TABLE 4
EFFECTS OF VEGETATION ON NEST PRODUCTIVITY AND SUCCESS OF LOGGERHEAD SHRIKES IN CENTRAL MISSOURI (1980–81)

Vegetation	% success		
	Hatching	Fledging	Nest
Multiflora rose	78.6 (6)*	32.4 (6)[a]	42.9 (7)[c]
Deciduous trees	92.1 (11)	75.4 (11)[b]	93.8 (16)[d]
Eastern redcedar	85.5 (26)	52.7 (23)	62.5 (32)[e]

* Numbers in parentheses are sample sizes.
[ab] Paired difference significant (χ^2 = 4.82, df = 1, $P < 0.05$).
[cd] Paired difference significant (χ^2 = 7.59, df = 1, $P < 0.05$).
[de] Paired difference significant (χ^2 = 5.18, df = 1, $P < 0.05$).

provided poorer support (easily tilted by winds). Nest success was highest in deciduous trees, probably due to their thorny nature (Table 1). Siegel (1980) also found success lowest in multiflora rose, and highest in osage orange. There was no significant difference (χ^2 = 0.04, df = 1, NS) in nesting success between nests in isolated trees and nests in hedges.

Loggerhead Shrikes were considered multibrooded by Miller (1931) and Bent (1950), but Lohrer (1974) found them regularly double-brooded in Florida. No evidence of double broodedness was observed in Colorado, although renesting was common (Porter et al. 1975). In Alabama, Siegel (1980) reported that 3 of 20 successful pairs nested again. He also noted that 4 of 11 pairs renested after an initial nesting failure. In the present study 7 of 38 successful pairs (18.4%) attempted a second nest, and 5 of 17 pairs (29.4%) with an initial nesting failure renested. All second nests were built within the original territory. Perhaps some pairs left the study area before renesting. In areas where weather conditions are favorable, and the nesting season is long, shrikes appear to be double brooded (i.e., Florida [Lohrer 1974], California [Miller 1931]). At higher latitudes the number of birds raising a second brood, after a successful initial nesting attempt, declines (Porter et al. 1975).

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Adaptive response of nesting Clapper Rails to unusually high water.—On 13 April 1980, I observed Clapper Rails (*Rallus longirostris*) respond to high water by building their nest higher. The nest was in *Spartina alterniflora* in a saltwater marsh in Ocean Springs, Jackson Co., Mississippi. Within 24 h more than 20 cm of rain fell in the area. When the rails were first observed at 09:30 it had just stopped raining. One rail was on the nest, a second, judged to be the male by its brighter orange bill and more distinctive flank and head markings, was hurriedly adding material to the nest. I watched for 75 min as the male worked—at first hardly leaving the nest to get material, but later moving more than a meter away. He put everything into his efforts, using wings to balance himself, bracing with his feet against live *Spartina* as he tugged at brown stems, almost flipping over backwards as he rushed material to the nest or to the incubating female. The female moved only to tuck bits under her and to rearrange material around the nest. During a 3-min period, the male made 17 trips to the nest. This rate was maintained for over an hour, and then, when it started to rain again, the male's pace seemed to quicken but could not be timed because of reduced visibility.

During a lull in the rain I examined the nest. The male retreated 30 m, but the female remained on the nest until I was within 0.6 m, at which point she stepped to the rim of the nest to reveal her nine eggs. The water in the marsh was rising and near the nest rim so I retreated.

On 21 April I found the female still incubating nine eggs and equally tenacious. There had been little rain since 13 April and the water level in the marsh had dropped to 41 cm below the nest rim. On the 21st the nest measured 19.5 cm deep (from rim to bottom) and 31 cm across. The diameter of the enlarged nest (31 cm) exceeded the largest Clapper Rail nest (30.5 cm) $\bar{x}$ = 23.6 cm, N = 63) reported by Kozicky and Schmidt (Auk 66:355–364, 1949), suggesting that enlargement may have been outward as well as upward.

Several authors (e.g., Bent, U.S. Natl. Mus. Bull. 135, 1926; Adams and Quay, J. Wildl. Manage. 22:149–156, 1958) recognized high tides and floods as threats to Clapper Rails. None mentions a response to rising water as observed in this case. Zucca (Wassman J. Biol. 12:135–153, 1949) observed 12 nests during 3 days of high tides; several nests were lost, some damaged, all were soaked, but no mention was made of nest enlargement. Meanley (N. Am. Fauna No. 69:60, 1969) observed a King Rail (*Rallus elegans*) build up its cattail nest above rising water in a roadside ditch and another building its nest up when the rice field in which it was located was flooded. Both of these nests were built up by single incubating birds working from the nest.

Lack of previous observations of this type of behavior in Clapper Rails is probably due to the wave action which usually accompanies high tides and which would thwart nest reinforcement activity. The extreme, but gentle rise in water level in this instance put little disruptive stress on the nest and allowed the bird to work without fighting waves or a strong current. My observation that the gathering of nest material and most of the nest reinforcement activity was done by the male also parallels Meanley's (1969:60) observations of nest construction by male King Rails.—JEROME A. JACKSON, *Dept. Biological Sciences, Mississippi State Univ., Mississippi State, Mississippi 39762.* *Accepted 13 July 1982.*

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Chick movements in Common Poorwills.—Common Poorwill (*Phalaenoptilus nuttallii*) chicks are reported to move frequently during the nestling stage. Evans (Wilson Bull. 79:453, 1967) re-examined a poorwill nest in Nevada six times and noted five changes of site involving moves from 2.1–10.6 m. In Oregon, Swisher (N. Am. Bird Bander 3:152–155, 1978) noted that a brood moved 1 m, then returned to the original nest-site and then apparently left the nest area. Orr (Auk 65:46–54, 1948) found that 1–2 day-old undisturbed chicks moved 0.15 m to cover.

In 1981 we recorded moves of a poorwill brood in the Rosebud Buttes, 12 km SE Rosebud, Rosebud Co., Montana. The area was dominated by ponderosa pine (*Pinus ponderosa*) and Rocky Mountain juniper (*Juniperus scopulorum*).