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AERIAL SEARCHES FOR WHOOPING CRANES ALONG THE PLATTE RIVER, NEBRASKA

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The endangered Whooping Cranes (*Grus americana*) that migrate between Wood Buffalo National Park, Alberta and Northwest Territories, and the Aransas National Wildlife Refuge Area, Texas, roost at many aquatic stopover locations (Austin and Richert 2001) including the central Platte River, Nebraska (Johnson

1982; Lingle et al. 1984, 1986, 1991; Faanes et al. 1992; Richert 1999). Under the U.S. Endangered Species Act, 90 km of the central Platte have been designated as critical habitat for the Whooping Crane, although suitable Platte River habitat for Whooping Crane and Sandhill Crane (*Grus canadensis*) continues to decline (Sidle et al. 1989, Currier 1997). The Whooping Crane has a long history of using the Platte River, and public agencies and private organizations have endeavored to learn more about Whooping Crane roost sites to enhance conservation of the species through regulatory and other efforts (Sidle et al. 1990a; Faanes 1992; Faanes and Bowman 1992; Ziewitz 1992). On the average, about 7% of the Whooping Cranes use the central Platte River as a stopover during migration (National Research Council 2005). Here we describe our aerial survey technique to locate roosting Whooping Cranes.

Knowing the locations of Whooping Cranes roosting on the Platte River is necessary to improve our understanding of crane distribution and habitat characteristics of roost sites on the river. Records of roosting Whooping Cranes have largely relied upon observations reported by the public to government agencies or conservation organizations. There has been a need, however, for a more consistent, objective method of determining roost site locations. One methodical approach to locate Whooping Cranes is to fly in a light aircraft along the Platte River at dawn or dusk. At dawn, the birds are close to leaving the roost to migrate north or south, or to feed in adjacent wet meadows and croplands. At dusk, the birds may be just arriving from meadows and cropland. Whether at dawn or dusk, there is a narrow window to visually detect roosting Whooping Cranes.

During 23 March to 1 May, 1984-1993, we flew a Cessna 172 daily, weather permitting, along the Platte River from east to west between the Highway 34 bridge southeast of Grand Island, Nebraska, and the J-2 irrigation canal return near Lexington (143 km). One of us (JGS) piloted the aircraft during 1987-1993, accompanied by one observer (WGJ, CAF, or other). Our ground speed was about 110 kph, our altitude was 120-150 m above ground level (agl), and we flew along the south bank of the Platte River. We departed Hall County Regional Airport north of Grand Island at 0700 CST and usually returned around 0840 CST via the north bank of the Platte. During 1987-1989 springs, we also flew along the Platte during the evening beginning at 1900 CST and returning to the airport by 2040 CST. Fall surveys were carried out during 1-31 October 1987-1990 from 0700 to 0840 CST. Upon detecting a suspect Whooping Crane, we descended to 60-90 m agl to inspect the species or object. The Whooping Crane is easily visible, as are scattered American White Pelicans (*Pelecanus erythrorhynchos*) (Sidle et al. 1990b, Sidle et al. 1993). We commonly inspected the pelicans as well as large pieces of white plastic, very light-colored drift wood, and an occasional white cow.

We carried out 191 spring morning flights, 66 spring evening flights, and 106 fall morning flights for a total of 363 flights (508 hr of flight time). We made 35 Whooping Crane observations (22 Whooping Cranes), typically in the wide channels described by Faanes et al. (1992). Eighteen of these Whooping Crane observations were of the same Whooping Crane that roosted daily with flocks of Sandhill Cranes during March-April, 1987 (Faanes and Lingle 1988). We consistently located this Whooping Crane without pre-flight knowledge of its location and despite its presence in large flocks of Sandhill Cranes. Of the remaining 17 observations, nine observations (11 Whooping Cranes) were of Whooping Cranes that had already been reported by the public the evening prior to a

morning flight or in a diurnal observation reported before an evening flight. We made eight observations of ten unreported Whooping Cranes at five separate locations. For a substantial investment in flight and personnel time, the aerial surveys almost doubled the number of already observed Whooping Cranes.

The central Platte River valley is flat with open meadows and cropland. Feeding Whooping Cranes are easily visible in the valley and there is enough sensitivity to the Whooping Crane that the likelihood of ground sightings of Whooping Cranes is high. However, some Whooping Cranes pass unnoticed or are observed but not reported. They are, after all, one of the rarest species on Earth. During our 1984-1993 aerial surveys, the world Whooping Crane population ranged from 86 to 146 birds and numbered 237 in 2006 (U.S. Fish and Wildlife Service news release dated 18 December 2006).

Discussion about the Whooping Crane's use of the Platte River continues (Chavez-Ramirez 2004), although the central Platte is still recognized as important stopover habitat (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2005). The National Research Council (2005) concluded that there are no apparently suitable alternatives to replace the central Platte River in its function as habitat for migrating Whooping Cranes, and loss of Platte River habitat would have potentially serious consequences for the species. Combined aerial and ground detection of Whooping Cranes will likely reveal more about the stopover behavior of the Whooping Crane along the Platte River.

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