

SHORT COMMUNICATIONS

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RATES OF OPEN-FIELD FORAGING BY THE MISSISSIPPI KITE (*ICTINIA MISSISSIPPIENSIS*)

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KEY WORDS: *Mississippi Kite*, *Ictinia mississippiensis*; *foraging success*; *foraging habitat*.

During the past 50 yr, populations of the Mississippi Kite (*Ictinia mississippiensis*) appear to have recovered from earlier declines (Levy 1971, Parker 1977, Parker and Ogden 1977, Gliniski and Ohmart 1983). Although several hypotheses have been proposed to explain the recovery, the reason or reasons remain unclear. The hypotheses propose that habitat changes on the breeding or wintering grounds have allowed for this recovery (Parker and Ogden 1977, Gliniski and Ohmart 1983). These hypotheses stress changes in the habitats that either increase the nesting or foraging opportunities for kites. While several studies describe nesting habitats used by Mississippi Kites (Sutton 1939, Jackson 1945, Gliniski and Ohmart 1983, Cely 1987), only one documents foraging success (Skinner 1962). Skinner found that kites averaged six successful captures of insects per 40 min interval while foraging over an open field in Alabama. I report on the results of observations of Mississippi Kites foraging over a large open field in southern Louisiana.

STUDY AREA AND METHODS

The study area was located in the Sherburne Wildlife Management Area approximately 5 km southeast of the town of Krotz Springs, in southern Louisiana. The area consisted of an approximately 1000 ha old field surrounded by bottomland hardwood forest on three sides and bordered by Big Alabama Bayou on the fourth. Foraging by Mississippi Kites was observed using 7 × 35 binoculars and a 20× spotting scope. Individual birds were observed for 2-min intervals which was long enough to include one or more forage attempts and short enough to insure that birds would remain in suitable viewing range for the entire period. During each foraging interval, I recorded the number of successful prey captures. Prey capture success or failure was determined by observing whether or not the individual fed following a prey capture attempt. After each foraging interval, a different individual was chosen to observe for the next foraging interval.

During July–August 1995 and May–August 1996, observations of Mississippi Kite foraging were conducted on 10 d between 1000–1530 H. All observations were made under partly cloudy to sunny and calm weather conditions.

RESULTS AND DISCUSSION

The foraging behavior observed was similar to that described by Skinner (1962). Kites soared at heights of 50–100 m and made steep stoops to capture insects. Once prey was captured, the birds would level off and eat the prey while soaring over the field (Skinner 1962). The number of kites observed foraging ranged from 1 to >50, with an average of 4–6 individuals observed each day. These numbers are similar to the average of 10 reported by Skinner (1962).

Mississippi Kites were observed for 248 2-min foraging intervals during this period. The kites caught an average of 1.18 ± 0.076 (± 1 SE, range = 0–5) prey items per 2-min foraging interval for a total of 292 total prey items. This is a much higher rate of prey capture than previously reported. Skinner (1962) reported an average open field foraging rate of 6 prey items per 40-min interval or 0.3 prey items per 2-min foraging interval. His observations were limited to a 5-d period in July (Skinner 1962).

On a monthly basis there were significant differences between the rate of prey item capture (ANOVA, $F = 3.036$, $df = 3, 244$, $P = 0.03$). The highest success rates were observed during May and the lowest during August (Fig. 1). Some of the differences in foraging rates between months may be explained by juvenile birds foraging in July and August. Although the ages of all foraging birds were not determined, some juveniles were included in the July and August samples. All observed prey captures were insects. Dragonflies and large grasshoppers were very abundant in this field and have been reported as main prey for this species (Wayne 1906, Sutton 1939, Jackson 1945, Skinner 1962).

The results of this study suggest that Mississippi Kites can be much more efficient at foraging over open fields than reported by Skinner (1962). Most importantly, the results point out the need for comparative data of kite foraging in other habitats and in other locations. Together these data would allow for a better understanding of the foraging abilities of this species and might eventually lead to a better understanding of its recovery.

RESUMEN.—Las poblaciones de *Ictinia mississippiensis* en América del Norte han aumentado recientemente. Aunque las modificaciones del habitat son consideradas

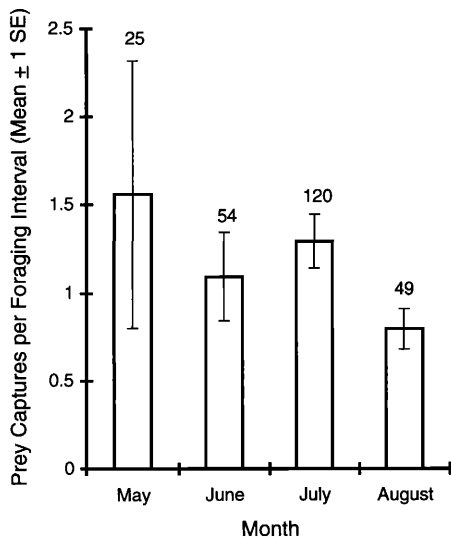


Figure 1. Monthly differences in the mean number of prey items captured by Mississippi Kites (*Ictinia mississippiensis*) during 2-min foraging intervals.

como las causas de este aumento, existen pocos estudios que puedan cuantificar esto. Las observaciones sobre el forrajeo de *Ictinia mississippiensis* en ambientes abiertos en Louisiana sugieren que esta especie es muy eficiente en su forrajeo en este habitat. *Ictinia mississippiensis* captura un promedio de 1.18 presas por cada 2 minutos de intervalo de forrajeo. Esta es una tasa exitosa mucho mayor

que las anteriores en ambientes abiertos. Se hace necesaria la comparación de datos de forrajeo colectados en distintos habitats y localidades.

[Traducción de César Márquez]

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EVALUATION OF NECK-MOUNTED RADIO TRANSMITTERS FOR USE WITH JUVENILE OSPREYS

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KEY WORDS: *Osprey*; *Pandion haliaetus*; transmitters; neck-lace; retention.

Transmitters on necklaces, originally used on game birds, resulted from a modification of neck-mounted markers developed in 1970 in response to selective pre-

dation on individuals with back-mounted markers (Pyrah 1970, Amstrup 1980). For larger birds, neck-mounted transmitters are used infrequently; backpack-style harnesses are preferred for their tenacity and durability in long-term research (Day et al. 1980, Marion and Shamus 1977, Young and Kochert 1987). For short-term research using short-lived radio transmitters, mounting methods must be highly reliable for the length of the study but need not be permanent. In a study of fledgling behavior, I mounted radio transmitters around the necks of Os-

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