

# ARMENIA

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Vast tablelands surrounded by ridges are characteristic of the Armenian landscape. (PHOTO: SHAHEN MNATSAKIANIAN)

## GENERAL INTRODUCTION

Independent since 1991, Armenia is a small land-locked country lying between the Black and Caspian Seas. It occupies an area of some 29,800 km<sup>2</sup> in the south-western Transcaucasian region of the former USSR and is bordered in the east by the main territory of Azerbaijan, in the south-west by Nakhichevan (also part of Azerbaijan), in the north by Georgia, in the south by Iran and in the west by Turkey. The country is characteristically mountainous, consisting of several vast tablelands surrounded by ridges. There

are clear landscape zones covering elevations from 400 m to over 4,000 m above sea-level. More than 90% of the country lies above 1,000 m. The major Armenian river systems are the Araks, Hrazdan, Kashakh, Vorotan, Metsamor, Debt, Aghstev and Arpa river systems. The two largest natural lakes are Sevan—the largest inland water-body in Transcaucasia and one of the largest freshwater mountain lakes in Eurasia—and, in the north-west, Lake Arpi.

A total of five Important Bird Areas (IBAs) have been identified in Armenia, although it is likely that several more IBAs will be identified in the future (see also ‘Conservation’, below). The five



**Map 1.** Location, area and criteria category of Important Bird Areas in Armenia.

**Table 1.** Summary of Important Bird Areas in Armenia. 5 IBAs covering 1,820 km<sup>2</sup>

IBA code	1989 code	International/national name	Area (ha)	Criteria (see p. 11)
001	—	Lake Arpi	2,000	A4i, B1i
002	—	Pombak mountain chain	—	A1, A3
003	—	Khosrov Reserve	29,166	A1, B2, A3
004	—	Armash fish-farm	2,795	A1, A4i, B1i, B2
005	—	Lake Sevan	150,000	A1, A4i, B1i

cover at least 1,820 km<sup>2</sup>, or approximately 6% of the country's surface area (Table 1, Map 1). No Armenian IBAs (as part of the former USSR) were identified in the previous pan-European IBA inventory (Grimmett and Jones 1989).

## ORNITHOLOGICAL IMPORTANCE

There are 113 species of European conservation concern (SPECs) breeding regularly in Armenia (Tucker and Heath 1994; Adamian and Klem 1997, 1999). Of these, *Marmaronetta angustirostris*, *Aythya nyroca*, *Oxyura leucocephala*, *Aquila heliaca* and *Falco naumanni* are globally threatened. Two additional species potentially in this category for Armenia are *Pelecanus crispus* (occurs, but does not breed regularly) and *Crex crex* (more information is required to determine breeding status). Globally near-threatened breeding species include *Phalacrocorax pygmeus*, *Aegypius monachus*, *Tetrao mlokosiewiczzi* and *Glareola nordmanni*, while a further 69 (perhaps up to 73) breeding SPECs have an unfavourable conservation status in Europe. Forty-five SPECs occur regularly on passage or overwinter, and among these are the globally threatened or near-threatened *Anser erythropus*, *Haliaeetus albicilla*, *Circus macrourus*, *Aquila clanga* and *Gallinago media*.

Table 1 lists the criteria which each of the five sites meets in order to qualify as an IBA. Four sites qualify because they hold (or are believed to hold) significant numbers of globally threatened or near-threatened species (criterion A1; see Table 2). Three out of the five sites meet criteria A4i and B1i by supporting 1% or more of the biogeographic or flyway population of waterbird species (Table 3): the near-threatened *Phalacrocorax pygmeus* at IBA 004 and *Larus armenicus*, restricted as a breeding bird to Transcaucasia, Turkey and Iran, at Lake Arpi (IBA 001) and Lake Sevan (005). Two out of the five IBAs support species of European conservation concern in important numbers, thus meeting criterion B2. Estimated breeding-population figures are not available for the majority of breeding SPECs in Armenia (see Table 4).

**Table 2.** Important Bird Areas in Armenia that are important for species of global conservation concern (meeting criterion A1).

Species	IBA code
<i>Phalacrocorax pygmeus</i> Pygmy Cormorant	004
<i>Anser erythropus</i> Lesser White-fronted Goose	005
<i>Marmaronetta angustirostris</i> Marbled Duck	004
<i>Aythya nyroca</i> Ferruginous Duck	004, 005
<i>Oxyura leucocephala</i> White-headed Duck	004
<i>Aegypius monachus</i> Cinereous Vulture	003
<i>Tetrao mlokosiewiczzi</i> Caucasian Black Grouse	002
<i>Glareola nordmanni</i> Black-winged Pratincole	004

**Table 3.** Important Bird Areas in Armenia that support important numbers of one or more congregatory species (i.e. meeting criteria A4 and/or B1). IBAs meeting both criteria A4 and B1 for the species are shown in **bold**. IBAs meeting only criterion B1 for the species concerned, and not A4, are shown in normal type. For key to 'Season' see p. 7.

Species	Season	IBA code
<i>Phalacrocorax pygmeus</i> Pygmy Cormorant	B	<b>004</b>
<i>Aythya nyroca</i> Ferruginous Duck	N	<b>004</b>
<i>Larus armenicus</i> Armenian Gull	B	<b>001,005</b>

**Table 4.** Species of European conservation concern with significant breeding populations at Important Bird Areas in Armenia (meeting any IBA criteria).

Species <sup>1</sup>	Minimum national breeding population (pairs) <sup>2</sup>	Proportion (%) of national population breeding at all IBAs in Armenia
<i>Phalacrocorax pygmeus</i> Pygmy Cormorant	—	— <sup>3</sup>
<i>Marmaronetta angustirostris</i> Marbled Duck	15	53
<i>Aythya nyroca</i> Ferruginous Duck	—	— <sup>3</sup>
<i>Oxyura leucocephala</i> White-headed Duck	—	— <sup>3</sup>
<i>Gypaetus barbatus</i> Lammergeier	—	— <sup>3</sup>
<i>Neophron percnopterus</i> Egyptian Vulture	—	— <sup>3</sup>
<i>Gyps fulvus</i> Griffon Vulture	—	— <sup>3</sup>
<i>Aegypius monachus</i> Cinereous Vulture	15	47
<i>Buteo rufinus</i> Long-legged Buzzard	—	— <sup>3</sup>
<i>Tetrao mlokosiewiczzi</i> Caucasian Black Grouse	—	— <sup>3</sup>
<i>Tetraogallus caspius</i> Caspian Snowcock	166	1
<i>Alectoris chukar</i> Chukar	—	— <sup>3</sup>
<i>Glareola pratincola</i> Collared Pratincole	—	— <sup>3</sup>
<i>Otus scops</i> Scops Owl	—	— <sup>3</sup>
<i>Bubo bubo</i> Eagle Owl	—	— <sup>3</sup>
<i>Merops apiaster</i> Bee-eater	—	— <sup>3</sup>
<i>Monticola solitarius</i> Blue Rock Thrush	—	— <sup>3</sup>

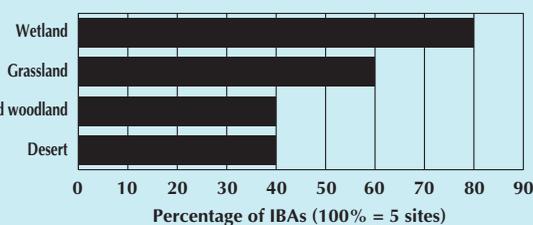
1. Only those species of European conservation concern (see Box 1, p. 12) that meet IBA criteria in Armenia are listed.
2. Data are taken from Snow and Perrins (1998).
3. No national population estimate available.

The country's geographical position means that it is a major intersection of migration routes from all directions, with birds moving between Europe and wintering areas lying south of Transcaucasia. Few detailed studies have been undertaken, but there is a prominent raptor passage in the autumn, birds heading from north of Mount Aragats south-west to Sardarapat steppe and the Araks valley or south-east between the Pombak (IBA 002) and Bazoom mountains towards Lake Sevan (005) and on southward, either in unbroken flights or with stopovers. Wetland habitats, among them Lake Arpi (IBA 001) and, more especially, site 004 (the Armash fish-farming ponds) and Lake Sevan (005), are important staging sites for a wide range of migratory waterbirds and others.

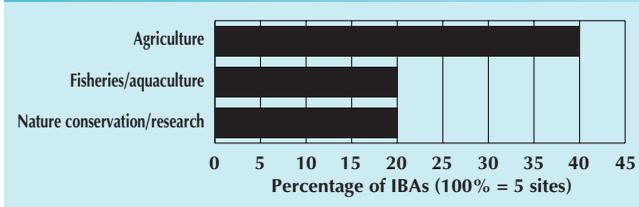
## HABITATS

Armenia is located in the north-eastern part of the Armenian Upland at the junction of three geological-botanical regions: the mesophilic Caucasian, desert/semi-desert Iranian and subtropical Eastern Mediterranean. Semi-desert, with rock, barren soil and scrub, predominates in the south of the country, covering much of the Araks river depression (Ararat plain) and adjacent foothills up to 1,500 m above sea-level, but primarily below 1,000 m. Drought-adapted plant communities comprise *Artemisia*, *Artemisia-ephemeral*, *Artemisia-grass*, *Achillea*, scrub and solonchak. Birds favouring semi-desert habitats include bee-eaters *Merops*, *Coracias garrulus*, larks (Alaudidae), *Hippolais* and *Sylvia* warblers and *Carpospiza brachydactyla*; where there is scrub and trees, also shrikes *Lanius* and *Irania gutturalis*. Higher-altitude semi-desert with rocky areas supports many raptors, *Apus melba*, *Monticola solitarius*, nuthatches *Sitta*, *Sturnus roseus* and *Bucanetes githagineus*. Agriculture has increasingly invaded semi-desert, with the cultivation of wheat, viticulture and fruit orchards. Mountain

**Figure 1.** Occurrence of habitats at Important Bird Areas in Armenia (see Appendix 3 for definitions of habitats).



**Figure 2.** Occurrence of land-uses at Important Bird Areas in Armenia (see Appendix 3 for definitions of land-uses).



steppe, a characteristically diverse plant assemblage, is the predominant vegetation type in Armenia. It extends up to 500–550 m in the wetter north, up to 2,300–2,400 m in drier areas and there are two main types: arid mountain steppe (close to semi-desert, also ornithologically) and meadow steppe. Most mountain steppes are dominated by *Poa bulbosa* and *Catabrosella humilis*. Among species found in arid habitat of this kind are *Alectoris chukar*, wheatears *Oenanthe*, *Rhodopechys sanguinea*, *Emberiza buchanani* and *E. cia*, while raptors haunt rocky outcrops; it is also important for wintering passerines. The most widely distributed type of meadow steppe is ‘multiherbaceous’; there is also grass and sedge *Carex humilis*. Typical birds include *Perdix perdix*, *Coturnix coturnix*, many passerines such as *Carduelis flavirostris* and *Carpodacus erythrinus*, and more variety in stream valleys with rocks. Mountain meadows are alpine and subalpine habitat at 2,400–3,500 m (higher on Mount Aragats). Dwarf vegetation is typical of alpine meadows, with carpets on plateaus and gradual slopes; other features of these altitudes are sedge meadows, dry upland meadows, also boulder fields, talus and scree slopes. This habitat supports *Tetraogallus caspius*, *Eremophila alpestris*, *Anthus spinoletta*, in scrub *Prunella ocularis*, also (in rocky areas) *P. collaris*, *Tichodroma muraria* and choughs *Pyrhocorax*.

Timber cutting and widespread grazing have reduced the now mostly discontinuous forested areas in Armenia to c.12% of the land cover, at elevations between 550 and 2,600 m. The main forest-types are *Fagus*, mixed *Quercus*, *Carpinus* (particularly widespread), open *Juniperus* woodland and *Pinus*, though stands of native conifers are rare in Armenia. Destruction of *Quercus-Carpinus* forest has given rise to sibiljax (steppe scrub) with *Juniperus* and *Paliurus*; also, in rocky, arid hills, *Pistacia*, *Cotinus*, *Rhamnus*, etc. Typical forest birds are woodpeckers, raptors (*Pernis apivorus*, *Accipiter brevipes*, *Aquila pomarina*, *Hieraaetus pennatus*), and many passerines (*Ficedula parva*, *F. semitorquata*); *Tetrao mlokosiewiczii*

uses subalpine meadows for breeding, but moves into forest (*Rhododendron*, *Betula*, *Sorbus*) in winter. In the south of the country, dense deciduous forest or scattered *Juniperus* have *Aegypius monachus*, *Aegolius funereus*, *Dendrocopos syriacus*, *Sylvia* warblers, *Parus lugubris* and *Serinus pusillus*.

Armenian wetlands comprise over 400 natural and man-made lakes, reservoirs, fish-ponds and rivers. Of outstanding importance for birds are Lake Sevan (IBA 005) and fish-farming ponds in the Araks valley at Armash (IBA 004), Masees and Yeghegnoot. These ponds generally have surrounding emergent vegetation or ‘islands’ of such growth (*Phragmites*, *Typha*, etc.). Because of the falling water-level at Lake Sevan and the consequent loss of the adjacent Lake Gilli and its marshlands, the fish-ponds have become increasingly important for breeding waterbirds (some globally threatened), including *Phalacrocorax pygmeus*, *Plegadis falcinellus*, *Aythya nyroca*, *Oxyura leucocephala*, *Recurvirostra avosetta*, *Charadrius leschenaultii*, *Chettusia leucura*, *Burhinus oedicnemus* and pratincoles *Glareola*. Pelicaniformes and Ciconiiformes, wildfowl, shorebirds and others occur on passage or as rare visitors.

Figure 1 shows the main habitat types represented at the five IBAs in Armenia.

**IMPACTS ON IBAs – LAND-USE AND THREATS**

Figure 2 summarizes land-use at the five Armenian IBAs. Little is known of threats at four out of the five sites. Fluctuating water-levels are a threat to nesting birds at Lake Arpi (IBA 001) and many waterbirds, including *Phalacrocorax pygmeus* and *Pelecanus onocrotalus*, are shot (legally or illegally) at Armash and other ponds because of the perceived conflict with fish-farming interests, while the shooting of migrating and other raptors appears to be a widespread threat throughout the country.

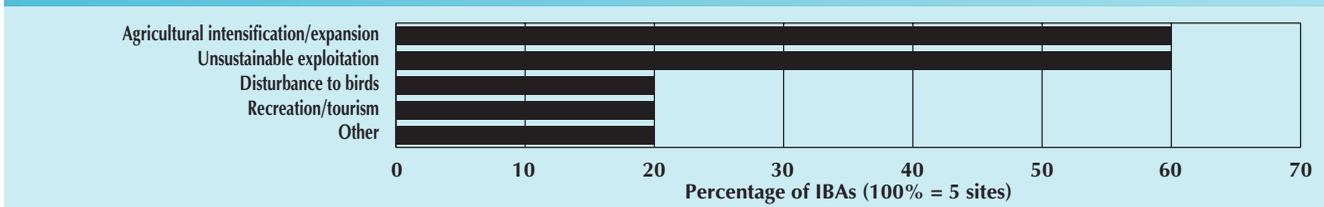
**PROTECTION STATUS**

**National protection**

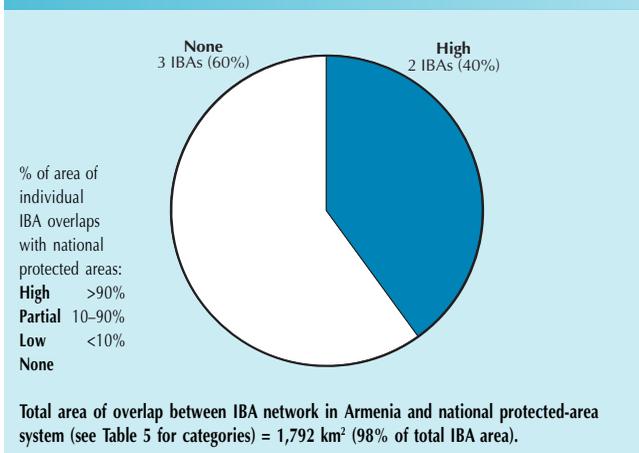
In common with other now-independent states of the former USSR, Armenia has a protected-area system comprising **Zapovedniks** (strict nature reserves), **Zakazniks** (temporary reserves with a less strict regime) and **National Parks**.

Only two out of the five Armenian IBAs overlap with a protected area (Table 5, Figure 4).

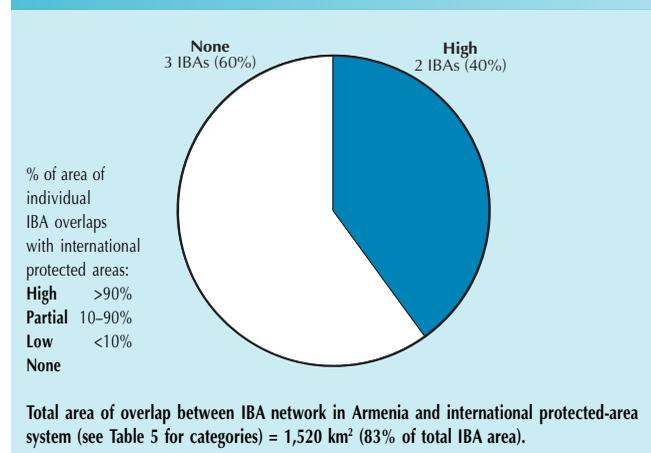
**Figure 3.** Occurrence of threats at Important Bird Areas in Armenia (see Appendix 3 for definitions of threat types and impact categories).



**Figure 4.** The national protection status of Important Bird Areas in Armenia.



**Figure 5.** The international protection status of Important Bird Areas in Armenia.



**Table 5.** Protection status of Important Bird Areas in Armenia. A tick (✓) indicates that an IBA overlaps with a protected area (to any extent).

IBA code	International name	National		Inter-national
		Zapovednik	National Park	Ramsar Site
001	Lake Arpi			✓
002	Pombak mountain chain			
003	Khosrov Reserve	✓		
004	Armash fish-farm			
005	Lake Sevan		✓	✓
<b>Total number of IBAs</b>		<b>1</b>	<b>1</b>	<b>2</b>

**Box 1.** International legislation and initiatives that are relevant to site conservation in Armenia (see Appendix 1 for a general description of the agreements).

Global	
Biodiversity Convention	✓
Ramsar Convention	✓
Bonn Convention	
World Heritage Convention	✓
MAB Programme	✓
Pan-European	
Bern Convention	
✓ Convention ratified/initiative supported	
✓ Convention signed	

### International protection

Armenia is not yet committed to the Bonn Convention, but is a contracting party to the World Heritage Convention and supports the Biodiversity and Ramsar Conventions (Box 1). Two areas are designated Ramsar Sites, Lake Arpi (001) and Lake Sevan (005).

## CONSERVATION

- The following four nature reserves (Zapovedniks) are not covered as IBAs in this inventory. 1) Dilijan (established 1958): 27,995 ha of forested mountainous country in north-eastern Armenia. 2) Shikahogh Reserve (1959): c.10,000 ha on the northern slopes of the Meghri mountains in the south-eastern Little Caucasus. 3) Sevelech Reserve (1987): 240 ha in southern Armenia on the border with Azerbaijan. 4) Ereboonee Reserve (1981): 89 ha situated between Yerevan and site 003 (Khosrov).
- Preliminary observations indicate a large and diverse raptor migration through Armenia. Several of these migration watch-points may in the future be identified as IBAs, most notably Gree gorge (40°21'N 45°05'E, 55 km east-north-east of Yerevan).
- The importance for birds of two further areas requires investigation: Khoostop mountain, and the semi-desert and mountain steppe in the Meghri region in the extreme south-east of Armenia.
- Contemporary Armenian laws governing nature (and birds specifically) are as inherited from the Soviet period and the available evidence suggests that the current level of enforcement of laws relating to the protection of wildlife and natural resources is far from satisfactory. New national laws unique to Armenia (including 'The Law of the Republic of Armenia on the Animal Kingdom') and under consideration by the country's legislators

were expected to be enacted by the end of 1998 or early 1999. The country's leading ornithologist, M. S. Adamian, was appointed to a government committee dealing with wildlife conservation laws in 1997. Such new legislation, if enforced effectively by the appropriate government agencies, holds great promise for improving bird protection and conservation. Considerable impetus has come from the American University of Armenia (AUA), which was opened simultaneously with the country's declaration of independence in 1991 and which houses a Department of Environmental Management having an influence on the Ministry of Environmental Protection and running courses in environmental awareness which all students, regardless of their field of study, are required to follow.

- The international Birds of Armenia Project involved cooperation between the Armenian National Academy of Sciences and the American University of Armenia in comprehensively reviewing the literature and organizing fieldwork in the period 1992–1995. This project led to the publication of two key references: a field guide (Adamian and Klem 1997) and a more recent handbook (Adamian and Klem 1999). These books carry a strong conservation message, describing in detail protected areas and identifying species of special concern within the country. Of the c.350 species recorded in Armenia, about 30% are deemed to be of special concern (Endangered, Threatened, Undetermined or Extirpated). The Red Data Book of Armenia (1987) contains 67 such species. The handbook (1999) should serve as a basis for a national scheme to protect, conserve and, where possible, to restore the country's birds and to promote and justify relevant laws.
- Against the background of harsh economic restraints and the heavy impact on the environment of human activities, more ornithological studies, especially population censuses and surveys, need to be encouraged, and greater involvement of young people in these and other schemes is felt to be essential.

## ANALYTICAL METHODS

- Data for the IBAs in this inventory were compiled from the literature and recent (1993–1997) ornithological research in the country. The lack of abundance studies using census plots and the line-transect method has meant that the population size of most species is unknown.

## GLOSSARY

**solonchak** intrazonal (i.e. affected more by local factors than by climate) saline soil without structure.

**Transcaucasia** the area, in the former USSR, lying to the south of the Great Caucasus mountain range and comprising the republics of Armenia, Azerbaijan and Georgia.

## ACKNOWLEDGEMENTS

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## SITE ACCOUNTS

### Lake Arpi

Admin region —

Coordinates 41°03'N 43°35'E

Altitude 2,000–2,000 m Area 2,000 ha

A4i, B1i

001



### Site description

Arpi reservoir, located in the very north-west of Armenia, evolved in the 1950s from the small Lake Arpi. Fed by thaws and four streams, it is the source of the Akhurian river. The landscape is mountain steppe with mostly grassy alpine vegetation. The site is adjacent to wetlands.

In spring the reservoir floods, and water covers an area of 20 km<sup>2</sup>, and two islands (2 and 4 ha) form. By autumn, when the lake waters are used for irrigation, the shores of the two islands merge.

**Habitats** Grassland (steppe/dry calcareous grassland; alpine/subalpine/boreal grassland), Wetland (standing fresh water)

**Land-use** Agriculture

### Birds

More than 100 species have been observed around Lake Arpi. Of special concern is the large breeding colony of *Larus armenicus*; 7,000–

10,000 pairs are known to breed on the two islands, comprising 60% of the population in Armenia. Species of global conservation concern that do not meet IBA criteria: *Pelecanus crispus* (breeding every 2–5 years, juveniles visiting annually).

Species	Season	Year	Pop min	Pop max	Acc	Criteria
<i>Larus armenicus</i> Armenian Gull	B	—	7,000	10,000	—	A4i, B1i

### Protection status

National None International High

2,000 ha of IBA covered by Ramsar Site (Lake Arpi, 2,000 ha).

### Conservation issues

**Threats** Agricultural intensification/expansion (U), Disturbance to birds (U)

The colony is extremely vulnerable due to annual water-level fluctuations of the reservoir. Birds are sometimes subject to disturbance when fluctuating water-levels allow access to nesting areas.

## Pombak mountain chain

Admin region —

Coordinates 40°38'N 44°32'E

Altitude 1,000–3,000 m Area —

A1, A3

002



### Site description

Pombak chain is one of the largest mountain ranges in the central part of northern Armenia, extending for 65 km from the north-west to south-east and evolving two ridges split by the Marmareek river. The mountain range has clearly defined landscape zones; mountain steppe, and subalpine and alpine meadows interspersed with mosaics of woodlands covering steep, north-facing slopes.

**Habitats** Forest and woodland, Grassland (steppe; alpine/subalpine/boreal grassland)  
**Land-use** Agriculture

### Birds

Species	Season	Year	Pop min	Pop max	Acc	Criteria
<i>Tetrao mlokosiewiczii</i> Caucasian Black Grouse	R	—	—	—	—	A1, A3
<i>Tetraogallus caspius</i> Caspian Snowcock	R	—	—	—	—	A3
<i>Prunella collaris</i> Alpine Accentor	R	—	—	—	—	A3
<i>Tichodroma muraria</i> Wallcreeper	R	—	—	—	—	A3
<i>Pyrhcorax graculus</i> Alpine Chough	R	—	—	—	—	A3
<i>Montifringilla nivalis</i> Snowfinch	R	—	—	—	—	A3

*Tetrao mlokosiewiczii* is confined to the edge of the snow-line in the upper edges of the forest and in the subalpine and alpine meadows. The following species of special concern are also present: *Gypaetus barbatus*, *Gyps fulvus*, *Accipiter gentilis*, *Aquila pomarina*, *A. clanga*, *A. chrysaetos*, *Prunella ocularis* and *Phoenicurus erythrogaster* (current status uncertain).

### Protection status

National None International None

### Conservation issues

**Threats** Agriculture intensification/expansion (U), Unsustainable exploitation (U)

The deeply-incised mountain range and the mosaic of woodland result in a patchy distribution of the *Tetrao mlokosiewiczii* population, thus lowering its viability and productivity. In addition, the species is threatened by heavy livestock-grazing during the breeding season and year-round poaching.

## Khosrov Reserve

Admin region —

Coordinates 40°02'N 44°56'E

Altitude 800–2,800 m Area 29,196 ha

A1, B2

003



### Site description

The Khosrov Reserve lies in a central part of southern Armenia. The terrain is rather complicated. The entire area is typically alpine, densely

traversed by primary and side-gorges, high plateaus and inter-montane depressions, massive towering mountain ranges, volcanic expanses and isolated mountain peaks. Two alpine rivers, the Azat and Verdi, with tributaries and a small lake (0.3 ha) are within the IBA. The area extends over four landscape zones: desert/semi-desert, mountain steppe, woodland, and alpine and subalpine meadows, though much valuable high-altitude habitat (meadow steppe on plateaus and rocky areas) lies outside the reserve.

**Habitats** Forest and woodland (wooded steppe), Grassland (alpine/subalpine/boreal grassland), Desert (semi-desert), Wetland (standing fresh water; river/stream)  
**Land-use** Nature conservation/research

### Birds

Species	Season	Year	Pop min	Pop max	Acc	Criteria
<i>Gypaetus barbatus</i> Lammergeier	R	—	3	—	—	B2
<i>Neophron percnopterus</i> Egyptian Vulture	B	—	5	6	—	B2
<i>Gyps fulvus</i> Griffon Vulture	R	—	15	20	—	B2
<i>Aegypius monachus</i> Cinereous Vulture	R	—	7	9	—	A1, B2
<i>Buteo rufinus</i> Long-legged Buzzard	R	—	4	5	—	B2
<i>Tetraogallus caspius</i> Caspian Snowcock	R	—	2	3	—	A3, B2
<i>Alectoris chukar</i> Chukar	R	—	300	—	—	B2
<i>Otus scops</i> Scops Owl	B	—	50	60	—	B2
<i>Bubo bubo</i> Eagle Owl	R	—	7	10	—	B2
<i>Merops apiaster</i> Bee-eater	B	—	200	300	—	B2
<i>Prunella collaris</i> Alpine Accentor	R	—	—	—	—	A3
<i>Monticola solitarius</i> Blue Rock Thrush	B	—	30	35	—	B2
<i>Sitta tephronota</i> Great Rock Nuthatch	R	—	60	70	—	A3
<i>Tichodroma muraria</i> Wallcreeper	R	—	—	—	—	A3
<i>Pyrhcorax graculus</i> Alpine Chough	R	—	—	—	—	A3

At least 156 species have been recorded and 76 of these have been proved to breed. An outstanding site for raptors, with at least 21 species breeding and three possibly breeding, including *Aquila chrysaetos*, *A. pomarina*, *Circaetus gallicus*, *Accipiter brevipes* and, uniquely in Armenia, a small relict population of *Aegolius funereus*. A colony of *Apus melba* in Azat Gorge numbers some 2,000 birds. Among other breeding birds are *Dendrocopos medius*, *Oenanthe hispanica*, *Monticola saxatilis*, *M. solitarius* and *Bucanetes githagineus*.

### Protection status

National High International None

29,196 ha of IBA covered by Strict Nature Reserve (Zapovednik) (Khosrov, 29,196 ha).

### Conservation issues

**Threats** Agricultural intensification/expansion (U), Other (U), Recreation/tourism (U), Unsustainable exploitation (U)

Fingers of grazing land 200–500 m wide and 1–5 km long penetrate into the reserve territory and herds are regularly driven through the reserve from adjacent farms. Until recently, there was hay-making and the collecting of fruit and seeds of edible, decorative and medicinal plants. Serious damage to the flora and fauna is caused by villagers resident in the reserve. There is also some poaching. The construction of tourist facilities, roads running through the reserve and the lack of a buffer zone are further causes for concern. A hydroelectric power-station, planned for a site on the Azat river within the reserve, would, it is believed, have a very detrimental affect on Khosrov and its wildlife.

## Armash fish-farm

Admin region —

Coordinates 37°45'N 44°46'E

Altitude — Area 2,795 ha

A1, A4i, B1i, B2

004



### Site description

Armash area is the largest fishery in the Araks valley of Armenia, with 1,514 ha covered by a total of 29 fish-ponds, each between 11 ha and 95 ha in size. The Araks valley is mainly semi-desert with extremely salty soils. The vegetation is basically halophytic, with mostly goosefoot *Chenopodium*, pepper-grass *Lepidium*, saltwort *Salsola*,

camel's thorn *Alhagi* and bean caper *Zygophyllum*. Marshes, wetlands, channel shores and ponds are densely vegetated with reeds and forbs, mixed with *Typha*, *Carex* and sparse tamarisk.

**Habitats** Desert (semi-desert), Wetland (standing fresh water; water-fringe vegetation)  
**Land-use** Aquaculture/fisheries

### Birds

Species	Season	Year	Pop min	Pop max	Acc	Criteria
<sup>1</sup> <i>Phalacrocorax pygmeus</i> Pygmy Cormorant	B	—	150	200	—	A1, A4i, B1i
<i>Marmaronetta angustirostris</i> Marbled Duck	B	—	8	10	—	A1, B2
<i>Aythya nyroca</i> Ferruginous Duck	B	—	25	30	—	A1
<i>Aythya nyroca</i> Ferruginous Duck	N	1995	—	700	—	A1, A4i, B1i
<i>Oxyura leucocephala</i> White-headed Duck	B	—	4	6	—	A1
<i>Glareola nordmanni</i> Black-winged Pratincole	B	—	15	20	—	A1

1. 80 nests 1994, 27 nests 1995.

The reedbeds cover edges of ponds, or grow in islet-shaped patches taking up approximately 30–50% of the water area, thus providing suitable cover and breeding places for grebes, cormorants, egrets/herons, rails, ducks and other birds.

### Protection status

**National** None **International** None

### Conservation issues

**Threats** Unsustainable exploitation (U)

Many waterbirds, including *Phalacrocorax pygmeus* and *Pelecanus onocrotalus* are shot (legally or illegally) at Armash and other ponds because of the perceived conflict with fish-farming interests.

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## Lake Sevan

A1, A4i, B1i **005**

**Admin region** —  
**Coordinates** 40°20'N 45°20'E  
**Altitude** — **Area** 150,000 ha



### Site description

A large lake in east-central Armenia, the country's largest protected area (125,300 ha of lake and 24,800 ha of land).

**Habitats** Wetland (standing fresh water; water-fringe vegetation)  
**Land-use** Unknown

### Birds

Species	Season	Year	Pop min	Pop max	Acc	Criteria
<sup>1</sup> <i>Anser erythropus</i> Lesser White-fronted Goose	U	1995	—	26	—	A1
<i>Aythya nyroca</i> Ferruginous Duck	N	1995	—	60	—	A1
<i>Larus armenicus</i> Armenian Gull	B	—	—	5,000	—	A4i, B1i

1. Three counts in 1995 with the highest of 26 individuals.

This is an important site for breeding *Larus armenicus* and large numbers of wintering waterfowl.

### Protection status

**National** High **International** High

150,000 ha of IBA covered by National Park (Sevan). 150,000 ha of IBA covered by Ramsar Site (Lake Sevan, 489,100 ha).

### Conservation issues

**Threats** Unknown

The surrounding Lake Sevan basin (339,000 ha) is designated as an External Protective Zone (EPZ).

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