Short Communication

Observations of Waterbirds at Abshineh Dam, Hamedan Province, Iran

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Abstract
During the field surveys conducted approximately once a week at the Abshineh Dam from September 2007 to June 2008, 42 waterbird species were identified. The highest number of species was observed in September 2007 and May 2008 (26 species) while the highest bird density was recorded in November (58 per 10 ha). The commonest species were Eurasian Coot *Fulica atra* (26.2%) and Mallard *Anas platyrhynchos* (18.56%).

Introduction

Hamedan Province covers a total area of about 195,418 sq km and is located between 33º33'–33º38'N and 47º45'–49º36'E. (Barati 2008a). Aquatic ecosystems of this area are limited to some seasonal and man-made wetlands. Main seasonal wetlands are: Pir-Salman, located 15 km W of Asad-Abad (34º40'N, 48º05'E, 2 ha); Cham-Shour, located 25 km E of Asad-Abad (38º40'N, 48º00'E, 500 ha) and Agh Gol (34º29'N, 49º02'E, about 450–1500 ha), a seasonal freshwater wetland 35 km SE of Hamedan (Barati 2008a, Ashoori *et al.* 2007). Two man-made water bodies are important for waterbirds in this province, namely Shirin-Sou (30 km NW of Kabudr-Ahang) and Abshineh dams (Fig. 1).

Due to the cold winters and lack of official designation of nationally important wetlands, mid-winter censuses were not carried out regularly in Hamedan Province with the result that data on waterbird species and their populations are limited to some occasional counts (Barati 2008b). In order to obtain some baseline data on species composition and possible occurrence of threatened birds in the region, we carried out a monthly investigation on changes of waterbird numbers at the Abshineh Dam. This location was chosen because of the importance of the dam for waterbirds. The series of regular surveys carried out as part of this study is the first of its kind for this site.

Materials and Methods

Abshineh Dam (34°46'N, 48°38'E) is situated about 5 km south-west of Hamedan in Western Iran and covers an area of *c.*150 ha. The depth of the water varies from 0 m to about 15 m in some locations. The dominant plant species is Common Reed *Phragmites australis* and the dam is surrounded by mainly muddy areas and by rocks in some parts (Barati 2008b). The coldest days of the year occur in January and February when the number of waterbirds decreases to its minimum because of freezing conditions (Metrological Organization of Iran 2007).

In the present survey, monitoring of changes in waterbird diversity and population was conducted approximately once a week in good weather conditions at the Abshineh Dam from September 2007 to June 2008. Maximum counts for each month are presented in Table 1. All observations were made using 10×40 binoculars and a 15×60 telescope and were obtained by walking around the area or by using a boat.

Results

Surveys indicated the occurrence of 42 waterbird species from 13 families (Table 1). The dominant family was Anatidae, representing 12 species. The highest number of species was observed in September 2007 and May 2008 (26 species) while there was a decline in the number of species from September to December (Fig.2). There were no

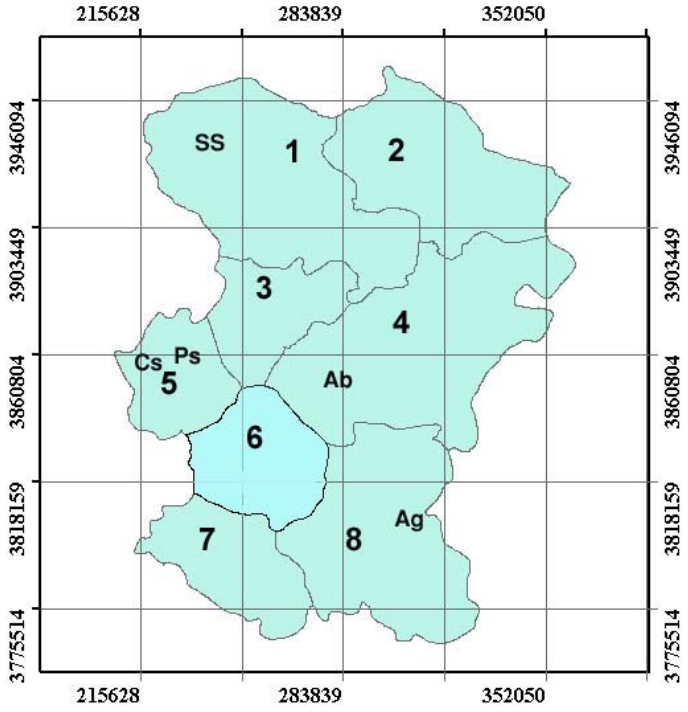

Figure 1. The location of mentioned wetlands and dams in Hamedan Province: Ps: Pir-Salman, Cs: Cham Shour, Ag: Agh Gol, Ss: Shirin-Sou, Ab: Abshineh (scale: 1: 1,000,000). Key to numbers: 1= Kabudar-Ahang, 2= Razan, 3=Bahar, 4= Hamedan, 5= Asad-abad, 6= Toyserkan, 7= Nahavand, 8= Malayer.

records of waterbirds in January or February because the water was frozen. An increase in species numbers was observed from March to May followed by a decline in June (Fig.2).

The population of waterbirds increased from September to November (Fig. 3). The highest bird density was recorded in November (58 per 10 ha.). From March to May the number of birds increased (and bird density reached 51.2 birds per 10 ha - Table 1) with a decline in June (Fig.2) mirroring the decline in the number of species recorded (with a bird density of 22.33 per 10 ha - Table 1). The commonest species was Eurasian Coot *Fulica atra* (26.2%) followed by Mallard *Anas platyrhynchos* (18.56%). The peak counts for the two species were 285 Mallard and 256 Eurasian Coots, both in November (Table 1). Mallard was the dominant species in September, November and March with Eurasian Coot being the most numerous in the rest of the study period except for January and February when there were no birds present. Garganey *Anas querquedula* and Mallard were the earliest migrants, arriving in mid-September and leaving the area before other ducks. Garganey was present in maximum numbers in September. Common Teal *Anas crecca* was common in most months. There were few records of Eurasian Shoveler *Anas clypeata* in autumn but larger numbers were observed in April and May – 65 and 85 respectively.

For some species, there were only one or two records, namely: Night Heron *Nycticorax nycticorax,* Little Bittern *Ixobrychus minutus,* Eurasian Spoonbill *Platalea leucorodia,* Ruddy Shelduck *Tadorna ferruginea,* Tufted Duck *Aythya fuligula,* Red-crested Pochard *Netta rufina,* Northern Pintail *Anas acuta,* Water Rail *Rallus aquaticus,* Common Gull *Larus canus* and Armenian Gull *Larus armenicus.* In the 2008 breeding season, we found a nest of Eurasian Coot in late June, but because of the rapid decline in water levels the nest was destroyed before hatching.

Grey Heron *Ardea cinerea* was present in all months with a peak number in June (25 individuals) but Little Egret *Egretta garzetta* numbers were at their maximum in November and December (20 individuals). In the Abshineh Dam area, there was a rapid decline in the wader population in late December as the water began to freeze and many suitable habitats for waders were lost. The changes in wader numbers were probably due to the numbers of passage migrants reaching peaks during autumn and spring migrations. Greater Flamingo *Phoenicopterus ruber* was observed only in spring with a maximum number of 35 individuals on 18 May 2008. Gulls spent a long time in the Abshineh Dam area with Slender-billed Gull *Larus genei* and Lesser Black-headed Gull *Larus ridibundus* being the commonest. Charadriidae and Scolopacidae were passage migrants (Table 1) being seen at Abshineh Dam during their migration. Pied Avocet *Recurvirostra avosetta* and Dunlin *Calidris alpina* were present small numbers.

Table 1. Monthly maximum numbers of waterbirds by species at Abshineh Dam (September 2007–June 2008).

Common Name	Scientific Name	Sep. 07	Oct. 07	Nov. 07	Dec. 07	Jan. 08	Feb. 08	Mar. 08	Apr. 08	May. 08	Jun. 08	Percentage of Total No. of Birds
Black-necked Grebe	*Podiceps nigricollis*	0	4	5	5	0	0	2	0	0	0	0.36
Great Crested Grebe	*Podiceps cristatus*	2	8	0	2	0	0	5	25	15	20	1.74
Great Cormorant	*Phalacrocorax carbo*	3	2	15	15	0	0	5	10	5	3	1.31
Great Egret	*Casmerodius albus*	1	1	1	5	0	0	0	0	3	5	0.36
Purple Heron	*Ardea purpurea*	1	0	0	0	0	0	0	0	0	0	0.02
Grey Heron	*Ardea cinerea*	5	17	2	5	0	0	3	5	6	25	1.53
Little Egret	*Egretta garzetta*	0	12	20	20	0	0	0	0	3	7	1.4
Cattle Egret	*Bubulcus ibis*	0	4	0	0	0	0	0	0	0	1	0.11
Night Heron	*Nycticorax nycticorax*	1	0	0	0	0	0	0	0	0	0	0.02
Little Bittern	*Ixobrychus minutus*	3	0	0	0	0	0	0	0	0	0	0.06
White Stork	*Ciconia ciconia*	5	3	0	0	0	0	0	5	6	16	0.79
Eurasian Spoonbill	*Platalea leucorodia*	0	0	0	0	0	0	0	0	3	0	0.06
Greater Flamingo	*Phoenicopterus ruber*	0	0	0	0	0	0	2	13	35	15	1.46
Graylag Goose	*Anser anser*	0	25	58	0	0	0	3	5	0	0	2.05
Ruddy Shelduck	*Tadorna ferruginea*	0	0	0	2	0	0	0	0	0	0	0.04
Common Shelduck	*Tadorna tadorna*	0	0	35	25	0	0	0	0	0	0	1.35
Common Pochard	*Aythya ferina*	3	5	0	3	0	0	6	5	8	0	0.67
Northern Shoveler	*Anas clypeata*	2	3	5	0	0	0	8	65	85	6	3.93
Common Teal	*Anas crecca*	15	15	30	45	0	0	32	45	55	5	5.47
Tufted Duck	*Aythya fuligula*	0	0	0	0	0	0	2	0	0	0	0.04
Gadwall	*Anas strepera*	0	0	0	0	0	0	3	16	12	0	0.7
Red-crested Pochard	*Netta rufina*	0	0	0	0	0	0	3	2	0	0	0.11
Garganey	*Anas querquedula*	53	23	8	20	0	0	5	35	42	0	4.2
Northern Pintail	*Anas acuta*	2	0	0	0	0	0	0	0	0	0	0.04
Mallard	*Anas platyrhynchos*	54	50	285	55	0	0	85	105	152	35	18.56
Eurasian Coot	*Fulica atra*	38	250	256	150	0	0	65	150	185	65	26.2
Water Rail	*Rallus aquaticus*	0	2	0	0	0	0	0	0	0	0	0.04
Pied Avocet	*Recurvirostra avosetta*	25	0	0	0	0	0	0	0	0	7	0.72
Black-winged Stilt	*Himantopus himantopus*	21	20	0	0	0	0	15	26	28	35	3.27
Northern Lapwing	*Vanellus vanellus*	26	20	55	25	0	0	0	0	3	0	2.91
Common Ringed Plover	*Charadrius hiaticula*	13	10	5	3	0	0	16	9	2	7	1.46
Kentish Plover	*Charadrius alexandrinus*	12	0	5	7	0	0	2	3	8	9	1.04
Dunlin	*Calidris alpina*	0	0	4	16	0	0	0	0	0	0	0.45
Common Greenshank	*Tringa nebularia*	3	8	16	0	0	0	2	18	5	9	1.37
Common Redshank	*Tringa totanus*	8	28	15	3	0	0	6	18	25	15	2.66
Common Snipe	*Gallinago gallinago*	16	15	6	0	0	0	0	0	14	5	1.26
Red-necked Phalarope	*Phalaropus lobatus*	0	0	5	9	0	0	0	6	4	0	0.54
Common Gull	*Larus canus*	8	6	0	0	0	0	0	0	0	0	0.31
Black-headed Gull	*Larus ridibundus*	35	43	15	25	0	0	86	90	55	45	8.9
Slender-billed Gull	*Larus genei*	5	6	24	25	0	0	12	3	8	0	1.87
Armenian Gull	*Larus armenicus*	0	0	0	0	0	0	5	6	0	0	0.24
Gull-billed Tern	*Sterna nilotica*	0	0	0	0	0	0	0	0	1	0	0.02
TOTAL waterbird numbers		**360**	**580**	**870**	**465**	**0**	**0**	**373**	**665**	**768**	**335**	
Density per 10 ha.		**24**	**38.66**	**58**	**31**	**0**	**0**	**24.86**	**44.33**	**51.2**	**22.33**	

Discussion

The freezing over of the surface of the dam and the subsequent lack of food resources are important factors in making the birds depart the area in search of other more favourable habitats. A further contributory factor is the lack of official protection for the site. Since there is no regular monitoring and control, there is no secure refuge around the wetland, resulting in smaller numbers of waders. Finally, the changes in the water level result in a lack of stable food supply for waders. Protecting and securing a site is as important for waterbird populations as vegetation cover and food resources (Khalilipour & Nabavi 2006). Although it is not big enough to support large numbers of waterbirds, because of the lack of other large wetlands in the Hamedan area and because it lies on a waterbird migration route, Abshineh Dam is a very important aquatic habitat providing food and shelter for winter migrant species which mainly use these areas during the autumn season. Moreover, the occurrence of the globally threatened species, White-headed Duck *Oxyura leucocephala* (Barati & Balmaki 2006), means that the need to recognise and protect the site is that much more urgent. The site was also where the first record for Hamedan Province of Osprey *Pandion haliaetus* was seen in September 2007 (A. Barati, pers. obs.). Even if the site is not officially protected, regular waterbird population counts are necessary on a monthly basis with particular focus on the autumn months – in addition to the monitoring of hunting and limiting other human activities around the dam so that the waterbird population is not too affected.

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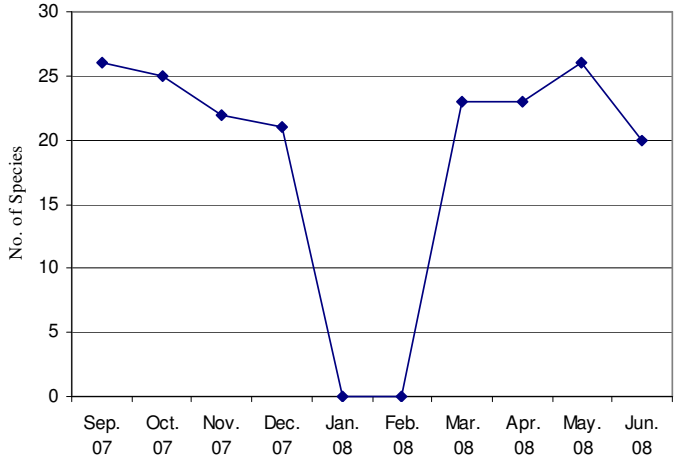

Figure 2. Monthly totals of waterbird species at Abshineh Dam (Sep. 2007–Jun. 2008).

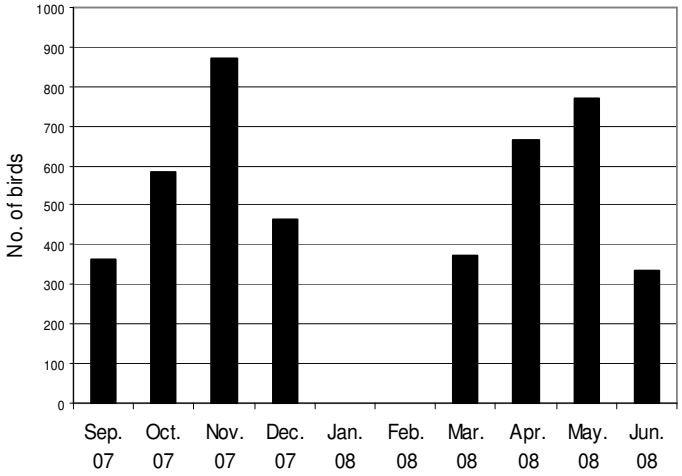

Figure 3. Monthly totals of waterbirds at Abshineh Dam (Sep. 2007–Jun. 2008).

References

Ashoori A., Barati A. & Reihanian H.R. 2007. Recent observations of the Red Phalarope *Phalaropus fulicarius* at Boujagh National Park, Gilan Province, and Agh Gol Wetland, Hamedan Province and its status in Iran. *Podoces* **2(2):** 148–151.

Barati A. 2008a. The economic values of wetlands of Hamedan province. Final report, Department of the Environment, Hamedan Province, 260 pp. [In Persian].

Barati A. 2008b. Waterbirds population changes in water bodies around Hamedan, Iran. Final Report, Azad University of Hamedan, 80 pp [In Persian].

Barati A. & Balmaki B. 2006. Observation of White-headed Duck *Oxyura leucocephala* in the Abshineh Dam, Hamedan. *Podoce* **1(1/2):** 42–43.

Khlilipour O.G. & Nabavi S.M.B. 2006.Monthly Survey of Wintering Waterbirds in Hooreh Bamdej, Khuzestan Province. *Podoces* **1(1/2):** 43–48.

Metrological Organization of Iran. 2007. *Hamedan Province Annual Report* **1:** 25–30.