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Nesting Ecology of Sedge Wrens in Hall County, Nebraska

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The status of the Sedge Wren (*Cistothorus platensis*) in Nebraska is not well known. Cink (1973) summarized summer records from 1867 to 1971 and described only a few nest records. One nest discovered on 28 August 1902 at Capitol Beach, Lancaster Co., was assumed empty, apparently because of the late date. Bedell (1987) recorded July and August sightings in southcentral Nebraska and raised the question of whether these birds were migrants or nesting.

Sedge Wrens are frequently polygynous (Crawford 1977, Burns 1982) and may exhibit two waves of nesting effort in some areas (Burns 1982). Nest initiation appears to fall into two periods depending on the latitude; one from early May to June in Michigan (Walkinshaw 1935), Minnesota (Burns 1982), North Dakota (Stewart 1975), and Wisconsin (Manci and Rusch 1988), and the other beginning in late July through August in Kansas (Cink pers. comm., Williams 1981) and Arkansas (Meanley 1952) in addition to more northern latitudes as cited above. This may explain why Sedge Wrens are often not encountered during "typical" May and June breeding bird censuses, especially in southern and western portions of their nesting range (Robbins et al. 1986)

This paper compares nesting densities on a grazed versus an ungrazed area and describes the nesting phenology of Sedge Wrens during the 1988 nesting season in Hall Co.

Study area and methods

The study area was the sedge meadows located on Mormon Island Crane Meadows, Hall Co., Nebraska (Lingle and Hay 1982). Four transects, 2 in an ungrazed pasture and 2 in an adjacent grazed pasture, were established. Each transect was about 0.4 mi. in length and ran perpendicular to the sinuous topography of the relict channels meandering throughout the meadows. A chi-square test was used to determine differences in the number of Wrens counted in the grazed versus ungrazed pastures.

Censuses were conducted 3 times on each transect between 12-18 August 1988. Morning counts occurred between 0736 and 0940 h CDT. An observer recorded all Wrens observed or heard and estimated the perpendicular distance each Wren was from the transect line. Population estimates were derived by estimating the area censused and recording the number of males present within each polygon.

Eleven adult Sedge Wrens were captured during 19-25 August by driving them into mist nests. Each bird was banded and released. During banding operations an active nest was found and its fate was determined through repeated visits.

Results

Occurrence

Sedge Wrens arrived in the area on 26 July and were present at least through 18 October 1988. First arrivals were seen on 28 June 1984 (Labedz 1984) and on 1 August, 16 August, and 20 August 1985-1987 respectively (Bedell 1987, Lingle unpubl. data). This species has not been recorded on MICM during breeding bird census studies, which have been conducted annually between 23 May to 20 June since 1980.. Departure dates previous to 1988 were not determined.

Nesting populations and habitat use

A total of 123 ($\bar{X}$ = 41 $\pm$ 5) Sedge Wrens were counted during all censuses combined (Fig. 1, Table 1). There were significantly more Wrens counted on the ungrazed versus grazed pasture ($p < .05$). Individual transect

Table 1. Sedge Wren nesting population estimate

	Ungrazed	Grazed	Combined
Number counted	86	37	123
$\bar{X}$ Wren/census	29 $\pm$ 4	12 $\pm$ 2	41 $\pm$ 5
Density (males/100 ac.)	48	18	32

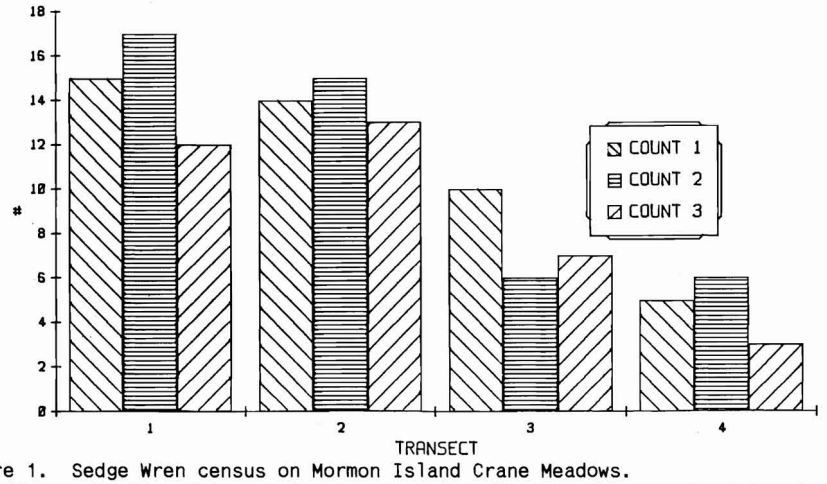

Figure 1. Sedge Wren census on Mormon Island Crane Meadows. Transects #1 and 2 were in an ungrazed pasture, and transects # 3 and 4 were in a grazed pasture.

counts had from 3 to 17 Wrens. Sedge Wrens were most prevalent along the margins of the relict channels (sloughs), avoiding the higher ground between the sloughs. Predominant vegetation where Wrens occurred was water sedge (*Carex aquatilus*). common ragweed (*Ambrosia artemisifolia*), and river bulrush (*Scirpus fluviatilus*). Cattle were in the grazed area from 1 July to 14 August at a stocking rate of 1.0 AUM (animal unit month) per acre.

Nest observations

Three nests were discovered on 24 August during banding operations. Two were empty and may have been dummy nests and the other contained 3 eggs. There were 4 eggs present on 25 August and 5 eggs on 1 September. The nest contained 2 blind and naked hatchlings on 8 September and 3 hatchlings on 10 and 13 September. The other two eggs, which were addled, were collected. Three nestlings were banded on 18 September at 11 days of age. Rectrices and remiges were emerging, as were most contour feathers. The site was visited next on 4 October. Although an adult Wren was in the vicinity, there was no sign of the nest. It was assumed the young fledged, but what happened to the nest is unknown.

Discussion

Sedge Wrens established territories and initiated nesting in late July through mid-August in Hall Co. Although singing males have been reported in June in eastern Nebraska (Cink 1973, Johnsgard 1980), their breeding season may shift between years at the same site (Burns 1982). A nest with 3 nearly fledged nestlings was found on 28 August 1988 in Boone Co. (W. Mollhoff, pers. comm.). An adaptive advantage to late nesting is reduced competition for available resources. It is not known if birds nesting in the late summer have nested earlier elsewhere in their range. This aspect of their nesting behavior needs clarification.

Nesting densities (expressed as males/100 acres) have been as high as 47 in Illinois (Birkenholz 1984), 29 in Iowa (Wilson 1983), 12 in Kansas (Cink and Sepahi 1983), 78 in Minnesota (Hanowski and Niemi 1983), 60 in North Dakota (Higgins at al. 1984), 72 in Wisconsin (Manci and Rusch 1988) , and 350 in Michigan (Walkinshaw 1935). In comparison, densities from this study were somewhat lower.

We believe the higher density of Sedge Wrens in the ungrazed areas was due to denser nesting cover than that in the grazed area. Grazing and trampling by cattle reduced vegetation stature, apparently making it less attractive to Wrens. Physiography was similar in both areas. Both pastures were dry, with no standing water in the sloughs.

The disappearance of the nest in this study is puzzling. Picman and Picman (1980) observed male Sedge Wrens remove nest material from an

artificially placed Marsh Wren (*Cistothorus palustris*) nest and use it for their own nest. Burns (1982) suspected the destruction by another wren of a Sedge Wren nest under observation. It is possible that the nest in our study was removed by the Wrens themselves. Observations of nests in the future may shed light on this hypothesis.

This nest is the westernmost documentation in Nebraska. On 19 August 1988 we heard a singing male in a sedge meadow in Sec. 15, T8N, R19W, Phelps Co.,but no nest was found. Sedge Wrens are possible breeders in northeast Colorado (A.O.U. 1983). A singing male was reported last August at Arapahoe NWR, Colorado, northwest of Rocky Mountain National Park (H. Kingery, pers. comm.). Perhaps closer scrutiny of Sedge Wrens in August may better define their western range in the central Great Plains.

Acknowledgments

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