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#### WHOOPING CRANE ROOST SITE CHARACTERISTICS ON THE PLATTE RIVER, BUFFALO COUNTY, NEBRASKA

Whooping Crane (*Grus americana*) use of the Platte River in Nebraska has been a controversial topic, especially in the last decade. Pressures from water development interests seeking Platte River water conflict with the needs of wildlife and interests from the conservation community. Between spring 1942 and fall 1984 there were 13 confirmed Whooping Crane sightings on or near the Platte River (U.S. Fish and Wildlife Service, 1985). Lingle et al. (1984) described physical characteristics of a Platte River roost site used in 1983. This report describes the physical characteristics of the most recent known roost site on the Platte River.

#### METHODS

Observers were keeping watch over selected portions of the Platte River during the expected peak period of Whooping Crane migration through central Nebraska. Following a sighting of three Whooping Cranes roosting in the river, a bank to bank transect, positioned over the roost site and perpendicular to the river current, was measured at 3 m intervals. Width of sandbars and open water areas, height of sandbars above the water surface, depth of water, and distance from the roost site to woody vegetation were measured. A cross-section of the river was plotted from these measurements. Measurements were taken by personnel from the National Audubon Society, the Platte River Whooping Crane Trust, and the U.S. Fish and Wildlife Service within 5 hours after the Cranes departed. Stream discharge data were obtained from the U.S. Geological Survey in Ord, Nebraska.

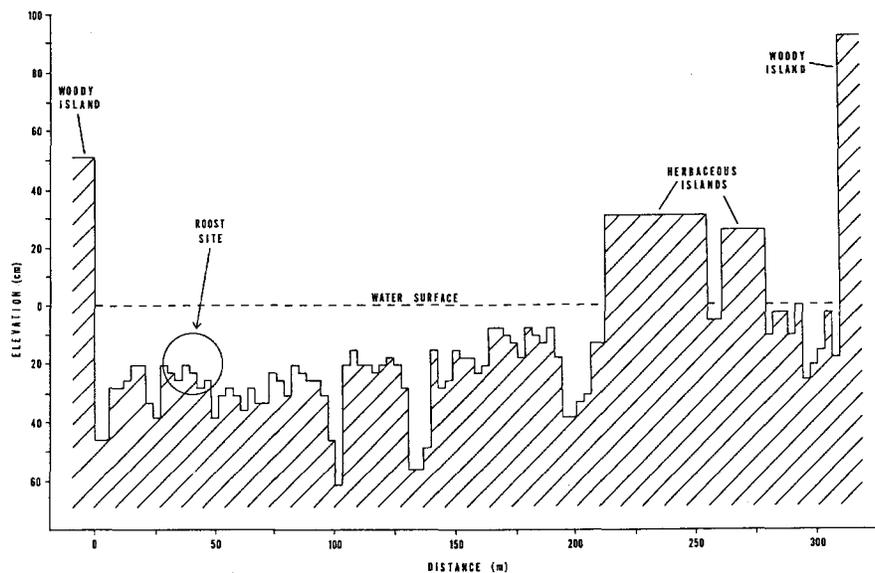
#### RESULTS

Details of the Whooping Crane sighting. At 0712 CDT on 21 October 1985, Marie Strom observed three adult-plumaged Whooping Cranes roosting on the Platte River. The site was on the National Audubon Society Lillian Annette Rowe Sanctuary (Sec. 17, T8N R14W Buffalo Co.). Although there was a cover of low clouds at the time of the sighting, the air was clear and calm, with good visibility. Strom, who had a pair of 7x35 binoculars, first observed the birds in the river channel at a distance of about 350 m east of her. One of the birds was flying toward her, very low over the water,

while the other two birds remained standing in the water. The first Crane made a wide circle toward the other two, gaining altitude as it flew. The other two Cranes leaned forward into the current, spread their wings, and departed west toward Strom. The three passed to the south of her, within 100 m, flying about 15 m above the surface of the water. They were last seen heading SSW. No vocalizations were heard.

**Riverine roost site characteristics.** The cross-section of the roost channel was plotted. Willows (*Salix* sp.) and cottonwoods (*Populus deltoides*) occurred on islands north and south of the roost channel and ranged from 1.5 to 2.5 m in height. The total unobstructed channel width was 311 m. Of this, 212 m, 68% of the total width, was a single water-filled channel in which the Cranes roosted, plus an additional 40 m of water-filled channel separated by low herbaceous islands less than 30 cm above the water surface. About 81% of the total unobstructed width was water-filled channel. The approximate site of the roost was 41 m from the nearest woody island and 137 m from the nearest herbaceous island. There was a 220° unobstructed view of 0.4 km from the roost site. Portions of this section had been mechanically cleared of woody vegetation over the past few years. The closest dwelling was 0.8 km from the site.

The roost was located on a shallowly submerged sandbar with a depth of 20–28 cm. Stream discharge ranged from 1890 to 1820 cfs on 20 and 21 October, respectively (U.S. Geological Survey, unpubl. data). These measurements were taken at the Kearney gauging station about 14 km upstream from the roost. Flows at the Grand Island gauging station were from 3300 to 3180 cfs on these same dates. (U.S. Geological Survey unpubl. data). This station is about 48 km downstream from the roost. Variation in discharge between the 2 gauging stations was probably the result of local precipitation patterns. This roost was within the area designated as Whooping Crane critical habitat (Federal Register 43(94);20938–20942.



Cross-section of the Whooping Crane roost channel on the Platte River

#### DISCUSSION

The roost site characteristics were very similar to those described by Lingle et al. (1984) and fit well within the parameters listed by Johnson and Temple (1980). The observed flows were higher than the 1700 cfs recommended by the Nebraska Game and Parks Commission (1983) for maintaining Whooping Crane migration habitat. We feel that although the observed conditions provided

usable roosting habitat on a managed site, higher flows would be necessary to provide optimum roosting habitat over a larger stretch of river where management is not conducted. The reason is that woody vegetation establishment on riverine islands results in aggradation of those sites, hence more water is needed to inundate them.

In 1983 the Platte River Whooping Crane Trust constructed a model which mapped optimum roost sites on the Platte River, based on a geographic database (Carrier et al. 1985). It is interesting to note that this site and the 1983 site fell within the area predicted by this model as the best roost site within their respective river segments. Also, two other confirmed Whooping Crane sightings (one in 1974 and one in 1980) were within 1 km of this recent roost, indicating a strong fidelity for this broad, open reach of river.

As part of Audubon's management of this area for Cranes and other migratory birds, most of this section of the river channel was mechanically cleared of encroaching vegetation in 1982. Additional clearing of this area was begun in 1985. The southern half of the channel adjacent to this roost site was mechanically cleared by waterfowl hunters in 1984 and 1985. The repeated observations of Whooping Cranes in this area emphasizes the importance of the Platte River in providing migration habitat as well as the need to maintain adequate instream flows in the river for this endangered species,

#### Comparison of riverine Whooping Crane roost characteristics

Characteristic	Johnson and Temple (1980)	Lingle et al. (1984)	This site
1 Channel width	155 to 365+ m	350 m	311 m
2 Flow	Slow, 1-4 mph	Not measured	Not measured
3 Water depth	5-30 cm	10-13 cm	Less than 30 cm
4 Vegetation	Unvegetated	Unvegetated	Unvegetated
5 Substrate	Fine, usually sand	Fine sand	Fine sand
6 Horizontal visibility	Unobstructed view from bank to bank and at least 200 m upstream and downstream	Unobstructed view from bank to bank, upstream and downstream view 300-350 m.	Unobstructed view of 220° within 350 m of roost
7 Overhead visibility	Open	Open	Open
8 Proximity to feeding site	4.8 km for Platte River valley sites	1-2.8 km.	Undetermined
9 Isolation	Usually 0.4 km from human developments	0.2-0.8 km with wooded visual barrier	0.8 km with wooded visual barrier
10 Sandbar characteristics near roost	1-2° slope, less than 30 cm topographic relief, no banks over a few cm.	Closest sandbar was 26 m with 1-2° slope, less than 5 cm relief, no high banks.	Closest sandbar was 137 m with 1-2° slope, less than 30 cm relief, no high banks.

#### ACKNOWLEDGMENTS

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#### LITERATURE CITED

- Currier, P. J., G. R. Lingle, and J. G. VanDerwalker. 1985. Migratory bird habitat on the Platte and North Platte rivers in Nebraska. The Platte River Whooping Crane Critical Habitat Maintenance Trust, Grand Island, Neb.
- Johnson, K. A., and S. A. Temple, 1980. The migratory ecology of the whooping crane. U.S. Fish and Wildl. Serv., Office of Endangered Species. Unpubl. rep. contract 14-16-0009-78-034.

- Lingle, G. R., P. J. Currier, and K. L. Lingle, 1984. Physical characteristics of a Whooping Crane roost site on the Platte River, Hall County, Nebraska. *Prairie Nat.* 16:39-44.
- Nebraska Game and Parks Commission, 1983. Biological opinion, Little Blue Natural Resource District - Catherland Project. Unpubl. report, Lincoln.
- U.S. Fish and Wildlife Service, 1985. Whooping Crane recovery plan. U.S. Fish and Wildl. Serv., Albuquerque NM. Draft rep. 190 pp.
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