Short comunication

Contributions and data regarding the Boreal Owl *Aegolius funereus* phenology in Marche region

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Abstract - An analysis of the observations of Boreal Owl *Aegolius funereus* in the Marche region, also regarding a recent recovery of an adult of the species, which appears to be the southernmost movement in Italy.

Key words: Boreal Owl, *Aegolius funereus,* Marche, central Italy, ringed Strigiformes, vagrant species.

Riassunto - Contributi e dati relativi alla fenologia della Civetta capogrosso *Aegolius funereus* nelle Marche.

Un'analisi e una raccolta di dati inediti sulle osservazioni di Civetta capogrosso *Aegolius funereus* nelle Marche, alla luce anche del recente rinvenimento di un adulto della specie, che risulta ad oggi essere il movimento più meridionale in Italia.

Parola chiave: civetta capogrosso, *Aegolius funereus,* Marche, Italia centrale*,* specie accidentali, Strigiformi inanellati.

The Boreal Owl *Aegolius funereus* is a polytypic species with boreoalpine holoarctic distribution; for the western Palearctic region it has two subspecies, of which the only *funereus* concerns the Italian territory (Brichetti & Fracasso, 2005). In Italy it's sedentary and breeding, with a reproductive range limited to the Alps, uniformly distributed in the central-eastern part of the mountain range (Trentino-Alto Adige, Veneto and Friuli Venezia Giulia) and irregularly in the western sector (Aosta Valley, Lombardy, Piedmont and the province of Imperia in Liguria), where the species is even more scarce (Brichetti & Fracasso, 2020). The Boreal Owl lives in compact and mature forest complexes, however, not disdaining natural forests with trees of different ages, preferring north-facing slopes or alternatively cold valleys, characterized by clearings and outcropping rocks (Korpimäki & Hakkarainen, 2012). The species nests in coniferous forests especially in not too dense *Picea excels* stands but also in mixed broad-leaved and coniferus forests with *Fagus sylvatica*, *Abies alba, Picea excels* and *Larix decidua*, being scarce in pure larch and beech woods and rare in broad-leaved woods (Brichetti & Fracasso, 2005). In the Italian Alps, the reproductive areas are generally located between 900 and 2100 m a.s.l., also influenced by the habitat and the availability of trophic resources (especially micro-mammals, such as *Microtus sp*. and *Apodemus sp*.) (Mezzavilla & Frasson, 2014). The *Aegolius funereus* is sedentary but the availability of the prey seems to be the main cause also for the movements of the species, first of all for the adult females, which are much less territorial than the adult males, especially in the periods of food scarcity (Korpimäki & Hakkarainen, 2012; Korpimäki *et al.*, 1987); to this are added the typical post-flight dispersive movements by the youngs (Spina & Volponi, 2008), which can start from mid-April (Mezzavilla & Lombardo, 2013). Boreal Owl is a very rare vagrant outside the Alps, especially outside the typical mountain habitats as the lowland areas even in regions where the species nests (Brichetti & Fracasso, 2015, 2020; Bassi *et al*., 2011): confirming this, the first observation for the Po Valley dates back only to 2014, a female individual in the municipality of Spresiano (TV) (Mezzavilla & Frasson, 2014), even if the site was only about 10 km from the first pre-alpine reliefs and about 30 km from the nearest breeding sites in Cansiglio Plateau (Brichetti & Fracasso, 2020). The Boreal owl performs more commonly altitudinal movements descending to lower levels in autumn-winter. Birds from northern populations, however, are known to move over distance, that can reach 1000 km (Korpimäki & Hakkarainen, 2012), while in the southern part of the range the documented distances amount to a maximum of 150 km both in the Pyrenees (Badosa *et al*., 2007) and within the Italian territory (Spina & Volponi, 2008; Brichetti & Fracasso, 2015) with the record distance of 261 Km traveled by an individual between Switzerland and the province of Turin (Fasano *et al.*, 2018), with a movement in south direction. However, the dispersive movements of the species appear to be non-directional

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as regards the Italian territory, as demonstrated by the other three cases concerning ringed birds: a specimen ringed us pullus in 1992 on the Cansiglio Plateau was found three months later in Styrian Alps (Austria), with a distance of about 220 km away and a movement in north-east direction (Spina & Volponi, 2008); a bird ringed in October 2001 in Veneto was recovered six day later in Lombardy, about 150 km away, with a movement in west direction (Spina & Volponi, 2008); a bird marked in autumn 2010 on the Brocon (Trento) was found four years later, breeding on the Cansiglio Plateau, about 50 km away with a movement in south-east direction (Sighele *et al*., 2015). The amplitude of the movements of Italian ringed individuals is confirmed by the findings in Marche, all between 220 and 250 km away from the theoretically closest reproductive sites in Venetian Prealps or northern Croatia (Keller *et al*., 2020), although in this last case no sea movements of the species have been documented (Korpimäki & Hakkarainen, 2012). Altitudinal movements, however, can bring the species into atypical habitats. There

Fig. 1 - Sightings of Boreal Owl *Aegolius funereus* in Italian extra alpine regions. Documented observations (red dots) and vocalizations not documented (blu dot). / Avvistamenti di Civetta capogrosso *Aegolius funereus* nelle regioni extra alpine italiane. Osservazioni documentate (punti rossi) e vocalizzazioni non documentate (punti blu).

are so far only very few Italian records outside the Alps: in Emilia Romagna, near Modena, in January 1989, (Bertarelli *et al.,* 1991; Bagni *et al.,* 2003) and in Marche, where the species has been recorded three times. In the last region Boreal Owl was first recorded and miss-netted at the "Ringing and Capture Center of Monte Brisighella", in the Monte San Bartolo Natural Park, in the municipality of Pesaro (PU). The area represents the first promontory of the Adriatic coast for migrating birds coming from the north and the center is located 150 m a.s.l. along the coast line, a few tens of meters from the cliff overlooking the sea. It was a very debilitated adult bird, probably a female, with the following biometric data: wing = 180 mm; bill = 19 mm; weight = 126 gr (U. Giusini, pers. com.), which is captured at 9.00 am on 11 April 1997 (Giusini & Giacchini, 1997). No other subject of the species was captured over the 1993-2015 (Giacchini *et al*., 2003; personal communication by the ringing camp manager U. Giusini, consulted on 30 October 2021). The second regional record has involved wounded adult found near Marotta, in the municipality of Mondolfo (PU), on 13 October 2021 and delivered to the CRAS Regionale Marche − center of Cà Girone (Urbino). This individual was found with a fractured wing about 2 km north of the mouth of the Cesano river and about 30 km from the Conero, at sea level, on a cycle path that runs along the beach: most likely it hit a net delimiting a field of beach volleyball placed on the beach. Treated by CRAS specialists, where the specimen was then ringed and later released, it was most likely a female (biometric data: wing = 171 mm; beak = 19 mm; tarsus = 21.50 mm; weight = 168 gr). In the days preceding the finding the weather was fine, with warm and clear nights and a weak north wind. The discovery site was 30 km away from the 1997 capture and about 20 km further south, thus representing the southernmost recorded of the species in Italy (Spina & Volponi, 2008). The third albeit-not documented involved a singing bird founded by a birdwatcher well acquainted with the species vocalizations (I. Rovida, pers. com.). He heard the singing bird between 11 and 18 August 2018, near Ripalta, in the municipality of Cartoceto (PU) (Ivan Rovida, in www. ornitho.it consulted on 5 November 2021). The site is located about 13 km away from the Adriatic Sea an altitude of 250 m a.s.l. The bird was heard between 11.00 pm and midnight from about 600 m away, in a hilly area characterized by extensive cultivation of olive trees, vineyards and sunflowers, with the valley floor occupied by the small Rio Secco stream, along which small oak woods mixed with *Robinia pseudoacacia*, which represent the only uncultivated territories of the area. In the period between the two nights of listening, the days were characterized by clear weather and warm temperatures, with very dark nights (I. Rovida, pers. com.).

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