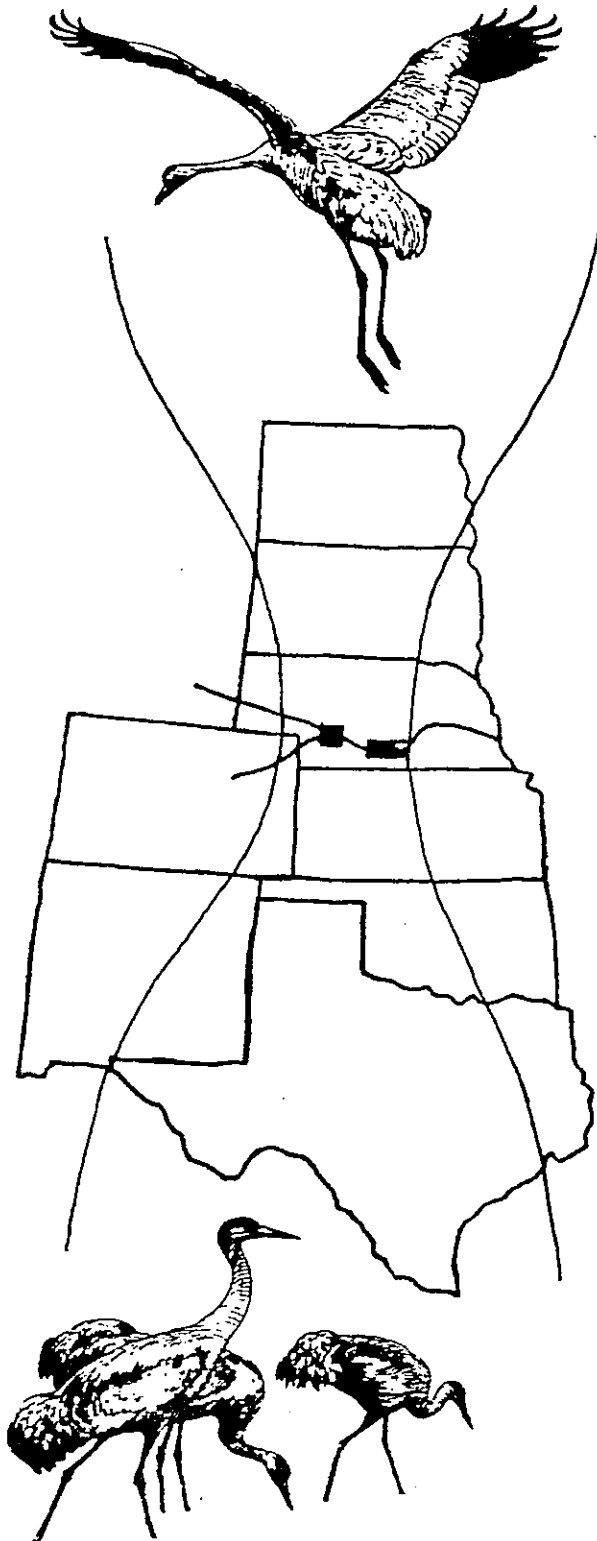


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COORDINATED SPRING MID-CONTINENT SANDHILL CRANE SURVEY

1989



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COORDINATED SPRING MID-CONTINENT SANDHILL CRANE SURVEY

SURVEY DATES: 28-29 March 1989

SURVEY PERSONNEL:

Aerial Survey

Observer/pilot - John W. Solberg, USFWS, MBMO, Kearney, NE
Observer - James P. Bredy, USFWS, MBMO, Laurel, MD
Photographer - Wallace Jobman, USFWS, FWE, Grand Island, NE

Ground Surveys - Areas and Coordinators

North Dakota - S. Kohn (NDGFD) - John Cornely (USFWS)
South Dakota - R. Fowler (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 1989 coordinated spring mid-continent (MC) sandhill crane survey was conducted 28-29 March 1989 with no procedural changes from 1988. Unseasonably warm temperatures encouraged the cranes arrival in Nebraska 2-3 weeks earlier than normal. The aerial survey, conducted in Nebraska's Platte River Valley, yielded an estimate of 391,995 (photo corrected) sandhill cranes. The combined observations (aerial portions plus all ground counts) totaled 393,895 which represents a 16% decrease from the 1988 index.

METHODS: Methods used during the 1989 coordinated survey were similar to those in 1988. Current design includes coverage changes adopted by the Central Flyway Technical Committee prior to the 1985 survey. Ground portions of the survey were conducted by various field personnel and coordinated by state and federal individuals. Observations were forwarded to the Flyway Biologist (Kearney, NE) for inclusion in the final report. The aerial (Platte Valley) portion was again conducted 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 eighth 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 figures are applied to the aerial portion of the coordinated effort which has provided the major component (79-99 percent) of the Mid-Continent Sandhill Crane index in past years.

is 3% below the 1982-1988 average (\bar{x} = 407,014). Tables 2 and 3 present aerial indices and standard errors for all years of ocular transect survey design. These tables reflect the initiation of photo correction in 1982.

DISCUSSION: Although it seemed to be an earlier than normal spring in the Platte Valley, reports from observers in Nebraska and the Dakotas suggested no major emigration prior to the survey. The low contribution by Kansas and Texas may suggest that most birds had arrived in Nebraska by survey time. With funding and logistical constraints limiting aerial crane surveys to a single effort annually, the importance of ground observer participation greatly increases.

Even though conditions seemed nearly ideal, few crane flocks were observed soaring during the survey. It is recommended that the aerial photography aspect of this survey be continued in an attempt to increase the precision in the annual estimate.

ACKNOWLEDGEMENTS: Appreciation is expressed to all coordinators and observers who participated in the 1989 survey and to the statistical staff at Northern Prairie Wildlife Research Center for their continued statistical analysis of survey results. Thanks also to personnel of the Fish and Wildlife Enhancement office in Grand Island, NE for another year of support in aerial photography.

Submitted by: John W. Solberg
January 1990

Table 1. Distribution of sandhill cranes within the mid-continent region during the coordinated spring survey, 1974-89.

DATE	ND ⁵	SD ⁵	NEBRASKA		KS	CO	OK	NH	TX	TOTAL	Photo corrected		
			Central Platte Valley ¹								Ocular trans. w/photo correction	Vert.photo transect	Ocular cruise
		Ocular cruise	Ocular transect	Other									
3/24-31/74	0	0	162,600(92%) ⁴	-	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	- ²	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	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 ³	-	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%)	7,100	2,000	0	100	7,800	-	367,800	-	-
3/25-26/83	0	0	-	306,300(96%)	4,100	200	200	Tr	7,000	-	317,800	-	-
3/25-30/84	0	Tr	-	222,710(91%)	18,100	900	-	Tr	800	-	243,600	-	-
3/25-26/85	-	-	-	378,127(72%)	11,500	3,000	-	-	1,200	-	390,700	-	-
3/25-26/86	Tr	Tr	-	317,025(89%)	1,000	200	-	-	2,100	-	320,325	-	-
3/24-26/87	0	0	-	383,581(92%)	-	Tr	-	-	350	-	383,931	-	-
3/21-25/88	0	0	-	386,853(82%)	-	-	-	-	7,730	-	394,583	-	-
3/28-29/89	0	200	-	391,353(99%)	100	1,000	-	-	800	-	393,253	-	-

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

²/No survey.

³/Less than 50.

⁴/Percent of total M-C population index.

⁵/Crane sightings for North and South Dakota from 1985 and later are noted but not included in totals.

Table 4. Coordinated spring mid-continent sandhill crane survey participation by state - 1989.

	Survey Dates	No. of Aircraft	No. of Auto's	Miles Covered Air/Auto	No. of observers Federal State	
North Dakota*	28 March 1990	-	1	-/ 25	4	-
South Dakota*	28-29 March 1990	-	12	-/814	2	12
Nebraska	28-29 March 1990	1	9	900/633	3	6
Kansas	28 March 1990	-	1	-/ 30	1	-
Texas	28 March 1990	-	2	-/164	1	1
Total		1	25	900/1666	11	19

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

Coordinated Spring Mid-Continent Sandhill Crane Survey

Distribution

Central Management Unit Technical Committee	12
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	3
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
Chuck Sowards, FWE, USFWS, Pierre, SD	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, Prince Albert, 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