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First record of the breeding Mediterranean Gull (*Larus melanocephalus* Temminck, 1820) in Iran

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Abstract

We report the breeding of Mediterranean Gull *Larus melanocephalus* from Shahid Kazemi dam, West Azerbaijan, Iran, which is considered the first breeding record for the species in Iran. Breeding attempts were monitored in the 2014-2015 breeding seasons at the Saidabad islet of Shahid Kazemi Dam, where Mediterranean Gulls bred in mixes-species colonies with Slender–billed and Black-headed Gulls. We recorded around 100 Mediterranean Gull nests in the Seidabad islet during the two breeding seasons. The modal clutch was a three-egg clutch. Nestlings weighed 27 gr at hatching and 358 gr prior to fledging. Our record in northwest Iran is suggesting that the species is expanding its breeding ranges probably as a result of variation in breeding grounds or climatic changes. Further investigations are needed to understand their breeding ecology and the causes and consequences of colony expansions.
Keywords: Mediterranean Gull, *Larus melanocephalus* breeding, Shahid Kazemi Dam, Iran

Introduction

The Mediterranean Gull (*Larus melanocephalus*) breeds in the Western Palearctic, mainly in central Turkey. There are colonies elsewhere in Europe this species has now expanded over most of Europe including Great Britain, Ireland, Belgium, Denmark, Sweden, Estonia, Switzerland, the Czech Republic, Hungary and the Balkans. Previous studies reported that this species is mainly migratory that migrates between breeding and wintering areas (del Hoyo *et al.* 1996, Olsen and Larsson 2003). In winter, Mediterranean Gulls migrate to the Mediterranean, Atlantic coasts, North-west Europe, and North-west Africa (del Hoyo *et al.* 1996). The migration toward breeding areas usually starts in early April and breeding usually happens in early-May (del Hoyo *et*

al. 1996). The breeding and resident populations have been recorded in relatively large areas of 182000 sq. km in the western Palearctic and have been classified in the LC category of red list threat categories (BirdLife International Species factsheet, 2015).

Snow and Perrins (1998) recorded breeding colonies of the Mediterranean Gull along the species breeding colonies has been recorded and most populations of this species are from the Asian Turkey. The species returns to its breeding colonies from late-February (Olsen and Larsson 2003) to early-March, with most beginning to breed from early-May (del Hoyo *et al.* 1996). Colonial breeding is the main breeding behavior of the species but breeding of single pairs intermingling with other species colonies was also reported (del Hoyo *et al.* 1996). Mediterranean Gulls usually breed in mixed-species colonies with Sandwich Terns *Thalasseus sandvicensis,* and Black-headed gulls *Larus ridibundus* (del Hoyo *et al.* 1996). It has been suggested that Mediterranean Gulls prefer vegetation covers for breeding and avoid bare soil of coastal areas. Nesting in the fields and grasslands also reported (del Hoyo *et al.* 1996, Snow and Perrins 1998). Distance to the water resource and the structure of the vegetation is most important determinates for nest-site preferences in this species (Snow and Perrins 1998, Burgess and Hirons 1992). Mediterranean Gulls have been expanding their breeding colonies during the last 50 years from costs of Black Sea to Central and western Europe in west (Ardamatskaya 1999) and to north Caucasian plains and Azerbaijan in west (Del Hoyo *et al.*, 1996). Until recently, Mediterranean Gull was listed as scarce and irregular passage migrant (less than annual) to some areas of Iran with no confirmed breeding attempt (Scot & Adhami 2006). In the current work, we report the occurrence of relatively large breeding colonies of the Mediterranean Gull in northwest Iran as a first breeding record for this species in the country.

Material and methods

Study area and field data collection

We studied the breeding colonies of the species in Shahid Kazemi dam's Islands, West Azerbaijan province, Iran (Fig.1) during March 2014 to June 2015. This dam was constructed in 1971 on Zarrine-h-Rood river to provide enough water for downstream agricultural and farming grounds. During spring when the maximum water level is reached, more islets which are closer to the mainland appeare making a breeding habitat for colonially-breeding waterbirds. Totally four main islets that support large populations of breeding waterbirds are Nazargah, Khushe-h-Darreh, Seied najmeh and Seidabad (Fig. 1). Among them, Mediterranean Gull inhabits Seidabad islet. which covers an area of about 4600 sq.m. The ares was visited regularly form early stage of breeding activities of waterbirds for another study. In each visit any nesting

activities were recorded and the number of active nests was counted. Nest initiation date, clutch size, brood size, and nest physical and structural traits were measured for of 26 randomly selected nests. In addition egg traits (width, breath, and mass) were measured using an electronic caliper and balanced to the nearest 0.1 mm and 1 gram. We also recorded habitat variables surrounding the nest (1 m radius) including the main plant specie and the vegetation density as well as thedistance to other nests.

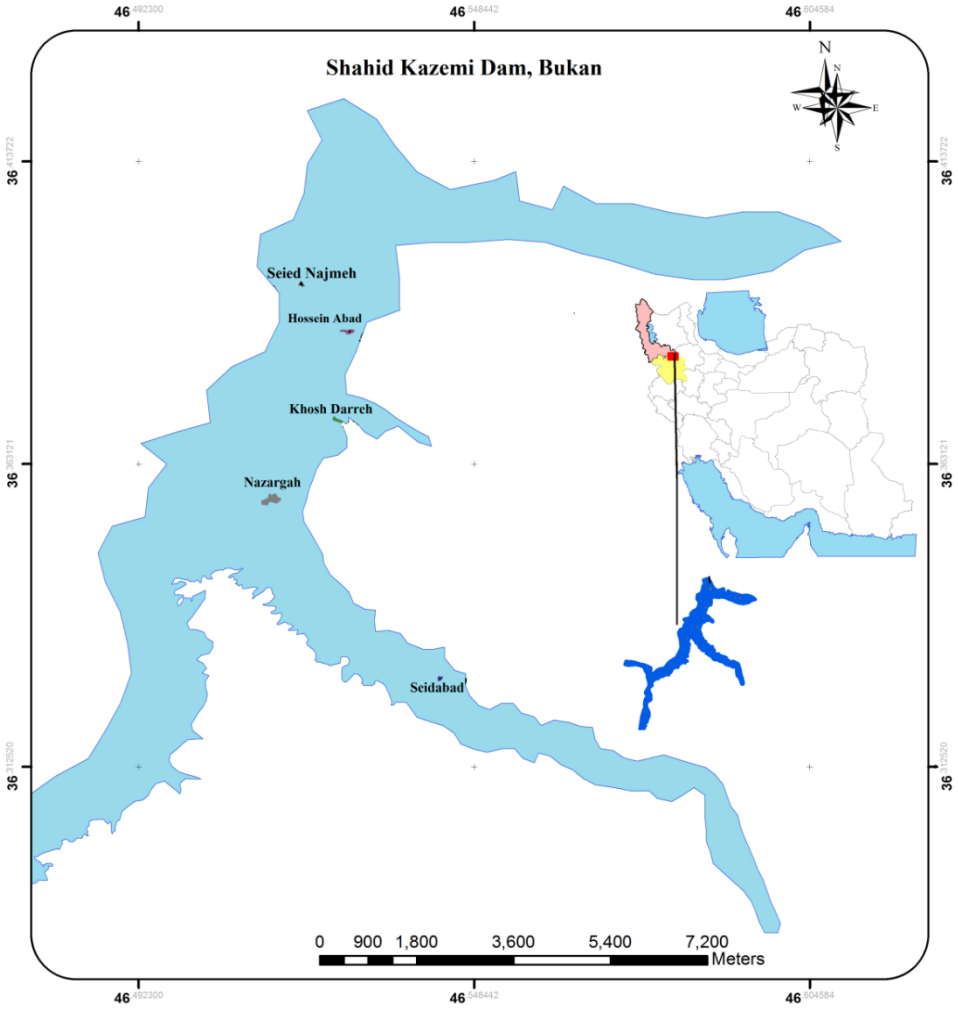

Figure 1. Location of the breeding colony of Mediterranean Gulls in Shahid Kazemi dam, Northwest Iran.

Results

We recorded around 100 Mediterranean Gull nests in Seidabad islet during the two breeding seasons. Breeding birds arrived at the nesting areas in early-April and initiated nesting in mid-April, with peak egg laying and hatching occurring in late April and mid-May respectively. The modal clutch size was three-egg clutches but some nests with two eggs were also observed.. The mean weight of the eggs was 33.4 gr (n=64, SD=1.45). The mean dimension of the eggs was 54.79 × 37.59 mm. The average weight of nestlings in the

hatching day was 27 gr (n=45). The mean weight of the offspring prior to fledging was 358 gr (n=36). The mean diameter and the mean depth of the nests were 18.5±3.43 cm and 6.2±0.65 cm respectively. Nests were places inn close distance to plant such as *Bromus tectorum*, *Stipa barbata* and *Euphorbia helioscopia.* female birds use parts of *Bromus tectorum* and *Avena festoca* during nest construction. The mean density of nests and vegetation coverage were estimated 5.2±0.98 and 12.38 percent per sq.m respectively. The mean distance between Mediterranean Gulls nests to conspecific nests was 2±0.51 m whereas the nest was closer to non-conspecific nests (Common Tern and Common Black-head Gull; 0.5 ±0. 23) indicating a higher density of other species in at the breeding colony.

Discussion

The breeding timing of the Mediterranean Gulls in the studied colony was similar to other breeding population in Palearctic region (del Hoyo *et al.* 1996).. Previous studies suggest that habitat variables such as topography, distance to the water and density of vegetation are the most important determinants for Mediterranean Gull nest site selection (Snow and Perrins 1998, Burgess and Hirons 1992, del Hoyo *et al.(*1996), however, at the studied colony, we failed to collect detail information in order to interpret the shift to new breeding areas. Apparently the distance to the nearest conspecific or non-conspecific determine selection of nesting areas as a results of social organization and colony dynamics or territoriality. The Mediterranean Gull is considered to be relatively new breeding species in most part of central and western Europe and was mostly confined to costs of the Black Seas until the 1940s (Ardamatskaya 1999) with a recent spread to the north Caucasian plains and Azerbaijan (Del Hoyo *et al.*, 1996). Our record in northwest Iran is suggesting that the species is expanding its breeding ranges probably as a result of variation in the breeding areas or climatic changes. Further investigations are needed to understand their breeding ecology and the causes and consequences of colony expansions.

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