

## FALL NESTING BARN OWLS IN UTAH

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Two active Barn Owl (*Tyto alba*) nests were discovered on 4 October 1968 in Springville, Utah County, Utah. The nests were located among the buildings of an abandoned steel mill complex which is now being dismantled. The first nest, visible from below, was located about 35 m above ground level on an open exposed platform on the coal storage tower. This nest held two young, judged to be one week old, and one egg, apparently infertile. The nesting platform, 0.75 × 1.1 m, was covered with pigeon waste and pellet fragments, the whole forming a rudimentary nest. The second nest, which also contained two young aged approximately one week, was located inside a large storage warehouse only 40 m from the first nest and about 8 m from the floor. This site was located in one corner of the interior on a roof support beam and was approximately 0.3 × 0.3 m. The nest consisted of a mixture of pellet fragments and pigeon waste material. Both sets of young fledged in early December. They remained in the company of the adults until three of the four young died, two by drowning in a small pond below the original nest site and one as the victim of indiscriminate shooting.

There is little published information on Barn Owls in Utah. Tanner (1927), Behle (1941), and others have recorded Barn Owls in the southwestern portion of the state (Virgin River Valley and Kanab) and presumed them to be nesting there. Woodbury et al. (1949) considered them to be residents of the lower valleys of the state, occurring from Box Elder to Kane and Washington Counties. Hayward (unpubl.) notes a set of fresh eggs taken from an old farm near Brigham City, Box Elder County, in May; a set of fresh eggs taken from a barn near Provo, Utah

County in the middle of May; and a nest with a brood of young located 3 mi. SE of St. George, Washington County, about 15 July 1938. These unpublished data and the late nesting records at Springville, Utah County, appear to be the only positive accounts of Barn Owls nesting in Utah.

Fall nesting Barn Owls have been recorded by Bendire (1895), Goetz (1932), and others. Late nesting is considered to be an uncommon but not unusual habit of these irregularly breeding owls, but the problem of double-brooded owls is intriguing. Wallace (1948:16-17) suggests that Barn Owls breed continuously during periods of abundant prey. The breeding period of these owls coincided with an irruptive increase in the meadow mice (*Microtus*) population in the area. *Microtus* was found to comprise over 95 per cent of the prey stockpiled at the nest sites, with Starlings (*Sturnis vulgaris*) and House Sparrows (*Passer domesticus*) making up the remaining 5 per cent of the prey species.

Both broods were much smaller than the normal broods associated with Barn Owls. A review of the literature seems to indicate that Barn Owl winter broods are, on the average, smaller than spring and summer broods, but it is by no means certain that this is the actual case.

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## FEEDING TERRITORIES IN THE EVERGLADE KITE

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The gregarious nature of the Everglade Kite (*Rostrhamus sociabilis*) is well known. The kites generally forage in loose flocks and capture their only known food—fresh water snails of the genus *Pomacea*—in communal feeding areas. Snails are caught near the water surface and are carried to feeding perches to be extracted from their shells. Feeding perches are often close together and it is not uncommon to see several kites simultaneously working on snails just a few meters from one another.

On 2 November 1969 we observed a number of brown-plumaged kites (females or immatures) feeding

along a canal in the eastern Everglades of Florida. Surprisingly, some of the birds were defending feeding territories. We had not previously noted such behavior in Everglade Kites observed at various seasons in southern Florida and coastal Guyana. The territorial birds did not appear to be nesting, although nesting has been known to occur in November in Florida (Sprunt, *Auk* 59:585-586, 1942).

We watched one bird in particular from about noon until shortly before sunset. The entire feeding range for this individual was a section of the canal about 30 m wide and 75 m long. The bird remained perched on cattails during most of the afternoon, flying only to procure snails (about every 10-20 min) or to chase off other kites intruding on its feeding area (fig. 1). Similar behavior was noted in three other kites defending similar-sized feeding territories adjacent to that of the bird we were watching closely. Some kites in the area did not appear to be defending territories and these were successively harassed by the territorial individuals as they attempted to forage along the canal. *Pomacea paludosa* was extremely abundant in the canal, an abundance far surpassing anything we had seen in several years observation of

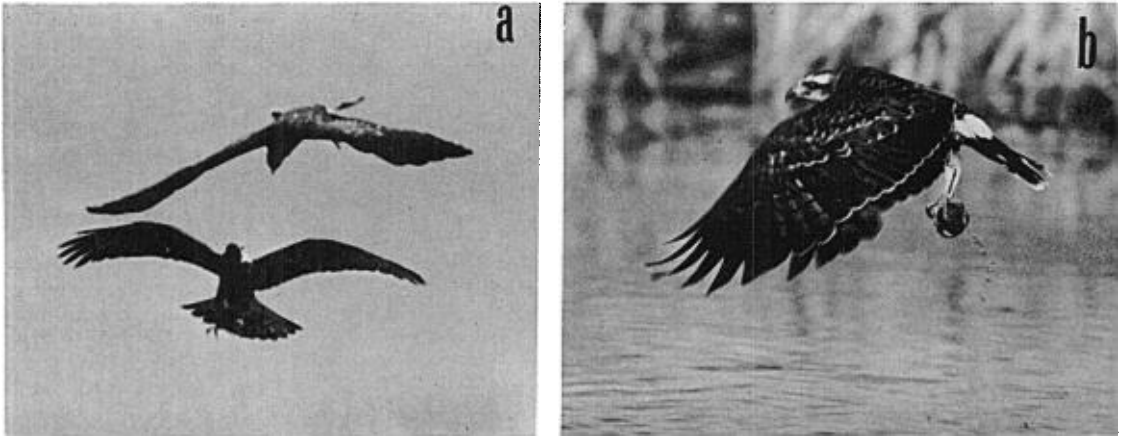


FIGURE 1. a. Territorial interaction between two Everglade Kites. b. Everglade Kite capturing a *Pomacea paludosa* from a canal in the eastern everglades.

this snail in the Everglades. It was common to see as many as three or four adult snails on a single submerged cattail stalk, and it usually took a kite less than a minute (often just a few seconds) to locate and capture a snail on a given hunting foray.

We returned to the same locality on 17 November 1969 and again found brown-plumaged kites feeding in the area. On this date, however, we saw no evidence of territorial defense, and it was clear that several different kites were foraging along the same stretch of canal. Individuals were seen to move great distances in search of food, often flying out of sight as they worked up and down the canal and over adjacent areas of marsh. Snails were much less abundant on this date, as evidenced by our inability to spot them in the water and by the long, frequently unsuccessful, hunting forays of the kites.

It might at first seem paradoxical that defense of feeding areas occurred with superabundance of food,

but we suspect that defense is feasible only under such conditions. Under normal conditions of prey abundance the area necessary to supply a kite's needs may well be larger than it is capable of defending effectively, and the expense (of time and energy) of defending a large territory could easily exceed any possible benefit the kite might garner by excluding other kites. However, if snails were superabundant over a relatively large proportion of the range of a kite population, there would seemingly be little to be gained by individuals defending territories. We believe that the area of snail superabundance on 2 November was quite limited although we were unable to check snail abundance in the marshes surrounding the defended areas of canal. In the canal itself we noted high concentrations of snails only in the defended areas.

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## MOLTS OF THE VERDIN, *AURIPARUS FLAVICEPS*

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Good descriptive accounts of the Verdin's (*Auriparus flaviceps*) plumages have been written by a number of investigators (Coues 1878; Sennett 1879; Ridgway 1904; Dawson 1923; Bailey 1928); however, published information on the molts of this species is meager. Bent's (1946:432) account of the Verdin's molts is inconclusive: "I have seen no very young verdins, but apparently they are hatched naked, and they probably acquire the juvenal contour plumage before they leave the nest."

Information was obtained on the molts of immature (fledglings that have not completed post-juvenal molt) and adult Verdins while collecting specimens for analysis of their food habits. Particular attention was given to the loss and replacement of the remiges and rectrices.

### METHODS

Most of the 43 immature and 18 adult Verdins examined were collected in the desert areas near Mesa and Tempe, Maricopa County, Arizona. A few speci-

mens were taken near the Graham (Pinaleno) Mountains, Graham County, Arizona; Komatke, Maricopa County, Arizona; Sunflower, Maricopa County, Arizona; and Patagonia, Santa Cruz County, Arizona. I collected all Verdins reported herein except those from Komatke, which were obtained and given to me by Mr. Amadeo Rea, and those that were banded on my study plot in Maricopa County.

Verdins were collected primarily in the summer and early autumn of 1965 and 1966. A few individuals, all of which had completed their molt, were collected in the winter of 1965 and spring of 1966. Birds were weighed when possible, and all weights were recorded in grams using an Ohaus Triple Beam Balance. Weighing was accomplished shortly after the birds were obtained. The specimens collected are deposited in the Vertebrate Collection at Arizona State University, Tempe, Arizona.

### WEIGHTS

Data on the weights of 34 immature and 15 adult Verdins are reported in table 1. The mean weights of the immatures and adults were 6.9 (SE, 0.085) and 7.2 (SE, 0.127) g, respectively.

### PLUMAGES

The Verdin's plumages may be summarized as follows: The juvenal plumage is the first covering of feathers as the young are hatched naked. This plumage is lost