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New breeding, distribution and prey records for the Pygmy Eagle *Hieraaetus weiskei*

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Abstract. An active nest of the Pygmy Eagle *Hieraaetus weiskei* is described, providing the first documented observation of a downy chick in late January and hence an indicative laying date of late November/early December. The first documented record of this species for Waigeo Island (West Papua Province) is presented. A prey item being carried by a Pygmy Eagle is identified as a probable Brown (Slender-billed) Cuckoo-Dove *Macropygia amboinensis*, and another Pygmy Eagle had eaten a Mountain Fruit-Dove *Ptilinopus bellus*.

The Pygmy Eagle *Hieraaetus weiskei* of New Guinea and the Moluccas was recently recognised, on DNA and morphological grounds, as a full species distinct from the Little Eagle *H. morphnoides* of Australia (Gjershaug *et al.* 2009). Therefore, ecological and biological information on the latter species need not necessarily apply, and indeed the Pygmy Eagle, being an inhabitant of closed forest, is inferred to occupy a different niche (Gjershaug *et al.* 2009).

The breeding biology and feeding ecology of the Pygmy Eagle are essentially unknown (BirdLife International 2016; del Hoyo *et al.* 2016). There is no nesting information, and only brief reference to it soaring over the forest and diving at unspecified birds in the tree canopy (Gjershaug *et al.* 2009; Pratt & Beehler 2015). Here we describe an active nest of the Pygmy Eagle, note a sighting for Waigeo Island (West Papuan or Raja Ampat Islands), assign a probable identity to a prey item being carried by a different individual Pygmy Eagle, and note a prey item eaten by a further individual.

On 31 January 2016, at ~0845 h, DB and JD observed a Pygmy Eagle at 750 m elevation in the Arfak Mountains of western New Guinea. The eagle performed an undulating diving display, as known for this species and the Little Eagle (Marchant & Higgins 1993; Gjershaug *et al.* 2009), though silently in what might have been the final two observed dives in a sequence (as in the Little Eagle: SD pers. obs.). At 1010–1044 h, a Pygmy Eagle was found on a nest at 590 m elevation, and another (presumably its mate) soaring and calling nearby at 628 m elevation. The call was a high-pitched weak single note, not the usual disyllable or trisyllable, and apparently similar to the ‘squeal’ call of the Little Eagle (cf. Marchant & Higgins 1993). **On 2 September 2015 at 0918 h, DB had observed a Pygmy Eagle soaring high before descending rapidly into the forest at or close to the site of the subsequently discovered nest.**

The **Eagle’s** inaccessible nest-site was on a steep-sided ridge, covered with forest except for a road along the crest of the ridge (Figure 1). The nest-tree was downslope ~10 m from the road, on the edge of a clearing for the road construction, and the nest was at eye level. The stick nest was ~9 m above ground, in an unidentified rainforest tree ~11 m tall, located under the foliage canopy and visible by telescope from the side though well hidden, and possibly invisible from above the canopy (Figure 2). Enlarged crops of Figure 2 (unsuitable for publication) show the adult eagle sitting in the nest, and resembling a Little Eagle in similar circumstances (e.g. relative size of eagle and nest). The parent eagle remained on the nest for the half-hour of observation, during which it fed a chick that appeared to be mostly white and downy (i.e. within its first month of life, by comparison with the Little Eagle; e.g. Debus 2011). Hatching would therefore have been in early to mid-January, and laying around late November/early December (incubation ~38 days, cf. Little Eagle: Debus 2011); that is, during the wetter months (November–April). If successful, fledging would have been in early to mid-March, on the basis of a nestling period of around 8 weeks in the Little Eagle (e.g. Debus 2011). During 5 weeks in the Arfak Mountains, the only other sighting was a Pygmy Eagle soaring on 17 January, at 1045 h, at an elevation of 1625 m.

On 23 October 2014 at 0835 h, DB observed a Pygmy Eagle over Waigeo Island, Raja Ampat Islands, West Papua, Indonesia (0°25′ S, 130°46′ E), near the

village of Saporkrang. The soaring eagle was observed along a narrow (vehicle-width) track in the foothills of south-west Waigeo, within tall moist forest on steep limestone terrain; it was harassed by an adult female Variable Goshawk *Accipiter hiogaster* (Figure 3). To our knowledge, this is the first record of the Pygmy Eagle for Waigeo.

On 16 July 2010, JH photographed a Pygmy Eagle carrying prey at Varirata National Park near Port Moresby, Papua New Guinea (Figure 4). The partly eaten prey was avian, apparently a dull-coloured or juvenile canopy pigeon, of which several possible contenders were seen at the time (Pinon's Imperial Pigeon *Ducula pinon*, Great Cuckoo-Dove *Reinwardtoena reinwardti* and Papuan Mountain Pigeon *Gymnophaps albertisii*). However, referral of the photograph to P. Gregory produced the suggestion (pers. comm.) that it was most likely a Brown (Slender-billed) Cuckoo-Dove *Macropygia amboinensis*. Furthermore, a Pygmy Eagle specimen collected in eastern New Guinea at 2100 m altitude had eaten a Mountain Fruit-Dove *Ptilinopus bellus* (B. Beehler pers. comm.).

The prey items extend what little is known of the foraging ecology of the Pygmy Eagle, and support the assumption that it preys on birds of the forest canopy. Although closely related to the Little Eagle and the Booted Eagle *Hieraaetus pennatus* (Gjershaug *et al.* 2009), the Pygmy Eagle in its ecology appears to more resemble Ayres' Eagle *H. ayresii* of Africa – a dashing hunter of forest or woodland birds (e.g. Knobel 2016). The Pygmy Eagle's nest construction was similar to that of the Little Eagle, being the usual rather small (for the size of the bird) stick nest in a tree fork, but placed in closed forest in rugged terrain rather than in open sclerophyll forest or woodland in gentle terrain. Finally, the Waigeo sighting provides a range connection between mainland New Guinea and the Moluccas, although the Pygmy Eagle is known from Batanta Island (Gjershaug *et al.* 2009; Pratt & Beehler 2015), closer to the New Guinea coast and connected to it via Salawati Island.

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Captions to photos:

Figure 1. Habitat of Pygmy Eagle nest, Arfak Mountains, western New Guinea. Photo: David Bishop

Figure 2. Active Pygmy Eagle nest, Arfak Mountains, 31 January 2016. Photo: David Bishop

Figure 3. Pygmy Eagle, Waigeo Island, West Papua Province, October 2014 (being harassed by a Variable Goshawk). Photo: David Bishop

Figure 4. Pygmy Eagle carrying prey, Varirata National Park, Papua New Guinea, 16 July 2010. Photo: Jonathan Hornbuckle