

SEPTEMBER 2016 SURVEY OF THE ROCKY MOUNTAIN POPULATION OF GREATER SANDHILL CRANES

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Greater sandhill cranes (*Antigone canadensis tabida*) of the Rocky Mountain Population (RMP) were counted at fall premigration staging areas in Colorado, Idaho, Montana, Utah, and Wyoming September 2016. Early migrants that arrived at RMP migration stopover areas near Jensen, Utah and in the San Luis Valley, Colorado were also recorded. The cooperative survey was organized by the Pacific Flyway Subcommittee on RMP of Greater Sandhill Cranes and the U.S. Fish and Wildlife Service (FWS). The FWS, Division of Migratory Bird Management (DMBM), Denver, provided a Quest Kodiak for a portion of the survey. Aerial and ground surveys were conducted by personnel from respective state agencies, FWS and volunteers (participants listed in Table 1).

A total of **22,264** RMP cranes were counted (third highest count) at 79 survey areas with 33.7% in Montana, 24.5% in Idaho, 21.9% in Wyoming, 14.8% in Utah, and 5.1% in Colorado (Figure 1; Tables 2). All normally surveyed areas were covered except for the Delta, CO area. The majority (93%) of survey areas were counted during the designated survey week (12-16 September) with 67% of the areas surveyed during the three-day target period (13-15 September) (Table 1).

Four premigration staging areas had concentrations exceeding 1,000 cranes: 1) Dillon-Twin Bridges, MT – 2,871; 2) the contiguous tri-state Upper Bear River Valley in ID, UT, and WY – 2,210; 3) Farson, WY – 1,864 and 4) Teton Basin, ID – 1,221. Over 500 cranes were recorded at eight other premigration sites: Box Elder Co, UT – 806; Otter Creek, MT – 793; Ashton-St. Anthony, ID – 705; Toston-Townsend, MT – 660; Teton River-Eureka Reservoir, MT – 604; Blackfoot Reservoir, ID – 600; Malad River, ID – 582 and Yampa River, CO – 551 (Table 1). The migration stopover near Jensen, UT on the Green River had 1,230 cranes (Table 1, Figure 1). These 13 areas accounted for 66% of all cranes recorded.

Under the guidelines of the RMP sandhill crane management plan, sandhill cranes from Sheridan, Johnson, and Natrona counties in Wyoming were included in the overall estimate this year for the first time. The reference to county was changed to river basin since Wyoming survey areas have traditionally been listed by river basin (see North Platte and Powder-Tongue, Table 1).

A total of 166 sandhill cranes were counted in Millard (2), Piute (48), Sevier (63), and Wayne (53) counties in Utah. This is the 6th year that cranes have been counted in these additional areas, but we are still awaiting a decision on whether to include these counties, traditionally thought of as within the range of the Lower Colorado River Valley (LCRV) sandhill crane population (Manes et al., 1988), into the overall survey estimate. A study involving both marked LCRV and RMP cranes with satellite transmitters is ongoing and may inform potential range overlap between the two management populations. To date, there has not been strong evidence to indicate that these cranes are part of the RMP.

The Jensen and Pelican Lake area, UT, primarily a migration stopover site on the Green River in Uintah County, had estimates of 1,230 and 130 cranes recorded during the survey week (Table 1). Both estimates were only slightly above their respective 10-year averages (1,096 and 119) and suggests expected patterns of crane migration were occurring during the survey week. In the San Luis Valley, CO 371 cranes were counted, which was equivalent to the 10-year site average of 384 cranes, also suggesting that the majority of RMP cranes were still staging on areas that were surveyed during the week. Few cranes were counted on breeding areas during the survey, another indicator of good survey timing.

Overall U. S. average temperatures for the period from January through September 2016 were the second warmest on record. The winter of 2015-2016 across the RMP sandhill crane range was characterized by above average temperatures. Record to near record temperatures persisted into the summer. Average U.S. temperatures in June were the warmest on record. Utah also had record average temperatures in June as well as record high maximum and minimum temperatures during that month. Average June temperatures in Wyoming and Colorado were the second and third warmest on record, respectively. The remainder of the breeding states had well-above average summer (June – August) temperatures. The warm trend continued into September with record setting average temperatures in Utah and Colorado, the second warmest September in Wyoming, and above average temperatures for Montana and Idaho.

Precipitation was average during the winter of 2015-2016. Summer (June – August) precipitation was below to well-below average across ID, WY, southwest MT and northeast UT. Colorado received average precipitation during the summer and into September. September precipitation was above average in WY and well-above average in eastern ID, southwest MT and northeast UT.

Weather conditions for the FWS portion of aerial surveys were variable throughout the week, but we were able to adjust plans on a daily basis to fly areas that had the clearest skies on any given day. We feel that survey conditions were good, even with some overcast skies encountered during surveys.

We thank all who participated in the survey and we especially appreciate the effort made to complete counts during the designated period.

Manes, S. S., R. C. Drewien, J. D. Huener, T. W. Aldrich, and W M. Brown. 1992. Distribution of color-marked greater sandhill cranes banded in Utah. Pages 55-60 *in* D. A. Wood, editor. Proceedings of the 1988 North American Crane Workshop. Florida Game and Fresh Water Fish Commission Nongame Wildlife Program Technical Report 12.

Table 1. Counts in September 2016 of the Rocky Mountain Population of greater sandhill cranes at premigration staging and migration stopover areas in Colorado, Idaho, Montana, Utah, and Wyoming (Figure 1). Surveys were conducted by air (a) and ground (g) between 12-28 September.

Map No. & Location(a/g) Date	No. Cranes	Source
<u>COLORADO</u>		
1 Yampa River (g) 9/14	551	
Axial Basin (g) 9/14	0	B. Holmes, B. Smithers, CPW
County Line grain fields (g) 9/13	270	A. Reishus, CPW
Craig vicinity fields (g) 9/14	166	E. Jones, CPW
Hayden airport/racetrack (g) 9/14	47	J. Gammonley, CPW
Morgan Bottoms (g) 9/14	68	L. Rossi, CPW
Yampa River SWA (g) 9/14	0	J. Pollock, CPW
2 Elk River	38	
Selby's grain fields (g) 9/15	38	A. Sponseller, CPW
3 White River	172	
East of Meeker (g) 9/15	no survey	
Little Beaver-Irish Mesa (g) 9/15	172	B. Holmes, A. Kircher CPW
4 Williams Fork River	0	
East of Hamilton (g) 9/15	0	E. Jones, CPW
5 Little Snake River (g) 9/15	3	
Slater (g) 9/15	0	A. Kircher, CPW
Two Bar Ranch (g) 9/15	3	"
6 Delta Co., Harts Basin	no survey	
7 San Luis Valley (g) 9/12-14	371	D. Lee, FWS
Subtotal	1,135	5.1%
<u>IDAHO</u>		
1 Amer. Falls Res. (a) 9/12	198	FWS survey ^a
2 Ashton-St. Anthony (a) 9/15	705	" "
3 Bear River Valley	1,301	
Bear Lake Valley (g) 9/13	405	B. Wishnek, T. Plank, D. Betz, FWS
Border-Pegram (a) 9/16	45	FWS survey
Bennington-Soda Spr. (a) 9/15	154	" "
Grace-Thatcher (a) 9/12	254	" "
Thomas Fork (a) 9/16	443	" "
4 Blackfoot Res. (a) 9/12	600	" "
5 Camas NWR (g) 9/12	179	P. Johnson, F. Downs, FWS
6 Camas Prairie (g) 9/14	2	T. Gregory, IDFG
7 Carey Lake area (g) 9/14	0	" "
8 Chesterfield Res. (a) 9/12	43	FWS survey
9 Grays Lake NWR (a) 9/15	328	" "
10 Henrys Lake Flats (a) 9/13	0	" "
11 Island Park Res. (a) 9/13	0	FWS survey

Table 1 (continued)

Map No.	Location(a/g) Date	No. Cranes	Source
12	Kilgore	no survey	
13	Market Lake WMA (g) 9/13	4	C. Hendricks
14	Marsh Valley (a) 9/12	178	FWS survey
15	Mud Lake WMA (g) 9/13	73	J. Gray, IDFG
16	Oxford Slough-Swan Lake (a) 9/12	0	FWS survey
17	Silver Creek (g) 9/14	31	C. Shackelford, IDFG
18	Teton Basin (a) 9/15	1,221	FWS survey
19	Malad River (a) 9/12	582	B. Stringham, UDWR
	subtotal	5,445	24.5%

MONTANA

1	Blackfoot/Ovando Valley (a) 9/12	21	S. Eggeman, MFWP
2	Cascade-Ulm (a) 9/18	162	K. Smucker, MFWP
3	Centennial Valley (g) 9/28	2	S. Latham, FWS
4	Clark Fork of the Yellowstone (a) 9/15	303	S. Stewart, MFWP
5	Deadman's Basin (a) 9/15	286	J. Paugh, MFWP
6	Dillon-Twin Bridges (a) 9/13	2,871	FWS survey
7	Gallatin Valley (a) 9/17	250	J. Cunningham, MFWP
8	Helena Valley (a) 9/16	70	K. Podruzny, MFWP
9	Melville (a) 9/15	0	J. Paugh, MFWP
10	Musselshell River (a) 9/15	384	" "
11	Otter Creek (a) 9/15	793	" "
12	Teton River-Eureka Res. (a) 9/20	604	K. Smucker, MFWP
13	Toston-Townsend (a) 9/19	660	A. Grove, MFWP
14	Upper Madison Valley (a) 9/13	173	FWS survey
15	Warm Springs (a) 9/15	129	D. Dziak, MFWP
16	White Sulphur Spr. (a) 9/15	493	E. Lula, MFWP
17	Whitehall (a) 9/13	306	FWS survey
	subtotal	7,507	33.7%

UTAH

1	Cache Co. (a) 9/12	469	B. Stringham, UDWR
	<u>Great Salt Lake Basin</u>		
2	Box Elder Co. (a) 9/13	806	B. Stringham, UDWR
3	Davis Co. (a) 9/12	21	" "
4	Weber Co. (a) 9/12	68	" "
5	Morgan Co. (a) 9/14	91	" "
	<u>Rich Co.</u>		
6	Bear River Valley (a) 9/15	410	B. Stringham, UDWR
7	Round Valley (a) 9/15	18	" "
8	Summit Co. (a) 9/14	16	" "

Table 1 (continued)

Map No.	Location(a/g) Date	No. Cranes	Source
<u>Uintah Co.</u>			
9	Jensen (a) 9/15	1,230	B. Stringham, UDWR
10	Pelican Lake area (a) 9/15	130	" "
11	Leland Bench (a) 9/15	0	" "
12	Wasatch Co. (g) 9/14	39	" "
	subtotal	3,298	14.8%
<u>WYOMING</u>			
1	Baggs (g) 9/16	4	N. Huck, WGFD
2	Bear River Valley (a) 9/16	909	FWS survey
<u>Big Horn Basin</u>			
3	Greybull River/Otto (a) 9/14	6	N. Huck, WGFD
4	Shoshone River/Ralston (a) 9/14	303	" "
5	Worland (a) 9/14	85	" "
<u>Green River Basin</u>			
6	Big Piney-Daniel (a) 9/16	57	FWS survey
7	Bridger Valley (g) 9/13	32	A. Deru, WGFD
8	Lonetree (g) 9/13	3	" "
9	Farson (a) 9/16	1,864	FWS survey
10	Hams Fork (a) 9/16	0	" "
11	Pinedale-Cora-Boulder (a) 9/16	0	" "
12	Seedskadee NWR	no survey	
13	Saratoga (g) 9/13	2	N. Huck, WGFD
<u>North Platte River Basin</u>			
14	33 Mile (a) 9/15	479	N. Huck, WGFD
<u>Powder-Tongue River Basin</u>			
15	Barnum - Middle Fork Powder R. (a) 9/15	0	N. Huck, WGFD
16	Mayoworth - N. Fork Powder R. (a) 9/15	0	" "
17	Kaycee-Sussex (a) 9/15	150	" "
18	Buffalo (a) 9/15	0	" "
19	Dayton (a) 9/15	375	" "
<u>Snake River Basin</u>			
20	Jackson Hole		
	Natl Elk (g) 9/14	68	E. Cole, C. Mulcahy, B. Mulcahy
21	Star Valley (g,a) 9/12,16	329	R. Drewien, J. Bohne, FWS Survey
<u>Wind River Basin</u>			
22	Hidden Valley (a) 9/14	25	N. Huck, WGFD
23	Ocean Lake (a) 9/14	35	" "
24	Riverview Valley (a) 9/14	153	" "
	subtotal	4,879	21.9%
TOTAL CRANES		22,264	

^a Fish & Wildlife Service aerial survey flown by P. Thorpe, P. Donnelly, and Dan Collins.

Table 2. September premigration staging area counts by state of the Rocky Mountain Population of greater sandhill cranes during 1987, 1992, 1995-2005, 2007-2016.

Year	Colorado ^a	Idaho	Montana	Utah	Wyoming	Total
1987	1,443	10,686	1,447	1,578	2,327	17,481
1992	3,181	5,801	5,264	2,810	2,248	19,304
1995	2,284	6,864	3,681	1,528	1,671	16,028
1996	1,255	8,334	2,974	1,849	2,526	16,938
1997	1,604	8,132	3,595	2,450	2,255	18,036
1998	1,273	8,067	3,415	2,185	3,162	18,102
1999	1,102	8,761	3,141	2,292	4,205	19,501
2000	749	9,337	3,598	2,416	3,890	19,990
2001	666	7,160	4,585	1,522	2,626	16,559
2002	1,355	7,698	4,843	1,869	3,038	18,803
2003	745	7,822	4,964	2,546	3,446	19,523
2004	1,410	7,152	4,637	2,239	3,072	18,510
2005	1,052	7,668	5,588	2,646	3,911	20,865
2007	1,743	8,262	6,509	2,401	3,907	22,822
2008	1,080	6,123	6,419	3,708	3,826	21,156
2009	1,162	6,934	6,329	2,283	3,613	20,321
2010	985	5,776	7,335	3,242	3,726	21,064
2011	1,347	5,029	6,642	1,498	2,978	17,494
2012	413	3,432	5,876	2,109	3,587	15,417
2013	1,594	5,228	7,218	2,732	3,588	20,360
2014	1,258	6,064	6,555	2,783	3,008	19,668
2015	1,089	6,454	9,493	3,698	3,596	24,330
2016	1,135	5,445	7,507	3,298	4,879 ^b	22,264
Mean	1,301	7,053	5,288	2,421	3,265	19,328

^a Colorado counts include migrants that had arrived at the staging area in the San Luis Valley.

^b Wyoming added six new survey areas per management plan guidelines.

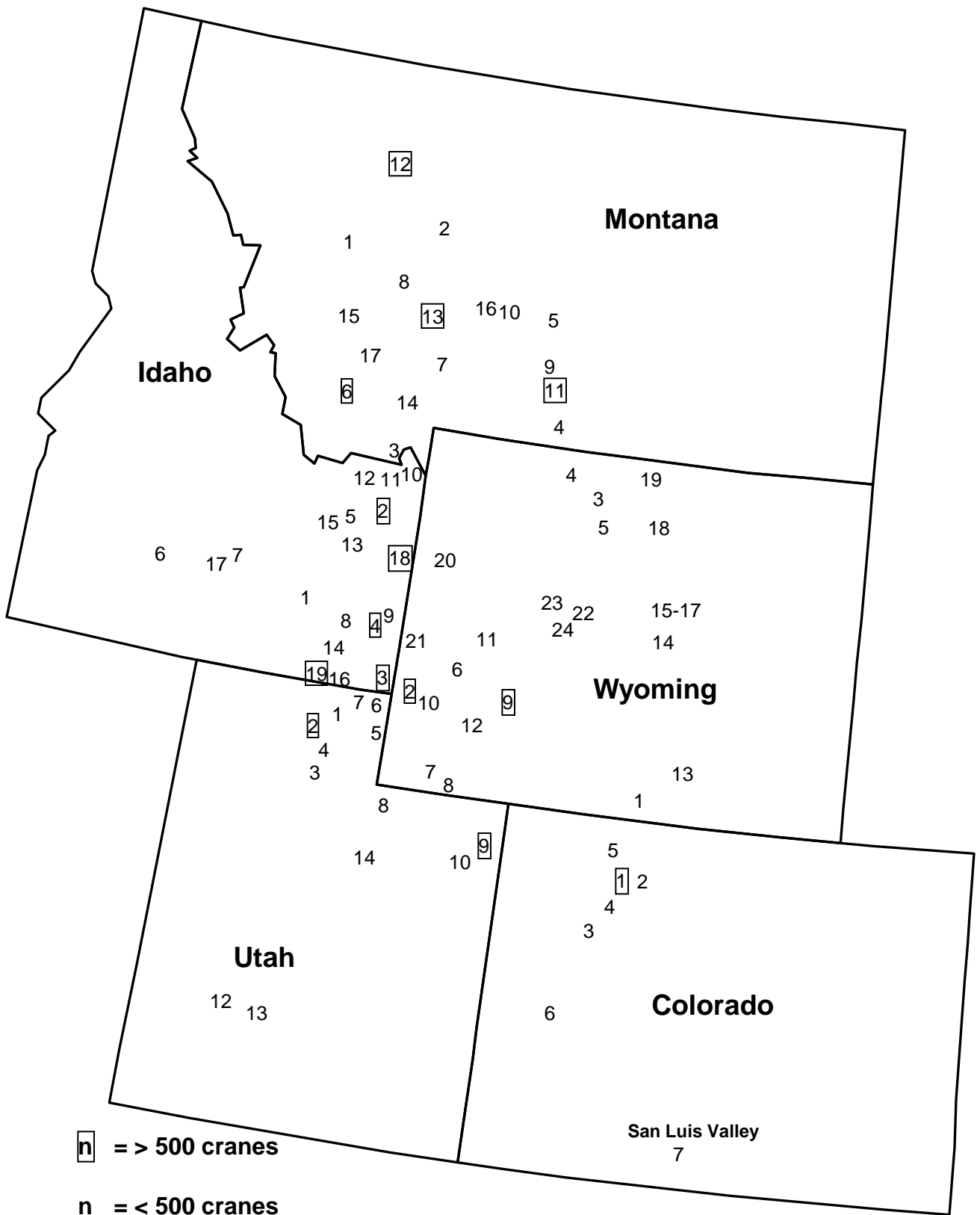


Figure 1. September survey locations for the Rocky Mountain Population of Greater Sandhill Cranes. See Table 1 for location names and numbers.