

## TEMPORAL DYNAMICS AND FLOCK CHARACTERISTICS OF SANDHILL CRANES IN THE PLATTE RIVER VALLEY, NEBRASKA

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**Abstract:** I gathered information on crane flocks in the Platte River Valley during spring staging of 2002-2004. The objective of this work was to evaluate hypotheses regarding flock size and formation using sandhill crane (*Grus canadensis*) flocks observed in the Platte River Valley. Specifically, I wanted to: (a) evaluate the effect of period of migration, geographical location, and habitat type on flock size, and (b) evaluate predictions regarding ecological theories of flock formation and behavior based on concentrated resources, accessibility, social facilitation, and potential predation response. Flock size overall was influenced negatively by period of migration ( $P < 0.001$ ) and positively by geographical location ( $P < 0.01$ ). Total crane abundance (55%) of flocks were located in corn fields, but flock sizes were larger and significantly different ( $P < 0.001$ ) in low grasslands (mean = 666.4). There were no significant differences in flock size among other habitat categories (corn = 316, high grassland = 301.8, wet meadow = 214.4, and alfalfa = 204.9). The proportion of cranes foraging in a flock in corn fields decreased over time while it increased in flocks foraging in low grasslands. Proportion of cranes resting increased over time in corn fields while it decreased in low grasslands. There was a negative relationship between flock size and proportion of cranes foraging in a flock in corn fields but not in grasslands. The relationship between observed and predicted patterns (based on ecological flock formation theories) of crane flocks are evaluated and discussed.

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**Key words:** flock formation, *Grus canadensis*, habitat type, Nebraska, Platte River Valley, sandhill crane.

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