

JOB PROGRESS REPORT

State: California

Project Number: W-54-R-12 Project Title: Nongame Wildlife Investigations

Job Number: III - 3.0 Job Title: Winter Sandhill Crane Inventory

Period Covered: July 1, 1979 - June 30, 1980 Job Type: Survey and Inventory

SUMMARY:

During December 3 to 13, 1979, age ratio counts were made of Greater Sandhill Cranes (Grus canadensis tabida) wintering in the Central Valley. Samples of 1,778 cranes in the Thornton area and 663 near the Gray Lodge Wildlife area resulted in age ratios of 6.6 and 7.8 percent immature cranes respectively. Due to small sample sizes, no age ratio counts were made of Lesser Sandhill Cranes (G.c. canadensis). Wintering population estimates were about 3,000 birds in the Thornton area (this includes both Greater and Lesser Sandhill Cranes). Near Gray Lodge, about 600 Greater Sandhill Cranes and 50 Lesser Sandhill Cranes were counted in mid-December.

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 previously by the Department to conduct age ratio counts in the areas surveyed during 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 multi-agency task force under the sponsorship of the U.S. Fish and Wildlife Service has developed a number of species management plans.

OBJECTIVES:

The objectives of this survey were to determine the recruitment rate of young Greater Sandhill Cranes into the population wintering in California and to ascertain whether this rate was adequate to maintain a stable population. In addition, some estimates of the number of Sandhill Cranes wintering in two important regions of the Central Valley were made and assessments were made as to the continued viability of these areas as wintering habitat for Sandhill Cranes.

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 plan as a high priority item to increase our knowledge on the status of the species.

Known concentration areas of Sandhill Cranes were chosen to make age ratio counts. Large flocks of birds were located and numbers of adult and juvenile Greater Sandhill Cranes were tabulated. Lesser Sandhill Cranes sometimes intermixed in these flocks and were also noted. Age ratio counts for Lesser Sandhill Cranes were made on Kern NWR by U.S. Fish and Wildlife Service personnel.

Wintering population estimates were made for both Greater Sandhill Cranes and Lesser Sandhill Cranes wintering near the Thornton area in Sacramento County and Gray Lodge State Wildlife Area, Butte County.

FINDINGS:

Results of age ratio counts and wintering population estimates (Table 1) indicate that the Central Valley population of Greater Sandhill Cranes is not producing young at a rate that will ensure a stable population. That is, the 6.6 percent of immature cranes showing up in wintering flocks at Thornton and the 7.8 percent near Gray Lodge is well below the 12.0 percent figure needed for population stability (Miller et al 1972). Sandhill Cranes are long-lived birds and it may be several years before a prolonged period of low recruitment of young will begin to show up in reduced numbers of wintering cranes.

Wintering population levels are still comparable with data collected by C.D. Littlefield during previous years, however. For the Thornton area, Greater Sandhill Crane numbers peak at 1,000 birds and Lesser Sandhill Cranes at 4,000 birds in mid-January of each year. During this survey, total numbers of cranes for the area was approximately 3,000 birds (both subspecies). In the Gray Lodge area about 500-600 Greater Sandhill Cranes and about 50 Lesser Sandhill Cranes were counted.

Table 1. Age-ratios of Wintering Greater Sandhill Cranes at Two Locations in the Central Valley of California, 1979.

Thornton Area			
<u>Date</u>	<u>Adults (n)</u>	<u>Immatures (n)</u>	<u>Percent Imm.</u>
12-3-79	340	34	9.1
12-5-79	943	51	5.1
12-7-79	<u>384</u>	<u>32</u>	<u>7.7</u>
Total (n)	1,667	117	6.6

Gray Lodge Area			
<u>Date</u>	<u>Adults (n)</u>	<u>Immatures (n)</u>	<u>Percent Imm.</u>
12-6-79	346	30	8.0
12-13-79	<u>265</u>	<u>22</u>	<u>7.7</u>
Total (n)	611	52	7.8

ANALYSIS:

A number of factors are responsible for the apparent decline in recruitment rates.[?] These population reduction factors are occurring on breeding grounds on the Malheur NWR in Southern Oregon, Northeastern California, and other breeding areas further north. A premigration age ratio of 6.4 percent on Malheur NWR compares closely with the wintering age ratios of 6.6 percent and 7.8 percent. Since there is little difference between the premigration age ratio and the age ratio on wintering grounds, mortality during migration is probably low. The fact that winter age ratios are higher than those at Malheur indicates that birds from other breeding areas join those from Malheur on the wintering grounds. Even though nesting success was relatively good during 1966 to 1978 (range 20 to 67 percent) chick survival to fledging age has been low (average 7.4 percent during 1970 to 1979). 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 annual recruitment rates during the period of 1970 to 1979 that have ranged from a low of 0.4 percent in 1973 and 1974 to a high of 12.6 in 1970. Thus, in the past decade, the figure needed to maintain population stability was attained only once.

RECOMMENDATIONS:

1. Investigate scope of breeding of Greater Sandhill Cranes in California.
2. Continue winter age ratio counts of all populations of Sandhill Cranes wintering in California.
3. Implement management recommendation designed to improve survival of young cranes on breeding grounds in California in order to improve recruitment rates.
4. 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 Univ. School of Forestry and Environmental Studies. Bull. 60. 49 pp.

Prepared by: Ronald W. Schlorff Approved by: Stephen P. Ree for Bob Mallette
Ronald W. Schlorff Robert D. Mallette
Wildlife Biologist Nongame Wildlife Coordinator

Approved by: E. G. Hunt Date: 8/29/80
Eldridge G. Hunt, Chief Wildlife Management Branch