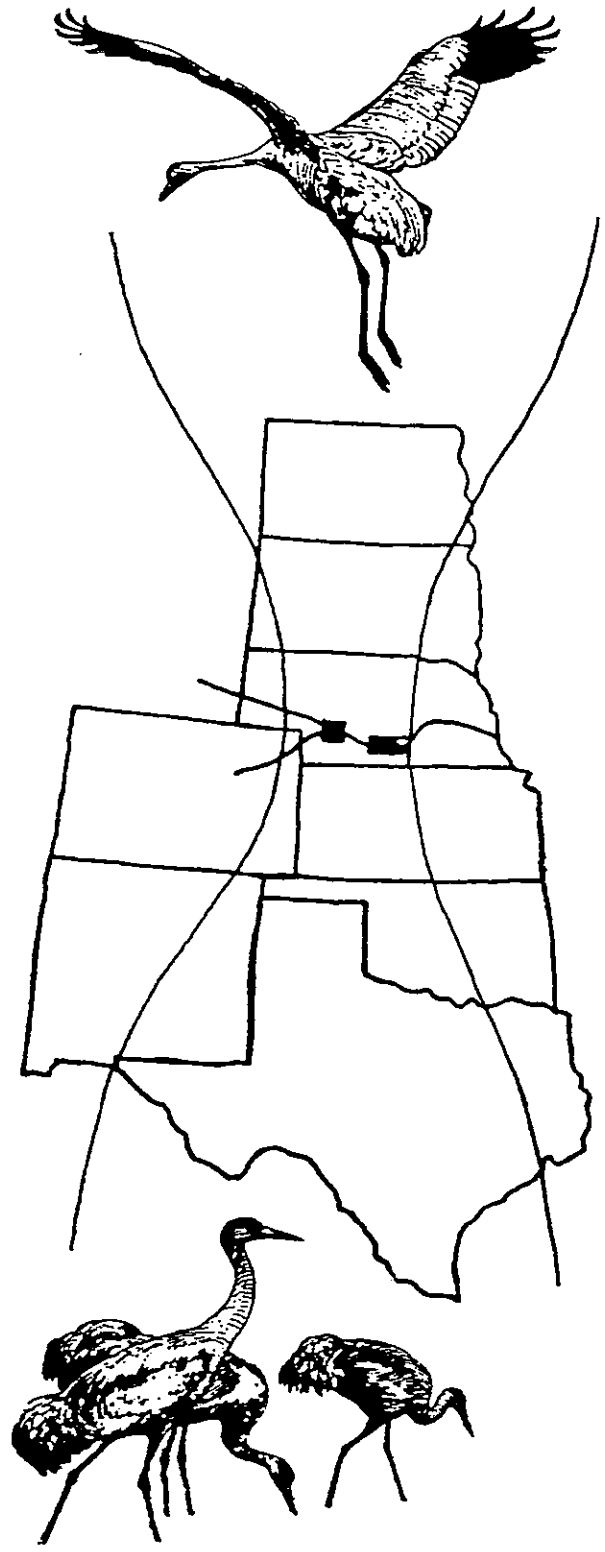


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# COORDINATED SPRING MID-CONTINENT SANDHILL CRANE SURVEY

1991



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COORDINATED SPRING MID-CONTINENT SANDHILL CRANE SURVEY

SURVEY DATES: 25-26 March 1991

SURVEY PERSONNEL:

**Aerial Survey**

Observer/pilot - John W. Solberg, USFWS, MBMO, Kearney, NE  
Observer - James S. Walter, USFWS, MBMO, LaCrosse, WI  
Photographer - James Bredy, USFWS, MBMO, Laurel, MD

**Ground Surveys - Areas and Coordinators**

North Dakota - S. Kohn (NDGFD) - John Cornely (USFWS)  
South Dakota - S. Vaa (SDGFP) - John Cornely (USFWS)  
Nebraska - J. Gabig (NGPC) - John Cornely (USFWS)  
Kansas - M. Kraft (KDWP) - John Cornely (USFWS)  
Texas - R. George (TPWD) - Jeff Haskins (USFWS)

ABSTRACT: The 1991 coordinated spring survey of mid-continent sandhill cranes was conducted 25-26 March 1991 with no procedural changes from 1990. Personnel changes involved only the photographer. The aerial portion, conducted in Nebraska's Platte and North Platte river valleys, provided an estimated 340,645 (photo corrected) sandhill cranes. Observations outside aerial coverage boundaries by ground observers in the Official Survey Area (OSA) of Nebraska, Kansas, and Texas produced 1,140 additional birds for a total combined index of 341,785. The 1991 index decreased similarly from the 1990 figure (-22%) and the previous 3-year (1988-90) average (-21%).

METHODS: Methods used during the 1991 coordinated survey were similar to those used in 1990 and included the coverage changes adopted by the Central Flyway - CMU in 1985. Ground portions of the survey were conducted by various field personnel and coordinated by state and federal individuals (Table 4). Observations were forwarded to the Flyway Biologist (Kearney, NE) for inclusion in the final report. The aerial portion of the survey was completed by USFWS personnel and continued to utilize an ocular, line transect sampling scheme. Coverage is divided into 10 strata sampled at a rate of approximately 25%. The survey employed, for the tenth consecutive year, subsampling of crane flocks using 35mm oblique photography. The photos are used to quantify flock estimate errors and provide observer specific correction factors. Correction factors are applied to the aerial portion of the coordinated effort which has provided the major component (72-99%) of the mid-continent sandhill crane index in past years.

cranes was 341,785 (Table 1). Included are 340,645 (photo corrected) birds from aerial counts in Nebraska and a contribution of only 1,140 birds from Nebraska (100 outside aerial coverage area), Kansas (800), and Texas (240). The 1991 index decreased 22% from the 1990 figure and provided a similar decrease (21%) from the 1988-90 three-year average of 434,600. Tables 2 and 3 present annual indices and standard errors for all years of ocular transect survey design. Table 2 reflects the initiation of photo correction in 1982.

DISCUSSION: The timing of crane movements into Nebraska in 1991 was slightly earlier than normal and similar to 1990. Arrivals of flocks began the 2nd week of February with the build-up continuing through the end of March. Reported ground observations from Nebraska (100), outside the area of aerial coverage, were probably incomplete as 8,000 - 10,000 birds which regularly use the North Platte River between Lewellen and Lake McConaughy, were not reported. The North Loup River in Valley, Garfield, and Loup counties was reconnoitered again this year by ground personnel with no cranes observed. One small flock of birds (45) was reported on 3/10 in an unusual sighting in Washington county near the Missouri River (north of Omaha). Reports of emigration were noted in late March and early April.

North and South Dakota reported essentially no crane migration (200 - SD) on or prior to the survey date. Dakota coordinators/observers believed there had been no significant movement of cranes into their states until the 1st week of April. Texas and Kansas observed only about 1,000 in 1991. This contribution is the lowest from those states since 1987.

With negative reports of crane overflights in the Dakotas coupled with a 22% decrease in the total index, it appears that some birds were missed in the flyway south of South Dakota. Suspicions of missed birds is further supported by less ground coverage within the OSA. Although "total miles" covered by all ground observers increased from 1990 to 1991 (+10%), coverage within the OSA actually decreased 60% from the 1990 effort (Table 4). Whether unaccounted birds were in Mexico, Nebraska, or enroute somewhere between these areas is unknown. As always, the spring index should be considered a minimum representation of the mid-continent population.

ACKNOWLEDGEMENTS: Appreciation is expressed to all coordinators, observers, and photographers who participated in the 1991 survey. Northern Prairie Wildlife Research Center continues to provide photo counting and statistical analysis of survey results and their efforts are greatly appreciated.

Submitted by: John W. Solberg  
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Table 2. Results of ocular transect survey for Mid-Continent Sandhill Cranes in the central Platte Valley of Nebraska during the coordinated spring surveys.

<u>Year</u>	<u>Population Index</u>	<u>Standard Error</u>
1978	188,582	± 23,948 (± 12.7%)
1979	203,574	± 24,968 (± 12.1%)
1980	254,417	± 51,738 (± 20.3%)
1981	248,882	± 31,957 (± 12.8%)
1982	347,996	± 33,353 (± 9.6%)
1983	306,316	± 21,257 (± 6.9%)
1984	222,710	± 17,466 (± 7.8%)
1985	378,127	± 34,230 (± 9.1%)
1986	317,025	± 32,461 (± 10.2%)
1987	383,581	± 53,508 (± 13.9%)
1988	386,853	± 35,775 (± 9.2%)
1989	391,353	± 44,066 (± 11.2%)
1990	385,950	± 40,585 (± 10.5%)
1991	297,831	± 27,551 (± 9.2%)

Table 3. Results of ocular transect survey with photo correction for Mid-Continent Sandhill Cranes in the central Platte Valley of Nebraska during the coordinated spring surveys.

<u>Year</u>	<u>Population Index</u>	<u>Standard Error</u>
1982	417,263	± 42,331 (± 10.1%)
1983	343,378	± 31,674 (± 9.2%)
1984	261,802	± 24,198 (± 9.2%)
1985	514,763	± 49,650 (± 9.6%)
1986	353,040	± 37,340 (± 10.6%)
1987	416,058	± 65,588 (± 15.7%)
1988	463,457	± 53,213 (± 11.4%)
1989	391,995	± 51,349 (± 13.0%)
1990	412,154	± 50,496 (± 12.2%)
1991	340,645	± 33,897 (± 10.0%)

Figure 1. Surface weather map of the United States - 26 March, 1991.



