

June 1999

## CRANE AND WATERFOWL MIGRATION REPORT-SPRING 1999

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This annual report summarizes the spring migration of cranes and waterfowl in the central Platte River Valley for 1999. Last year, the Trust initiated a long-term monitoring program to assess the status of cranes and waterfowl during their stay in the central Platte Valley. The goals of this program are to evaluate responses of these species to the variety of habitat management practices (e.g., clearing of trees, grazing, haying) used in the central Platte Valley, monitor the distribution and habitat-use patterns of these species relative to changes in habitat and land use practices, and provide information to guide future management decisions.

### Methods

Trust staff conducted weekly crane and waterfowl surveys from 25 February through 15 April, 1999. Five survey routes were delineated along the Platte River from Chapman to Overton, Nebraska. For the most part, survey routes were located within 1-2 miles of the river. Each Trust staff member was responsible for driving an assigned survey route twice a week. The total weekly mileage driven by Trust staff was approximately 450 miles. This year surveys were conducted during the morning (sunrise - 1200 pm) and afternoon (1201pm - sunset) during each week. Last year we conducted surveys during 3 time periods (early: sunrise - 1100 am, midday: 1101 am - 3 pm, and late: 3 pm - sunset), but because there was considerable overlap (i.e., surveys in one time period often extended into another time period) between the midday period and the early and late periods, we conducted surveys during 2 periods this year. We assessed crane and waterfowl distribution and habitat-use patterns by locating groups of cranes (sandhill and whooping cranes), geese (Canada, snow, and white-fronted geese), and ducks (predominantly mallards and northern pintails) while driving the designated survey routes. For each observation, the approximate number of birds in each group, habitat type (e.g., wet meadow-lowland grassland, upland grassland, corn, alfalfa, and soybean), and land use practice (e.g., grazed, hayed, tilled, and mowed) were recorded, and the location of each group was plotted on maps. For grasslands, we also recorded presence of water in sloughs and depressions, vegetation height, and vegetation density. To determine habitat availability, we recorded habitat types and land use practices of all fields within the survey area on maps which will then be digitized using ArcView.

Eight aerial surveys of the river were conducted during March to determine distribution patterns of sandhill crane roost sites from Chapman to Overton. Aerial surveys were initiated at sunrise and continued for approximately 2 hours. During each flight, one person videotaped crane roost locations with an 8 mm video camera, while another person recorded roost locations

and approximate size of each roost on aerial photos of the river. Locations and roost sizes were later confirmed from viewing the video tape. Channel widths of individual roost sites and sites not used by cranes were recorded from aerial photos. For those sites not used by cranes, we recorded widths at half-mile increments for all channels, but only included those half-mile increments that did not delineate a roost site in the comparison of the channel widths of roost sites with the channel widths of sites not used by cranes. We also recorded if roost sites occurred in sections of the river that had been cleared and/or maintained during the last 4 years.

The following is a summary of the data collected from our crane and waterfowl surveys. Additional information on whooping crane sightings was obtained from the U.S. Fish and Wildlife Office in Grand Island, Nebraska.

### Whooping Crane

A total of 14 whooping crane sightings that included 31 whooping cranes were recorded in Nebraska during the spring. Of the 14 sightings, 5 (6 individual cranes) were recorded in the central Platte Valley between Highway 34 and Highway 10. The first whooping crane arrived on 4 March. The bird was observed in a corn field at the Trust's Dipple property located 2 miles east of the Gibbon I-80 Interchange. This bird is believed to have stayed in the valley for nearly 3 weeks (4-23 March) and was located at 2 roost sites on the Platte River. On 13 March, the bird was observed roosting across from the Trust's West Blind at Wild Rose Ranch in Hall County, and during an aerial survey on 17 March, Trust staff located the bird on a roost site 0.75 miles upstream from the Highway 34 bridge in Hamilton County. Both roost locations were in sections of the river that were >330 meters wide. The Trust has maintained the wide river channel at the Wild Rose Ranch site through its vegetation clearing program. During the day, this bird was frequently observed 5-10 miles south of its roost site in crop fields (corn, soybean) and native pastures. A pair of whooping cranes were observed roosting in the Platte River 2.5 miles west of the Gibbon bridge near Audubon's Rowe Sanctuary on 15 March. On 21 March, 1 whooping crane was observed roosting across from the Trust's Uridil Blind in Hall County in a wide section (>300 meters) of the river. Both the Rowe and Uridil sites are regularly maintained by the Trust's vegetation clearing program. The other 2 sightings in the central Platte Valley were of single birds that were flying.

Whooping cranes were also observed at Funk Lagoon Waterfowl Production Area in Phelps County (2 sightings: 2 birds, 3 April; 5 birds, 24-30 April), Rock County near Bassett (family group of 3 birds, 4-8 April), Loup County near Taylor (2 birds, 6-8 April), Holt County near Newport (2 birds, 2-8 April), Antelope County near Clearwater (family group of 3 birds, 9-11 April) and Phelps County 2 miles south of the Overton I-80 Interchange (2 birds, 3 April). Separate sightings of flying whooping cranes were also recorded in Buffalo County 2 miles west of the Shelton I-80 Interchange (1 bird, 29 March) and 8 miles west of Ravenna (4 birds, 12 April) and in Hall County 1 mile east of Grand Island (2 birds, 6 April). The 2 birds (W-nil; BwB-nil) observed near the Overton Interchange and one of the birds (G-GwG) observed in Antelope County had leg bands.

## Sandhill Crane

As occurred last year, the first sandhill cranes arrived in late January. An estimated 30,000-40,000 cranes were along the Platte River by mid-February. Similar to last year, the early arrival of cranes was likely a function of the mild weather that occurred throughout the southern High Plains during January and February. We recorded 119,324 cranes in our survey area during the first week of our vehicle surveys (21-27 February; Figure 1). During the second week of our surveys, sandhill cranes increased to approximately 206,000. In contrast to last year, we did not observe sandhill crane numbers reach a peak by late March, but rather, sandhill crane numbers within our survey area remained relatively stable (175,000-206,000 birds) from 28 February through 27 March. After the fifth week (21-27 March), sandhill crane numbers in our survey

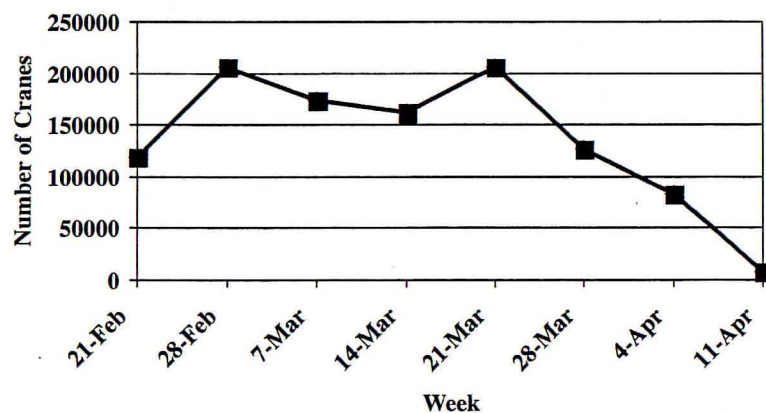


Figure 1. Sandhill crane numbers from vehicle surveys conducted along the Platte River in central Nebraska from Chapman to Overton during spring 1999.

area began to decline with most of the birds departing central Nebraska by week 8 (11-17 April). Approximately 8,000 cranes remained in our survey area through mid-April.

The daytime distribution of sandhill cranes was not uniform among the 12 bridge segments (Table 1). Over 58% of the cranes were distributed among 3 bridge segments (3, 6, and 7). As occurred in 1998, bridge segments 3 and 7 had the highest percentages of cranes with 25 and 18% of the total number of cranes observed, respectively. The higher percentages of cranes that occurred in these 2 bridge segments is likely related to the large tracts of wet meadow-

lowland grassland habitat and wide river channels that occur within these segments.

Most of the sandhill cranes were observed in 3 habitat types. Overall, 39% of the daytime observations were in wet meadow-lowland grasslands, 38% in corn fields, and 13% in alfalfa fields. Upland grasslands, soybean fields, and shrub-grasslands accounted for 6, 2, and 1% of the total observations, respectively. In contrast, 53% of the daytime observations were in corn fields, 35% in wet meadow-grasslands, 9% in alfalfa fields, and 2% in upland grasslands in 1998. The higher percentages of cranes we observed in wet-meadow grasslands, alfalfa fields, and upland grasslands in 1999 may have been weather related; the average temperature for February was 10° F above normal, while temperatures for March and April were close to normal. The mild weather in February may have initiated invertebrate activity earlier and the normal temperatures in March and April may have maintained the invertebrates close to the surface for foraging cranes in the 3 habitats. Cranes may also have spent less time in corn fields because they may have expended less energy during the mild weather. Additionally, the mild temperatures maintained open water in the sloughs and depressions in the wet meadow-lowland grasslands which may have attracted cranes to this habitat earlier than normal.

Table 1. Daytime distribution of staging sandhill cranes within bridge segments of the Big Bend stretch of the Platte River, 21 February-17 April, 1999.

Bridge segment	Location	Percentage of total cranes observed
1	Chapman-U.S. 34	0.43
2	U.S. 34-U.S. 281	9.05
3	U.S. 281-Alda	25.07
4	Alda-Wood River	4.85
5	Wood River-Shelton	5.35
6	Shelton-Gibbon	15.60
7	Gibbon-Nebraska 10	17.68
8	Nebraska 10-Kearney	9.97
9	Kearney-Odessa	3.34
10	Odessa-Elm Creek	6.42
11	Elm Creek-Overton	1.39
15	Overton-Lexington	0.85

Nearly 82% of the cranes observed in wet meadow-grasslands were in grazed grasslands (Table 2). Grazing is an important management tool for cranes because it creates lower stature vegetation which cranes prefer. Also, grazing may increase soil invertebrate numbers,

particularly scarab beetle larvae and earthworms, by adding organic matter to the grasslands. In corn fields, over 72% of the cranes were observed in grazed and stubble (ungrazed) fields (Table 3). During the spring, most of the corn fields were in stubble or grazed, however, as the season progressed, more corn fields were mowed or tilled. Consequently, availability of the different land use practices may have played a role in crane selection patterns of corn fields, but differences in corn availability (i.e., grazed and stubble fields probably had higher corn availabilities than the other land use practices) among the different land use practices likely played a greater role in crane selection patterns.

Because sandhill cranes frequently left some of the roost sites before sunrise, the number of roosting sandhill cranes we recorded during our aerial surveys fluctuated dramatically. For example, roosting sandhill crane numbers ranged from 284,500 birds on 15 March to 95,790 birds on 25 March. Another problem with the cranes leaving the roost before sunrise is that we may have missed some roost sites because all the birds departed before we flew over the site.

**Table 2. Proportion of total sandhill cranes observed in wet meadow-lowland grasslands under different land use practices in the central Platte River Valley during spring 1999.**

Land use practice	%
Grazed	81.6
Idle	1.0
Tilled	0.1
Mowed	0.3
Hayed	13.4
Burned	3.6

**Table 3. Proportion of total sandhill cranes observed in corn fields under different land use practices in the central Platte River Valley during spring 1999.**

Land use practice	%
Grazed	37.6
Stubble	35.3
Tilled	12.4
Mowed	14.3
Hayed	0.004
Burned	0.4
Silage	0.03

Most of the roosting cranes (96.8%) were observed among 5 bridge segments (2, 3, 4, 5, and 7) (Table 4). These bridge segments contain some of the widest river channels in the Big Bend Reach. Of the 279 individual roost sites we located during our flights, 66% occurred in cleared areas of the river and 34% were in areas not cleared. Unobstructed channel widths for roost sites averaged 233.7 meters, while unobstructed channel widths for randomly selected sites not used by cranes averaged 83.1 meters. Sixty percent of the roost sites were located in channels with widths of 200 to 350 meters.

In general, river flows were normal for most of the staging period. From 21 February-17 April, river flows averaged 2,262 cfs which is only 16 cfs below the long-term historic flows (1936-1997) for that period. During 2 days in late March, the J-2 return (i.e., the North Platte River flows) from Lake McConaughy was shut off for maintenance work which resulted in river flows briefly declining to 1,080 cfs. Sandhill cranes appeared to take advantage of the new roost sites created by the low flows; we conducted 2 aerial surveys during the shut-off and observed several groups of sandhill cranes in sections of the river that were normally too deep for roosting.

**Table 4. Distribution of roosting sandhill cranes within bridge segments of the Big Bend stretch of the Platte River, 1-29 March, 1999.**

Bridge segment	Location	Percentage of total cranes observed
1	Chapman-U.S. 34	0.01
2	U.S. 34-U.S. 281	25.60
3	U.S. 281-Alda	12.75
4	Alda-Wood River	16.92
5	Wood River-Shelton	26.57
6	Shelton-Gibbon	2.00
7	Gibbon-Nebraska 10	14.91
8	Nebraska 10-Kearney	0.03
9	Kearney-Odessa	0.00
10	Odessa-Elm Creek	1.19
11	Elm Creek-Overton	0.02
15	Overton-Lexington	0.00

#### Common Crane

During several weeks in March, 1 common crane, which is native to Asia, was regularly observed with sandhill cranes in crop fields and grasslands south of the Gibbon I-80 Interchange. Common cranes and sandhill cranes nest in close proximity to each other in Siberia and it is