

JOB PROGRESS REPORT

State: California
Project Number: W-54-R-14 Project Title: Nongame Wildlife Investigations
Job Number: III-3.0 Job Title: Winter Sandhill Crane Inventory
Period Covered: July 1, 1981 - June 30, 1982 Job Type: Survey and Inventory

SUMMARY:

From December 3 to 20, 1981, age-ratio counts were made of Greater Sandhill Cranes (Grus canadensis tabida) wintering in the San Joaquin Valley. A sample of 2,509 cranes in the Thornton Area, San Joaquin County, resulted in an age-ratio of 4.6 percent immature cranes. No age-ratio counts were made of Lesser Sandhill Cranes (G. c. canadensis). Time limitations prevented age-ratio counts on the approximately 1,000 Greater Sandhill Cranes that winter near the Gray Lodge Wildlife Management Area, Butte County.

BACKGROUND:

During the past decade, the Department has made counts of Greater Sandhill Cranes on breeding grounds during waterfowl census. No special effort had been made by the Department to conduct age-ratio counts in California until December 1979. However, there has been considerable work conducted in this area by C. D. Littlefield, U. S. Fish and Wildlife Service Crane Biologist, during the past decade. The counts done in 1979 were initiated as part of an effort involving several state and federal agencies aimed at improving research and management programs concerning Sandhill Cranes. To accomplish this, a multiagency task force under the leadership of the U. S. Fish and Wildlife Service has developed a number of species management plans. During 1979, an age-ratio of 6.6 percent immatures was obtained from a total sample of 1,784 cranes in the Thornton Area, and 7.8 percent (N=663) was obtained for the Gray Lodge Area. The same areas were surveyed in the winter of 1980, with the results being 6.1 percent (N=1,904) for the Thornton Area and 3.0 (N=450) for the Gray Lodge Area. At least 12.0 percent immatures are needed for population stability (Miller et al., 1972).

OBJECTIVES:

The objective of this survey was to determine the recruitment rate of young Greater Sandhill Cranes into the population wintering in California. Assessments were made as to the continued viability of wintering habitat for Sandhill Cranes in areas sampled.

PROCEDURES:

The Department has participated in the formulation of a Pacific Flyway Management Plan for the Central Valley and the Colorado River Valley populations of Greater Sandhill Cranes and Lesser Sandhill Cranes. The Department assumes several management responsibilities for research and population surveys. Age-ratio counts were

identified in the plans as high priority items to increase our knowledge on the status of crane populations in California. Known concentration areas of sandhill cranes were chosen to make age-ratio counts in 1979, and the same areas have been visited during subsequent survey periods. Large flocks of birds were located and numbers of adult and juvenile Greater Sandhill Cranes were tabulated.

FINDINGS:

Results of age-ratio counts during 1981 and previous years indicate that the Central Valley population of Greater Sandhill Cranes is not producing young at a rate that will ensure a stable population (Table 1). The 4.6 percent immature cranes showing up in wintering flocks at Thornton is well below the 12.0 percent figure needed for population stability. Even though Sandhill Cranes are long-lived birds, it will not be long before the prolonged period of low recruitment of young will begin to show up in reduced numbers of wintering cranes.

Qualitative inspection of winter area indicates that adequate habitat is still available for cranes. However, incompatible land uses are occurring and expected to continue. Where suitable foraging and loafing areas are replaced by intensive agriculture, cranes are expected to disappear.

Table 1. Results of Age-ratio Counts Conducted on Central Valley Population Greater Sandhill Cranes, 1979-81

Thornton Area

<u>Year</u>	<u>Adults (n)</u>	<u>Immatures (n)</u>	<u>Percent Im.</u>
1979	1,667	117	6.6
1980	1,787	117	6.1
1981	2,394	115	4.6

Gray Lodge Area

<u>Year</u>	<u>Adults (n)</u>	<u>Immatures (n)</u>	<u>Percent Im.</u>
1979	611	52	7.8
1980	427	13	3.0
1981	-----No Data-----		

In addition to data gathered in California, estimates of production were conducted in portions of the Greater Sandhill Cranes breeding range in Oregon. Production at two major Greater Sandhill Crane producing areas, Malheur NWR and Sycan Marsh (Nature Conservancy Refuge in southern Oregon) was only 23 young (C. D. Littlefield, pers. comm.). The breeding population at Malheur was about 220 pair and over one hundred pair nested at Sycan. Not a single young crane survived at Sycan Marsh due to extremely high rates of predation on eggs and young by Common Ravens (Corvus corax) and Coyotes (Canis latrans). Ravens also represent a significant problem at Malheur. Cattle grazing at Malheur NWR seem to be related to increased Coyote activity and consequently has adverse impacts on nesting cranes. The premigration count at Malheur was only 4.8 percent young in a sample of over 1,200 cranes classified for age-ratios. During the past 7 years, this rate has ranged from 5.7 to 8.8. (C. D. Littlefield, pers. comm.)

ANALYSIS:

A number of factors are responsible for the low recruitment rates. The greatest threat to Sandhill Cranes on the breeding grounds is land conversion which changes native meadows to various forms of intensive agriculture; primarily, irrigated alfalfa. Some loss of young also occurs due to mowing mortality, predation by coyotes, raccoons and ravens, and starvation. All of these factors have combined to result in low recruitment rates during the period of 1979 to 1981. These population reduction factors are occurring on breeding grounds on the Malheur NWR in southern Oregon, northeastern California, and other breeding areas further north. The premigration age-ratio of 4.8 percent on Malheur NWR compares closely with the wintering age-ratio of 4.6 percent at the Thornton Area. Since there is little difference between the premigration age-ratio and the age-ratio on wintering grounds, mortality during migration is probably low. Even so, something must be done to increase survival of chicks to fledging age, in order to maintain a stable crane population.

RECOMMENDATIONS:

1. Continue winter age-ratio counts of all populations of Sandhill Cranes wintering in California.
2. Implement management recommendation designed to improve survival of young cranes on breeding grounds in California, in order to improve recruitment rates.
3. Continue to enforce laws protecting cranes to reduce mortality on migration routes and wintering areas.

LITERATURE CITED:

Miller, R. A., G. S. Hochbaum and D. S. Botkin, 1972. A Simulation Model for the Management of Sandhill Cranes. Yale University School of Forestry and Environmental Studies. Bull. 60. 49 pp.

Prepared by: Ronald W. Schlorff Approved by: Robert D. Mallette
Ronald W. Schlorff Robert D. Mallette
Wildlife Biologist Nongame Wildlife Coordinator

Approved by: Eldridge G. Hunt Date: September 27, 1982
for Eldridge G. Hunt, Chief
Wildlife Management Branch