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Notes on the body weight and molt of the Elf Owl (*Micrathene whitneyi*) in southeastern Arizona

Philip M. Walters

The Elf Owl, the world's smallest owl, is a common, summer, breeding resident in southern Arizona (Phillips et al, 1964). It has, however, a limited breeding range in the United States, being found additionally only in extreme southeastern California, southwestern New Mexico, and the Big Bend and extreme southern regions of Texas. It winters in southern Mexico (Ligon, 1968). Only small numbers of this tiny owl have been banded in recent years. None was banded in 1977 (Swisher, 1978); one in 1978 (Balph, 1979); and 9 in 1979 of which I banded 8 (Balph, 1980).

Reported here are data including molt, feather-edge wear, weight, wing chord and tail measurements obtained from 20 Elf Owls I banded in 1979 and 1980. The banding was carried out at two stations, Tanque Verde Guest Ranch and my home, located in the foothills of the mountains surrounding Tucson. Each station was operated one day a week throughout the year. 16 Elf Owls were mist-netted at Tanque Verde Guest Ranch and the remaining 4 at my home.

Of the 20 Elf Owls discussed here, 19 were gray phase and 1 was the rarer brown phase (Ridgway, 1914). This latter individual was banded as an adult at my home on 9 June 1980 and recaptured there on 4 May 1981 and again on 19 May 1981.

With respect to age, 8 were determined to be adults, another 8 were juveniles, and the remaining 4 were of unknown age. I was able to determine the sex of only 1, a female with a brood patch. The earliest capture date was 10 April and the latest was 18 September. In the Tucson area, the occurrence in numbers is from March through September with extreme dates of 25 February 1940 and 10 October 1885 (Phillips et al, 1964). The individual handled on 10 April 1980 was a recapture of 1 banded as an adult at the same location on 17 May 1979. Another adult banded 12 July 1979 was recaptured at the same location 2 years later on 11 June 1981.

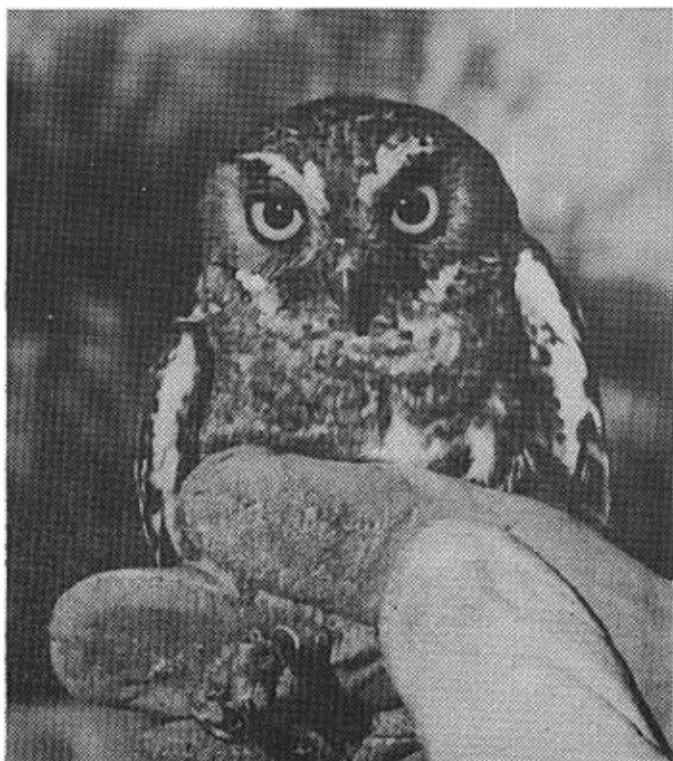
I observed no molt on individuals handled prior to 12 July. On 31 July 1980, I recaptured a bird banded 12 June 1980 as a juvenile. When banded it was not molting, but when recaptured 7 weeks later, it showed

heavy ventral and slight dorsal molt. In addition, 2 other captured juveniles were similarly undergoing body molt. One taken on 2 August 1979 exhibited only slight dorsal molt. Another captured on 7 August 1980, however, was undergoing heavy ventral and dorsal molt. Finally, a 4th individual of unknown age, banded 16 August 1979, showed moderate ventral and dorsal molt and, in addition, had molted the 1st primary on both wings. Ligon (who based his conclusions on molt largely on his observations of captive Elf Owls) found that molt begins in early September in both juveniles and adults and continues in some individuals into December. On the other hand, Bent (1938) concluded that the juvenal plumage seems to be worn for only a short time, as a more or less complete body molt in June and July produces a plumage that is practically adult. He, however, agrees with Ligon that the complete annual molt of adults seems to take place in September and October.

All birds handled were also observed for feather-edge wear. None of the Elf Owls exhibited any significant body feather wear; however, all but 2 did show wear of primaries and/or rectrices ranging from slight to heavy. Among the adult birds, there was some evidence of an increase in the prominence of the wear as the season progressed. However, too few birds have been handled to draw any conclusions from these observations.

The average weight (obtained using an Ohaus Model 730 Triple Beam Balance) of the 20 Elf Owls was 41.0 gm (min. 35.9 — max. 44.1). The average length of the wing chord (length of the closed wing in natural position from the bend to the tip of the longest primary) was 104.5 mm (min. 99 — max. 110). The average tail length was 46.3 mm (min. 39 — max. 51). My measurements are consistent with data reported by Ligon (1968) and Ridgway (1914), but differ significantly from those reported by Karalus and Eckert (1974).

The range of 35.9 - 44.1 gm for body weights of 20 individual Elf Owls of varying age and sex is generally consistent with the 41 - 48 gm for breeding females and



a mean weight of about 40 - 42 gm for 18 - 30 day old nestlings reported by Ligon (1968). Ridgway (1914) reports only measurements made on skins. His wing measurements (method undefined) taken on Arizona specimens, averaged 110 mm (min. 105 — max. 115) compared with my average of 104.5 mm (min. 99 — max. 110). His tail measurements averaged 48.5 mm (min. 45 — max. 53.5) compared with my average of 46.3 mm (min. 39 — max. 51).

Karalus and Eckert (1974) report in detail the weight, wing and tail measurements of 41 individuals (30 males and 11 females) that are generally inconsistent with my data, as well as that of Ligon (1968) and Ridgway (1914). Their average weight for 41 Elf Owls of 25.7 gm (min. 17.0 — max. 30.6) was only 63% of the average weight of my 20 Elf Owls. Their average wing length of 99.7 mm with a surprisingly narrow range of 98.8 — 102.0 mm, was about 5% shorter than the average wing chord length I observed. Their tail measurements averaging 54.8 mm (min. 50.8 — max. 60.3) were about 19% longer than those of my birds. These authors do not cite the source of their information and give other erroneous information as pointed out by Bock (1976).

It is expected that this banding program will provide additional information on the biology of these fascinating, tiny owls. 🦉

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