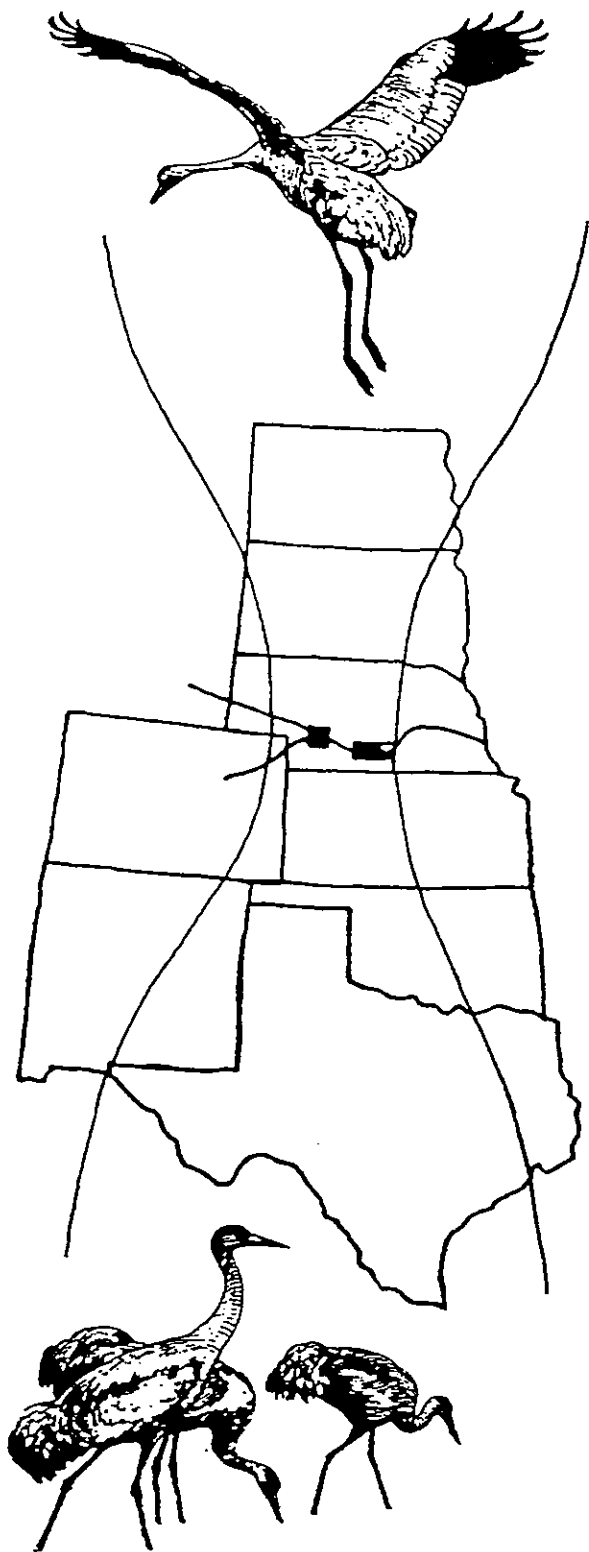


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COORDINATED SPRING MID-CONTINENT SANDHILL CRANE SURVEY

1992



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COORDINATED SPRING MID-CONTINENT SANDHILL CRANE SURVEY

SURVEY DATES: 19-25 March 1992

SURVEY PERSONNEL:

Aerial Survey

Observer/pilot - John W. Solberg, USFWS, MBMO, Kearney, NE  
Observer - Elizabeth K. Buelna, USFWS, MBMO, Laurel, MD  
Photographer - James Bredy, USFWS, MBMO, Laurel, MD

Ground Surveys - Areas and Coordinators

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

ABSTRACT: The 1992 coordinated spring survey of mid-continent sandhill cranes was conducted 19-25 March 1992 with no procedural changes from 1991. Aerial crew personnel changes involved only the right side observer. The aerial portion of the survey, conducted in Nebraska's Platte and North Platte river valleys, provided an estimated 406,500 (photo corrected) sandhill cranes. Outside of the aerial coverage boundaries, ground observers in the Official Survey Area (OSA) of Nebraska, Kansas, and Texas produced an additional 13,600 birds for a total combined index of 420,100. The 1992 index increased 23% compared to the 1991 figure and contributes to the current 3-year average of 400,200.

METHODS: Methods used during the 1992 coordinated survey were similar to those used in 1991 and included the coverage changes adopted by the Central Flyway - Central Management Unit (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%. For the eleventh consecutive year the survey employed sub-sampling 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 (91%-100%) of the mid-continent sandhill crane index in past years.

Although experienced in aerial surveys of other migratory birds, this was the first year of participation in the mid-continent sandhill crane survey for the right seat observer. The 1992

RESULTS: The 1992 combined estimate of mid-continent sandhill cranes was 420,100 (Table 1). Included are 406,500 (photo corrected) birds from aerial surveys in Nebraska. Additionally, Nebraska (12,200 outside aerial coverage area), Kansas (300), and Texas (1,100) all supplied contributions to the total. The 1992 index increased 23% from the 1991 figure and contributed to the calculation of a new 3-year (1990-1992) average of 400,200. Table 1 was modified in the 1992 report by rounding all figures to the nearest 100. Tables 2 and 3 present indices and standard errors of aerial counts for all years of ocular transect survey design. Table 2 reflects the initiation of photo correction in 1982.

DISCUSSION: Spring arrivals of sandhill cranes were recorded earlier than "normal" and earlier than reports from 1991. Initial observations were from the Gothenburg, NE area and provided 500 birds traveling west along the Platte River on 20 January. Near Kearney, cranes began to arrive during the first week of February and by mid-month, were present in significant numbers. As usual, crane numbers continued to increase in the Platte valley through March. During the survey, observations in Nebraska outside the area of aerial coverage provided the highest addition to the index since 1984. Although ground efforts in Nebraska were minimal, 10,400 birds were recorded by one observer in the Lake Mc Conaughy - Lewellen area. An additional 250 birds were observed incidently (and included) outside the aerial stratum boundary near North Platte. Observers noted typical post-survey departure (late March into April) from Nebraska.

Concerns recently expressed by the CMU Technical Committee regarding the possible need for aerial stratum boundary adjustment were addressed in 1992. Four reconnaissance flights, in addition to standard aerial coverage, were conducted (2/28, 3/7, 3/13, 3/24) by Migratory Bird Office and Fish and Wildlife Enhancement personnel. A variety of areas were searched on each flight. Throughout these special reconnaissance flights, no cranes were observed outside the current aerial coverage boundary. During the survey, the aerial observation crew did encounter some birds (approximately 1,500) outside stratum boundaries (south of Phillips and Rosedale, NE). These birds occurred within 1/2 mile of the current boundary and were included in the Nebraska "other" portion of the total index. With the additional aerial reconnaissance effort in Nebraska in 1992, the author believes the current survey design remains valid. As intended, the aerial coverage boundaries continue to encompass the majority (historically 90%+) of the total index. Coverage of areas outside the aerial stratum boundaries will continue to be the responsibility of state and federal ground coordinators.

Elsewhere in the OSA, Texas (1,100) and Kansas (300) provided crane numbers that suggest migration had progressed through these states by the time of the coordinated effort. Personnel at the Quivera NWR in Kansas reported their migration peak (11,300) on 10 March, two weeks prior to the survey. According to coordinators from

Table 1. Distribution of sandhill cranes within the mid-continent region during the coordinated spring survey, 1974-92 (rounded to nearest 100).

DATE	MD <sup>1</sup>	SD <sup>2</sup>	NEBRASKA				KS	CO <sup>3</sup>	OK <sup>4</sup>	NM <sup>5</sup>	TX	TOTAL		
			Central Platte Valley		Other							NE other KS, OK, CO, NM, and TX plus:		
			Ocular cruise	Ocular transect	Ocular trans. w/photo correction	Vert. photo transect						Ocular cruise (uncorrected)	Ocular transect (photo corrected)	Vert. photo transect
3/24-31/74	0	0	162,600(92%) <sup>6</sup>	-	-	9,000	1,900	400	-	3,200	177,100	-	-	
3/25-30/75	0	0	223,600(98%)	-	-	2,300	900	100	100	Tr	227,500	-	-	
3/22-26/76	3	0	147,500(97%)	-	-	2,800	300	100	1,000	800	152,500	-	-	
3/13-23/77	0	300	173,400(79%)	-	-	1,100	1,600	400	12,500	30,700	220,000	-	-	
3/20-24/78	-	0	149,800(94%)	188,600(95%)	-	2,200	1,700	-	2,300	4,900	159,900	198,700	-	
3/20-29/79	0	0	-	203,600(97%)	-	2,600	1,100	1,500	0	0	209,300	-	-	
3/24-4/15/80	Tr <sup>7</sup>	-	223,400(95%)	254,400(96%)	-	5,000	4,100	100	500	1,400	234,500	265,500	-	
3/22-28/81	0	0	-	248,900(86%)	-	8,300	11,200	0	0	21,800	290,400	-	-	
3/22-27/82	0	Tr	-	348,000(95%)	417,300(95%)	7,100	2,000	2,800	100	7,800	367,800	437,100	-	
3/25-26/83	0	0	-	306,300(96%)	343,400(97%)	4,100	200	0	Tr	7,000	317,800	354,900	-	
3/25-30/84	0	Tr	-	222,700(91%)	261,800(93%)	18,100	900	1,100	Tr	800	243,600	282,700	-	
3/25-26/85	-	-	-	378,100(96%)	514,800(97%)	11,500	3,000	-	-	1,200	393,800	530,500	-	
3/25-26/86	Tr	Tr	-	317,000(99%)	353,000(99%)	1,000	3,200	-	-	2,100	320,300	356,300	-	
3/24-26/87	0	0	-	383,600(100%)	416,100(100%)	-	Tr	-	-	400	384,000	416,500	-	
3/21-25/88	0	0	-	386,900(98%)	463,500(98%)	-	-	-	-	7,700	394,600	471,200	-	
3/28-29/89	0	200	-	391,400(100%)	392,000(100%)	100	1,000	-	-	800	393,300	393,900	-	
3/27-28/90	Tr	Tr	-	386,000(94%)	412,200(94%)	11,000	5,200	-	-	10,300	412,500	438,700	-	
3/25-26/91	0	200	-	297,800(100%)	340,600(100%)	100	800	-	-	200	298,900	341,700	-	
3/19-25/92	200	Tr	-	257,700(95%)	406,500(97%)	12,200	300	-	-	1,100	271,300	420,100	-	

<sup>1</sup>/Utilizing various survey techniques within Nebraska's central Platte Valley.

<sup>2</sup>/No survey.

<sup>3</sup>/Less than 50.

<sup>4</sup>/Percent of total M-C population index.

<sup>5</sup>/Crane sightings for North and South Dakota from 1985 and later are noted (overflight monitoring purposes) but not included in totals.

<sup>6</sup>/CO, OK, NM were eliminated from the official Survey Area in 1985 by the Central Flyway CMU.

Table 4. Coordinated spring mid-continent sandhill crane survey participation by state - 1992.

	Survey Dates	No. of Aircraft	No. of Auto's	Miles Covered Air/Auto	No. of observers Federal State	
North Dakota*	19-25 March 1992	1	7	800/617	2	8
South Dakota*	24 March 1992	-	5	-/300	4	3
Nebraska	24 March 1992	1	2	900/ 80	3	2
Kansas	24 March 1992	-	3	-/ 72	2	1
Texas	24 March 1992	-	3	-/125	2	1
Total		2	20	1700/1200	13	15

\*Monitors for overflights on or prior to scheduled survey date.

## Coordinated Spring Mid-Continent Sandhill Crane Survey

### Distribution

Central Management Unit Technical Committee	11
Chief, MBMO, Washington, D.C.	1
Chief, Branch of Operations, MBMO, Washington, D.C.	1
Central Flyway Representative, Golden, CO	1
Chief, Branch of Surveys, MBMO, Laurel, MD	1
Wildlife Biologist, Waterfowl Harvest Surveys, MBMO, Laurel, MD	1
Chief, Section of Waterfowl Population Surveys, Portland, OR	1
Flyway Biologists, MBMO, Laurel, MD	4
Flyway Biologist, MBMO, La Crosse, WI	1
Flyway Biologists, MBMO, Lafayette, LA	2
Flyway Biologist, MBMO, Golden, CO	1
Project Leader, Waterfowl Investigations, USFWS, Juneau, AK	1
Region 6 - USFWS (Regional Director and Migratory Bird Coordinator)	2
Region 2 - USFWS (Regional Director and Migratory Bird Coordinator)	2
Region 7 - USFWS (Regional Director and Migratory Bird Coordinator)	2
Project Leader, Rainwater Basin WMD, Kearney, NE	1
Whooping Crane Coordinator, USFWS, Albuquerque, NM	1
Director, Northern Prairie Wildlife Research Center, Jamestown, ND	1
Doug Johnson, Northern Prairie Wildlife Research Center, Jamestown, ND	1
Gary Krapu, Northern Prairie Wildlife Research Center, Jamestown, ND	1
State Supervisor, FWE, USFWS, Grand Island, NE	1
Nick Lyman, Nebraska Game & Parks Commission, North Platte, NE	1
Director, Western and Northern Region, CWS, Edmonton, AB	1
Population Management Biologist, CWS, Saskatoon, SK	1
Jack Smith, CWS, Saskatoon, SK	1
Librarian, CWS, Saskatoon, SK	1
Provincial Waterfowl Biologist, Winnipeg, MB	1
Provincial Waterfowl Biologist, Saskatoon, SK	1
Provincial Waterfowl Biologist, Edmonton, AB	1
Gary Lingle, Platte River Trust, Grand Island, NE	1
Ken Strom, National Audubon Society, Gibbon, NE	1
Richard S. Miller, Yale University, New Haven, CT	1