

JOB PROGRESS REPORT

State: California

Project Number: W-65-R-1 Subproject Title: Nongame Wildlife Investigations

Job Number: III-2 Job Title: Inland Nesting Waterbird Survey

Period Covered: July 1, 1983 - June 30, 1984 Job Type: Survey and Inventory

SUMMARY:

During 1984, a total of 74 breeding pairs of Greater Sandhill Cranes (Grus canadensis tabida) was located at 5 major nesting areas in Modoc and Lassen counties. An additional 27 pairs were found at seven other sites in Lassen and Modoc counties. Seven sites were surveyed that produced no nesting cranes. Twenty-five young were observed at all sites checked. A combined age-ratio of 11.0% (25 young per 227 cranes, breeders + young) was obtained. Less than half this figure will survive to make the flight to wintering grounds. Non-breeders numbered at least 69 birds. Efforts were made by staff at Modoc NWR to capture and color-mark a sample of Greater Sandhill Cranes.

BACKGROUND:

In 1978, an interagency task force lead by the U.S. Fish and Wildlife Service, developed management plans for populations of Sandhill Cranes breeding and wintering in the Pacific Coastal region of the United States and Canada.

Based on recommendations contained in the Pacific Flyway Management Plan and the fact that a study of cranes breeding in California was conducted in 1971, surveys were conducted during spring, 1981 to determine the number of nesting pairs and ascertain if any changes had occurred at selected nesting areas since 1971 (Littlefield 1982). A total of 191 pairs was located. Modoc County contained 110 nesting pairs, more than any other county. The largest single concentration of nesting birds occurred in Surprise Valley, Modoc County, where 44 pairs were counted. Nesting pairs also were found in Lassen, Siskiyou, Shasta, and Plumas counties.

During 1982, a total of 83 pairs of nesting Sandhill Cranes was located at five key breeding areas in northeastern California. The five areas were among 11 considered important to the breeding population in California and had been surveyed during 1971 and

1981. Since 79 percent of the nesting pairs were on private land in 1981, there is a continuing threat of habitat loss through land conversions. Littlefield (1982) recommended that Greater Sandhill Cranes be placed on the California Department of Fish and Game's Endangered Species List if habitat loss causes population decline. It was also recommended that monitoring continue in order to determine population trends. Listing of the Greater Sandhill Crane as a State Rare bird took place in early 1983 and a monitoring program is being implemented.

In summer, a total of 343 adult cranes and 18 chicks were located at six key breeding areas in northeastern California. These areas were: In Modoc County - Surprise Valley, Modoc National Wildlife Refuge, Goose Lake, Jess Valley, Likely, and part of the Big Valley; in Lassen County - Big Valley (part). The six areas are deemed vital to the breeding population in California and have been surveyed previously during 1971 and 1981-83. In 1983, a total of 254 adults (127 pair) apparently made up the breeding population in the areas surveyed. The remaining 79 birds either had not attempted breeding or attempted and failed. Of the 18 chicks located, 17 were found in the Surprise Valley, Modoc County.

OBJECTIVES:

The objectives of the inland waterbird nesting survey are to determine the distribution and abundance of waterbird populations breeding in California. Other objectives include determination of population trends, reproductive health, and habitat availability concerning inland nesting waterbirds. Also, land use changes and human activities that may threaten populations and habitat are to be monitored.

PROCEDURES:

Surveys were conducted by visiting native meadow and wetland habitats in northeastern California known to support breeding Greater Sandhill Cranes. Information was gathered on nesting pairs present, habitat association, land ownership, and impacts that may be detrimental to nesting cranes and their habitat. Data on the use of the areas surveyed by non-breeding, sub-adult cranes were also gathered.

Survey personnel included Department wildlife biologist R. Schlorff, student assistant J. Estep, and student volunteer D. Schlorff. Additional data were gathered by Department biologists D. Thayer and F. Hall, U.S. Forest Service biologist D. Airola, and staff of Modoc NWR.

FINDINGS:

The results of 1984 Greater Sandhill Crane breeding ground surveys are listed according to the areas surveyed within the breeding range in California (Figure 1).

Surprise Valley

The Surprise Valley, east of the Warner Mountains in northeastern Modoc County, remains as the densest concentration of breeding Greater Sandhill Cranes in the State. The native meadow habitats are found in the area bounded on the west by State Highway 81 and on the east by the shorelines of Lower Lake, Middle Alkali Lake and Upper Lake. Several creeks drain the east slope of Warner Mountains and flow into the Alkali lakes. In addition, there are flowing wells close to the lake shores. This moisture regime provides ideal growth of meadow grass, sedges, and rushes that are suitable for nesting Sandhill Cranes. During July, 1984, a total of 34 breeding pairs of cranes was located. Ten pairs had two chicks, 2 instances, and one chick, 8 instances. All young cranes were located in the area between just south of and to the north of Eagleville. The age-ratio for the area was 15.0% (12 young per 80 total cranes, young plus breeders). A number of non-breeders or adults that failed in their nesting attempts were found, primarily in an area to the north and south of Eagleville. These cranes were in flocks ranging from 1 to 18 birds with a total of 60 birds.

Evidence of land conversion in the area continues. Sites where breeding cranes were recorded in previous years are now irrigated fields of alfalfa. Also, there is a pilot program being undertaken by Soil Conservation Service to interrupt the flow of several creeks flowing into the Alkali lakes and recharge a depleted ground water supply. This scheme may adversely affect crane breeding habitat if it results in the drying of moist meadows or creates incentives for further land conversions in the area.

Modoc National Wildlife Refuge

Preliminary findings indicate that 27 territories were active at one time during the breeding season. Fifteen pairs nested and produced at least 5 young surviving to fledging stage. Refuge staff are attempting to color-mark adult and juvenile cranes. Thus far, 10 birds have been captured, marked, and released unharmed. Further results from the refuge staff biologist will be reported in next year's report.

Likely Area

The Likely Area breeding ground consists of a series of meadows west of irrigation channels that run north and south along highway 395 from an area south of Modoc NWR south to the town of Likely, Modoc County. This area has supported as many as 14 breeding territories in 1981 (Figure 1). During 1984 no survey was made, but a private landowner reported seeing 2 pairs, each with a single young bird.

Jess Valley

Jess Valley is an isolated valley consisting of a single land holding on the west slope of the south Warner Mountains about 15 miles east of Likely. The area's meadows normally support about five to seven breeding pairs of cranes (Figure 1). Six pairs of adults were found in the area. No young were counted. Six unpaired cranes also were observed.

Goose Lake Area

The south shore of Goose Lake, in the area west of Highway 395 and east of the bridge across Goose Lake from the southwestern shore to McGinty point, supports habitat suitable for nesting Sandhill Cranes. The area supported seven pairs in recent years (Figure 1). During 1984, nine pairs were located. Much of the area appeared to be heavily grazed by cattle. No young were observed.

Big Valley Area

The Big Valley Area consists of a tract of wetland and upland habitats between the towns of Adin on the east and Bieber on the west near the Modoc/Lassen county line. Ash Creek and the Pit River provide the water source for the wetland and moist meadow habitats. Although there is evidence of yearly degradation through land conversion and heavy cattle grazing of this area, much suitable crane breeding habitat remains, especially at the west end of the Big Swamp area on the east and west side of the county road between Bieber and Lookout. Landownership changed during 1983 and access has been restricted to the area. This resulted in only an incomplete survey for 1984. A total of 10 pair was found at this site. No young were seen.

There were plans to severely alter the condition of the Big Swamp by digging a series of drainage ditches to drain a major portion of the area where Greater Sandhill Cranes have nested previously. This would reduce the amount of breeding habitat for cranes in

this area. At present, the Department is attempting to obtain a conservation easement on the property to preserve the wetlands and other important habitats. Fourteen to 24 pairs have nested on these lands in previous years (Figure 1).

Habitat in the east end of Big Valley is offered for sale. The Department has developed an acquisition proposal for the property. With proper management, especially reduced cattle grazing, this area, if acquired, could provide important breeding habitat for nesting Greater Sandhill Cranes. The area should be able to support about 10 to 15 breeding pair.

Ash Valley

Ash Valley is located midway between Adin and Madeline on Lassen County route 527. The valley consists of meadows and wetlands on a few large cattle ranches. Most vegetation is still in a natural state and very little land conversion has taken place. The main detriment to cranes is heavy cattle grazing of native meadow habitat. Thirteen pairs of cranes were found. The pairs appeared closely associated and not on territories except for one or two pairs. No young were observed. Most cranes were found in one large tract of cattail (Typha sp.) marsh, apparently feeding. Two non-paired cranes also were observed.

Two sites where cranes had bred in previous years but where none were found in 1984 included the Canby and Madeline areas in Modoc and Lassen county respectively (Figure 1).

Twelve adult cranes representing 6 territories and 1 non-breeding bird were found south of Bieber, Lassen County.

A single pair each were reported in May at 4-Mile Valley, Wild Horse Valley, and Groh's Ranch, all in Modoc County. The cranes could not be relocated in July. Littlefield (1982) reported 2 pair at Weed Valley, Modoc County, in 1981, but none were found in 1984. In all of the above 4 sites on private and U.S. Forest Service land, there was evidence of cattle grazing.

Lassen National Forest personnel reported single pairs of cranes at Eagle Lake and Lake Almanor. The Lake Almanor pair apparently failed. Six individuals (3 pairs) were seen at Mountain Meadows Reservoir. Four young were seen without adults at Willow Lake. One pair with 1 young was reported at Indian Valley and 2 pair were sighted at Papoose Lake.

ANALYSIS:

Although there continues to be a small and apparently stable breeding population of Greater Sandhill Cranes existing in

portions of northeastern California, it is increasingly evident that agricultural trends of the area could dramatically affect nesting birds on private lands. In 1981, it was discovered that at least 79% of nesting took place on private lands (Littlefield 1982). This figure has not changed appreciably in the past three years. Of the 19 areas surveyed in 1984 for breeding cranes, 11 were found on private lands. These lands are threatened with conversion from native meadow to intensive agriculture. This has been the pattern since the 1971 survey and has been especially evident since the 1981 survey. The changed land ownership in Big Valley makes uncertain the consequences for cranes nesting there in the future.

Some habitat must be acquired to prevent the total loss of the breeding population on private lands. The birds now nesting on public lands may represent the core of what will be the remaining Sandhill Crane population in the next decade. Improved management on public land might offset some of the loss on private lands. However, there is evidence this won't occur on those public lands that are heavily grazed.

In some instances, habitat conditions may be improved on both public and private lands simply by restricting grazing by livestock. Cranes avoid using pastures or meadows that are heavily grazed by cattle. In some instances, cranes may have already established a breeding territory in a meadow prior to cattle grazing, and, as was observed this year, nest failures may result when cattle are turned out in summer and disrupt crane breeding activities, trample nests and eggs, or reduce the protective cover of grasses by overgrazing.

LITERATURE CITED:

Littlefield, C. D. 1982. The Status and Distribution of Greater Sandhill Cranes in California, 1981. State of California, Department of Fish and Game, Wildlife Management Branch, Admin. Rep. 82-1, 27 pp.

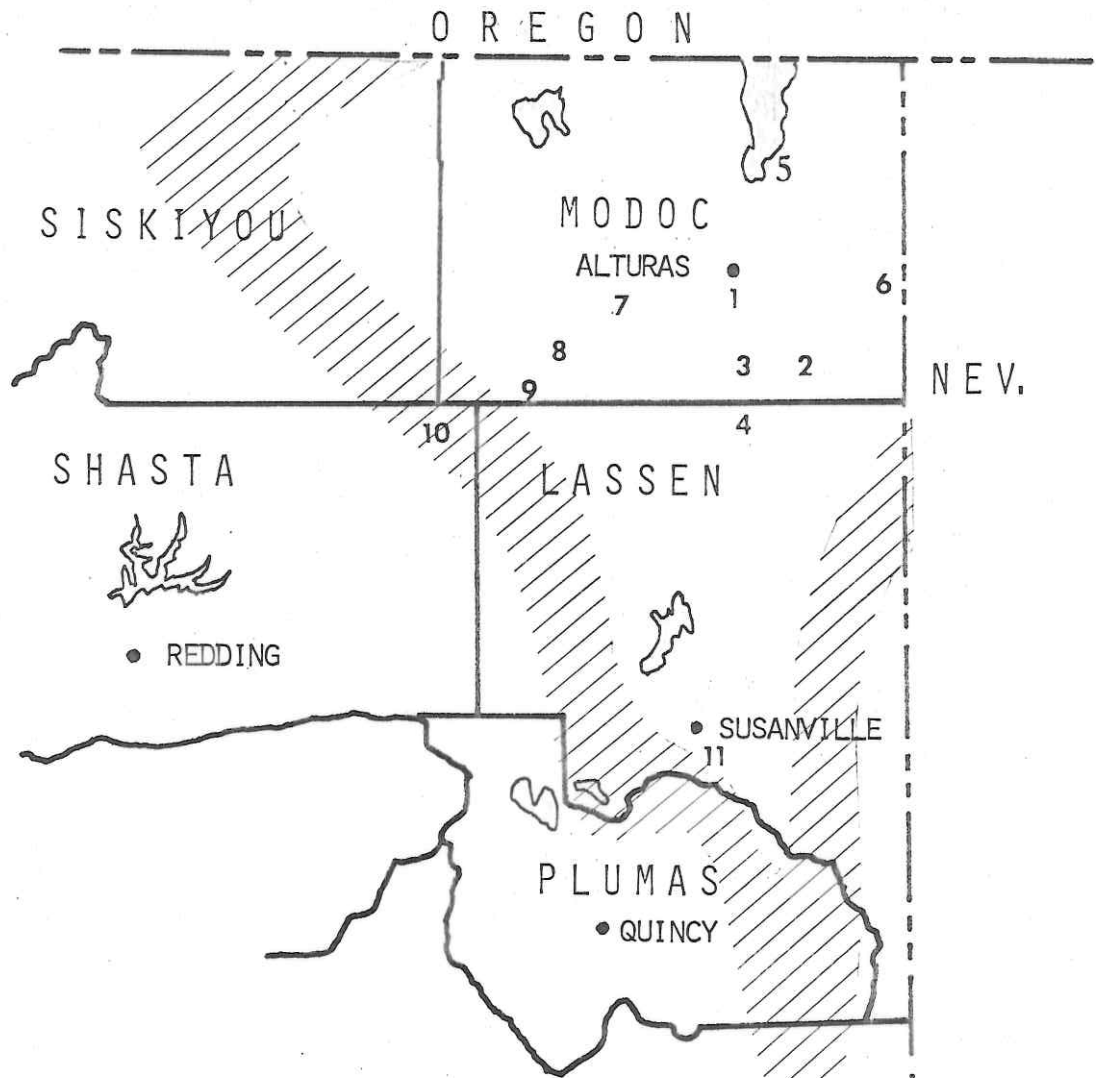
RECOMMENDATIONS:

1. Continue inland nesting waterbird surveys to determine abundance and distribution of selected species.
2. Continue to monitor land use patterns that may adversely affect inland nesting waterbirds and their habitats.
3. Monitor levels of environmental contaminants that may have detrimental effects on the reproductive success of certain species, such as Western Grebes.

4. Acquire key habitat and improve habitat management on public land to lessen the effect of habitat loss on private lands, especially for species such as Sandhill Crane.

Prepared by: Ronald W. Schlorff Approved by: Kent A. Smith
Ronald W. Schlorff Kent A. Smith
Wildlife Biologist Nongame Wildlife Coordinator

Approved by: Eldridge G. Hunt Date: 11-1-84
Eldridge G. Hunt, Chief
Wildlife Management Branch
California Department of
Fish and Game



LOCATION	NUMBER OF NESTING PAIRS				
	1971	1981	1982	1983	1984
1 - MODOC NWR	16	21	19	26	15
2 - JESS VALLEY	7	7	5	0	6
3 - LIKELY	14	9	NC ^{1/}	4	NC
4 - MADELINE	1	1	NC	NC	0
5 - GOOSE LAKE	2	7	7	3	9
6 - SURPRISE VALLEY	42	44	34	50	34
7 - CANBY	2	6	NC	50	0
8 - ROUND VALLEY	2	2	NC	NC	NC
9 - BIG VALLEY	21	24	18	14	10 ^{2/}
10 - FALL RIVER VALLEY	2	2	NC	NC	NC
11 - HONEY LAKE	3	6	NC	NC	NC
TOTALS	112	129	83	84	74

^{1/} NC = NOT CHECKED

^{2/} INCOMPLETE COUNT DUE TO RESTRICTION ON ACCESS TO PRIVATE LAND.

Figure 1. COMPARISON OF NUMBERS OF GREATER SANDHILL CRANE NESTING PAIRS, 1971, 1981-84.