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Research Article

Expansion of the Geographical Range of Long-tailed Dove *Oena capensis* (Linnaeus, 1766) (Columbidae) in Syria

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Abstract: There are more than 390 bird species in Syria from different families such as columbidae. Seven bird species belong to this family; one of them is Namaqua dove *Oena capensis*. This species was recorded for the first time in Syria in 2003 (Palmyra in the Syrian desert). It is resident and common in most sub-Saharan Africa, and less common in the middle east. Its geographical range has been expanded to the middle east since 1980s, and it was recorded from many middle east countries. In this study, this species was recorded from the Syrian coast (part from Mediterranean coast) (Latakia- Syria) in 2023. Four individuals (two males and two females) were recorded from two sites of Latakia governorate: Al-Shabatliyah and Burj Islam. This refers to the continuous expansion of the original geographical range of *O. capensis* towards the north in general and toward west in Syria. It is recommended that new studies of avifauna in Syria focus more on impact of climate change. Also, more investigations are needed to determine the types of food which this species may have in the Syrian coast.

Keywords: Climate change, Geographical range, Namaqua dove, Syrian coast, Biodiversity.

Introduction

Geographical range size is an essential criterion to determine if a species faces a heightened risk of extinction or not [1,2]. Changes in range size are used in regular means to predict extinction risks of species due to habitat loss or climate change [3,4].

Climate change is increasingly causing upward shifts in the distributions of animal species [5]. Thomas and Lennon [6] found that many British bird species had expanded the northern margins of their geographical range further north by around 19 km in average due to a period of climatic warming while Massimino et al. [7], showed that many British birds have expanded their geographic range as a short-term response to climate change, and that the northern margin had been shifted north by nearly 45 km in average. These shifts may cause extinction risk for number of bird species [8].

Syria is one of Mediterranean countries that has big richness in bio-communities with a great biodiversity of its fauna and flora [9]. There are more than 390 bird species in Syria varying between resident, migrant, crossing, and visitors. Some of them are vagrant birds and they may shelter to Syria due to climate change [10]. The family [Columbidae: Columbiformes] includes 321 species belonging to 42 genera around the world [11]. In Syria, there are seven columbid species belong to three genera in the wild [12] which are: Rock Dove *Columba livia*, Stock dove *Columba oenas*, Common wood pigeon *Columba palumbus*, Collared dove *Streptopelia decaocto*, Turtle dove *Streptopelia turtur*, Laughing dove *Streptopelia senegalensis*, and long tail dove (Namaqua dove) *Oena capensis*.

The species *Oena capensis* (figure 1) is an indigenous species to Africa as it is abundant and common resident in sub-Saharan Africa and it was less common in the Middle East. Some populations of this species are resident, but others have seasonal movements or regular migrations in some areas [11,13]. However, it could be considered as an invasive species that has high ability to spread and adopt with new habitats [14]. This species has expanded its geographical range through the middle east since 1980s, and many studies outweigh that this expansion is toward the north due to developments in irrigation in desert area of Arab peninsula [15].



Figure 1: General shape of *Oena capensis* (A: male, B: female) (Syrian bird, 2008).

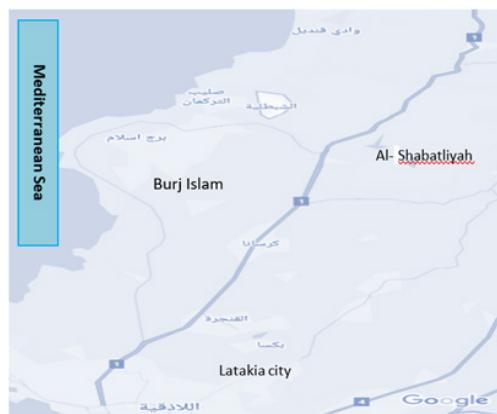


Figure 2: Area of the Study on Map.

This expansion is normal due to human activities. Expansion of irrigated agriculture has contributed to expansion of geographical range of *O. capensis* as it tries to find new suitable habitats which can provide suitable food and shelter: this was followed by successful breeding trying [16]. This species does have two recognized subspecies: *Oena capensis* which is found in sub-Saharan Africa, the Arabian Peninsula, and Socotra, and *Oena capensis aliena* which is found on Madagascar [17].

The studies have documented invasion of this species into many new areas of Arab peninsula, it was recorded in 21st century in northern of Egypt, Kuwait, and Jordan [16]. Its populations settled in areas located to the north of its previous main geographical range from the beginning of 21st century. The settlement of this species has been continued as it was recorded in many countries located to the north of its original geographical range in Africa, west Asia, north of Morocco, Cyprus, and Turkey, and central and south of Asia [18,19,20,21].

Oena capensis recorded in Jordan for the first time in 1980s and has become a settled species [22]. The first record to this species in Lebanon was in 1999, and was recorded repeatedly until 2015 [23,24,25]. In Turkey, it was recorded for the first time in 2005 [26], and it was recorded many times after [27,28] to become one of the breeding species in Turkey in 2023 [21]. Vagrant individuals of this species were documented in Greek and Georgia, and there was increasing in its population size along the Mediterranean coast [29]. It is expected to expand towards south Europe in near future [29].

Therefore, the phenomenon of distribution of this species northwards in the Middle East deserves more attention and furtherer studies. In Syria, it was recorded for the first time in 2003 in Syrian desert, Palmyra oasis near Wadi Al Abiad Dam, although it was observed around Palmyra since 2001 [9]. It was a very rare summer visitor, and it migrates to Syria in spring and leaves it after breeding season toward Africa [9]. It was repeatedly recorded from 2007 to 2008 including six males and one female in May 2008. This refers to possibility of being a rare resident to Palmyra area, but its breeding has not been confirmed yet [30,31]. There were no data updating for Syria since 2011. However, it was a non-breeding species according Birdlife International until 2024 [32].

Oena capensis was a rare summer visitor to Syria especially to Al Badiyah area (with a desert climate), and it may reproduce and gradually increase in number there. Usually, this species lives in grass meadows and semi- deserts that contain spiny bushes [12], and it wasn't recorded in the Syrian coast before this research (2024).

Description

It is a very small dove with a total body length of 28 cm [11] including tail length (9cm). Body colour is bluish-gray or brownish-gray. Feathers in the middle of the tail are black. Big brownish-red spot is seen on the black primates during flying, and coverts of wings are brownish- grey with isolated dark spots. Namaqua dove is easy to be distinguished from general shape of pigeons and its small size. The male has a distinctive black mask and colourful bill [33], and the female has a plain head and dark bill. Swift and straight in flying, but it spends most of its time on the ground.

This species is mainly granivorous, but its dietary is insufficiently known [34,35]. It is mostly seen cautionary feeding on the ground in farms near animals, and it consumes a group of cultivated seeds and grains. It may be seen associated with any species of *Streptopelia* sp. [16].

Importance of Study and Aims

This the first study to focus only pigeons and doves which are present in the Syrian coast. The main aim was to determine if the climate change has a role on bird range expansion of these birds.

Materials and Methods

The study was carried out from April 2023 to April 2024 using DT08 10x25 digital camera binoculars to observe bird species in the study area.

The area of the study included two different sites Latakia Governorate:

1. Al-Shabatliyah site (35° 41' 9" N, 35° 49' 39" E): Al Shabatliyah town is in the Latakia countryside. It is about 1 km from the sea, and about 18 km to the north of Latakia city with around 100 m elevation from the sea level. It is surrounded from all directions with orange and olive orchards and forests. Lands of the village exposed to fires in 2020 and after which led to Lands of the villages exposed to burning many times since 2020 which led to heavy loss in crops and vegetation there.
2. Burj Islam site (35° 41' 00" N, 35° 48' 00" E): It is about 1 km from Mediterranean Sea coast, and it locates on a rocky coast of Mediterranean Sea with many caves. It has vermiculate plain lands descend toward west north.

Results and Discussion

Four adult individuals were recorded (two females and males) for the first time in Latakia governorate in two positions of Burj Islam and Shabatliyah in 2023 (figures 3&4). It was verified that these individuals are scattered (wild) and they did not escape from the cage by checking feather safety and detecting individuals of this species repeatedly according to bird hunters in the area. It was detected from the beginning of summer 2023 associated with populations of the species *Streptopelia turtur*. This is a new evidence that the geographical range of *O. capensis* is expanding continually. This agrees with what was found by many previous studies [18,19,20,21,23]. However, the expansion within Syria was towards the west of the country which has more moderate climate than the desert climate where *O. capensis* was first recorded in Palmyra (desert climate). This may mainly be attributed to climate change [5,6,7], as temperature might rise up later. However, more investigations and studies are needed to prove that happened regularly and it is not by accident.



Figure 3: A female of *O. Capensis* was Captured and re-freed Later in the Study Area.



Figure 4: A male of *O. Capensis* was Captured and re-freed Later in the Study Area.

Conclusion

This refers to the continuous expansion of the original geographical range of *O. capensis* towards the north in general and toward west in Syria. It is recommended that new studies of avifauna in Syria focus more on impact of climate change. Also, more investigations are needed to determine the types of food which this species may have in the Syrian coast.

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