

SHORT COMMUNICATIONS

Observations of Nesting Northern Pygmy-Owls

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On 18 April 1981, nests of a Northern Pygmy-owl (*Glaucidium gnoma*) and Northern Saw-whet Owl (*Aegolius acadicus*) were discovered in the same tree in Missoula County, Montana (Norton and Holt 1982). We know of only one reported (Holman 1926) observation of nesting Northern Pygmy-owls in North America. The purpose of this paper is to summarize our observations and provide information on a little known North American species.

The nest was visited daily 4 April - 21 June 1981. Observations were made using binoculars and a variable power spotting scope from distances of 15-50 m. The owls were observed from the onset of their activity in late afternoon until activity ceased in the evening. Pellets and prey remains were collected from the nest for analysis after the nestlings fledged. Prey items were identified by cranial, dental and feather characteristics. Three prey items were retrieved after the male was observed caching them. Two others were observed in possession of the female. These observations are in addition to prey deliveries from male to female reported by Norton and Holt (1982).

The adult female pygmy-owl was observed each day at the cavity's entrance. These observations, and observations that the male never entered the cavity, indicate the female as the sole incubator and brooder. Each evening at dusk, the male called (a hollow, slow *toot-toot*) at approximately one sec intervals until the female came from the nest cavity to the area in which he was perched. Apparently this call solicited the female to receive prey from the male. Prey was exchanged in a small tree located approximately 10 m in front of the cavity entrance. A soft *twittering* vocalization was made by one or both owls during the exchange, followed by the departure of the male. The female either ate parts of the prey or returned to the cavity with it. A soft whistling sound was produced by the wings as each owl took flight.

Six eggs hatched on 13 May. On 25 May we heard what we believed were food begging calls of the nestlings for the first time. The *cheeping* call occurred when the female entered the nest cavity, whether or not she had prey. The nestlings were quiet when the female was absent. This behavior continued until the nestlings fledged on 5 and 6 June.

We never observed the male enter the nest cavity. On one occasion the female failed to emerge from the cavity for 11 min as the male called with prey. She then flew to the male and received the prey. The latest time at which the male was recorded to call was 2207 H. We stayed until after 2400 H on several nights.

Prey information was difficult to obtain. Pellets are small (average 17.5 x 9.6 mm; N = 26), roosting areas of the male difficult to locate, and the owls did not deposit pellets below the nesting cavity. Of the nineteen prey items identified, ten were mammals and nine were birds (Table 1).

During one observation at dusk, the female pygmy-owl attacked and killed a Red Squirrel (*Tamiasciurus hudsonicus*) on the ground and fed there. Similarly, in February 1982, we observed two other Northern Pygmy-owls preying on Bohemian Waxwing (*Bombycilla garrulus*) and caching and feeding on them on the ground and under bushes. Apparently, Northern Pygmy-owls are capable of killing large prey, but some prey may be too heavy to fly with and must be eaten or partially eaten on the ground.

Tail switching behavior by the adult owls was displayed only when we approached closely. The tail was switched from side to side with a quick, jerky motion. The distance between the observers and the tail switching owl was not measured; however, the behavior occurred whether or not the owl had prey. We observed the same behavior in wintering Northern Pygmy-owls. A description of the nest, nest tree and habitat type has been reported (Norton and Holt 1982).

Kellomaki (1977) labelled the site of prey exchange between the male and female European Pygmy-owl (*Glaucidium passerinum*) as the "sojourning sector", an area of prey delivery generally 10 - 30 m in front of the nest. We refer to this area as the "prey exchange area". Prey exchange between adults continued until the nestlings fledged, although the female began to hunt nine days after the eggs hatched. Kellomaki (1977) reported that the female European Pygmy-owl did not begin to hunt until the end of the nestling period.

Mikkola (1983) reported laying intervals of every second day for the European Pygmy-owl. Scherzinger (1970) and Kellomaki (1977) reported incubation periods of the European Pygmy-owl to be 28-30 d. Steyn (1979) reported the incubation period of the Pearl-spotted owl (*Glaucidium perlatum*) to be 29 d. Scherzinger (1970) and Steyn (1979) stated that incubation does not begin until the clutch is complete. Scherzinger (via Heimo Mikkola, pers. comm.) proved synchronous hatching in captive European Pygmy-owls. Norton and Holt (1982) also reported synchronous hatching in Northern Pygmy-owls. However, a female Northern Pygmy-owl from Montana sent by the authors to the Owl Rehabilitation Research Foundation, Vineland, Ontario, Canada, laid eggs in captivity which

Table 1. Prey remains from one pair of breeding Northern Pygmy-owls in Missoula County, Montana, 4 April - 21 June 1981. Prey items were identified from thirty-six pellets, debris from the nest, cached prey and observations.

PREY TYPE	NUMBER	METHOD OF DETECTION
Birds		
<i>Empidonax</i> spp.	1	from debris in nest
Hammond's Flycatcher (<i>Empidonax hammondi</i>)	1	cache located
<i>Parus</i> ssp.	1	from debris in nest
Red-breasted Nuthatch (<i>Sitta canadensis</i>)	1	from debris in nest
Townsend's Solitaire (<i>Myadestes townsendi</i>)	1	from debris in nest
Cassin's Finch (<i>Carpodacus cassinii</i>)	1	from debris in nest
Unid. Passeriform birds (mandibles only)	3	from debris in nest and pellets
Mammals		
<i>Sorex</i> spp.	1	from debris in nest
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)	1	observation
Deer Mouse (<i>Peromyscus maniculatus</i>)	1	from debris in nest
Northern Red-backed Vole (<i>Clethrionomys gapperi</i>)	1	cache located
Unid. Microtine spp.	1	from debris in nest
House Mouse (<i>Mus musculus</i>)	4	pellets, cache located
Western Jumping Mouse (<i>Zapus princeps</i>)	1	observation
Totals	19	

hatched asynchronously (Kay McKeever, pers. comm.). Obviously, hatching in this genus warrants further investigation. Nestlings of European Pygmy-owls usually fledge on the same day, do not return to the nest, and nestlings that do not fledge at this time are left behind by the adults. (Heimo Mikkola, pers. comm.).

Assuming that the Northern Pygmy-owl, European Pygmy-owl and Pearl-spotted Owl have similar incubation periods, (28 days, Scherzinger 1979; 30 days, Kellomaki 1977; 29 days, Steyn 1979, respectively), we extrapolated that the eggs in this study were laid between 3 April and 15 April 1981, and incubation began approximately 15 April. The incubation period was calculated to be approximately 28 d, and the nestling period was 23 d. The fledglings were observed on six occasions between 7 and 14 June. The owls were not located after 14 June, and the study was terminated.

Observed tail switching behavior has been previously reported. Mailiard (1926) observed a bathing Northern Pygmy-owl jerking its tail from side to side, but he concluded that it was simply shaking off water. Steyn (1979) reported that "tail jerking" accompanied by head bobbing was a behavior linked to excitement in the Pearl-spotted Owl. We believe that tail switching was a direct consequence of our approach to Northern Pygmy-owls and

thus may indicate excitement or a threat display. The behavior needs further observation.

Reports on the food habits of Northern Pygmy-owls are scanty. To our knowledge, Holman (1926) recorded the only account of food habits during the breeding season prior to the accounts of Norton and Holt (1982). Holman (1926) observed nineteen prey exchanges between the male and female in California. Prey identified included eight lizards, five birds and six mammals. Fisher (1893) examined 6 stomachs of Northern Pygmy-owls and found 1 to contain a bird, 1 contained a mouse, 1 contained lizards, 1 contained an insect and 2 stomachs were empty. Other reports (Pierce 1921; Burleigh 1929; Brooks 1930; Clabaugh 1933; Castle 1937; Farley 1937; Brock 1958; and Gashwiler 1960) included few prey items of Northern Pygmy-owls at various times of the year.

Other interesting reports of Northern Pygmy-owl prey include incidental observations; Walker (1924) reported a Northern Pygmy-owl killing a young chicken (*Gallus domesticus*). Keck (1925) observed a Northern Pygmy-owl eating a chipmunk in Yosemite National Park. Kimball (1925) in Arizona and Balgooyen (1969) in California recorded Northern Pygmy-owls killing Gambel's Quail (*Callipepla gambelii*) and California Quail (*C. californica*), respectively. In California, Michael (1927) observed a

Northern Pygmy-owl to enter a woodpecker hole and take out a fully feathered nestling.

Though Mikkola (1970) collected pellets and prey remains from below the nest of European Pygmy-owls in Finland, we did not locate any pellets or prey remains below our Northern Pygmy-owl nest site, nor could we find any further indication in the literature that Northern Pygmy-owls deposit pellets or prey remains below their nests. Apparently the female at our nest deposited pellets and prey remains away from the nest site, and few remains were found in the cavity after the nesting period.

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An Unusual Incident with the Bald Eagle
 (*Haliaeetus leucocephalus*)

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On 20 July 1969, I watched 2 immature Bald Eagles (*Haliaeetus leucocephalus*) feeding on the east shore of Lake Lebarge, Yukon Territory, Canada (opposite Richthofen Island - 61°10'N, 135° 05'W). The eagles were about 350 metres away from me and flushed when I walked towards them to investigate. I saw that the eagles had been feeding on the body of a man lying half submerged in the water. The body was fully clothed, and one trouser leg was ripped and the calf of that leg had been partly eaten.

I notified the Royal Canadian Mounted Police (RCMP) who collected the body. The RCMP informed me that the man had apparently been killed in Whitehorse, Yukon Territory, and had drifted down the Yukon River from there. The body probably had been submerged for about a month before rising and being washed ashore.

I know of no other reports of eagles (as opposed to vultures) eating human flesh.

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