin, and the Kenai peninsula. The Cordova area was chosen as a starting point for model construction. GIS was used to extract data layers potentially relevant to swan nesting/productivity such as fire history, roads, oil/gas wells, wetland type, wetland size, and elevation. A majority of the

models for this analysis have been constructed using these variables, and analysis will continue after objectives 1 and 3 are complete. These same models will then be applied to the other 3 areas, including Minto Flats.

3. During this reporting period additional computer processors were purchased, using funds available due to the cancellation of a survey in the previous year, to assist with the fitting of the models. This has greatly increased the computational speed and the number of models that can be run concurrently. Approximately 40 hours were spent surveying Minto Flats for swans during this reporting period as well.

**Significant Deviations:**

1. Objective 2 will be addressed in the regional analyses.
2. We have been told that survey design issues have or will be addressed within the U.S. Fish and Wildlife Service, so we are not currently pursuing objective 5 (as stated in 04-05 report).
3. The amount of development in the Minto Flats area has been much less than expected prior to the initiation of this study. Due to the small amount of development that has occurred, we would not be able to detect any direct effects of development on breeding swans at this time (Objective 8). We still intend to investigate the factors affecting production and wetland selection at Minto Flats, and the other three areas with adequate data: Kenai NWR, Tetlin NWR, and the Cordova area. The amount of oil and gas development on the Kenai NWR has been substantial over the past 50 years and we will include an analysis of its potential effects on breeding swans.

**Actual Costs during this Report Period** (*personnel plus all operating expense totals*):

(Reported costs included ADF&G indirect calculated at 13.5%)

Federal (from ADF&G):	Partner (nonfederal share):
\$63,227	\$21,076

**Project Leader** (*or Report Contact Person*): Mark Lindberg

**Additional Information:**

1. Is this project contributing samples to the Alaska Avian Influenza detection effort? NO
2. Do you anticipate having any unspent funds at the end of the project? NO