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SANDHILL CRANE STAGING AND WHOOPING CRANE MIGRATORY STOPOVER DYNAMICS IN RESPONSE TO RIVER MANAGEMENT ACTIVITIES ON THE CENTRAL PLATTE RIVER, NEBRASKA, USA

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MAMMALIAN NEST PREDATION IN MISSISSIPPI SANDHILL CRANES

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Abstract: Low recruitment is the largest challenge facing the recovery of the critically endangered Mississippi sandhill crane (MSC, Grus canadensis pulla). Lack of information on nest predation and the impacts of specific nest predator species hinder effective management to lower nest predation rates. I have completed my first year of a 2-year research project on mammalian predation at the MSC National Wildlife Refuge in Gautier, Mississippi. I aim to identify common nest predators, determine if nest predation rates are higher in certain nesting habitats than others, and if different mammalian predators are more common in certain nesting habitats than others. I also aim to establish if there is a correlation between the most abundant predators in scent surveys and the most common nest predators. Scent station surveys are used to determine common mammalian predators throughout the refuge. I ran 7 transects of scent stations for a total of 10 days throughout winter and early spring when mammalian movement was likely to be highest, using fatty acid tablets as the attractant. The most abundant predator recorded was the coyote (Canis latrans), followed by the red fox (Vulpes vulpes) and raccoon (Procyon lotor). Nest cameras are used to detect nest predation events and identify specific predators. Infrared heat and motion sensor digital cameras (Reconyx Rapidfire, Holmen, WI) were installed at 22 of the 32 nests so far this season. Increasing the knowledge on the presence and behavior of mammalian predators on the refuge and in relation to the nesting sandhill cranes will help develop more effective management to increase recruitment.

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Abstract: The Central Platte River Valley (CPRV) is a critical stopover for migrating whooping cranes (Grus americana) and the most important staging area for sandhill cranes (G. canadensis) in North America. Due to reduced water flows caused by human activities, the Platte River no longer follows its traditional hydrograph which consisted of high spring flows that produced scouring action that eliminated vegetation. To provide adequate crane roosting habitat during stopover and staging periods, annual and woody vegetation has been mechanically cleared on eastern portions of the CPRV since 1980. Staging sandhill crane riverine roosting area has decreased since 1950 (160 km) to the present (<80 km) with roosts concentrated on the eastern managed area (approximately 60 km). Sandhill crane roosting has dramatically decreased in western reaches of the CPRV between 1945 (90% of population) and 2007 (10% in 2000, <1% in 2007) as a result of woody vegetation encroachment on the river and no management. Whooping crane stopovers in western areas of the CPRV have decreased over time (80% of total observations in 1950-1979, 17% in 1980-2005) while increasing proportionally overall in the eastern portion of the CPRV. Individual sections show higher density and longer permanence of roosting cranes in areas with more intensive channel management. Mechanical clearing is necessary to recreate the appropriate conditions (open and wide river) for roosting cranes during spring and fall migration.

Key words: Grus americana, Grus canadensis, management, Nebraska, Platte River, sandhill crane, whooping crane.