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PROCEEDINGS



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Migration Chronology and Habitat Use by Sandhill Cranes in Central Nebraska

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During spring 1998, Trust staff conducted ground and aerial surveys of staging sandhill cranes (*Grus canadensis*) along the Platte River. We conducted ground surveys from 15 February through 25 April. Ground survey routes were delineated along roads in the Platte River Valley from Chapman to Overton and were generally located within 1-2 miles of the river. To minimize biases associated with conducting surveys during the same time period, we conducted surveys during early (sunrise-1100), midday (1101-1500), and late (1501-sunset) time periods. We counted all sandhill cranes along the route and recorded habitat-use. Five aerial surveys of the river were conducted between 20 February and 10 April 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 staff member videotaped crane roost locations with an 8 mm video camera, while another staff member recorded roost locations on aerial photos of the river. Estimates of crane abundances were later determined from the video tape. We also determined channel widths of individual roost sites and randomly selected sites not used by cranes and recorded if roost sites occurred in sections of the river that had been cleared.

Sandhill cranes began arriving in the Platte River Valley in late January. Approximately 5,000-10,000 sandhill cranes were along the Platte River by 14 February. By late February, over 66,000 cranes were within our study area. Crane numbers continued to increase through most of March with peak numbers (232,023 cranes) occurring during the sixth week (22-28 March). By the ninth week (12-18 April), most of the cranes had departed the valley. Sandhill crane distribution was not uniform among the 12 bridge segments. During the peak of the staging period (sixth week), nearly 75% of the cranes were observed among 4 bridge segments (3, 6, 7, and 8). Most of the sandhill cranes were observed in 3 habitat types. Overall, 52% of the daytime observations were in corn fields, 29% in wet meadow-lowland grasslands, and 15% in alfalfa fields. Early in the staging period (first and second weeks), most of the sandhill cranes (59-74%) were observed in wet meadow-lowland grasslands, but after the second week, most of the cranes (46-64%) were in corn fields. From the third week to the ninth week, 17-42% of the cranes were observed in wet meadow-lowland grasslands.

Sandhill crane numbers recorded during aerial surveys ranged from 1,825 birds on 20 February to 207,725 birds on 28 March. During the peak of the staging period, over 80% of roosting cranes were observed within 2 bridge segments (3 and 7). Sixty-five percent of the roost sites were located in cleared sections of the river, while 35% were located in sections that had not been cleared. The mean width for sections of the river used by sandhill cranes for roosting was 908 feet, while the mean width of randomly selected sections not used by sandhill cranes was 275 feet. Clearing of channel vegetation appears to be benefiting sandhill cranes.

The Trust plans to continue monitoring sandhill cranes on a long-term basis. Further analyses will incorporate GIS techniques to examine long-term trends in sandhill crane distribution patterns relative to habitat changes. Compositional analysis will be used to assess spatial and temporal sandhill crane habitat-selection patterns.