

JOB PROGRESS REPORT

State: California

Project Number: W-54-R-13 Project Title: Nongame Wildlife Investigations

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

Period Covered: July 1, 1980-June 30, 1981 Job Type: Survey and Inventory

SUMMARY:

From 15 December 1980 to 15 January 1981, age-ratio counts of wintering Greater Sandhill Cranes (Grus canadensis tabida) were made in the Central Valley of California. In the area southwest of Lodi, San Joaquin County (hereafter referred to as "Thornton Area"), 1898 cranes were sampled, and near the Gray Lodge Wildlife Area, 440 were counted. Age-ratios were 6.2 and 3.0 percent immature cranes, respectively. No age-ratio counts of Lesser Sandhill Cranes (G. c. canadensis) were attempted. No attempts were made to estimate wintering population levels. However, about 3,000 birds (Greater and Lessers) are known to winter in the Thornton Area and about 500-700 Greater are known to winter on and near the Gray Lodge Wildlife Area.

BACKGROUND:

During the past decade, Department personnel have made counts of Greater Sandhill Cranes on breeding grounds during waterfowl census work. No effort was made by the Department to conduct age-ratio counts of wintering cranes until December 1979. Prior to this time, field work on both breeding and wintering populations of California was conducted by C. D. Littlefield of the U. S. Fish and Wildlife Service. As a result of this and other research, a multi-agency task force, under the leadership of the U. S. Fish and Wildlife Service, was formed and produced draft species management plans for Sandhill Cranes. These plans have served as guidelines for initiating and continuing research and management programs designed to improve the status of cranes that breed and winter within the Pacific Flyway.

Age-ratio counts were identified in the management plan as the major survey activity needed to determine population trends and those counts were initiated in 1979.

OBJECTIVES:

The objectives are to determine the recruitment rate of young Greater Sandhill Cranes into the population wintering in California and to make assessments concerning viability of the population. Also, habitat assessments are made of areas used by wintering cranes.

PROCEDURES:

The Department has participated in the writing of Pacific Flyway Sandhill Crane Management Plans for those populations breeding and wintering in California. The Department assumes several research and management responsibilities outlined in the plans. Age-ratio counts are a high priority procedure and Department personnel are responsible for conducting the necessary field work to obtain information on crane recruitment rates.

There are areas in California where Sandhill Cranes traditionally congregate each winter. Large flocks of cranes are located and numbers of adult and young birds are tabulated. Efforts are made to obtain a sufficient sample size to ensure validity of results. At present, only Greater Sandhill Cranes, the subspecies that breeds in Northeastern California, are counted since their population has shown signs of decline and is small in comparison to the Lesser Sandhill Crane population.

Estimates of wintering population numbers of Greater and Lesser Sandhill Cranes have been made; however, that is not the primary objective. Assessments of habitat and land-use changes that may have adverse effects on cranes are made while information on age-ratios is collected.

FINDINGS:

Results of age-ratio counts indicate the Central Valley population of Greater Sandhill Cranes is producing young at a very low rate (Table 1). The rate of 6.2 percent immatures for the Thornton flock, and 3.0 percent for the flock wintering near Gray Lodge is well below the minimum 12.0 percent required to maintain a stable population according to Miller et al. (1972). Even though cranes are long-lived birds, the continuing trend of low recruitment over the past decade will eventually begin to show up in reduced numbers of birds wintering in the Central Valley.

TABLE 1. Age-ratios of Wintering Greater Sandhill Cranes at two locations in the Central Valley of California, December 1980 - January 1981.

	<u>Adults</u>	<u>Immatures</u>	<u>Percent Immature</u>
Thornton Area	1787	117	6.2
Gray Lodge	427	13	3.0

ANALYSIS:

Sample sizes have been adequate to present a reasonably accurate estimate of the recruitment of young Sandhill Cranes into the population wintering in the Central Valley. Unfortunately, the recruitment rate continues its decade long trend of being too low to maintain a stable population. Various factors are responsible for low recruitment rates as reflected in the low age-ratio counts. Chief among these are the threats posed by agricultural expansion that cranes face on breeding grounds in Southern Oregon and Northeastern California. Land conversions which change native meadows to various forms of intensive agriculture represent the most critical factor affecting the breeding population. Something must be done to increase survival of chicks to fledging age in order to ensure an adequate basis for the populations' survival.

Apparently, this has been caused by loss of habitat, mowing mortality, predation, intraspecific strife, and starvation. Annual recruitment rates have ranged from a low of 0.4 percent to a high 12.6 percent with an average of about 7.0 percent during 1970 to 1980. In the past decade, a recruitment rate (age-ratio) greater than the required 12.0 percent, was attained only once when 12.6 percent was recorded in 1970.

RECOMMENDATIONS:

1. Monitor breeding populations of Greater Sandhill Cranes in California.
2. Encourage land management agencies in California and elsewhere in the Pacific Flyway to improve habitat conditions to increase Sandhill Crane breeding performance.
3. Continue winter age-ratio counts of populations of Sandhill Cranes wintering in California.
4. Implement programs to improve survival of young cranes on breeding grounds in California.
5. Continue to enforce laws protecting cranes to reduce mortality from shooting and other causes.

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. 50. 49 pp.

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