

Clutch size, egg size and egg mass of Black-winged Stilts *Himantopus himantopus*, Shirinsu wetland, Hamedan province, western Iran

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The Black-winged Stilt *Himantopus himantopus* is a common and opportunistic worldwide breeder (BirdLife International 2016). In Iran, Black-winged Stilts can be found in northern, southern and southwestern wetlands (Table 1, Scott 1995, 2007, Tohidifar *et al* 2009, Porter & Aspinall 2010, Ashoori 2011, Kaboli *et al* 2016). Although this species adapts readily to environmental conditions, it may not breed during periods of drought especially in tropical and subtropical regions (Cramp & Simmons 1983). While this wader is straightforward to study, there is no reliable database of its breeding or demographic status in the Middle East (Ashoori 2011, Barati *et al* 2012ab, Suleiman 2009, Tohidifar *et al* 2009). The objective of this report is to present some basic information, from egg measurements to nest density, of the Black-winged Stilt in one of the Iranian wetlands.

The study site is the Shirinsu (Shirinsou) wetland, 35° 29' 59" N and 48° 26' 31" E, in Hamedan province, Iran. The wetland is a dam-based reserve on Qara Chai river. Up to 2013, 119 avian species were recorded for the reserve (Gholami 2013). From studies in

Table 1. Breeding populations of Black-winged Stilt *Himantopus himantopus* in Iran.

Wetland	Population	Source	
Urumiye basin, Azarbaijan provinces	300–500 pairs (1970s)	Scott 2007	
southern wetlands lake Urumiye	100 pairs (1970s)		
Miankaleh wetland, Mazandaran province	50–100 pairs (1970s)		
wetlands of Mazandaran province	50–100 pairs (1970s)		
Gomishan coastal lagoons, Golestan province	250 pairs (1970s)		
Shadegan marshes, Khuzestan province	60 pairs (1970s)		
Bamdej marshes, Khuzestan province	100–150 pairs (1970s)		
Alagol lake, Golestan province	50 pairs (1970s)		
Ajigol lake, Golestan province	10 pairs (1970s)		
Eymar lake, Golestan province	10 pairs (1970s)		
Voshmigr dam, Golestan province	5–10 pairs (1970s)		
lake Parishan, Fars province	10 + pairs (1970s)		
lake Maharlu, Fars province	25 pairs (1970s)		
Tashk and Bakhtegan lakes, Fars province	35 pairs (1970s)		
Soltanabad marshes, Fars province	5–10 pairs (1970s)		
Zarghan and Lapuyee marshes, Fars province	15 pairs (1970s)		
Hamoun-i Sabari, Sistan & Baluchistan province	100 pairs (1973)		
Helleh delta, Bushehr province	25–50 pairs (1970s)		
Ashkerabad marshes, Tehran province	10 pairs (1977)		
Akh Gol (Agh Gol), West Azarbaijan province	100–150 pairs (1974)		
Dasht-e Gaz, Kordestan province	3 pairs (1971)	Ashoori 2011	
Boujagh national park, Gilan province	25 pairs (2005)		
Agh Gol wetland, Hamedan province	53 pairs (2008)		Barati <i>et al</i> 2012a
Shirinsou wetland, Hamedan province	15 pairs (2010)		Barati <i>et al</i> 2012b
Meyghan (Mighan) wetland, Markazi province	30 pairs (2008)	Tohidifar <i>et al</i> 2009	

2011, the Shirinsu wetland (elevation 1825 m asl, area 57–60 ha) was described as a new Important Bird & Biodiversity Area (IBA) for the Middle East under criteria A1 and B2 (Gholami 2013). The main vegetation around the wetland is *Phragmites* sp and *Tamarix* sp. Some threatened bird species can be found in the region such as Ferruginous Duck *Aythya nyroca*, White-headed Duck *Oxyura leucocephala* and Black-tailed Godwit *Limosa limosa* (Gholami 2013, Gholami *et al* 2017) as well as mammals such as Wolf *Canis lupus*, Golden Jackal *Canis aureus*, Red Fox *Vulpes vulpes*, European Hare *Lepus europaeus* and Yellow Ground Squirrel *Spermophilus fulvus*.

Our Black-winged Stilt data were collected late April–early May 2010. Calipers and digital scales were used to measure length, width and weight of each egg (1.0 mm and 1.0 g accuracy) (Adamou *et al* 2009). To calculate nest density (number of nests/area), we used Toral & Figuerola’s (2012) method.

In total, 12 Black-winged Stilt nests (Plate 1), each with four eggs, were recorded from the northern marshy area (1.3 ha) of the wetland (Plate 2). The minimum nest distance from a conspecific’s nest and the water’s edge were 4 m and 12 m respectively. During the early breeding season, water depth around each nest was between 5–15 cm. Nest density (nests/ha) was 0.20 nests/ha (or one nest/4.87 ha in the whole area) and 9.2 nests/ha in the northern marshy area. The minimum, maximum and mean (\pm SD) egg length were 41, 43 and 41.9 (\pm 0.6) mm respectively (Table 2). The width of all 48 eggs was similar (29 mm) and weight 12–12.3 g (mean \pm SD: 12.2 \pm 0.07 g).

Unfortunately, for the breeding season November 2016–March 2017, we found habitat in a poor condition for many species at Shirinsu wetland, especially breeding waders.



Plate 1. Black-winged Stilt *Himantopus himantopus* nest, Shirinsu wetland, western Iran, April 2010. © Jafar Gholami



Plate 2. Nesting site of Black-winged Stilts *Himantopus himantopus*, Shirinsu wetland, western Iran, April 2010. © Jafar Gholami

Table 2. Size (mm) and weight (g) of 48 eggs in 12 nests of Black-winged Stilt *Himantopus himantopus*, Shirinsu wetland, Hamedan province, western Iran.

Nest	Egg 1		Egg 2		Egg 3		Egg 4	
	size	weight	size	weight	size	weight	size	weight
1	42 × 29	12.3	42 × 29	12.3	43 × 29	12.0	41 × 29	12.3
2	42 × 29	12.3	42 × 29	12.3	42 × 29	12.3	42 × 29	12.3
3	41 × 29	12.0	42 × 29	12.3	43 × 29	12.3	41 × 29	12.3
4	42 × 29	12.3	42 × 29	12.3	41 × 29	12.1	42 × 29	12.3
5	43 × 29	12.3	42 × 29	12.2	43 × 29	12.3	42 × 29	12.3
6	42 × 29	12.3	42 × 29	12.3	43 × 29	12.3	41 × 29	12.1
7	41 × 29	12.2	42 × 29	12.3	42 × 29	12.3	42 × 29	12.3
8	42 × 29	12.3	42 × 29	12.3	42 × 29	12.3	41 × 29	12.3
9	42 × 29	12.3	42 × 29	12.3	41 × 29	12.2	41 × 29	12.2
10	42 × 29	12.3	42 × 29	12.3	42 × 29	12.3	42 × 29	12.3
11	42 × 29	12.3	41 × 29	12.3	43 × 29	12.3	41 × 29	12.1
12	41 × 29	12.2	42 × 29	12.3	43 × 29	12.1	41 × 29	12.2

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