

Further breeding records of Black Stork *Ciconia nigra* in Iran

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Black Stork *Ciconia nigra* is one of three stork species recorded for Iran and is a rare winter and summer visitor. White Stork *C. ciconia* has good breeding populations in western Iran and the Woolly-necked Stork *C. episcopus* is a vagrant (Kaboli *et al* 2016, Scott & Adhami 2006, Porter & Aspinall 2010). Black Stork has been recorded in much of Iran (Figure 1, Mansoori 2008, Kaboli *et al* 2016, Porter & Aspinall 2010) though its breeding occurrence and migration routes there are poorly known (Cramp *et al* 1977). The first confirmed breeding record of Black Stork in Iran was in 1970 (Scott 2007). We present three further breeding records of Black Stork for Iran. During river surveys, breeding of Black Stork was recorded by us at the Karun (Khuzestan province, Plates 1–3), Qaranqu (East Azarbaijan) and Aliabad (Khorasan Razavi) rivers, southwest, northwest and northeast

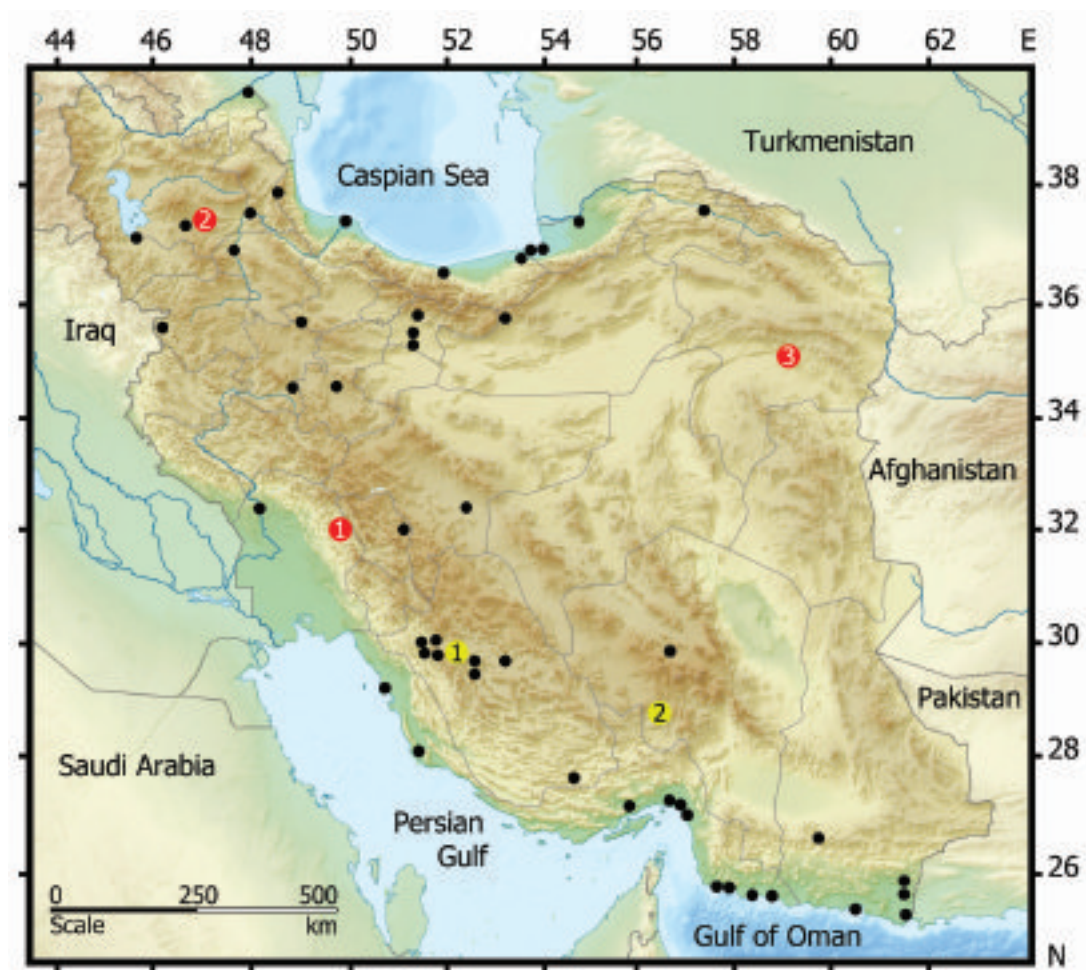


Figure 1. Distribution of Black Stork *Ciconia nigra* records in Iran (Scott 1995, Hamedanian 2000, Amini & Willems 2008, Mostafavi *et al* 2008, Amini & van Roomen 2009, Kaboli *et al* 2016, Ahmadzadeh *et al* 2016). Black dots: records of Black Stork except confirmed or suspected breeding records. Yellow dots: 1, confirmed breeding record (Scott 2007); 2, suspected breeding records (Scott 2007, Table 1). Red dots: 1, breeding record, Third-Karun-Dam reserve (this paper); 2, breeding record, Qaranqu river (this paper); 3, breeding record, Bazmai protected area (this paper).

Table 1. Breeding records of Black Stork, *Ciconia nigra* in Iran.

Location	Nesting site	Date	Status of record	Source
15 km south of Aliabad, Fars province	Unknown	1970	First confirmed breeding record in Iran	Scott 2007
Kuh-e Khabr, Kerman province (Khabr national park)	Unknown	1975	It was suspected breeding	Scott 2007
Qaranqu river, near Zahak castle, Hashtroud county, East Azarbaijan province	Cliff	May 2006	A breeding pair at nest with two young. Nest 20 m above river surface.	This paper
Bazmai protected area, Aliabad river, near Fathabad town, Rashtkhar county, Khorasan Razavi province	Cliff	May 2010	A breeding pair with two young in the nest. Nest 20 m above river surface.	This paper
Qaranqu river, Hashtroud county, East Azarbaijan province	Unknown	May 2016	Observation of two immatures	This paper
Third-Karun-Dam reserve, near Rakat bridge, Izeh county, Khuzestan province (Plate 2).	Cliff (northwestward slope, close to <i>Pistacia atlantica</i> and <i>Quercus brantii</i> trees)	May 2016	A pair with 2 young and 4 white eggs in nest (Plates 1–3). Nest 24 m above water surface. Nest mainly of twigs of <i>P. atlantica</i> on outer side, slender bushy twigs and plastic bags inside.	This paper

Iran respectively (Figure 1, Table 1). Nesting sites were on cliffs, 20–24 m above the water. There were two young and four white eggs in the Karun river nest (Plate 2), two young at the Qaranqu river nest and two young at the Aliabad river nest. Nests were of tree/ bush twigs and plastic bags.

The Karun river (Eulaeus/Ulai river) rises in Zardkuh Bakhtiari mountain, and is the longest and largest (950 km, 453 m³/s) Iranian river. The Third-Karun-Dam reserve (red dot 1 in Figure 1), where Black Stork breeding was recorded, is covered by woodlands of Turpentine *Pistacia atlantica*, Oak Manna *Quercus brantii*, Hawthorn *Crataegus* sp and Common Fig *Ficus carica*. European Chub *Leuciscus cepholus*, Tigris Salmon *Barbus esocinus* and Large-scaled Barb *Barbus grypus* have been recorded (Osteichthyes) and Dice Snake *Natrix tessellata* and Large-scaled Rock Agama *Laudakia nupta* occur (Reptilia). The Qaranqu river (red dot 2, Figure 1) rises in Sahand volcano and Aghdagh mountain and is one of the longest and largest branches of the Qezelouzan river. The Qaranqu, with *Tamarix*, *Typha* and *Phragmites* vegetation communities, is a permanent river. Brown Trout *Salmo trutta*, European Chub and Kura Barb *Capoeta capoeta* are the main fish species in the river whilst Eurasian Marsh Frog *Pelophylax ridibundus* is the most frequent amphibian. The Aliabad (red dot 3 in Figure 1, Kal-e Aliabad), with a *Salix* vegetation community, is a permanent river. Various fish species and *P. ridibundus* are abundant.

The rivers were surveyed by car and on foot and a Canon camera was used to document the storks breeding beside the Qaranqu and Aliabad rivers (springs of 2006

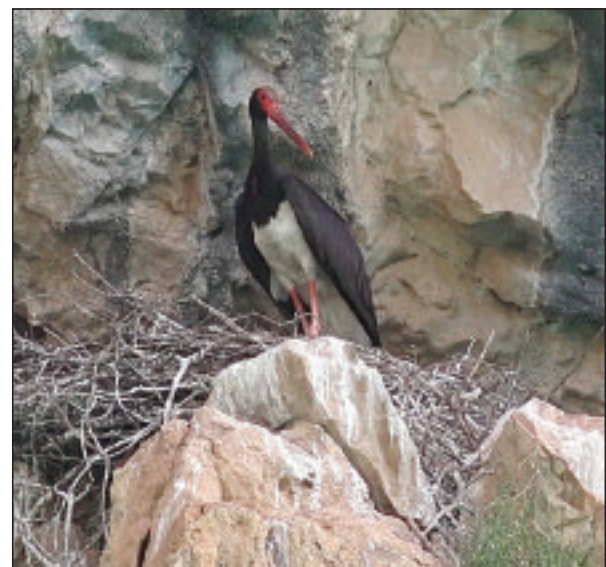


Plate 1. Black Stork *Ciconia nigra* on cliff nest (see also Plates 2, 3), Third-Karun-Dam reserve, Khuzestan province, Iran. © P Dibadj



Plate 2. Black Stork *Ciconia nigra* nest on cliff (see also Plates 1, 3) containing four eggs (one hidden by plastic bag) and two nestlings, Third-Karun-Dam reserve, Khuzestan province, Iran. © P Dibadj



Plate 3. Cliff breeding site for Black Stork *Ciconia nigra* (see also Plates 1, 2), Third-Karun-Dam reserve, Khuzestan province, Iran. © P Dibadj

and 2010 respectively). In the Third-Karun-Dam reserve two boats and a Dji Phantom camera-drone were used to record Black Stork eggs and nestlings (spring 2016). Rivers and wetlands in Shur & Shirin rivers delta protected area and Meighan wetland were visited and surveyed during winters 2004 and 2016 respectively (Table 2). The Black Stork literature for Iran covering the 1970s onwards was reviewed (Table 2, Figure 1).

Cramp *et al* (1977) considered that wintering Black Storks in northern India and Pakistan probably included individuals bred in the Caspian region and western Asia. Kaboli *et al* (2016) concluded that in Iran Black Stork probably breeds in the Alborz, Zagros

Table 2. Records of Black Stork in Iran, 1970s to date.

Location	Province	Current status of location	Records
Kabutarkhan wetland	Kerman		Four individuals in winter, year unknown (Hamedanian 2000)
Bakhtegan national park & wildlife refuge	Fars	Threatened by human activities	One individual, Jan 2007 (Foekens <i>et al</i> 2008)
Parishan & Arjan protected area	Fars	Dry (illegal water extraction for agriculture)	12 individuals in 1970s winters (Scott 1995)
Rice fields, Islamabad village, Firouzabad county	Fars		One individual, Aug 2016 (DoE)
Shur & Shirin rivers delta protected area	Hormozgan	Threatened by human activities	Four individuals, Jan 2004 (ATQ); one individual, Jan 2009 (van Roomen <i>et al</i> 2009); one individual, Jan 2009 (van Roomen <i>et al</i> 2009)
Jagin, Gabrik & Jask protected area	Hormozgan		One individual in winter 1970s (Scott 1995); two individuals, Jan 2007 (de Boer <i>et al</i> 2008); two individuals, Jan 2009 (van Roomen <i>et al</i> 2009)
Bahukalat (Gando) protected area	Sistan & Baluchistan		One individual (Scott 1995); two individuals, Jan 2007 (van Bruggen <i>et al</i> 2008)
Chahbahar bay & Konarak creek	Sistan & Baluchistan		Occasional winter visitor (Scott 1995)
Helleh protected area (delta of Helleh river)	Bushehr		Five individuals, winter 1970s (Scott 1995)
Mond protected area	Bushehr		At least one individual, winter 2005 (Mostafavi <i>et al</i> 2008)
Miankaleh peninsula & Gorgan bay	Mazandaran	Threatened by human activities	Scarce summer visitor (Kaboli <i>et al</i> 2016)
Alagol, Ulmagol & Ajigol lakes	Golestan	Threatened by human activities	Up to 10 individuals recorded in summer (Scott 1995)
Gandoman wetland	Chaharmahal & Bakhtiari	Threatened by human activities	Summer visitor (Scott 1995)
Gavkhuni wetland	Esfahan	Threatened by human activities	Scarce winter visitor (Scott 1995)
Nurgol (Neor lake)	Ardebil		Summer visitor and may breed (Scott 1995)
Dasht-e Moghan	Ardebil		Winter visitor (Scott 1995)
Qaranqu river	East Azarbaijan	Threatened by human activities	Four individuals, Dec 2015 (Ahmadzadeh <i>et al</i> 2016)
Shurgol, Yadgarlu & Dorgeh Sangi	West Azarbaijan	Threatened by human activities	Scarce passage migrant (Scott 1995)
Meighan (Meyghan) wetland	Markazi	Threatened by human activities	One individual, Oct 2014, and an immature, Mar 2016 (MK)
Aghgol wetland	Hamedan	Threatened by human activities	Three individuals, Sep 2007
Zaribar lake	Kordestan	Threatened by human activities	One individual, Sep 2016 (Green Chya Society)

and Kopet Dagh mountain ranges, and Kerman province. They also considered that rivers in Fars, Hormozgan and Sistan & Baluchistan provinces are wintering habitats of Black Stork in Iran (Table 2). Wintering and breeding populations of Black Stork were estimated at more than 50 individuals and less than 10 pairs, respectively, during the 1970s (Scott 1995). According to Kaboli *et al* (2016), Black Stork is listed as a 'Protected Species' by the

Iranian department of the environment and has high conservation value. It is listed by the Iran bird records committee as a rare breeding species.

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LITERATURE CITED

- Ahmadzadeh, F, HB Kiabi, A Abdoli, H Mostafavi, S Ataei, AT Qashqaei, J Gholami, A Talebi, R Saberi Pirooz & F Nejat. 2016. *The Atlas of Wetlands in East Azarbijan*. Final report. Shahid Beheshti University/ East Azarbijan DoE, Tehran.
- Amini H & M van Roomen (eds). 2009. *Waterbirds in Iran, January 2009. Results of a mid-winter count in the Provinces of Gilan, Mazandaran, Golestan, Fars, Khuzestan, Bushehr, Hormozgan & Sistan-Baluchistan*. DoE, Iran & Foundation Working Group, International Waterbird and Wetland Research, Netherlands.
- Amini H & FJ Willems (eds). 2008. *Waterbirds in Iran. Results of a mid-winter count in the Provinces of West Azarbayjan, Gilan, Mazandaran, Golestan, Sistan-Baluchistan, Hormozgan, Fars, Bushehr & Khuzestan of the Islamic Republic of Iran, January 2007*. DoE, Iran.
- de Boer, P, P Voskamp, M Ghasemi, M Sehhatiasabet & K Tabari. 2008. Hormozgan. In: Amini H & FJ Willems (eds). *Waterbirds in Iran. Results of a mid-winter count in the Provinces of West Azarbayjan, Gilan, Mazandaran, Golestan, Sistan-Baluchistan, Hormozgan, Fars, Bushehr & Khuzestan of the Islamic Republic of Iran, January 2007*. DoE, Iran.
- van Bruggen, J, A Mobaraki & J Schelvis. 2008. Sistan—Baluchistan. In: Amini H & FJ Willems. 2008. *Waterbirds in Iran. Results of a mid-winter count in the Provinces of West Azarbayjan, Gilan, Mazandaran, Golestan, Sistan-Baluchistan, Hormozgan, Fars, Bushehr & Khuzestan of the Islamic Republic of Iran, January 2007*. DoE, Iran.
- Cramp, S & KEL Simmons (eds). 1977. *Handbook of the Birds of Europe, the Middle East and North Africa*. Vol 1. Oxford University Press, UK.
- Foekens, E, HJP Verdaat & M Balouch. 2008. Fars. In: Amini H & FJ Willems (eds). *Waterbirds in Iran. Results of a mid-winter count in the Provinces of West Azarbayjan, Gilan, Mazandaran, Golestan, Sistan-Baluchistan, Hormozgan, Fars, Bushehr & Khuzestan of the Islamic Republic of Iran, January 2007*. DoE, Iran.
- Hamedanian, A. 2000. Wetlands: Kabutarkhan ecosystem. *Nature and Hunting Journal* 61: 44–46. [In Farsi]
- Kaboli, M, M Aliabadian, M Tohidifar, AR Hashemi & CS Roselaar. 2016. *Atlas of Birds of Iran*. DoE Iran/ University of Tehran, Tehran.
- Mansoori, J. 2008. *A guide to the birds of Iran*. Farzaneh, Tehran. [In Farsi]
- Mostafavi, H, B Kiabi, A Abdoli, AR Mehrabian, M Ebrahimi, A Salmanmahiny, HG Kami, A Naghinezhad, H Delshab, A Moradi & B Bonegazi. 2008. *Biodiversity of Mond Protected Area*. Shahid Beheshti University Press, Tehran. [In Farsi]
- Porter, R & S Aspinall. 2010. *Birds of the Middle East*. Christopher Helm, London.
- van Roomen, M, A Ouwerkerk, M Ram & H Amini. 2009. Mid-winter census of waterbirds in central Hormozgan Province, January 2009 In: Amini H & M van Roomen (eds). *Waterbirds in Iran, January 2009. Results of a mid-winter count in the Provinces of Gilan, Mazandaran, Golestan, Fars, Khuzestan, Bushehr, Hormozgan & Sistan-Baluchistan*. DoE Iran & Foundation Working Group, International Waterbird and Wetland Research, Netherlands.
- Scott, DA (ed). 1995. *A Directory of Wetlands in the Middle East*. IUCN, Gland, Switzerland and IWRB, Slimbridge, UK.
- Scott, DA. 2007. A Review of the Status of the Breeding Waterbirds in Iran in the 1970s. *Podoces* 2(1): 1–21.
- Scott, DA & A Adhami. 2006. An Updated Checklist of the Birds of Iran. *Podoces* 1 (1/2): 1–16.
- Ali Turk Qashqaei, *Echo of Persia Wildlife/Plan for the Land Society, Tehran, Iran*. Parham Dibadj, *Echo of Persia Wildlife, Tehran*; Shahrokh Sadeghpour, *Hashroud office, Iranian DoE*; Mehdi Jomehpour, *Kashmar office, Iranian DoE*; Javad Aslani, *Hashroud office, Iranian DoE*; Mahmood Kolnegari, *Avaye Dornaye Khakestari Institute, Arak*; Jafar Gholami, *Dept Environ Sci, Islamic Azad University, Science & Research Branch, Tehran*; Hamid Akefi, *Echo of Persia Wildlife, Tehran*; Ebrahim Sakhi, *Echo of Persia Wildlife, Tehran*; Mohammad Alavi, *Echo of Persia Wildlife, Tehran*; Farshad Nejat, *Dept Biodiversity & Ecosystem Mgmt, Environ Sci Res Institute, Shahid Beheshti University, G.C. Evin, Tehran*; Panteha Ardani, *Echo of Persia Wildlife, Tehran*; Setareh Babaki, *Echo of Persia Wildlife, Tehran*; Reihaneh Saberi Pirooz, *Dept Biodiversity & Ecosystem Mgmt, Environ Sci Res Institute, Shahid Beheshti University, G.C. Evin, Tehran*; Ashkan Ashariuon, *Echo of Persia Wildlife, Tehran*; Faraham Ahmadzadeh, *Dept Biodiversity & Ecosystem Mgmt, Environ Sci Res Institute, Shahid Beheshti University, G.C. Evin, Tehran, Iran*. a.t.qashqaei@gmail.com