

## LITERATURE CITED

- BENT, A. C. 1942. Life histories of North American flycatchers, larks, swallows and their allies. U.S. Natl. Mus. Bull. 179:1-555.
- CLARK, G. A. JR. 1967. Individual variation in natal pterylosis of Red-winged Blackbirds. *Condor* 69:423-424.
- COLLINS, C. T. 1990. Intraspecific variation in the natal pterylosis of the Ochre-bellied Flycatcher (Tyrannidae). Bull. Br. Ornithol. Club, in press.
- AND K. BENDER. 1977a. The natal pterylosis of the House Finch. Bull. South. Calif. Acad. Sci. 76:209-211.
- AND ———. 1977b. Cervical neossoptiles in a Neotropical passerine. Bull. Br. Ornithol. Club 97:133-135.
- AND M. H. KEMP. 1976. Natal pterylosis of *Sporophila* finches. *Wilson Bull.* 88: 154-157.
- AND K. M. MCDANIEL. 1989. The natal pterylosis of closed-nest building tyrant flycatchers (Aves:Tyrannidae). Bull. South Calif. Acad. Sci. 88:127-130.
- MARRA, P. P. 1990. Nest, eggs, and young of the Green-and-Gold Tanager, with notes on timing of breeding. *Wilson Bull.* 102:346-348.
- MINSKY, D. AND C. T. COLLINS. 1983. The natal pterylosis of *Amphispiza* sparrows. *Condor* 85:375-376.
- SCHROEDER, D. A. 1985. Breeding biology and population limitation in the Black Phoebe (*Sayornis nigricans*) in southern coastal Southern California. Ph.D. diss., Univ. Calif. Santa Barbara.
- WETHERBEE, D. K. 1957. Natal plumages and downy pteryloses of passerine birds of North America. Bull. Am. Mus. Nat. Hist. 113:339-436.
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**An incidence of second brood production by an Eastern Wild Turkey.**—Renesting after loss of an initial nest has been well documented for Wild Turkeys (*Meleagris gallopavo*) (Williams et al. 1976, 1980). Based on a sample of 123 hens in Florida, Williams and Austin (1988) reported 57% renesting for hens that had their nests disrupted during the laying period, 28% for hens whose nests were disrupted during incubation, and no renesting after incubating more than 18 days. Turkeys are not known to renest following loss of a brood, and reports of Wild Turkeys hatching two broods in one season have not been published (Williams 1981). This phenomenon has only recently been documented for the Northern Bobwhite (*Colinus virginianus*), a species of the same family (Phasianidae) (Sermons and Speake 1987). We describe here the hatching of two broods in one season by a free-ranging Eastern Wild Turkey (*M. gallopavo silvestris*).

These data were collected during a study conducted in Thomas and Grady counties, Georgia. For a detailed description of the study area see Sisson et al. (1990). Reproductive efforts of 26 Wild Turkey hens were monitored from 1 March 1988 to 31 July 1990. Turkeys were captured in late winter with alpha-chloralose treated corn (Williams 1966), leg banded, outfitted with solar-powered radio transmitters with motion switches (Everett et al. 1978),

and released near the capture site. Hens were monitored daily to determine onset of incubation, at which time nests were flagged as described by Everett et al. (1980). Nests were located after hens departed to obtain data on nest success, clutch size, and nesting habitat variables. Hens successfully hatching broods were located three times daily to obtain data on brood habitat preference, and visual contact was made every two weeks to determine poult mortality.

Turkey #966 was one of 12 hens monitored during the 1990 reproductive season. Daily locations after winter flock break-up in late March revealed that #966 began continuous incubation of her first nest on 16 April. She was checked daily until she hatched her first brood on 12 May. Her nest containing 12 successfully hatched eggs was found on 14 May, at which time intensive telemetry monitoring was begun. On 18 May, we observed #966 crossing a fire-break with no poults. A second visual check on 21 May revealed she had indeed lost her entire brood. The fate of the brood was unknown. However, based on previous research (Speake 1980, Speake et al. 1985), the cause of the disappearance was assumed to be predation soon after hatching.

Since the primary focus of our study was on brood habitat and since Wild Turkey hens were not known to renest after losing a brood, #966 was not located again until 26 June during a random mortality check. Telemetry monitoring indicated no motion for this hen for two consecutive days at which time we decided to locate her visually under the presumption she was dead. However, due to the type of cover she was in and the close proximity of her location to the first nest site, we suspected a renest and carefully flagged her location on 27 June. Daily radio monitoring from close range indicated motion on 6 July, revealing she was indeed alive and incubating a nest. On 12 July she hatched her second brood as indicated by the nest that was found containing 12 eggs, 11 of which had hatched.

The nature of our data collection prevented obtaining absolute proof that the second nest #966 incubated was her own; however, we have no reason to believe it was not. To our knowledge the laying of an entire clutch by one Wild Turkey hen and incubation of that same clutch by another has not been documented, and probably does not occur. Williams and Austin (1988) reported that the potential for multiple nesting (defined as when more than one hen lays in the same nest) existed in Florida Turkeys (*M. gallopavo osceola*), but was probably not a common behavior and should be more prevalent when nest density was high. Our study was of a relatively low-density turkey population, and the nest in question was late in the season at a time when most nesting activity was over. Further evidence that this was her own clutch exists in the fact that the two nest sites were only 79.5 m apart, and the chronology of the two nesting events was right. If we assume that it takes 13 days to lay 12 eggs and 27 days for incubation (Williams 1981), then hen #966 would have had 16 days after the time of initial brood loss to begin laying another clutch. Sermons and Speake (1987) found an average of 13.5 days between brood disappearance and renesting for four Northern Bobwhites in Alabama. Based on the number of Wild Turkey hens monitored by telemetry since the mid-1960s, double broods are undoubtedly a rare occurrence.

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#### LITERATURE CITED

- EVERETT, D. D., D. W. SPEAKE, AND W. K. MADDOX. 1980. Natality and mortality of a north Alabama Wild Turkey population. Proc. Natl. Wild Turkey Symp. 4:117-126.

- , ———, ———, AND R. HAWKINS. 1978. Multi-purpose radio transmitters for studying mortality, natality, and movements of Eastern Wild Turkeys. *Proc. Int. Symp. on Biotelemetry* 4:155–158. International Society on Biotelemetry, Garmisch-Partenkirchen, West Germany.
- SERMONS, W. O. AND D. W. SPEAKE. 1987. Production of second broods by Northern Bobwhites. *Wilson Bull.* 99:285–286.
- SISSON, D. C., D. W. SPEAKE, J. L. LANDERS, AND J. L. BUCKNER. 1990. Effects of prescribed burning on Wild Turkey habitat preference and nest site selection in south Georgia. *Proc. Natl. Wild Turkey Symp.* 6:44–50.
- SPEAKE, D. W. 1980. Predation on Wild Turkeys in Alabama. *Proc. Natl. Wild Turkey Symp.* 4:86–101.
- , R. METZLER, AND J. MCGLINCY. 1985. Mortality of Wild Turkey poults in northern Alabama. *J. Wildl. Manage.* 49:472–474.
- WILLIAMS, L. E. 1966. Capturing turkeys with alpha-chloralose. *J. Wildl. Manage.* 30:50–56.
- . 1981. *The book of the Wild Turkey*. Winchester Press, Tulsa, Oklahoma.
- , AND D. H. AUSTIN. 1988. *Studies of the Wild Turkey in Florida*. Univ. Presses of Florida, Gainesville, Florida.
- , ———, AND T. E. PEOPLES. 1976. The breeding potential of the Wild Turkey hen. *Proc. Southeastern Assoc. Fish and Wildl. Agencies* 32:303–308.
- , ———, AND ———. 1980. Turkey nesting success on a Florida study area. *Proc. Natl. Wild Turkey Symp.* 4:102–107.

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**First nesting record for the Piping Plover in Oklahoma.**—Piping Plovers (*Charadrius melodus*), endangered in the Great Lakes region and threatened throughout the rest of its range (U.S. Fish and Wildlife Service 1985), are known to nest in the northern Great Plains along the Loup, Missouri, Niobrara, and Platte rivers in Nebraska (U.S. Fish and Wildlife Serv. 1988). They often have been observed during both spring and fall migration at various sites in Kansas and Oklahoma but have never been known to nest in Kansas (Tordoff 1956, Johnston 1960, Thompson and Ely 1989).

During June and July 1986, a Piping Plover was seen at Optima Reservoir, located about 27 km east of Guymon, along the North Canadian (Beaver) River in Texas Co., Oklahoma (Fig. 1), but there was no indication of nesting.

On 17 June 1987, I found two adult Piping Plovers with four chicks along the west side of Optima Reservoir. The chicks were captured, measured, photographed (VIREO/VO6/7/001 thru VO6/7/004), and released. The adults were feigning injury. Neither was banded.

The Piping Plover chicks had been foraging along a sandy spit which projected into a shallow lagoon on the west side of the reservoir. A nest scrape of likely size, slightly larger and deeper than that made by Snowy Plovers (*C. alexandrinus*), but not as large as a Killdeer (*C. vociferous*) scrape, was discovered. The scrape was approximately 35 m from the water in loose sand and gravel. Snowy Plover chicks were seen farther north along the reservoir