*Go-South Bull.* (2018), **15**, 137-140

# New breeding record of Lammergeier (*Gypaetus barbatus barbatus*) in Morocco and proposals for its conservation

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Disponible en ligne (Available online) : 10 September 2018

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Once widespread across Africa and Eurasia, Lammergeiers or Bearded Vultures (*Gypaetus barbatus*) showed a significant decline over the last 20th century in several regions except in the reintroduction areas such as Alps and Pyrenées (BirdLife International 2018). According to the IUCN, the species is widely and disjunctly distributed across its range and it has been uplisted to Near Threatened owing to evidence that is has undergone a moderately rapid population decline over the past three generations (BirdLife International 2018).

This specialist scavenger is regarded as rare and at high risk in the Maghreb region with 5-10 pairs in Morocco (Cherkaoui 2005) where it is considered critically endangered by using IUCN criteria nationally due to its extreme rarity and its tiny population (Thévenot *et al.* 2003). Its status in Algeria remains, however, unknown due to the absence of recent and confirmed records (Isenmann & Moali 2000), while in Tunisia the species is considered as extinct (Isenmann *et al.* 2005). However, two observations in 2012 and 2014 of a Bearded Vulture at Theniet El Had National Park in Algeria gave hope than the species might still survive there (Djardini *et al.* 2014). Surprisingly, the altitude in that particular area does not exceed 2000 m comparatively to High Atlas in Morocco where the species is mainly observed at 3000 m and above (Cuzin 2010).

In North-Africa as in the rest of the African continent, the most prevalent threat to scavenging birds is said to be poisoning, either intentional or unintentional from illegal use of baits to control feral dogs and other carnivores (Margalida *et al.* 2008, Krüger 2015). Also it is thought that the burial of cattle carcasses throughout Morocco is a practice that avoids scavengers feeding on them, causing food shortage (Cherkaoui obs. pers).

High Atlas Mountains in Morocco have been a home to large raptors species for a long time (Thevenot *et al.* 2003). In fact, recent records of Lammergeiers in North Africa come quite exclusively from this area (Cuzin 2010). These vultures with those recently spotted in Algeria appear to be the only known and last surviving population of the species in southern Mediterranean (Frey 1994).

The survival of this small population of Lammergeiers gives hope that its entire population may not have been lost in this part of the Atlas Mountains. It is quite possible that this isolated population has been able to resist the effects of agents that have almost decimated the species elsewhere (Middle Atlas, Anti-Atlas and Rif) or may not have been exposed to the same threats.


ISSN 2269-9694

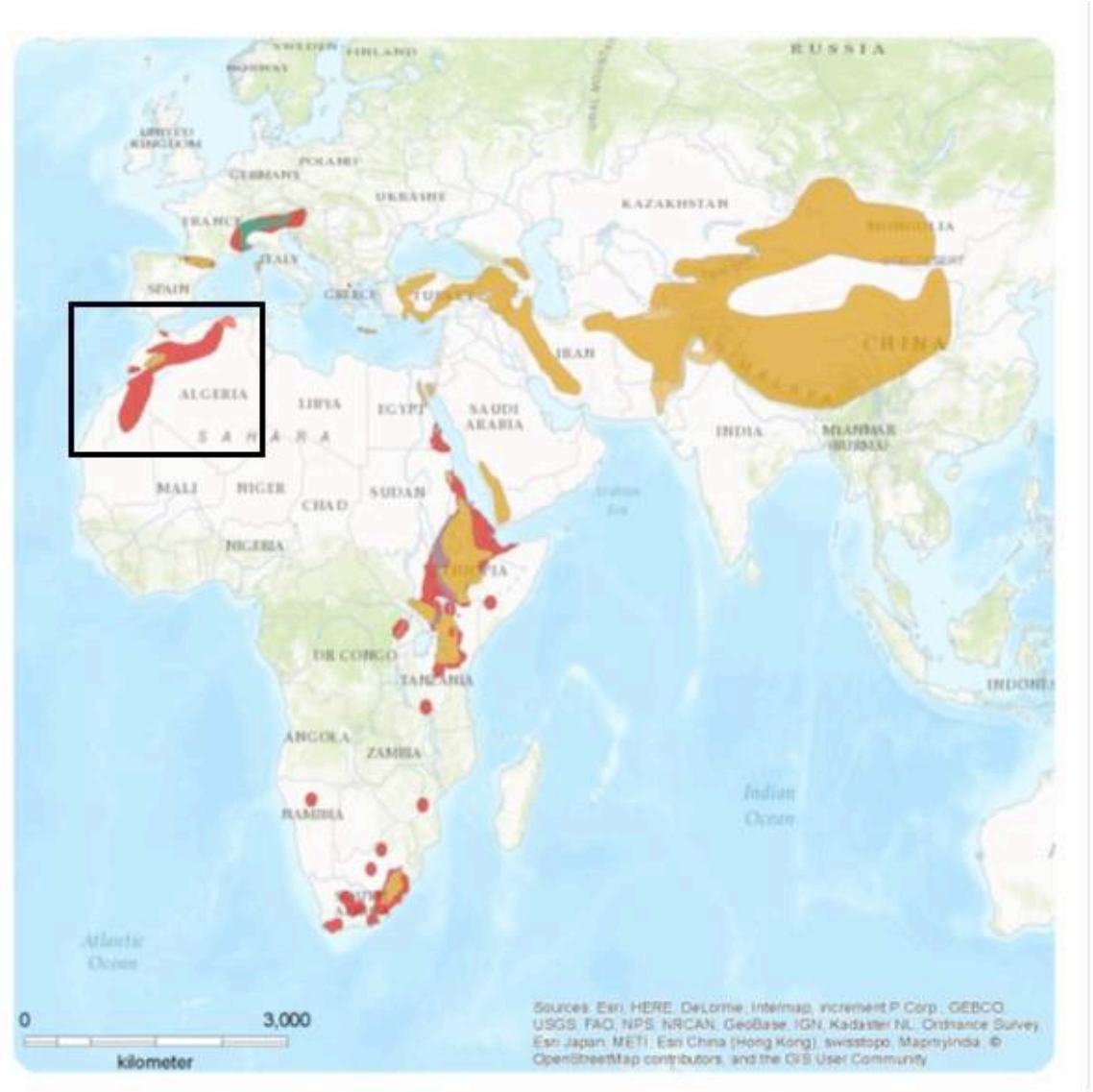


**Figure 1**. Breeding range of Lammergeier (after IUCN)

## Nesting area

High Atlas Mountains, North Africa's greatest mountain range, are spread over an area of c. 740 km and comprise the highest peaks of North Africa, such as Toubkal 4167 m and M'goun 4071 m.

The northern sides and tops of the lower peaks are clothed with forests of Holm's oak, pines, cedar and other trees, including walnuts, which grow to the limit of irrigation. The lower slopes enclose well-watered valleys in which native farmers cultivate tiny and steps-like irrigated fields. This is an important transhumance area, with thousands of heads of cattle roaming endless pastures that provide invaluable sources of food for scavengers. The distribution and density of Lammergeier is often correlated with domestic livestock management practices (Heredia & Heredia 1991, Thibault *et al.* 1993).

In some remote areas or natural reserves, wild large ungulates such as Barbary Sheep (*Ammotragus lervia*) and Cuvier's Gazellas (*Gazella cuvieri*) as well as Wild Boars (*Sus scrofa*) are still roaming in this mountainous region (Cuzin 2003) and could represent another source of food for Lammergeiers.

During the 21st century, few breeding records or juveniles were recorded mainly in the central High Atlas at Jbel Toubkal and Jbel Mgoun. There has also been one confirmed observation of a second-year bird in Jbel Ayachi in Eastern High Atlas in 2005 (Cherkaoui *et al.* 2006).

 

Nests are built in small caves or on rock ledges on high, inaccessible cliffs, typically between 1,000 and 3,000 m a.s.l., usually away from human settlements (Cramp & Simmons 1980).

## Breeding case

Ismail Allaoui, a passionate birdwatcher who lives in M'goun village, has so far performed hundreds of miles walking across the central High Atlas to monitor raptor populations, both breeding and migrating, and shares this passion with people from local populations and visitors. Also he is willingly raising awareness for raptors protection amongst local shepherds and villagers, explaining raptor's role to maintaining healthy ecosystems.

On 12 July 2018 and while camping at the west pass of Jbel M'goun (31.511781, -6.446513), Ismail has observed 3 Lammergeiers (a pair of adults and a newly fledged juvenile) soaring above him at 3800 m for few seconds before they flew away. This observation which was witnessed by other birders is another breeding record of this elusive species not only in Morocco but in the entire Maghreb region. Moreover, it states that central High Atlas represents the stronghold and key habitat for this large scavenger in Morocco and Maghreb as well, where conservation measures should be focused by eliminating or controlling human-driven threats such as poisoning, cliff-climbing, ski-lift and power lines.

It is therefore important to clearly identify and monitor threats that locally affect population of Lammergeiers in Morocco, prioritize them and suggest suitable conservation actions where possible. In fact, several factors would contribute to save and increase their numbers, namely the control of the use of poisons as the indiscriminate laying out of poisoned baits for mammalian carnivores which are suspected to be a major factor, the provision of food, the establishment of good practices in the local livestock farms, and protection of nests to avoid disturbance. Also attempt to estimate the potential value, in terms of ecosystem services, provided by vultures is another important action.

Further studies are required to ascertain whether productivity or survival is limiting population growth, and whether anthropogenic influences are resulting in the abandonment of territories in the periphery of the range and the subsequent decline in numbers.

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Ismail ALLAOUI at Jbel M'goun

 