

SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN THE CENTRAL FLYWAY DURING THE 2004-2005 HUNTING SEASON

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Elwood M. Martin

United States Fish and Wildlife Service
Division of Migratory Bird Management
10815 Loblolly Pine Drive
Laurel, Maryland 20708-4028

ABSTRACT: A mail questionnaire survey was conducted in nine Central Flyway States to monitor the harvest of Sandhill Cranes (*Grus canadensis*) during the 2004-2005 hunting season. Permits were issued to 66,917 hunters and an estimated 9,171 individuals (13.7%) actively hunted Sandhill Cranes. About 46% of these active hunters were successful in bagging one or more cranes, with an estimated harvest of 14,456 birds. Reports indicated an additional 1,271 birds were downed but lost for a total kill estimate of 15,817, down 21% from the previous season.

This report should be cited as: U.S. Fish and Wildlife Service, 2005. Sandhill Crane harvest and hunter activity in the Central Flyway during the 2004-2005 hunting season. U.S. Department of the Interior, Washington, D.C. U.S.A.

The primary purpose of this report is to facilitate the prompt distribution of timely information. Results are preliminary and may change with the inclusion of additional data.

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RESULTS

INTRODUCTION

The 2004-05 hunting season was the 30th for which a Federal permit or similar registration has been required for hunting cranes during the regular Sandhill Crane season in the Central Flyway. About 16% of the permit holders were contacted by questionnaire and asked to report their hunting activity and success. This report gives results of this survey and includes a long-term summary of previous survey estimates since 1975. Details of data collection and analysis are given in Division of Migratory Bird Management Administrative Report "Sandhill Crane Harvest and Hunter Activity in the Central Flyway during the 1975-76 Hunting Season" (9 July 1976) with occasional refinements outlined in annual updates. After several years of comparison, as summarized in last year's report (DMBM Administrative Report "Sandhill Crane Harvest and Hunter Activity in the Central Flyway during the 2003-2004 Hunting Season" (August 2004), we switched entirely from a card form to a letter-type questionnaire similar to that used in our Harvest Information Program (HIP) surveys. Up to two follow-up questionnaires were mailed to nonrespondents. The HIP conducts a similar survey of crane hunting in Alaska (see U.S. Fish and Wildlife Service. 2005. Migratory bird harvest information, 2004: preliminary estimates. U.S. Department of the Interior, Washington, D.C.).

Several years ago when first Texas and then Colorado changed their permit issuing systems, many hunters in both states who never hunt cranes unknowingly became classed as crane hunters, a result of the way these systems were designed and used. Questionnaire response rates from such hunters have been found to be below those of hunters who plan to hunt cranes, and adjustment factors based on these differences were calculated and used on the state level estimates those years. Initial indications from the HIP surveys are that response rates have increased in a manner that may have corrected this problem, so no adjustments have been made this season pending examination of additional information from future surveys.

A total of 66,917 "permits" was issued (14% more than in 2003), and almost 14% of those obtaining permits hunted cranes (10% more than the previous year; Table 1). Crane hunting activity (days hunted) increased 28% from 2003 levels while total success (cranes bagged) decreased 21%. Overall, those permittees hunting one or more days (active hunters) averaged 3.48 days afield with an average seasonal bag of 1.59 cranes (Table 2). About 46% were successful in bagging one or more cranes. The total estimated retrieved crane kill was 14,546 while unretrieved kill was 1,271 for a total of 15,817 birds killed, 21% less than last year. Comparisons with last year appear in Table 1. Tables 2A through 2I list the 2004-05 estimates for each county hunted as reported by respondents together with state totals. Generally, if a respondent hunted in more than one county, the hunting activity and harvest were assigned to the county with the most harvest or, if the harvest was equal, to the county in which the most hunting-days occurred. The new survey form more efficiently eliminates out-of-state hunting so such hunting is no longer shown in these tables. Selected figures are summarized by season since 1975 in Table 3.

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Table 1. NUMBERS OF SANDHILL CRANE PERMITS ISSUED, ACTIVE AND SUCCESSFUL HUNTERS, AND CRANES BAGGED AND LOST DURING THE 2003-04 AND 2004-05 SEASONS.

		COLORADO		MONTANA		NORTH DAKOTA		SOUTH DAKOTA		WYOMING	
		KANSAS	NEW MEXICO	OKLAHOMA	TEXAS	TEXAS	COMBINED				
PERMITS ISSUED	2003-04	5,854 *	1,206	273	471	6,030	1,000	563	43,199 *	50	58,646
	2004-05	5,784 *	1,180	308	548	5,788	780	307	52,161 *	61	66,917
	% ch.	-1%	-2%	13%	16%	-4%	-22%	-45%	21%	22%	14%
ACTIVE HUNTERS	2003-04	236	495	60	244	2,271	64	114	4,821	10	8,315
	2004-05	315	539	93	252	2,491	265	79	5,121	16	9,171
	% ch.	33%	9%	55%	3%	10%	314%	-31%	6%	60%	10%
SUCCESSFUL HUNTERS	2003-04	79	304	21	158	1,218	39	59	2,783	4	4,665
	2004-05	50	227	18	120	1,030	120	26	2,614	4	4,209
	% ch.	-37%	-25%	-14%	-24%	-15%	208%	-56%	-6%	0%	-10%
DAYS HUNTED	2003-04	602	1,328	134	611	7,050	170	246	14,668	38	24,847
	2004-05	1,464	2,218	303	833	9,642	754	272	16,389	34	31,909
	% ch.	143%	67%	126%	36%	37%	344%	11%	12%	-11%	28%
CRANES BAGGED	2003-04	230	942	49	617	4,564	200	166	11,560	7	18,335
	2004-05	92	856	54	350	3,967	441	67	8,715	4	14,546
	% ch.	-60%	-9%	10%	-43%	-13%	121%	-60%	-25%	-43%	-21%
CRANES LOST	2003-04	11	91	0	132	377	6	22	988	1	1,628
	2004-05	14	59	1	42	406	46	17	686	0	1,271
	% ch.	27%	-35%	++	-68%	8%	667%	-23%	-31%	++	-22%

* Colorado and Texas used permit issuing systems for identifying crane hunters these seasons which greatly increased the numbers of hunters eligible to hunt cranes there. See discussion in text.

TABLE 2A. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN COLORADO DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS			ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION				
		RESPOND		EXPAND	DAYS		CRANE	HUNTER		CRANE		BY SEASONAL BAG SIZE			
		-ING	-ED	AFIELD	BAG	LOSS	-DAYS	BAG	LOSS	KILL	0	1-3	4-9	10+	
# OF PERMITS	5,784	27	194	6.037	0.259	0.074	1,171	50	14	64	85.2	14.8	0.0	0.0	
# CONTACTED	1,068	1	7	2.000	0.000	0.000	14			0	100.0	0.0	0.0	0.0	
# RESPONDING	807	1	7	3.000	3.000	0.000	21	21		21	0.0	100.0	0.0	0.0	
% RESPONDING	75.6	2	14	5.000	0.000	0.000	70			0	100.0	0.0	0.0	0.0	
% ACTIVE	5.45	1	7	1.000	0.000	0.000	7			0	100.0	0.0	0.0	0.0	
ADJ. % ACTIVE		3	22	2.667	0.000	0.000	59			0	100.0	0.0	0.0	0.0	
		4	29	2.750	0.000	0.000	80			0	100.0	0.0	0.0	0.0	
		1	7	2.000	0.000	0.000	14			0	100.0	0.0	0.0	0.0	
		1	7	1.000	0.000	0.000	7			0	100.0	0.0	0.0	0.0	
		2	14	1.000	1.000	0.000	14	14		14	50.0	50.0	0.0	0.0	
		1	7	1.000	1.000	0.000	7	7		7	0.0	100.0	0.0	0.0	
STATE TOTALS		44	315	4.648	0.292	0.044	1,464	92	14	106	84.1	15.9	0.0	0.0	

TABLE 2B. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN KANSAS DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS			ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION				
		RESPOND		EXPAND	DAYS		CRANE	HUNTER		CRANE		BY SEASONAL BAG SIZE			
		-ING	-ED	AFIELD	BAG	LOSS	-DAYS	BAG	LOSS	KILL	0	1-3	4-9	10+	
# OF PERMITS	1,180	68	186	4.647	1.382	0.086	864	257	16	273	66.2	29.4	1.5	2.9	
# CONTACTED	572	1	3	2.000	6.000	0.000	6	18		18	0.0	100.0	0.0	0.0	
# RESPONDING	431	1	3	2.000	1.000	0.000	6	3		3	0.0	100.0	0.0	0.0	
% RESPONDING	75.3	50	137	4.380	1.200	0.188	600	164	26	190	62.0	36.0	0.0	2.0	
% ACTIVE	45.7	2	5	1.000	1.500	0.000	5	8		8	50.0	50.0	0.0	0.0	
		2	5	3.000	1.500	0.000	15	8		8	50.0	50.0	0.0	0.0	
		1	3	2.000	0.000	0.000	6			0	100.0	0.0	0.0	0.0	
		1	3	1.000	0.000	0.000	3			0	100.0	0.0	0.0	0.0	
		3	8	1.333	0.667	0.000	11	5		5	66.7	33.3	0.0	0.0	
		1	3	3.000	0.000	0.000	9			0	100.0	0.0	0.0	0.0	
		2	5	5.000	0.000	0.000	25			0	100.0	0.0	0.0	0.0	
		1	3	7.000	0.000	0.000	21			0	100.0	0.0	0.0	0.0	
		63	172	3.746	2.286	0.100	644	393	17	410	42.9	47.6	3.2	6.3	
		1	3	1.000	0.000	0.000	3			0	100.0	0.0	0.0	0.0	
STATE TOTALS		197	539	4.115	1.588	0.109	2,218	856	59	915	57.9	37.1	1.5	3.6	

TABLE 2C. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN MONTANA DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS			ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION					
		RESPOND		EXPAND	DAYS		CRANE	CRANE	CRANE	HUNTER		CRANE		BY SEASONAL BAG SIZE		
		-ING	-ED	AFIELD	BAG	LOSS	-DAYS	BAG	LOSS	BAG	LOSS	KILL	0	1-3	4-9	10+
# OF PERMITS	308	24	28	4.250	0.375	0.043	119	11	1	12	87.5	12.5	0.0	0.0		
# CONTACTED	290	1	1	1.000	0.000	0.000	1			0	100.0	0.0	0.0	0.0		
# RESPONDING	260	4	5	2.250	0.000	0.000	11			0	100.0	0.0	0.0	0.0		
% RESPONDING	89.7	1	1	1.000	0.000	0.000	1			0	100.0	0.0	0.0	0.0		
% ACTIVE	31.2	1	1	2.000	0.000	0.000	2			0	100.0	0.0	0.0	0.0		
		1	1	1.000	0.000	0.000	1			0	100.0	0.0	0.0	0.0		
		4	5	3.500	0.250	0.000	18	1		1	75.0	25.0	0.0	0.0		
		2	2	2.500	0.000	0.000	5			0	100.0	0.0	0.0	0.0		
		1	1	1.000	0.000	0.000	1			0	100.0	0.0	0.0	0.0		
		1	1	2.000	1.000	0.000	2	1		1	0.0	100.0	0.0	0.0		
		17	20	2.529	0.353	0.000	51	7		7	94.1	5.9	0.0	0.0		
		1	1	2.000	2.000	0.000	2	2		2	0.0	100.0	0.0	0.0		
		1	1	2.000	0.000	0.000	2			0	100.0	0.0	0.0	0.0		
		2	2	3.500	0.000	0.000	7			0	100.0	0.0	0.0	0.0		
		1	1	2.000	0.000	0.000	2			0	100.0	0.0	0.0	0.0		
		13	15	4.462	1.538	0.000	67	23		23	69.2	23.1	0.0	7.7		
		1	1	2.000	2.000	0.000	2	2		2	0.0	100.0	0.0	0.0		
		3	4	1.333	0.333	0.000	5	1		1	66.7	33.3	0.0	0.0		
		1	1	2.000	4.000	0.000	2	4		4	0.0	100.0	0.0	0.0		
		1	1	2.000	2.000	0.000	2	2		2	0.0	100.0	0.0	0.0		
		81	93	3.250	0.595	0.012	303	54	1	55	81.5	17.3	0.0	1.2		
	STATE TOTALS															

TABLE 2D. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN NEW MEXICO DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS			ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION					
		RESPOND		EXPAND	DAYS		CRANE	CRANE	CRANE	HUNTER		CRANE		BY SEASONAL BAG SIZE		
		-ING	-ED	AFIELD	BAG	LOSS	-DAYS	BAG	LOSS	BAG	LOSS	KILL	0	1-3	4-9	10+
# OF PERMITS	548	22	73	3.545	0.864	0.050	259	63	4	67	63.6	36.4	0.0	0.0		
# CONTACTED	247	1	3	1.000	0.000	0.000	3			0	100.0	0.0	0.0	0.0		
# RESPONDING	165	38	126	3.553	1.447	0.270	448	182	34	216	52.6	42.1	2.6	2.6		
% RESPONDING	66.8	5	17	2.400	1.800	0.000	41	31		31	40.0	60.0	0.0	0.0		
% ACTIVE	46.1	1	3	5.000	0.000	0.000	15			0	100.0	0.0	0.0	0.0		
		6	20	2.333	2.833	0.000	47	57		57	16.7	66.7	0.0	16.7		
		2	7	2.000	1.500	0.500	14	11	4	15	50.0	50.0	0.0	0.0		
		1	3	2.000	2.000	0.000	6	6		6	0.0	100.0	0.0	0.0		
	STATE TOTALS	76	252	3.306	1.389	0.167	833	350	42	392	52.6	43.4	1.3	2.6		

TABLE 2E. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN NORTH DAKOTA DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS			ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION							
		RESPOND -ING	EXPAND -ED	AFIELD	DAYS	CRANE	BAG	LOSS	HUNTER -DAYS	CRANE	BAG	LOSS	KILL	BY SEASONAL BAG SIZE				
														0	1-3	4-9	10+	
# OF PERMITS	5,788	207	1,025	4,121	1,159	0.117		4,224	1,189	120	1,309	70.0	25.1	1.4	3.4			
# CONTACTED	1,429	13	64	3,308	1,231	0.154		212	79	10	89	53.8	46.2	0.0	0.0			
# RESPONDING	1,169	18	89	2,444	1,944	0.188		218	173	17	190	38.9	61.1	0.0	0.0			
% RESPONDING	81.8	6	30	3,333	0.667	0.000		100	20	20	20	66.7	33.3	0.0	0.0			
% ACTIVE	43.0	10	50	2,900	1,900	0.100		145	95	5	100	40.0	60.0	0.0	0.0			
		1	5	6,000	0.000	0.000		30			0	100.0	0.0	0.0	0.0			
		6	30	3,333	0.000	0.000		100			0	100.0	0.0	0.0	0.0			
		5	25	4,200	3,400	0.400		105	85	10	95	20.0	60.0	20.0	0.0			
		6	30	4,833	0.833	0.333		145	25	10	35	83.3	16.7	0.0	0.0			
		1	5	3,000	6,000	1.000		15	30	5	35	0.0	100.0	0.0	0.0			
		1	5	4,000	0.000	0.000		20			0	100.0	0.0	0.0	0.0			
		56	277	4,214	2,571	0.315		1,167	712	87	799	37.5	51.8	7.1	3.6			
		1	5	2,000	0.000	0.000		10			0	100.0	0.0	0.0	0.0			
		11	54	2,818	0.273	0.000		152	15	15	15	90.9	9.1	0.0	0.0			
		8	40	2,375	1.375	0.000		95	55	55	55	50.0	37.5	12.5	0.0			
		2	10	6,500	0.000	0.000		65			0	100.0	0.0	0.0	0.0			
		17	84	3,647	3,059	0.400		306	257	34	291	41.2	41.2	11.8	5.9			
		1	5	1,000	0.000	0.000		5			0	100.0	0.0	0.0	0.0			
		11	54	3,182	3,091	0.500		172	167	27	194	9.1	81.8	0.0	9.1			
		8	40	5,250	1,250	0.125		210	50	5	55	37.5	62.5	0.0	0.0			
		12	59	3,583	1,083	0.083		211	64	5	69	66.7	33.3	0.0	0.0			
		1	5	3,000	0.000	2.000		15	10	10	10	100.0	0.0	0.0	0.0			
		2	10	1,500	2,000	0.000		15	20		20	50.0	50.0	0.0	0.0			
		39	193	3,846	2,744	0.211		742	530	41	571	41.0	51.3	2.6	5.1			
		2	10	6,500	6,500	0.000		65	65		65	50.0	0.0	0.0	50.0			
		19	94	3,632	0.684	0.105		341	64	10	74	68.4	31.6	0.0	0.0			
		5	25	2,200	0.600	0.000		55	15	15	15	60.0	40.0	0.0	0.0			
		16	79	4,000	1,375	0.125		316	109	10	119	56.3	37.5	0.0	6.3			
		18	89	4,333	1,667	0.000		386	148		148	66.7	22.2	5.6	5.6			
		503	2,491	3,871	1,593	0.163		9,642	3,967	406	4,373	58.6	35.6	2.6	3.2			
	STATE TOTALS																	

TABLE 2F. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN OKLAHOMA DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS		ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION					
		RESPOND -ING	EXPAND -ED	DAYS AFIELD	CRANE BAG	CRANE LOSS	HUNTER -DAYS	CRANE BAG	CRANE LOSS	KILL	BY SEASONAL BAG SIZE				
											0	1-3	4-9	10+	
# OF PERMITS	780	40	96	3,400	1,325	0.139	326	127	13	140	52.5	42.5	5.0	0.0	
# CONTACTED	454	14	33	2,286	1,214	0.000	75	40	40	40	64.3	35.7	0.0	0.0	
# RESPONDING	326	1	2	2,000	1,000	0.000	4	2	2	2	0.0	100.0	0.0	0.0	
% RESPONDING	71.8	1	2	3,000	0.000	0.000	6				100.0	0.0	0.0	0.0	
% ACTIVE	34.4	1	2	8,000	0.000	0.000	16				100.0	0.0	0.0	0.0	
		1	2	2,000	0.000	0.000	4				100.0	0.0	0.0	0.0	
		3	7	1,000	0.667	0.000	7	5	5	5	66.7	33.3	0.0	0.0	
		1	2	1,000	2.000	0.000	2	4	4	4	0.0	100.0	0.0	0.0	
		8	19	2,750	0.000	0.000	52				100.0	0.0	0.0	0.0	
		1	2	1,000	0.000	0.000	2				100.0	0.0	0.0	0.0	
		2	5	1,500	0.000	0.000	8				100.0	0.0	0.0	0.0	
		4	10	2,250	1,750	0.250	23	18	3	21	25.0	75.0	0.0	0.0	
		2	5	2,000	0.000	0.000	10				100.0	0.0	0.0	0.0	
		1	2	4,000	8,000	0.000	8	16		16	0.0	0.0	100.0	0.0	
		2	5	2,000	1,500	0.500	10	8	3	11	0.0	100.0	0.0	0.0	
		3	7	2,000	1,000	0.000	14	7		7	66.7	33.3	0.0	0.0	
		1	2	4,000	0.000	0.000	8				100.0	0.0	0.0	0.0	
		2	5	2,000	0.000	0.000	10				100.0	0.0	0.0	0.0	
		8	19	4,375	5,625	0.750	83	107	14	123	25.0	37.5	12.5	25.0	
		13	31	2,385	3,462	0.417	74	107	13	120	23.1	69.2	7.7	0.0	
		3	7	1,667	0.000	0.000	12				100.0	0.0	0.0	0.0	
STATE TOTALS		112	265	2,845	1,664	0.174	754	441	46	487	55.4	38.4	4.5	1.8	

TABLE 26. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN TEXAS DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS RESPONDING	ACTIVE HUNTERS EXPANDING	ACTIVE HUNTERS		HUNTER MEANS		EXPANDED ESTIMATES		ACTIVE HUNTER DISTRIBUTION BY SEASONAL BAG SIZE				
				DAYS AFIELD	DAYS EXPAND	CRANE BAG	CRANE LOSS	HUNTER -DAYS	CRANE BAG	CRANE LOSS	KILL	0	1-3	4-9
# OF PERMITS	52,161	138	1,859	4,014	1,239	0.117	219	2,523	59.4	36.2	2.2	2.2		
# CONTACTED	6,468	1	13	3,000	2,000	0.000	39	26	0.0	100.0	0.0	0.0		
# RESPONDING	3,873	9	121	5,444	7,889	0.444	659	955	33.3	44.4	0.0	22.2		
% RESPONDING	59.9	1	13	1,000	1,000	0.000	13	13	0.0	100.0	0.0	0.0		
% ACTIVE	9.86	1	13	1,000	2,000	0.000	13	26	0.0	100.0	0.0	0.0		
ADJ. % ACTIVE		8	108	3,125	1,875	0.000	338	203	50.0	37.5	0.0	12.5		
		1	13	7,000	2,000	0.000	91	26	0.0	100.0	0.0	0.0		
		4	54	1,250	1,250	0.000	68	68	50.0	50.0	0.0	0.0		
		1	13	30,000	0.000	0.000	390	0	100.0	0.0	0.0	0.0		
		1	13	2,000	2,000	0.000	26	26	0.0	100.0	0.0	0.0		
		3	40	1,333	2,000	0.000	53	80	33.3	66.7	0.0	0.0		
		5	67	1,000	1,000	0.000	67	67	20.0	80.0	0.0	0.0		
		1	13	3,000	5,000	0.000	39	65	0.0	100.0	0.0	0.0		
		1	13	4,000	0.000	0.000	52	0	100.0	0.0	0.0	0.0		
		1	13	2,000	0.000	0.000	26	0	100.0	0.0	0.0	0.0		
		16	215	2,250	0.750	0.000	484	161	68.8	31.3	0.0	0.0		
		1	13	2,000	1,000	0.000	26	13	0.0	100.0	0.0	0.0		
		1	13	2,000	0.000	0.000	26	0	100.0	0.0	0.0	0.0		
		2	27	2,000	1,500	1.000	54	41	0.0	100.0	0.0	0.0		
		1	13	2,000	6,000	0.000	26	78	0.0	100.0	0.0	0.0		
		4	54	2,000	3,500	0.000	108	189	0.0	100.0	0.0	0.0		
		1	13	5,000	12,000	1.000	65	156	0.0	0.0	0.0	100.0		
		1	13	1,000	0.000	0.000	13	0	100.0	0.0	0.0	0.0		
		3	40	3,333	0.000	0.000	133	0	100.0	0.0	0.0	0.0		
		9	121	1,889	1,556	0.125	229	188	0.0	100.0	0.0	0.0		
		3	40	2,333	0.000	0.000	93	0	100.0	0.0	0.0	0.0		
		1	13	1,000	0.000	0.000	13	0	100.0	0.0	0.0	0.0		
		2	27	6,000	3,500	1.000	162	95	50.0	0.0	50.0	0.0		
		1	13	3,000	1,000	0.000	39	13	0.0	100.0	0.0	0.0		
		1	13	1,000	1,000	0.000	13	13	0.0	100.0	0.0	0.0		
		3	40	4,333	5,000	0.000	173	200	66.7	0.0	0.0	33.3		
		4	54	3,750	6,000	0.750	203	324	0.0	75.0	0.0	25.0		
		1	13	1,000	3,000	3.000	13	39	0.0	100.0	0.0	0.0		
		2	27	9,500	0.500	1.500	257	14	50.0	50.0	0.0	0.0		
		1	13	3,000	3,000	0.000	39	39	0.0	100.0	0.0	0.0		
		3	40	1,667	0.333	0.000	67	13	66.7	33.3	0.0	0.0		
		2	27	1,000	0.000	0.000	27	0	100.0	0.0	0.0	0.0		
		1	13	3,000	0.000	0.000	39	0	100.0	0.0	0.0	0.0		
		5	67	2,000	4,400	0.000	134	295	20.0	60.0	0.0	20.0		
		2	27	1,000	0.000	0.000	27	0	100.0	0.0	0.0	0.0		
		1	13	3,000	0.000	0.000	39	0	100.0	0.0	0.0	0.0		

TABLE 2G. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN TEXAS DURING THE 2004-05 HUNTING SEASON - continued.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS		ACTIVE HUNTER MEANS		EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION						
		RESPOND -ING	EXPAND -ED	DAYS AFIELD	CRANE BAG	CRANE LOSS	HUNTER -DAYS	CRANE BAG	LOSS	KILL	BY SEASONAL BAG SIZE				
											0	1-3	4-9	10+	
JACKSON		5	67	3,200	1,800	0.000	214	121	121	40.0	60.0	0.0	0.0		
JIM WELLS		1	13	2,000	4,000	0.000	26	52	52	0.0	100.0	0.0	0.0		
JONES		1	13	3,000	0.000	0.000	39	0	0	100.0	0.0	0.0	0.0		
KARNES		2	27	3,000	0.500	0.000	81	14	14	50.0	50.0	0.0	0.0		
KAUFMAN		1	13	1,000	0.000	0.000	13	0	0	100.0	0.0	0.0	0.0		
KENEDY		1	13	3,000	0.000	0.000	39	0	0	100.0	0.0	0.0	0.0		
KING		1	13	1,000	1,000	0.000	13	13	13	0.0	100.0	0.0	0.0		
KLEBERG		6	81	2,333	0.667	0.000	189	54	54	50.0	50.0	0.0	0.0		
KNOX		2	27	1,500	0.000	0.000	41	0	0	100.0	0.0	0.0	0.0		
LAMB		3	40	2,000	5,333	0.000	80	213	213	0.0	100.0	0.0	0.0		
LAVACA		2	27	6,500	0.500	0.000	176	14	14	50.0	50.0	0.0	0.0		
LIVE OAK		6	81	3,667	0.500	0.333	297	41	27	66.7	33.3	0.0	0.0		
LUBBOCK		12	162	1,833	2,083	0.000	297	338	338	41.7	50.0	8.3	0.0		
LYNN		1	13	3,000	1,000	0.000	39	13	13	0.0	100.0	0.0	0.0		
MC CULLOCH		1	13	4,000	0.000	0.000	52	0	0	100.0	0.0	0.0	0.0		
MC LENNAN		1	13	2,000	1,000	0.000	26	13	13	0.0	100.0	0.0	0.0		
MARTIN		4	54	1,750	3,000	0.000	95	162	162	50.0	50.0	0.0	0.0		
MATAGORDA		18	242	3,278	2,000	0.200	793	484	49	533	44.4	50.0	5.6		
MITCHELL		1	13	5,000	3,000	1.000	65	39	13	52	0.0	100.0	0.0		
MOORE		2	27	1,500	2,500	0.000	41	68	68	0.0	100.0	0.0	0.0		
NOLAN		1	13	15,000	0.000	0.000	195	0	0	100.0	0.0	0.0	0.0		
NUECES		1	13	1,000	1,000	0.000	13	13	13	0.0	100.0	0.0	0.0		
OCHILTREE		3	40	4,667	6,667	1.333	187	267	53	320	0.0	66.7	33.3		
PARMER		1	13	1,000	3,000	0.000	13	39	39	0.0	100.0	0.0	0.0		
POTTER		1	13	2,000	6,000	0.000	26	78	78	0.0	100.0	0.0	0.0		
SAN PATRICIO		1	13	2,000	0.000	0.000	26	0	0	100.0	0.0	0.0	0.0		
SWISHER		1	13	1,000	0.000	0.000	13	0	0	100.0	0.0	0.0	0.0		
TAYLOR		1	13	2,000	6,000	0.000	26	78	78	0.0	100.0	0.0	0.0		
TERRY		5	67	1,800	1,400	0.200	121	94	13	107	20.0	80.0	0.0		
THROCKMORTON		1	13	1,000	0.000	0.000	13	0	0	100.0	0.0	0.0	0.0		
UVALDE		2	27	1,000	2,000	0.000	27	54	54	0.0	100.0	0.0	0.0		
VICTORIA		1	13	3,000	6,000	0.000	39	78	78	0.0	100.0	0.0	0.0		
WALLER		3	40	2,333	1,000	0.000	93	40	40	66.7	33.3	0.0	0.0		
WHARTON		34	458	2,059	1,147	0.091	943	526	42	568	47.1	50.0	2.9		
WHEELER		1	13	1,000	5,000	0.000	13	65	65	0.0	100.0	0.0	0.0		
WICHITA		1	13	1,000	0.000	0.000	13	0	0	100.0	0.0	0.0	0.0		
WILLACY		1	13	5,000	0.000	0.000	65	0	0	100.0	0.0	0.0	0.0		
WILLIAMSON		1	13	1,000	0.000	0.000	13	0	0	100.0	0.0	0.0	0.0		
WISE		1	13	2,000	0.000	1,000	26	13	13	100.0	0.0	0.0	0.0		
YOUNG		2	27	2,500	0.500	0.000	68	14	14	50.0	50.0	0.0	0.0		
STATE TOTALS		382	5,121	3,200	1,702	0.134	16,389	8,715	686	9,401	49.5	45.8	1.3		
													3.4		

TABLE 2H. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN SOUTH DAKOTA DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS		ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION				
		RESPOND -ING	EXPAND -ED	DAYS AFIELD	CRANE BAG	CRANE LOSS	HUNTER -DAYS	BAG	LOSS	KILL	0	1-3	4-9	10+
# OF PERMITS	307	23	27	4.217	0.478	0.261	114	13	7	20	78.3	21.7	0.0	0.0
# CONTACTED	300	1	1	10.000	0.000	0.000	10			0	100.0	0.0	0.0	0.0
# RESPONDING	260	4	5	4.000	1.000	0.000	20	5		5	25.0	75.0	0.0	0.0
% RESPONDING	86.7	1	1	3.000	4.000	0.000	3	4		4	0.0	100.0	0.0	0.0
% ACTIVE	26.2	3	4	3.333	1.000	0.000	13	4		4	33.3	66.7	0.0	0.0
		1	1	4.000	0.000	0.000	4			0	100.0	0.0	0.0	0.0
	EDMUNDS	6	7	1.667	0.333	0.167	12	2	1	3	83.3	16.7	0.0	0.0
	FAULK	2	2	2.500	0.500	0.500	5	1	1	2	50.0	50.0	0.0	0.0
	HAND	2	2	3.000	0.000	0.000	6			0	100.0	.0	0.0	0.0
	HUGHES	2	2	4.000	0.000	0.000	8			0	100.0	0.0	0.0	0.0
	HYDE	1	1	1.000	1.000	0.000	1	1		1	0.0	100.0	0.0	0.0
	JONES	1	1	16.000	11.000	5.000	16	11	5	16	0.0	0.0	0.0	100.0
	MC PHERSON	6	7	2.000	1.333	0.167	14	9	1	10	50.0	50.0	0.0	0.0
	PERKINS	1	1	2.000	0.000	0.000	2			0	100.0	0.0	0.0	0.0
	POTTER	5	6	3.000	2.800	0.400	18	17	2	19	20.0	60.0	20.0	0.0
	SPINK	3	4	3.000	0.000	0.000	12			0	100.0	0.0	0.0	0.0
	STANLEY	1	1	1.000	0.000	0.000	1			0	100.0	0.0	0.0	0.0
	SULLY	4	5	2.000	0.000	0.000	10			0	100.0	0.0	0.0	0.0
	WALWORTH	1	1	3.000	0.000	0.000	3			0	100.0	0.0	0.0	0.0
STATE TOTALS		68	79	3.443	0.848	0.215	272	67	17	84				

TABLE 2I. SANDHILL CRANE HARVEST AND HUNTER ACTIVITY IN WYOMING DURING THE 2004-05 HUNTING SEASON.

GENERAL INFORMATION	COUNTY OF HARVEST	ACTIVE HUNTERS		ACTIVE HUNTER MEANS			EXPANDED ESTIMATES			ACTIVE HUNTER DISTRIBUTION				
		RESPOND -ING	EXPAND -ED	DAYS AFIELD	CRANE BAG	CRANE LOSS	HUNTER -DAYS	BAG	LOSS	KILL	0	1-3	4-9	10+
# OF PERMITS	61	6	8	2.667	0.333	0.000	21	3		3	66.7	33.3	0.0	0.0
# CONTACTED	61	1	1	4.000	0.000	0.000	4			0	100.0	0.0	0.0	0.0
# RESPONDING	48	4	5	1.000	0.250	0.000	5	1		1	75.0	25.0	0.0	0.0
% RESPONDING	78.7	1	1	2.000	0.000	0.000	2			0	100.0	0.0	0.0	0.0
% ACTIVE	27.1	1	1	2.000	0.000	0.000	2			0	100.0	0.0	0.0	0.0
STATE TOTAL		13	16	2.125	0.250	0.000	34	4	0	4	76.9	23.1	0.0	0.0

COMBINED TOTALS 1,476 9,171 3.479 1.586 0.139 31,909 14,546 1,271 15,817 54.4 40.7 1.7 3.1

TOTAL PERMITS ISSUED = 66,917 NUMBER CONTACTED = 10,889 NUMBER RESPONDING = 7,593 (69.7%)

TABLE 3. SUMMARY OF SELECTED SANDHILL CRANE HUNTING ACTIVITY AND HARVEST DATA FOR THE CENTRAL FLYWAY BY SEASON SINCE 1975.

Season	TOTAL PERMITS ISSUED	PERCENT HUNTING CRANES	NUMBER HUNTING CRANES	NUMBER OF DAYS HUNTED	NO. OF CRANES BAGGED*	BAG PER ACTIVE HUNTER	NO. OF CRANES LOST*
1975-76	11,863	58.6	6,949	23,646	9,497	1.37	1,885
1976-77	11,352	44.9	5,092	18,780	7,393	1.45	1,384
1977-78	13,800	58.3	8,048	25,412	12,151	1.51	2,013
1978-79	13,659	56.2	7,683	22,992	10,146	1.32	1,860
1979-80	12,598	55.7	7,011	21,351	10,379	1.48	1,650
1980-81	13,413	53.4	7,164	21,951	10,152	1.42	1,737
1981-82	13,258	53.4	7,077	21,888	10,134	1.43	1,777
1982-83	12,370	41.8	5,172	14,559	7,916	1.53	1,397
1983-84	18,306	39.0	7,143	21,874	12,959	1.81	2,224
1984-85	17,420	39.2	6,821	20,281	11,271	1.65	1,889
1985-86	17,444	34.3	5,988	17,855	12,776	2.13	1,864
1986-87	19,298	30.3	5,840	15,959	12,487	2.14	1,867
1987-88	18,067	28.9	5,229	14,453	12,770	2.44	1,714
1988-89	16,368	32.0	5,232	14,169	12,772	2.44	1,628
1989-90	17,496	32.9	5,752	15,126	13,639	2.37	2,081
1990-91	22,720	33.6	7,631	20,423	18,041	2.36	2,519
1991-92	18,147	32.3	5,859	15,147	13,079	2.23	1,768
1992-93	17,127	30.9	5,284	14,833	12,433	2.35	1,459
1993-94	18,864 **	37.2	7,023	20,049	18,005	2.56	2,251
1994-95	19,412	36.8	7,141	20,392	16,201	2.27	1,676
1995-96	20,209	36.9	7,455	23,266	20,616	2.77	2,236
1996-97	21,330	34.5	7,354	22,291	17,111	2.33	2,011
1997-98	46,843 **	17.2	8,064	21,877	19,766	2.45	2,279
1998-99	47,734	17.1	8,173	24,242	19,831	2.43	2,143
1999-00	48,607	13.6	6,629	19,593	17,149	2.59	1,717
2000-01	61,311	11.3	6,950	19,112	15,504	2.23	1,430
2001-02	67,560	11.9	8,039	22,428	15,000	1.87	1,516
2002-03	55,384	15.1	8,358	27,931	15,008	1.80	1,351
2003-04	58,646	14.2	8,315	24,847	18,335	2.21	1,628
2004-05	66,917	13.7	9,171	31,909	14,546	1.59	1,271

* "Bagged" and "lost" refer to retrieved and unretrieved kill respectively.

** Kansas began hunting cranes in 1993; see text for explanation of increases since 1996.