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## HOME RANGE SIZE AND HABITAT USE OF MISSISSIPPI SANDHILL CRANE COLTS

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**Abstract:** Recruitment in the endangered Mississippi sandhill crane (*Grus canadensis pulla*) is minimal, with the population of 110 sustained by an annual augmentation of captive-reared juveniles. Suitability of available habitat quality is likely involved in nesting success. Thousands of hectares of pine savanna were restored for crane use, but it is not clear how much was being used by crane families. We used 3-g subcutaneous transmitters to radio-tag 27 colts over 6 years from 1998 to 2002 and 2004 to determine home range and habitat use. Using a hand-held receiver, H-antenna and standard triangulation, location data were collected twice daily along with age and habitat type. We used Hawth's GIS Tools to calculate a minimum convex polygons as an indicator of home range. We collected data on the colts from 23 nests and 16 different territories. There were 1,334 total locations with the number of locations per colt ranging from 3 to 130. The average age at tagging was 11.6 days. The home range size doubled about every 30 days until fledging: averaging 30 ha for colts 25 days and younger, 63 ha for colts 26-50 days, and 115 ha for colts older than 50 days. Colts were most often located in savanna habitat accounting for 69% of use, followed by water (11%), hydric drain (7%), pine flatwoods (6%), agricultural (5%), road (2%), and estuarine marsh (<1%). For those colts that survived and were tracked past 50 days old, total home range size varied greatly, from 50 to 400 ha, likely indicating habitat quality. Smaller home ranges included open water, savanna, and agricultural habitat. Larger home range size was observed more frequently in areas including bigger pineywoods tracts. Results support refuge habitat management goals to restore savanna from pine flatwoods and increase scattered shallow ponds. Additional analyses should focus on habitat use vs. availability, density-based home range, and further descriptors of successful territories.

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**Key words:** *Grus canadensis pulla*, habitat use, home range, Mississippi sandhill crane, pine savanna, radio-telemetry, territory.

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