

## First data on the breeding bio-ecology of the Long-legged Buzzard *Buteo rufinus* (Cretzschmar, 1927) in the Algerian Southwest (Taghit and El Bnou)

Keltoum DJILALI<sup>1\*</sup>, Makhoulouf SEKOUR<sup>2</sup>, Rahma BEDDIAF<sup>3</sup> & Karim SOUTTOU<sup>4</sup>

<sup>1\*</sup>. Scientific and Technical Research Center on Arid Regions (CRSTRA), Biskra, Algeria (corresponding author e-mail: [kaltdjil@gmail.com](mailto:kaltdjil@gmail.com)).

<sup>2</sup>. Department of Agricultural Sciences, Kasdi Merbah University, Ouargla, Algeria (e-mail: [sekkmakk@yahoo.fr](mailto:sekkmakk@yahoo.fr)).

<sup>3</sup>. Department of Agricultural Sciences, Kasdi Merbah University, Ouargla, Algeria (e-mail: [rahmadjanet@yahoo.fr](mailto:rahmadjanet@yahoo.fr)).

<sup>4</sup>. Department of Agronomy, Faculty of Natural and Life Sciences, Ziane Achour University, Djelfa, Algeria (e-mail: [kasouttou@yahoo.fr](mailto:kasouttou@yahoo.fr)).

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**Abstract** This study examines the bio-ecology and reproduction of *Buteo rufinus* (Cretzschmar, 1927) from southwestern Algeria. The first studied nesting site is a cliff on the edge of the wadi valley in the Taghit region. The second nest is in an Atlas pistachio tree (*Pistacia atlantica*) in the El Bnou region. The breeding period began in April 2018. Each nest measured 50 to 60 cm in diameter, and both were old. The hatching rate was 100%. The fledging rate of the chicks was 40 %. We recorded a linear increase in mass from 1 to 42 days of age, but the tarsus growth slowed at 27 days.

**Keywords** Algerian Southwest; breeding bio-ecology; Long-legged Buzzard; Taghit and El Bnou.

### Premières données sur la bio-écologie de la reproduction de la Buse féroce *Buteo rufinus* (Cretzschmar, 1927) dans le Sud-ouest algérien (Taghit et El Bnou)

**Résumé** Cette étude examine la bio-écologie et la reproduction de la Buse féroce *Buteo rufinus* (Cretzschmar, 1927) dans le Sud-Ouest algérien. Le premier site de nidification est une falaise ou une bordure de lits d'oued dans la région de Taghit et le deuxième nid se trouve dans un Pistachier de l'Atlas (*Pistacia atlantica*) dans la région de El Bnou. La période de reproduction débute en avril en 2018. Chaque nid mesurait 50 à 60 cm de diamètre et les deux étaient anciens ; le taux d'éclosion est de 100 %. Le pourcentage d'envol des poussins est de 40 %. Nous avons enregistré une augmentation linéaire de la masse de 1 à 42 jours d'âge, mais la croissance du tarse a ralenti au 27ème jour d'âge.

**Mots-clés** Sud-Ouest algérien ; bio-écologie de la reproduction ; Buse féroce ; Taghit et Elbnou.

#### Introduction

The Long-legged Buzzard is a medium-sized raptor with two palearctic subspecies. Its breeding range extends from North Africa (*Buteo rufinus cirtensis*) to southeastern Europe (CRAMP & SIMMONS, 1980; FERGUSON-LEES & CHRISTIE, 2001). It occurs mainly in the hot and dry regions of southeastern Europe, North Africa and Asia Minor to northwestern China (SNOW & PERRINS, 1998). The increasing number of records indicates a marked southern bias towards the Strait of Gibraltar, highlighting the dominant presence of individuals of African origin (i.e.,

*Buteo rufinus cirtensis*). In northern Morocco, it is locally common (THEVENOT *et al.*, 2003). In recent years, several studies have been conducted to understand the taxonomy of the genus *Buteo* in Afro-Eurasia (PORTER & KIRWAN, 2010).

Researchers have investigated the bioecology of this raptor worldwide (BAKALLOUDIS *et al.*, 2012; BALTAG *et al.*, 2014; CRAMP & SIMMONS, 1980; DEMERDZHIEV *et al.*, 2014; DEMERDZIEV, 2022; ELORRIAGA & MUÑOZ, 2013; GILBERT *et al.*, 1998; KASSINIS, 2009; MILCHEV, 2009; VATEV, 1987; YI-QUN *et al.*, 2008). In Algeria, the only study on the long-legged Buzzard is on his diet (DJILALI, 2019);

there is not enough information on the reproduction of this species in the North African region. Thus, this study aims to inform on the presence and reproduction of Long-legged Buzzard in an arid zone.

## Materials and methods

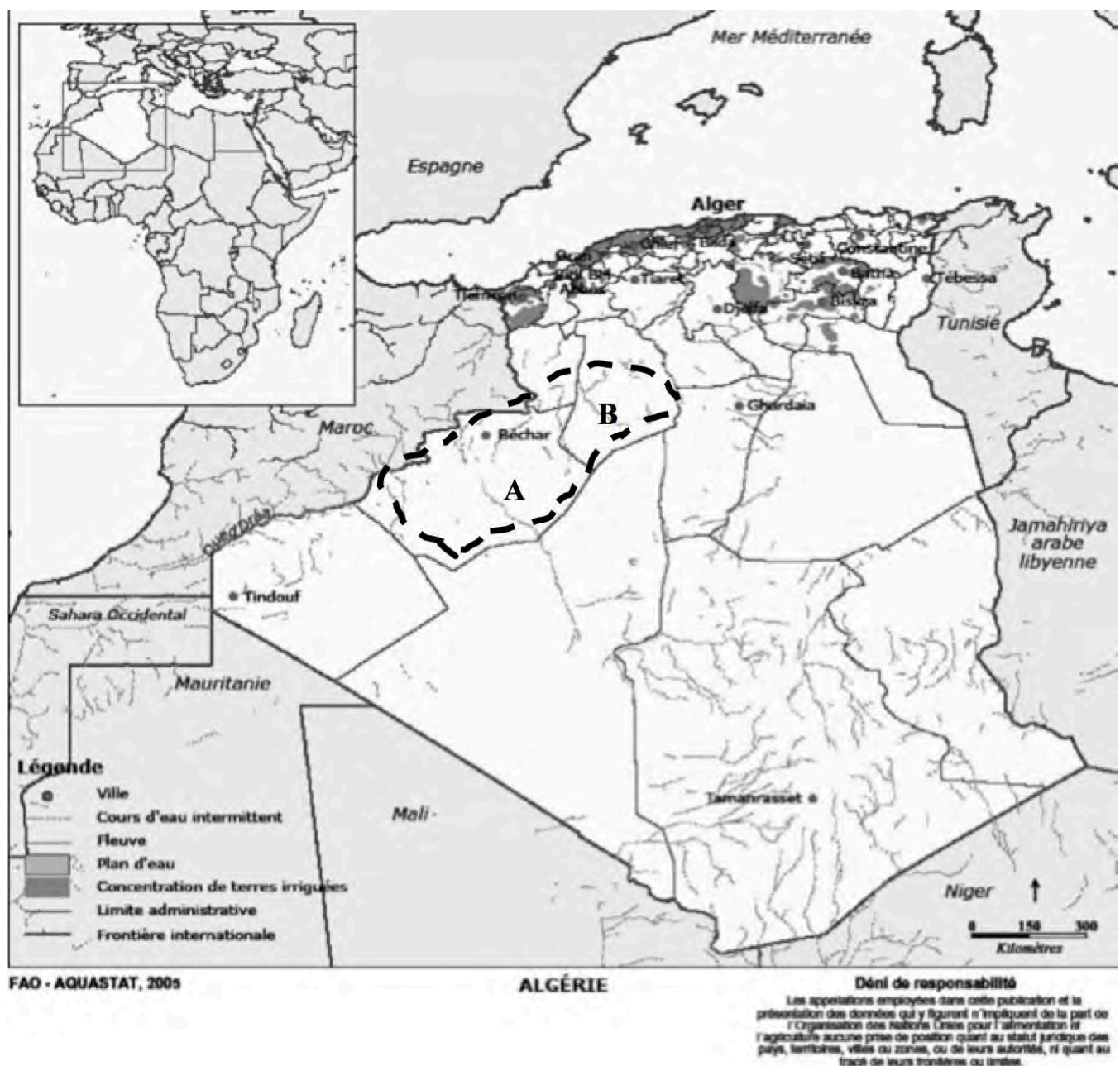
The study was carried out in southwestern Algerian in two nesting sites of the *Buteo rufinus*. The first site (A), Taghit, is located in the sub-Saharan zone, near the Moroccan border, on the western edge of the Great Western Erg. Its northern limit is less than 30 km south of Bechar. The nesting site is a cliff on the edge of the wadi valley in the Taghit region. The second site (B) is El Bnou, located in the Pres-Saharan zone on the southern edge of the Saharan Atlas. It is located more than 206 km south of El Bayadh. The nes-

ting is in a tree of Pistachio of the Atlas *Pistacia atlantica* (Desf., 1799) (Figure 1).

The method adopted to gather information on Long-legged Buzzard reproduction was to observe the raptor, with by eye or with binoculars. The first field visits started in mid-January to identify areas likely to become nesting sites and then mark them on a map (GILBERT *et al.*, 1998). Nests were found by observing the behavior of the breeding pair as they moved around. Once located, the nest was monitored and controlled every 3 days until fledging.

## Results and discussion

The on-site campaign revealed 2 Long-legged Buzzard nests in the study area, one Golden Eagle *Aquila chrysaetos* (Linnaeus, 1758), and 3 Lancer Falcon *Falco biarmicus*



**Figure 1**

Geographical location of Long-legged Buzzard nesting sites: (A) Taghit site, (B) El Bnou site (Source: FAO-AQUASTAT, 2005 modified).  
Situation géographique des sites des nidifications de la Buse féroce: (A) site de Taghit, (B) site d'El bnou.





**Figure 2**

Long-legged Buzzard chicks and an egg in the nest (Source: Authors, 2018).

*Oisillons et un œuf de la Buse féroce dans le nid.*



**Figure 3**

Nest diameter (Source: Authors, 2018)

*Diamètre du nid.*



**Figure 4**

*Buteo rufinus* (Cretzschmar, 1927) chicks at 38 days-old (Source: Authors, 2018).

*Oisillons de Buteo rufinus (Cretzschmar, 1927) à l'âge de 15 jours.*



**Figure 5**

*Buteo rufinus* (Cretzschmar, 1927) chicks at 38 days-old (Source: Authors, 2018).

*Oisillons de Buteo rufinus (Cretzschmar, 1927) à l'âge de 38 jours.*

(Temminck, 1825) nests. We also found 10 additional nesting structures, probably built by Eagles or the Ferocious Catfish but not occupied at the time of the study.

#### Location and measure of the nest

Nest observation in the study area was made during the first week of April 2018 (Figure 2). The first nest was installed on a cliff 20 m from the bottom of the Taghit valley. The second nest was on top of an Atlantic Pistachio tree of 8 m. MILCHEV (2009) in Bulgaria said that most of the breeding pairs place their nest on massive rocks, only in two cases the nest was built on trees (*Salix* or *Populus*) In our study area, each nest measured 50 to 60 cm in diameter (Figure 3), and both are old, as a new nest is rather light-weight (VATEV, 1987).

#### Clutch size and hatching success

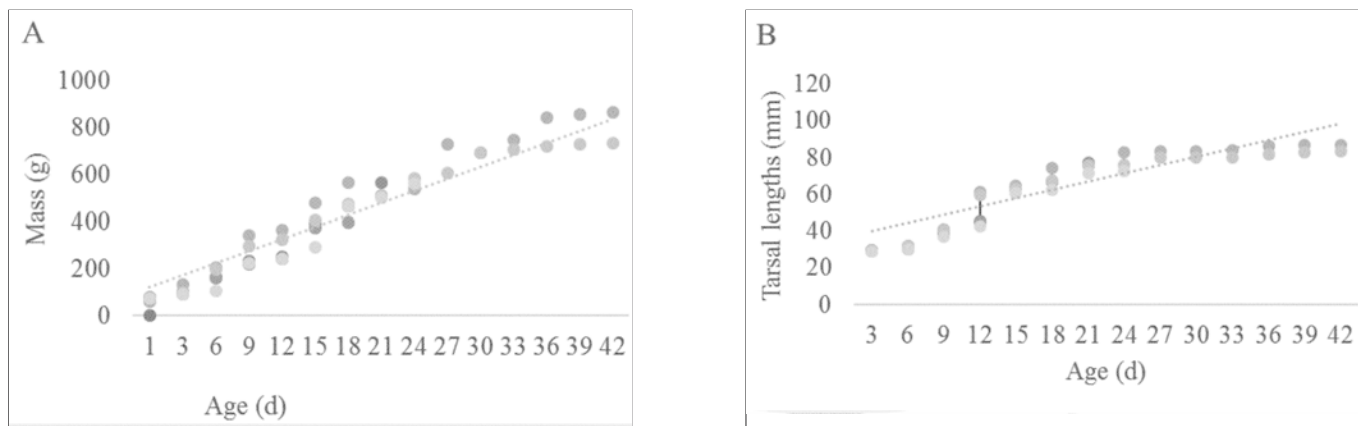
The female Long-legged Buzzard laid the first egg in the second week of March. Clutch size in both nests is 2 and 3 eggs, with 100% hatching success. This result is almost the same as the study carried out by VATEV (1987) in Bulgaria,

who reported that the newly laid egg in his study weighed 70.4 g and measured 63.7 x 46.2 mm. All 5 eggs successfully hatched. KASSINIS (2009) in Cyprus found that seven nests had fledged have 3 fledglings, five nests have 2 fledglings and two nests have 1 fledgling.

#### Development of the chicks and success at fledgling

After hatching, chicks weigh 70 g on average and are covered with a fine white down, tarsi without feathers pale yellow, and dark brown irises. By the end of the second week, the chicks have grayish down (Figure 4). After 21 days, the pins of the primary feathers start to emerge. Thirty days after hatching, the primary feathers begin to emerge. During the fifth week, only a little down remains around the forehead, breast and throat (Figure 5), the tarsi are still bare and yellow with large scales on the anterior side, and the chicks left the nest at the age of 45-48 days.

We obtained growth curves from the biometric data of a single chick. Measurements were made to develop body mass and size (Figure 6A). For the body mass of *Buteo rufinus* (Cretzschmar, 1927) chicks on day 1 (at hatching), we



**Figure 6**

Growth correlation curves of Long-legged Buzzard hawk mass increase (A) and tarsal growth (B).

Courbes de corrélation de croissance de la Buse féroce percnoptère augmentation de la masse (A) et croissance du tarse (B).

recorded a linear increase in mass from 1 to 42 days of age, but tarsal growth slowed at 27 days of age (Figure 6B). YI-QUN *et al.* (2008) reported that tarsal growth slowed at 28 days. Two out of five chicks successfully fledged (40%), and both remained in the nesting area a week later. In his study in Bulgaria, VATEV (1987) reported that the young remained at the nest site for about 46-50 days and fledged at about 49-53 days.

## Conclusion

This study only covers two nesting sites, but given the rarity of the species and the lack of information available on its reproductive biology, it seems useful to publish these data.

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