

# The avifauna of Sabzevar county, Khorasan-Razavi, northeastern Iran

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We carried out an avifaunal survey of Sabzevar county, Khorasan-Razavi province, northeast Iran over seven years, March 2008–February 2014. We identified 143 bird species. Eight had not previously been observed in the county and three were new for northeast Iran. Our investigations of the Rud-i Jowin/Rud-i Kalshur IBA of Sabzevar county suggest that key species recorded there in the 1970s are no longer present.

Distribution maps are essential for effective wildlife management and conservation (Guisan & Zimmermann 2000, Bury 2006, Phillips *et al* 2006). Distribution maps of birds are produced using the observations and records of field ornithologists. Although Iran has a long history of ornithology (Roselaar & Aliabadian 2007), field ornithology has still a lot to accomplish. Sabzevar county, in the desert and semi-desert region of northeastern Iran, is a critical stopover site as well as a breeding and wintering ground for migratory bird species (Khani *et al* 2010). Various rarities, such as White-crowned Penduline Tit *Remiz pendulinus coronatus* and Yellow-breasted Bunting *Emberiza aureola* have been recorded in Sabzevar (Scott 2008) and the avifauna of this region has been described as rich and diverse. The Rud-i Jowin/Rud-i Kalshur area of Sabzevar county is an IBA due to its significance as an avian wintering area, supporting globally and regionally important species (Evans 1994). To date, no thorough assessment of the considerable avifaunal diversity in this county has been done and no monitoring plan for the Rud-i Jowin/Rud-i Kalshur IBA has been proposed. The present study was conducted to identify the bird species that occur in Sabzevar county and to determine their status.

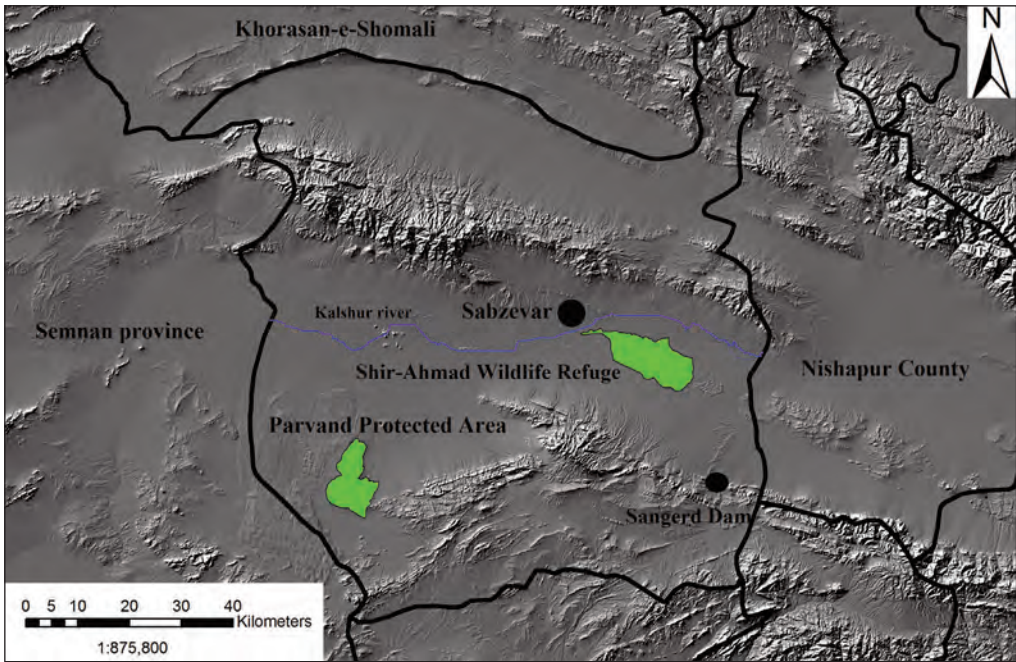
## MATERIALS AND METHODS

### *Study area*

Sabzevar county (Figure 1, 35° 27'–36° 52' N, 56° 33'–58° 16' E), located in the west of Khorasan-Razavi province in northeast Iran, covers 1 424 500 ha. Its average elevation is 950 m asl, with Kuhgar region in Davarzan the highest point (2977 m asl). Sabzevar has dry cold winters and warm summers. The two protected areas in the county are Shir-Ahmad wildlife refuge (22 800 ha) in the east and Parvand protected area (16 900 ha) in the southwest (Figure 1). The Kalshur river (Figure 1) runs through the Sabzevar plain, passing through salt lands and chalk beds. The waters are unsuitable for drinking and irrigation, but are crucial for birds. Along with Jowin river, the Kalshur river was designated as an IBA ('Rud-i Jowin & Rud-i Kalshur') of c250 000 ha in 1994 (Evans 1994). The main reasons for designation of this area as an IBA were the holding of significant numbers of wintering Great Bustards *Otis tarda* and Ruddy Shelducks *Tadorna ferruginea* as well as providing suitable habitat for the globally threatened White-tailed Eagle *Haliaeetus albicilla* and regionally threatened Griffon Vulture *Gyps fulvus* and Saker Falcon *Falco cherrug* (one record of each).

### *Data collection*

The present study was carried out March 2008–February 2014 in all four seasons (24 months). Using random field surveys (along walking trails or by car) all habitat types of the county were investigated and observed birds were identified following Scott *et al* (1975), Mullarney *et al* (1999) and Porter *et al* (2005). Identification was facilitated with



**Figure 1.** Sabzevar county (Khorasan-Razavi province, northeast Iran). It includes Sabzevar city, Kalshur river, Shir-Ahmad wildlife refuge, Parvand protected area and the Sangerd dam.

the aid of a telescope, binoculars and a digital Canon 40 D camera with 50×500 lens). We determined the status (resident, breeding migrant, wintering migrant, passage migrant) of birds based on the season of observation and on consulting the *Atlas of Birds of Iran* (Kaboli *et al* 2012). Considering the importance of the Kalshur river as a part of an IBA, we report birds recorded in the Kalshur area separately (Table 1).

## RESULTS AND DISCUSSION

We recorded 143 avian species in Sabzevar county (Table 1). Passeriformes and Falconiformes, with 66 and 20 species respectively, showed the highest species richness, while Podicipediformes, Pelecaniformes, Cuculiformes and Caprimulgiformes, one species each, were the least species-rich orders. Eighty-nine species were recorded in the Kalshur area (Table 1). Three of the species we recorded in Sabzevar county are globally Near Threatened and four are Threatened (two Vulnerable and two Endangered) in the IUCN Red List (IUCN 2016). Eight species namely Osprey, Black-crowned Night Heron (Plate 1), Glossy Ibis, Common Pochard, Tufted Duck, Common Goldeneye, White-tailed Lapwing and Collared Pratincole are new records for the county (Scott & Adhami 2006, Mansoori 2008, BirdLife International & NatureServe 2012).

Sabzevar county is one of the most biologically diverse regions in Khorasan-Razavi province due to high habitat diversity (Yousefi *et al* 2013, Khani *et al* 2013, Hosseini Yousefkhani *et al* 2014). Man-made water bodies add to the biodiversity of the county. The newly recorded bird species in Sabzevar county are waterbirds recorded at Sangerd dam (Figure 1) and Kalshur river. Sangerd dam was built on the Sangerd river in 2005, providing a 210 ha habitat for migratory waterbirds. Osprey, Black-crowned Night Heron, and Common Goldeneye are new not only for Sabzevar, but also for northeastern Iran (Scott *et al* 1975, Mansoori 2008, BirdLife International & NatureServe 2012, Khani *et al* 2015). The breeding status of Greater Sand Plover is poorly known for Iran, it is a very

**Table 1.** Results of avifaunal survey Sabzevar county, Khorasan-Razavi, northeastern Iran, March 2008–February 2014. The Kalshur area (right-hand column) is part of the 'Rud-i Jowin & Rud-i Kalshur' IBA.

	Species		Status				IUCN Red List category Ver. 3.1	Observed Kalshur area
	Scientific name	English name	Passage migrant	Wintering visitor	Breeding summer visitor	Resident		
1	<i>Tachybaptus ruficollis</i>	Little Grebe		*			LC	*
2	<i>Phalacrocorax carbo</i>	Great Cormorant	*				LC	
3	<i>Ardea cinerea</i>	Grey Heron		*			LC	*
4	<i>A. purpurea</i>	Purple Heron	*				LC	*
5	<i>Casmerodius alba</i>	Western Great Egret		*			LC	*
6	<i>Nycticorax nycticorax</i>	Black-crowned Night Heron		*			LC	*
7	<i>Ixobrychus minutus</i>	Little Bittern			*		LC	*
8	<i>Botaurus stellaris</i>	Great Bittern		*			LC	*
9	<i>Ciconia nigra</i>	Black Stork		*			LC	*
10	<i>Plegadis falcinellus</i>	Glossy Ibis		*			LC	
11	<i>Tadorna ferruginea</i>	Ruddy Shelduck		*			LC	
12	<i>Anas penelope</i>	Eurasian Wigeon		*			LC	
13	<i>A. strepera</i>	Gadwall		*			LC	*
14	<i>A. crecca</i>	Eurasian Teal		*			LC	*
15	<i>A. platyrhynchos</i>	Mallard		*			LC	*
16	<i>A. clypeata</i>	Northern Shoveler		*			LC	
17	<i>Aythya ferina</i>	Common Pochard		*			LC	
18	<i>A. fuligula</i>	Tufted Duck		*			LC	
19	<i>Bucephala clangula</i>	Common Goldeneye		*			LC	
20	<i>Marmaronetta angustirostris</i>	Marbled Teal	*				VU	
21	<i>Pandion haliaetus</i>	Western Osprey	*				LC	
22	<i>Aegypius monachus</i>	Cinereous Vulture				*	NT	*
23	<i>Gyps fulvus</i>	Griffon Vulture				*	EN	*
24	<i>Neophron percnopterus</i>	Egyptian Vulture			*		LC	
25	<i>Gypaetus barbatus</i>	Bearded Vulture				*	LC	
26	<i>Circaetus gallicus</i>	Short-toed Snake Eagle			*		LC	*
27	<i>Buteo buteo</i>	Common Buzzard	*				LC	
28	<i>B. rufinus</i>	Long-legged Buzzard				*	LC	*
29	<i>Circus cyaneus</i>	Northern Harrier		*			LC	*
30	<i>C. macrourus</i>	Pallid Harrier		*			NT	
31	<i>C. pygargus</i>	Montagu's Harrier	*				LC	*
32	<i>C. aeruginosus</i>	Western Marsh Harrier		*			LC	*
33	<i>Accipiter badius</i>	Shikra			*		LC	
34	<i>Aquila nipalensis</i>	Steppe Eagle		*			LC	*
35	<i>A. chrysaetos</i>	Golden Eagle				*	LC	*

	Species		Status				IUCN Red List category Ver. 3.1	Observed Kalshur area
	Scientific name	English name	Passage migrant	Wintering visitor	Breeding summer visitor	Resident		
36	<i>Hieraaetus pennatus</i>	Booted Eagle			*		LC	
37	<i>Falco tinnunculus</i>	Common Kestrel				*	LC	*
38	<i>F. columbarius</i>	Merlin		*			LC	
39	<i>F. subbuteo</i>	Eurasian Hobby			*		LC	*
40	<i>F. cherrug</i>	Saker Falcon		*			EN	
41	<i>Ammoperdix griseogularis</i>	See-see Partridge				*	LC	*
42	<i>Alectoris chukar</i>	Chukar				*	LC	
43	<i>Coturnix coturnix</i>	Common Quail			*		LC	
44	<i>Fulica atra</i>	Eurasian Coot		*			LC	
45	<i>Chlamydotis macqueenii</i>	Macqueen's Bustard			*		VU	*
46	<i>Haematopus ostralegus</i>	Eurasian Oystercatcher		*			LC	
47	<i>Himantopus himantopus</i>	Black-winged Stilt		*			LC	*
48	<i>Burhinus oedicephalus</i>	Eurasian Stone-curlew			*		LC	*
49	<i>Cursorius cursor</i>	Cream-coloured Courser			*		LC	*
50	<i>Glareola pratincola</i>	Collared Pratincole	*				LC	*
51	<i>Vanellus leucurus</i>	White-tailed Lapwing	*				LC	*
52	<i>Charadrius dubius</i>	Little Ringed Plover			*		LC	*
53	<i>C. leschenaultii</i>	Greater Sand Plover			*		LC	
54	<i>Tringa ochropus</i>	Green Sandpiper		*			LC	*
55	<i>Actitis hypoleucos</i>	Common Sandpiper			*		LC	*
56	<i>Phalaropus lobatus</i>	Red-necked Phalarope	*				LC	*
57	<i>Gallinago gallinago</i>	Common Snipe		*			LC	*
58	<i>Chroicocephalus genei</i>	Slender-billed Gull		*			LC	
59	<i>Sterna hirundo</i>	Common Tern	*				LC	*
60	<i>Pterocles orientalis</i>	Black-bellied Sandgrouse				*	LC	*
61	<i>Columba livia</i>	Rock Dove				*	LC	*
62	<i>Spilopelia senegalensis</i>	Laughing Dove				*	LC	*
63	<i>Streptopelia decaocto</i>	Eurasian Collared Dove				*	LC	*
64	<i>Cuculus canorus</i>	Common Cuckoo			*		LC	*
65	<i>Bubo bubo</i>	Eurasian Eagle-Owl				*	LC	
66	<i>Athene noctua</i>	Little Owl				*	LC	*
67	<i>Asio flammeus</i>	Short-eared Owl		*			LC	*
68	<i>Caprimulgus europaeus</i>	European Nightjar			*		LC	*
69	<i>Apus apus</i>	Common Swift			*		LC	
70	<i>Tachymarptis melba</i>	Alpine Swift			*		LC	
71	<i>Merops persicus</i>	Blue-cheeked Bee-eater			*		LC	*
72	<i>Merops apiaster</i>	European Bee-eater			*		LC	*

	Species		Status				IUCN Red List category Ver. 3.1	Observed Kalshur area
	Scientific name	English name	Passage migrant	Wintering visitor	Breeding summer visitor	Resident		
73	<i>Coracias garrulus</i>	European Roller			*		NT	*
74	<i>Upupa epops</i>	Eurasian Hoopoe			*		LC	*
75	<i>Alaemon alaudipes</i>	Greater Hoopoe Lark				*	LC	*
76	<i>Melanocorypha calandra</i>	Calandra Lark				*	LC	
77	<i>Ammomanes deserti</i>	Desert Lark				*	LC	*
78	<i>Calandrella brachydactyla</i>	Greater Short-toed Lark			*		LC	*
79	<i>Galerida cristata</i>	Crested Lark				*	LC	*
80	<i>Eremophila alpestris</i>	Horned Lark				*	LC	
81	<i>Ptyonoprogne rupestris</i>	Eurasian Crag Martin			*		LC	
82	<i>Hirundo rustica</i>	Barn Swallow			*		LC	*
83	<i>Motacilla cinerea</i>	Grey Wagtail				*	LC	*
84	<i>M. alba</i>	White Wagtail				*	LC	*
85	<i>Anthus campestris</i>	Tawny Pipit			*		LC	
86	<i>A. spinoletta</i>	Water Pipit		*			LC	*
87	<i>Lanius collurio</i>	Red-backed Shrike			*		LC	*
88	<i>L. isabellinus</i>	Isabelline Shrike			*		LC	*
89	<i>L. excubitor</i>	Great Grey Shrike		*			LC	
90	<i>Cinclus cinclus</i>	White-throated Dipper				*	LC	
91	<i>Luscinia megarhynchos</i>	Common Nightingale			*		LC	
92	<i>Erythropgia galactotes</i>	Rufous-tailed Scrub Robin			*		LC	*
93	<i>Phoenicurus erythronotus</i>	Eversmann's Redstart		*			LC	
94	<i>Phoenicurus ochruros</i>	Black Redstart		*			LC	*
95	<i>Saxicola caprata</i>	Pied Bush Chat			*		LC	
96	<i>Oenanthe oenanthe</i>	Northern Wheatear			*		LC	*
97	<i>O. picata</i>	Variable Wheatear			*		LC	*
98	<i>O. deserti</i>	Desert Wheatear			*		LC	*
99	<i>O. isabellina</i>	Isabelline Wheatear			*		LC	*
100	<i>Monticola saxatilis</i>	Rufous-tailed Rock Thrush			*		LC	*
101	<i>M. solitarius</i>	Blue Rock Thrush			*		LC	
102	<i>Turdus torquatus</i>	Ring Ouzel		*			LC	
103	<i>T. merula</i>	Common Blackbird		*			LC	
104	<i>T. ruficollis</i>	Dark-throated Thrush		*			LC	
105	<i>Acrocephalus stentoreus</i>	Clamorous Reed Warbler			*		LC	*
106	<i>Iduna pallida</i>	Eastern Olivaceous Warbler			*		LC	
107	<i>Hippolais languida</i>	Upcher's Warbler			*		LC	*
108	<i>Scotocerca inquieta</i>	Scrub Warbler				*	LC	*
109	<i>Phylloscopus trochiloides</i>	Greenish Warbler	*				LC	*

	Species		Status				IUCN Red List category Ver. 3.1	Observed Kalshur area
	Scientific name	English name	Passage migrant	Wintering visitor	Breeding summer visitor	Resident		
110	<i>Sylvia communis</i>	Common Whitethroat			*		LC	
111	<i>Sylvia nana</i>	Asian Desert Warbler			*		LC	*
112	<i>Sylvia hortensis</i>	Western Orphean Warbler			*		LC	
113	<i>Muscicapa striata</i>	Spotted Flycatcher			*		LC	*
114	<i>Ficedula parva</i>	Red-breasted Flycatcher	*				LC	*
115	<i>Parus major</i>	Great Tit				*	LC	
116	<i>Sitta tephronota</i>	Eastern Rock Nuthatch				*	LC	
117	<i>Miliaria calandra</i>	Corn Bunting			*		LC	*
118	<i>Emberiza cia</i>	Rock Bunting				*	LC	
119	<i>E. buchanani</i>	Grey-necked Bunting			*		LC	
120	<i>E. hortulana</i>	Ortolan Bunting			*		LC	*
121	<i>E. bruniceps</i>	Red-headed Bunting			*		LC	*
122	<i>Fringilla coelebs</i>	Eurasian Chaffinch		*			LC	*
123	<i>Serinus pusillus</i>	Red-fronted Serin				*	LC	*
124	<i>Chloris chloris</i>	European Greenfinch		*			LC	*
125	<i>Carduelis carduelis</i>	European Goldfinch				*	LC	
126	<i>Bucanetes githagineus</i>	Trumpeter Finch				*	LC	
127	<i>Rhodospiza obsoleta</i>	Desert Finch				*	LC	*
128	<i>Passer domesticus</i>	House Sparrow				*	LC	*
129	<i>P. hispaniolensis</i>	Spanish Sparrow		*			LC	*
130	<i>P. montanus</i>	Eurasian Tree Sparrow				*	LC	*
131	<i>Petronia petronia</i>	Rock Sparrow				*	LC	
132	<i>Carpodacus brachydactyla</i>	Pale Rockfinch			*		LC	*
133	<i>Pastor roseus</i>	Rosy Starling			*		LC	*
134	<i>Sturnus vulgaris</i>	Common Starling				*	LC	*
135	<i>Acridotheres tristis</i>	Common Myna				*	LC	
136	<i>Oriolus oriolus</i>	Eurasian Golden Oriole			*		LC	
137	<i>Pica pica</i>	Eurasian Magpie				*	LC	*
138	<i>Podoces pleskei</i>	Pleske's Ground Jay				*	LC	
139	<i>Pyrrhocorax pyrrhocorax</i>	Red-billed Chough				*	LC	
140	<i>Coloeus monedula</i>	Western Jackdaw				*	LC	*
141	<i>Corvus frugilegus</i>	Rook	*				LC	*
142	<i>C. corone</i>	Carrion Crow				*	LC	*
143	<i>C. corax</i>	Northern Raven				*	LC	*

scarce and local breeding bird (Scott 2007). We documented breeding of the species in Sabzevar county (Khani & Yousefi 2017).





**Plate 1.** Black-crowned Night Heron *Nycticorax nycticorax*, Kalshur river, Sabzevar county, Khorasan-Razavi, northeast Iran, December 2009. © Ali Khani

Considering that a simple avifaunal survey in a single county led to the identification of eight species previously unknown there, it is probable that similar efforts in other understudied areas of the country will yield a significant amount of new information about the birds of Iran. Special attention should be given to areas along borders of the country, which have largely been neglected in the past, as well as to areas where recently constructed manmade waterbodies now serve as suitable habitats for migratory waterbirds and waders within dry landscapes (Khani *et al* 2015). Comprehensive natural history studies will lead to a better understanding of critical habitats and breeding areas, which consequently facilitates conservation efforts such as national Red List assessments (Nourani 2014) and identification of vertebrate biodiversity hotspots within Iran.

The Rud-i Jowin and Rud-i Kalshur areas were listed as an IBA primarily because of wintering populations of the globally threatened Great Bustard recorded there in the 1970s (Evans 1994). Our results indicate that the species is no longer present. The reasons for this loss or when the populations of the species started to disappear is not known as no effort had been made previously to monitor these sites. This could very easily be the case with other IBAs in Iran. This ignorance can have devastating effects on understanding of the viability of threatened species both at regional and global levels.

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