

An Avifaunal Survey of the Varjin Protected Area, Alborz Mountains, Tehran, Iran

ARASH GHODDOUSI^{1*}, DELARAM ASHAYERI² & ELNAZ NEINAVAZ²

1. Biodiversity Bureau, Plan for the Land Society

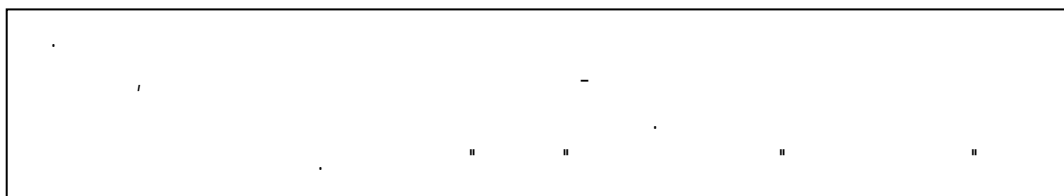
2. Field Biologist, Plan for the Land Society

* Correspondence Author. Email: ghoddousi@plan4land.org

Received 23 June 2007; accepted 22 January 2008

Abstract: The Varjin Protected Area (26,907 ha) is one of the unique landscapes of the Alborz Mountains. The survey was carried out between 2005 and 2007. In 43 days of survey, 100 bird species were observed in various parts of the Protected Area. 25 species were new records for the area. As designated in the Department of the Environment (DOE) laws, 5 species are categorised as "Endangered" and 20 as "protected species".

Keywords: Avifauna, Varjin Protected Area, conservation, Alborz Mountains, Tehran, Iran.



INTRODUCTION

The Varjin Protected Area (VPA) was one of the few Royal Game Reserves and held that status for several decades until 1978. This area had been one of the favourite hunting areas of the Ghajarid dynasty (1779–1925) and had been strictly protected. In 1982, the area was designated as a "Protected Area" under the supervision of the Department of the Environment.

In the Alborz Mountains, the VPA plays an important role as a corridor for mammals and birds (Darvishsefat 2006). No avifaunal surveys have been published from the area (Behrouzi-Rad 1990) and none of the avifaunal surveys carried out in adjacent areas covered any part of the VPA (Khaleghizadeh & Sehhatiasabet 2007, Scott 2007, Bakhtiari & Tohidifar 2007).

The aim of the present study was to prepare an avifaunal checklist and publish the protection status of all bird species, to align with national and international laws, regulations and requirements.

STUDY AREA

The VPA is one of the unique landscapes of the Alborz Mountains. Its area is 26,907 ha and it lies between 35°49' and 36°01'N, and 51°31' and 51°41'E in Tehran province in the south of the Central Alborz Protected Region (Figs. 1-2.). The main habitats resemble those of the high mountain ecosystems, but the diversity is greatly increased by the existence of, various rivers, farms and gardens. The altitude range is 1700–3900 m above sea level, and the mean annual precipitation and temperature are 700 mm and 5°C respectively (Yekom Engineers Co. unpubl. report). The most important river is the Jajerud, but there are many seasonal and permanent rivers in the VPA, whose main cities are Lavasan and Fasham. The main vegetation types consist of Graminaceae and Leguminaceae, including vetch *Astragalus* sp. At higher elevations, juniper trees (*Juniperus excelsa* or Greek juniper) are common. The plant community is diverse, but comprise mainly high-altitude groups, especially steep-slope flora. In the VPA, 577 plant species of 82 families have been identified, of which, 387

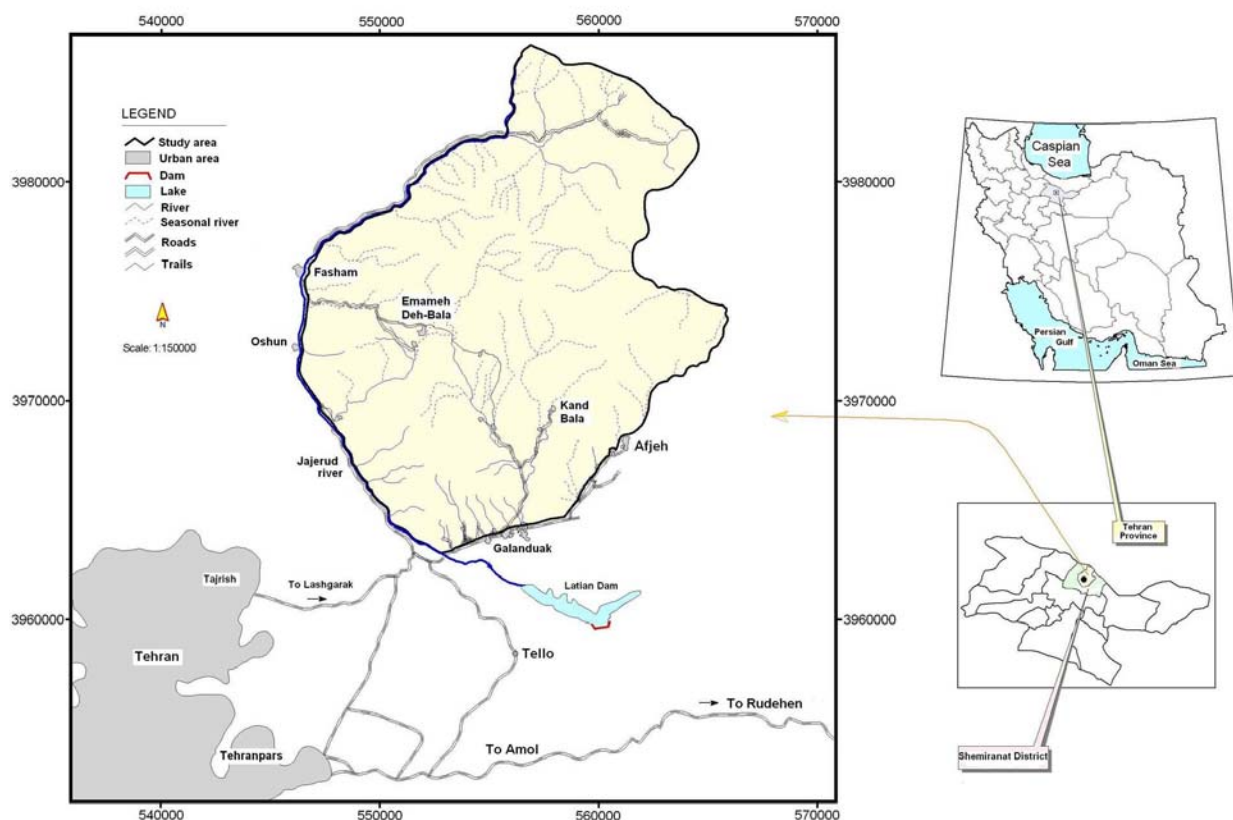


Figure 1. Map of the Varjin Protected Area, © translated after Yekom Engineers Co.

species are permanent, 32 being endemic to Iran, and 45 species are domesticated. The VPA is an important reservoir of plant diversity (Yekom Engineers Co. unpubl. report).



Figure 2. A view of the Chal-Agha Core Zone area, June 2006, © A. Ghoddousi.

MATERIALS AND METHODS

Bird surveys were carried out in various parts of the VPA, using random field surveys (along walking trails or by car), which were casual but thorough in searching for bird sites between summer 2005 and summer 2007, the survey effort not being constant each month. Most observations were in the Core Zone (Varjin Mountain) and around Garmabdar Game-guard Station (Fig. 1.), while northern parts were not accessed in winter seasons because of snow cover. We used bird field guides (Scott *et al.* 1975, Porter *et al.* 1996, Mansoori 2001) and binoculars (Bushnell 10x42, Baigash 8x30, Zeiss 8x30 and Nikon 8x36). Occasionally, to support the accuracy of our results, we took photographs, which also helped confirm the identity of those species about which we had some doubt in the field (Fig. 3.). In each trip at least 3 people were involved and observations and recordings made by the team in the field.



Figure 3. Egyptian Vulture *Neophron percnopterus* in the Varjin Protected Area, June 2007, © A. Ghoddousi.

RESULTS

During 43 days of avifaunal surveys in the period summer 2005 to summer 2007, 100 bird species were observed in various parts of the VPA (Table 1). The highest of bird species was in June (47), followed by May (44) and March (40) (Table 1). The numbers of bird species in the southern, central and northern parts of the VPA were 66, 48 and 44, respectively (Table 1).

At least 14 species have been proven to breed by observation of their nests or chicks during our survey in Varjin area, namely Lammergeier *Gypaetus barbatus*, Golden Eagle *Aquila chrysaetos* (Fig. 4), Common Kestrel *Falco tinnunculus*, Caspian Snowcock *Tetraogallus caspius*, Chukar Alectoris chukar, Rock Dove *Columba livia*, Rose-ringed Parakeet *Psittacula krameri*, Common Cuckoo *Cuculus canorus*, Syrian Woodpecker *Dendrocopos syriacus*, Barn Swallow *Hirundo rustica*, Common Nightingale *Luscinia megarhynchos*, Western Rock Nuthatch *Sitta neumayer*, Eurasian Magpie *Pica pica* and Red-billed Chough *Pyrrhocorax pyrrhocorax*. Amongst them three pairs of Golden Eagle, one

pair of Lammergeier and several pairs of Caspian Snowcock are of particular interest. We predict the occurrence of more species from future work.

DISCUSSION

Considering species recorded in a previous study (Yekom Engineers Co. unpubl. report) as well as those we recorded, the number of species identified species in the VPA is 124, near 24% of the 517 species recorded in Iran (Scott & Adhami 2006). The high total bird species in June may be related to the number of visits in that month (9) during the study (Table 1). 25 species was previously not reported from the area (Table 1) (e.g. Blue Rock Thrush *Monticola solitarius*, Blue Tit *Parus caeruleus* and Greater Short-toed Lark *Calandrella brachydactyla*) (Yekom Engineers Co. unpubl. report), but it is likely that most have occurred there for a long time.

However, we did not record 24 bird species that had been included in that report, namely Eurasian Teal *Anas crecca*, Black Kite *Milvus migrans*, Eurasian Sparrowhawk *Accipiter nisus*, Common Quail *Coturnix coturnix*, Common Redshank *Tringa totanus*, Green Sandpiper *Tringa ochropus*, Black-headed Gull *Larus ridibundus*, Long-eared Owl *Asio otus*, Lesser Spotted Woodpecker *Dendrocopos minor*, Calandra Lark *Melanocorypha calandra*, Bimaculated Lark *Melanocorypha bimaculata*, Yellow Wagtail *Motacilla flava*, Red-backed Shrike *Lanius collurio*, Lesser Grey Shrike *Lanius minor*, Woodchat Shrike *Lanius senator*, European Robin *Erithacus rubecula*, Stonechat *Saxicola torquata*, Pied Stonechat *Saxicola caprata*, Ring Ouzel *Turdus torquatus*, Mistle Thrush *Turdus viscivorus*, Goldcrest *Regulus regulus*, Moustached Warbler *Acrocephalus melanopogon* (Yekom Engineers Co. unpubl. report).

An avifaunal survey of the Varjin– A. Ghoddousi *et al.*

Table 1. Monthly totals of birds species observed, distribution and conservation status in Iran's DOE laws in the Varjin Protected Area, 2005–2007. B= Boak'zary, Bs= Basty, G=Garmabdar, Gh= Ghouchak, Gl=Galanduak, Gv= Gav'bandan, H=Heibat plateau, K= Kelogan, L=Lavasan, P= Palangy valley, R= Roudak, T= Tang'talar, V=Varjin peak and Z= Zardband.

English name	Scientific name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	South VPA	Centre VPA	North VPA	Cons. in Iran
Grey Heron	<i>Ardea cinerea</i>	2	1	0	0	0	1	0	0	0	0	0	0	+			Prot
Great Egret	<i>Casmerodius albus</i>	1	0	0	0	0	0	0	0	0	0	0	2	+			Prot
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	0	0	2	0	0	0	0	0	0	0	0	0	+			Prot
Mallard	<i>Anas platyrhynchos</i>	10	10	3	0	0	0	0	0	0	0	0	7	+	+		Norm
Lammergeier	<i>Gypaetus barbatus</i>	7	3	5	0	0	1	0	0	0	1	6	5	+	+		En
Egyptian Vulture	<i>Neophron percnopterus</i>	0	0	0	0	0	1	0	0	0	0	0	0		H		Prot
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	0	0	0	0	0	1	0	0	0	0	1	0		+		Prot
Hen Harrier	<i>Circus cyaneus</i>	0	0	0	0	0	0	0	0	0	1	0	0	B			Prot
Northern Goshawk	<i>Accipiter gentilis</i>	0	0	1	0	0	0	0	0	0	0	0	0			G	Prot
Common/ Long-legged Buzzard	<i>Buteo buteo/ rufinus</i>	0	0	0	0	2	1	1	1	0	0	0	0	+	+	+	Prot
Golden Eagle	<i>Aquila chrysaetos</i>	10	12	11	4	8	13	5	4	5	5	9	12	+	+	+	En
Lesser Kestrel	<i>Falco naumanni</i>	0	0	0	0	1	0	0	1	0	0	0	0	P			Prot
Common Kestrel	<i>Falco tinnunculus</i>	2	1	10	5	9	9	14	8	4	5	6	2	+	+	+	Prot
Eurasian Hobby	<i>Falco subbuteo</i>	0	0	0	0	0	6	2	3	0	0	0	0	+	+		Prot
Saker Falcon	<i>Falco cherrug</i>	0	0	0	0	1	0	0	0	1	0	0	0	P-Z			En
Peregrine/ Barbary Falcon	<i>Falco peregrinus/ pelegrinoides</i>	0	0	1	0	0	1	0	0	0	0	0	0	Z		G	En
See-see Partridge	<i>Ammoperdix griseogularis</i>	0	0	0	0	0	0	0	1	0	0	0	0	P			Norm
Caspian Snowcock	<i>Tetraogallus caspius</i>	0	0	5	0	0	0	0	0	0	0	0	0			+	Prot
Chukar	<i>Alectoris chukar</i>	23	17	44	17	45	33	20	41	19	36	35	27	+	+	+	Norm
Common Snipe	<i>Gallinago gallinago</i>	1	0	0	0	0	0	0	0	0	0	0	0	+			Norm
Yellow-legged Gull	<i>Larus cachinnans</i>	3	2	2	0	0	0	0	0	0	5	1	2	+			Norm
Rock Dove	<i>Columba livia</i>	15	12	5	8	14	25	3	14	26	7	8	13	+	+	+	Norm
European Turtle Dove	<i>Streptopelia turtur</i>	0	0	0	0	12	11	4	5	6	0	0	0	+	+	+	Norm
Laughing Dove	<i>Streptopelia senegalensis</i>	5	4	7	0	6	7	8	5	5	7	2	1	L			Prot
Ring-necked Parakeet	<i>Psittacula krameri</i>	7	9	12	5	2	4	6	4	14	0	0	2	L			Norm
Common Cuckoo	<i>Cuculus canorus</i>	0	0	0	3	2	0	0	0	0	1	0	0		+		Norm
European Scops Owl	<i>Otus scops</i>	0	0	0	0	0	1	0	0	0	1	0	0	+			Prot
Eurasian Eagle Owl	<i>Bubo bubo</i>	0	0	0	0	1	0	0	0	1	0	0	0	Z-Gh			Prot
Little Owl	<i>Athene noctua</i>	0	0	1	0	1	0	0	0	0	0	0	0	+			Prot
European Nightjar	<i>Caprimulgus europaeus</i>	0	0	0	0	0	3	0	0	0	0	0	0	+			Norm

English name	Scientific name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	South VPA	Centre VPA	North VPA	Cons. in Iran
Common Swift	<i>Apus apus</i>	0	0	7	5	5	13	9	0	4	5	0	0	+	+	+	Prot
Common Kingfisher	<i>Alcedo atthis</i>	0	0	0	0	0	0	1	0	0	0	0	0	+			Norm
European Bee-eater	<i>Merops apiaster</i>	0	0	15	7	3	18	18	12	3	9	0	0	+	+	+	Norm
European Roller	<i>Coracias garrulus</i>	0	0	0	0	5	3	8	5	2	0	0	0	+			Norm
Eurasian Hoopoe	<i>Upupa epops</i>	0	0	0	5	3	5	4	7	2	0	0	0	+	+	+	Norm
Syrian Woodpecker	<i>Dendrocopos syriacus</i>	2	0	3	8	0	2	1	4	2	0	0	1	+	+		Norm
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	0	0	0	0	0	0	0	0	1	0	0	0			G	Norm
Crested Lark	<i>Galerida cristata</i>	0	0	3	0	1	2	1	5	2	1	0	1	+	+	+	Norm
Eurasian Skylark	<i>Alauda arvensis</i>	0	0	0	0	1	0	1	0	0	1	0	0		+		Norm
Horned Lark	<i>Eremophila alpestris</i>	3	2	5	0	0	2	0	0	0	0	1	0			+	Norm
Sand Martin	<i>Riparia riparia</i>	0	0	0	0	0	0	0	0	1	0	0	0			G	Norm
Eurasian Crag Martin	<i>Hirundo rupestris</i>	0	0	2	3	3	7	9	2	0	0	2	0	+	+	+	Norm
Barn Swallow	<i>Hirundo rustica</i>	0	2	3	15	27	13	4	12	2	0	0	0	+	+	+	Norm
Common House Martin	<i>Delichon urbicum</i>	0	0	3	0	0	0	5	0	0	0	0	0			+	Norm
White Wagtail	<i>Motacilla alba</i>	13	22	10	3	7	23	13	2	32	12	10	1	+	+	+	Norm
White-eared Bulbul	<i>Pycnonotus leucotis</i>	2	0	5	2	3	2	0	5	3	1	3	0	L			Norm
Southern Grey Shrike	<i>Lanius meridionalis</i>	0	0	0	0	0	2	1	0	0	0	0	0		+		Norm
White-throated Dipper	<i>Cinclus cinclus</i>	1	0	0	0	1	1	1	1	0	0	0	0		+		Norm
Alpine Accentor	<i>Prunella collaris</i>	0	1	0	0	0	0	0	0	0	0	0	1			+	Norm
Radde's Accentor	<i>Prunella ocularis</i>	2	3	0	1	2	0	0	0	0	0	1	1			+	Norm
Common Nightingale	<i>Luscinia megarhynchos</i>	0	0	7	8	3	0	2	0	0	0	0	0	+	+	+	Prot
White-throated Robin	<i>Irania gutturalis</i>	1	0	0	0	0	0	0	0	0	0	0	0			+	Norm
Black Redstart	<i>Phoenicurus ochruros</i>	2	0	0	0	2	3	0	0	0	0	2	0		+	+	Norm
Common Redstart	<i>Phoenicurus phoenicurus</i>	0	0	0	0	2	1	0	0	0	0	0	0	+			Norm
Northern Wheatear	<i>Oenanthe oenanthe</i>	0	0	0	0	8	6	2	1	5	0	0	2		+		Norm
Finsch's Wheatear	<i>Oenanthe finschii</i>	0	0	0	0	0	1	0	2	0	0	0	0	+			Norm
Black-eared/Pied Wheatear	<i>Oenanthe hispanica/pleschanka</i>	0	0	5	3	2	0	2	1	0	0	0	0	+	+	G	Norm
Red-tailed Wheatear	<i>Oenanthe xanthopyrna</i>	0	0	0	0	1	0	0	0	0	0	0	0	+			Norm
Isabelline Wheatear	<i>Oenanthe isabellina</i>	0	0	0	0	0	5	3	3	0	0	0	0		+		Norm
Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	0	0	0	0	0	0	0	0	0	1	0	0			+	Norm

An avifaunal survey of the Varjin- A. Ghoddousi *et al.*

English name	Scientific name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	South VPA	Centre VPA	North VPA	Cons. in Iran
Blue Rock Thrush	<i>Monticola solitarius</i>	0	0	1	0	0	0	0	0	0	0	0	0		K		Norm
Blackbird	<i>Turdus merula</i>	0	0	1	0	2	0	0	0	0	1	0	0		+		Norm
Scrub Warbler	<i>Scotocerca inquieta</i>	0	0	0	0	0	1	0	0	0	0	0	0	Bs			Norm
Cetti's Warbler	<i>Cettia cetti</i>	0	0	0	0	1	0	0	0	0	0	0	0			+	Norm
Plain Leaf Warbler	<i>Phylloscopus neglectus</i>	0	0	0	1	0	0	1	0	0	1	0	0	+			Norm
Green Warbler	<i>Phylloscopus nitidus</i>	0	0	0	0	1	0	0	0	2	0	0	0	+			Norm
Eastern Orphean Warbler	<i>Sylvia(hortensis) crassirostris</i>	0	0	0	0	0	1	0	0	0	0	0	0	+			Norm
Spotted Flycatcher	<i>Muscicapa striata</i>	0	0	0	0	1	0	0	1	1	0	0	0	+	+	+	Norm
Red-breasted Flycatcher	<i>Ficedula parva</i>	0	0	0	0	0	1	0	0	1	0	0	0		+		Norm
Great Tit	<i>Parus major</i>	2	0	0	0	0	0	0	0	0	0	3	2	T			Norm
Blue Tit	<i>Parus caeruleus</i>	0	0	0	1	0	0	0	0	0	0	2	0	T	Gv		Norm
Western Rock Nuthatch	<i>Sitta neumayer</i>	1	2	0	3	0	0	0	3	12	7	0	0	+	+	+	Norm
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	0	0	3	2	0	0	5	12	6	2	0	0	+	+	+	Norm
Rock Bunting	<i>Emberiza cia</i>	0	0	0	1	0	0	3	0	0	0	4	0			+	Norm
Grey-necked Bunting	<i>Emberiza buchanani</i>	0	0	0	3	0	2	0	1	0	0	0	0		+		Norm
Black-headed Bunting	<i>Emberiza melanocephala</i>	0	0	0	5	5	12	0	0	0	0	0	0	+	+		Norm
Red-headed Bunting	<i>Emberiza bruniceps</i>	0	0	0	1	0	0	0	0	0	0	0	0	T			Norm
Corn Bunting	<i>Emberiza (Miliaria) calandra</i>	0	0	0	0	5	0	0	3	0	0	0	0	+	+		Norm
Common Chaffinch	<i>Fringilla coelebs</i>	5	7	3	0	0	0	0	0	0	0	2	0	T			Norm
Red-fronted Serin	<i>Serinus pusillus</i>	1	10	0	0	0	0	0	0	0	0	0	3			+	Norm
European Goldfinch	<i>Carduelis carduelis</i>	5	0	3	7	0	0	0	0	0	0	5	6	V			Norm
Twite	<i>Carduelis flavirostris</i>	0	0	0	0	0	1	0	0	0	1	0	0			+	Norm
Common Linnet	<i>Carduelis cannabina</i>	4	0	0	0	0	0	0	0	0	3	2	0		+		Norm
Crimson-winged Finch	<i>Rhodopechys sanguinea</i>	0	0	0	1	0	0	0	0	0	0	1	0	P			Norm
House Sparrow	<i>Passer domesticus</i>	10	15	8	7	2	5	7	13	2	11	5	8	+	+	+	Pest
Spanish Sparrow	<i>Passer hispaniolensis</i>	0	0	0	0	0	0	0	0	1	0	1	0		+		Pest
Rock Sparrow	<i>Petronia petronia</i>	0	0	0	0	2	0	0	3	0	0	0	0			+	Pest
White-winged Snowfinch	<i>Montifringilla nivalis</i>	0	1	5	0	0	1	0	0	0	0	0	0			+	Pest
Common Starling	<i>Sturnus vulgaris</i>	0	0	30	5	12	55	23	65	3	0	0	0	+	+	+	Norm
Common Myna	<i>Acridotheres tristis</i>	2	3	0	0	0	0	0	0	2	1	0	0	Gl			Prot
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	0	0	0	0	0	0	2	3	0	0	0	0		+		Norm

English name	Scientific name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	South VPA	Centre VPA	North VPA	Cons. in Iran
Eurasian Magpie	<i>Pica pica</i>	12	12	8	19	3	13	38	13	17	7	5	7	+	+	+	Norm
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	4	5	10	3	5	7	1	2	8	3	1	1	+	+	+	Norm
Alpine Chough	<i>Pyrrhocorax graculus</i>	0	0	1	0	0	0	0	0	0	0	0	0	+			Norm
Rook	<i>Corvus frugilegus</i>	5	7	13	37	24	12	23	11	6	6	4	2	Gl			Pest
Carrion Crow	<i>Corvus corone</i>	5	18	5	4	2	8	0	13	1	12	2	2	+	+	+	Pest
Common Raven	<i>Corvus corax</i>	0	0	3	2	0	0	0	1	0	0	1	0	+	+	+	Norm
No. of visits		3	2	2	3	5	9	3	2	5	3	3	3	20	14	9	69 Norm, 6 Pest, 5 En, 20 Prot
TOTAL no. of bird species		32	25	40	35	44	47	36	39	34	29	28	24	66	48	44	

The VPA, comprising a rich mix of habitats and lying in the south of the Central Alborz Protected Region, attracts wintering species like Mallard *Anas platyrhynchos*, Goshawk *Accipiter gentilis* and Snow Finch *Montifringilla nivalis*. The year-round species richness of the VPA increases the conservation importance of the region. There is a lack of data on the occurrence of Caspian Snowcock of *T. caspicus*, the breeding status of Golden Eagle *A. chrysaetos* and Lammergeier *G. barbatus* and the quantitative assessment of wintering waterbird species – much more research and recording is required from scientists and students, all the better with the active cooperation of birdwatchers and game guards.

The Garmabdar area lies in the north of VPA and being a rural region is well-suited for birdwatching and for study passerines. Many of the recent new records from the VPA have been observed in Garmabdar, which is only about 50 km from Tehran, thus offering good opportunities for people to visit during the warmer part of the year. Such easy access and the variety of bird species in the VPA make the site perfect for both ornithology and birdwatching. Three exotic bird species (Rose-ringed Parakeet *Psittacula krameri*, White-eared Bulbul *Pycnonotus leucotis* and Common Myna *Acridotheres tristis*) have increased in numbers recently in the region. Given the known problems of introduced species worldwide (Lever 2005), it is important that their effects on the ecosystem and other avian species should be researched within the VPA.

Conservation

The main threat in the area is habitat fragmentation by changing land-use and invasion of human activities (cities, roads, mines, etc.) to the area. Overgrazing outside the Core Zone must be assessed as to its extent and workable countermeasures proposed, these should be aimed at involving the local communities in harmony with implementation of the statutory requirements of the protected area. Reports about illegal hunting of the birds in winter season are available, indicating that better supervision of the implementation of existing regulations is required, and failing that, the development of new regulations (R. Kargar pers. comm.).

Considering internationally protected bird species, three in the VPA are assessed as under severe threat (BirdLife International 2007) – Lesser Kestrel *Falco naumanni* as Vulnerable, Saker Falcon *F. cherrug* as Endangered and European Roller *Coracias garrulus* as Near threatened in the 2006 IUCN Red List of Threatened Species. The Convention of the International Trade of Endangered Species (CITES) applies to 21 bird species (of total 124 species) in the VPA. These aspects inform the conservation value of the VPA. CITES Appendix I applies to Peregrine Falcon *Falco peregrinus*, Barbary Falcon, Saker Falcon *Falco cherrug* and Caspian Snowcock, while Appendix II to the remaining 17 species, Eurasian Griffon Vulture *Gyps fulvus*, Egyptian Vulture *Neophron percnopterus* (Fig. 3), Black Kite, Lammergeier, Hen Harrier *Circus cyaneus*, Northern Goshawk *Accipiter gentilis*, Eurasian Sparrowhawk, Common Buzzard *Buteo buteo*, Long-legged Buzzard *B. rufinus*,

Golden Eagle, Common Kestrel *F. tinnunculus*, Lesser Kestrel, Eurasian Hobby *F. subbuteo*, European Scops Owl *Otus scops*, Little Owl *Athene noctua*, Long-eared Owl *Asio otus* and Eurasian Eagle Owl *Bubo bubo*.

The numbers of four bird species observed in the VPA – Lammergeier, Egyptian Vulture, Eurasian Griffon Vulture and Saker Falcon are declining in the Middle East (Evans 1994). Several species encountered in the VPA have a global distribution restricted to the Middle East: See-see Partridge *Ammoperdix griseogularis*, Caspian Snowcock, Radde's Accentor *Prunella ocularis*, White-throated Robin *Irania gutturalis*, Finsch's Wheatear *Oenanthe finschii*, Red-tailed Wheatear *Oenanthe xanthopyrmyna*, Plain Leaf Warbler *Phylloscopus neglectus* and Crimson-winged Finch *Rhodopechys sanguinea*.

Iran's Department of the Environment (DOE) laws, designate from the 124 bird species identified in the VPA five as "Endangered", namely Lammergeier, Golden Eagle, Saker Falcon, Peregrine Falcon and Barbary Falcon and 23 species as "Protected Species" (Table 1). At present two species are in the "Pest" category that should not be, namely Rock Sparrow *Petronia petronia* and White-winged Snowfinch *Montifringilla nivalis*; we expect that they should be placed in a more appropriate category in the DOE laws in the near future.

Recommendations

The Varjin Protected Area is a critical habitat for breeding Lammergeier, Golden Eagle (Fig. 5) and Caspian Snowcock. A comprehensive conservation management plan should be developed, funded and implemented. The plan should emphasise practical wildlife



Figure 4. A nestling Golden Eagle *Aquila chrysaetos* at its nest, Varjin, spring 2007, © A. Ghoddousi.



Figure 5. An adult Golden Eagle *Aquila chrysaetos* at nest, Aali'dareh core zone, Varjin, spring 2005, © D. Ashayeri.

management techniques and involvement of local people and should be set in a framework that reverses habitat fragmentation. Local people should also hold responsibilities for implementing conservation and protection regulations.

Acknowledgements: Many thanks to Taher Ghadirian, Amirhossein Khaleghi Hamidi, Mohammad Tohidifar and Abolghasem Khaleghizadeh who have supported us in the implementation of this study. We are also grateful of cooperation of Rajab'ali Kargar, head of DOE of Shemiranat County and the staff: Shekarabi, Yeganzadeh, Salabarzi and all the game-guards of the Varjin protected area.

REFERENCES

- Bakhtiari P. & Tohidifar M. 2007. Avifauna of the Jajerud and Damavand basin, Alborz Mountains. *Podoces* **2(1)**: 61–71.
- Behrouzi-Rad B. 1990. *Checklist of birds of protected areas under protection*. Department of the Environment (DoE), 16 sheets
- BirdLife International. 2007. www.birdlife.org.
- Darvishsefat A.A. 2006. *Atlas of Protected Areas of Iran*. Tehran University Press, Tehran, 157 pp. [In English-Persian]
- Evans M.I. (comp.) 1994. *Important Bird Areas in the Middle East*. BirdLife Conservation Series No.2. BirdLife International, Cambridge, UK.
- Khaleghizadeh A. & Sehhatiasabet M.E. 2007. Avifaunal survey of the Latian Dam and Lashgarak Area, an important IBA for migrants in Iran. *Sandgrouse* **29(1)**: 53–69.
- Laws and Parliamentary Affairs Office 2004. Directory of Laws and Regulations of the Environment of Iran. Department of the Environment, 975pp.
- Lever C. 2005. *Naturalised birds of the world*. T&AD Poyser, London, UK.
- Mansoori J. 2001. *A field guide to the birds Iran*. Zehn-aviz Publishing, Tehran, 490 pp. [In Persian]
- Porter R.F., Christensen S. & Schiermacker-Hansen P. 1996. *A field guide to the birds of the Middle East*. T. & A.D. Poyser, London, 460 pp
- Scott D.A. 2007. The birds of the Latian Dam and Lashgarak Area, Tehran, Islamic Republic of Iran– June 1972 to February 1976. *Sandgrouse* **29(1)**: 35–52.
- Scott D.A. & Adhami A. 2006. *An Updated Checklist of the Birds of Iran*. *Podoces* **1(1/2)**: 1–16.
- Scott D.A., Moravvej Hamedani H., Adhami Mirhosseyni A. 1975. *The Birds of Iran*. Department of the Environment, Tehran. [In Persian with English introduction]

