

Taxonomic List

Noteworthy fauna

About 40 species of mammals are recorded (or expected to occur) which are represented by 6 insectivorous species, 8 bat species, 13 rodent species, 1 hare species, 10 carnivore species and 2 ungulates. Both ungulate species however as well as lynx and bear are rare visitors in this treeless region. Larger mammal species currently found are the European hare (*Lepus europaeus*), Badger (*Meles meles*), European otter (*Lutra lutra*), Red fox (*Vulpes vulpes*) and Wolf (*Canis lupus*).

The Nehring's mole rat (*Nannospalax nehringi*) is found only in this region and the Marbled polecat (*Vormela peregusna*).

The only non-native wild mammal is the muskrat *Ondatra zibethicus*, which was introduced to the Khanchali Lake (Georgia) in the middle 1980s and meanwhile has colonised most of the Javakheti Lakes, including Lake Arpi and Ardenis Pond.

The area is better known for its avifauna. The territory of Arpi Lake is identified by Birdlife International as Important Bird Area (IBA). Total 163 bird species have been recorded for the area, of which 80-85 species are known to nest in the target area. The other species are either migrants, summer visitors or their status remains unclear. Most of the bird species are related to the Lakes and Wetlands. Some of the more common species include 30 representative of the Charadriiformes family (10 of them are nesting in the area) and 24 species of the Anseriformes family of which 10 are known to nest. Seven species are of global conservation concern.

The area is one of the few areas in the Caucasus where breeding populations of the Common crane (*Grus grus*), White stork (*Ciconia ciconia*), Great White Pelican (*Pelicanus onocrotalus*), Dalmatian Pelican (*Pelicanus crispus*), and Velvet scoter (*Melanitta fusca*) are found.

The Velvet scoter (*Melanitta fusca*) occurs on Lake Arpi, as well as breeding pairs of the Dalmatian pelican (*Pelicanus crispus*). The Armenian Gull (*Larus armeniacus*) is the only endemic water-related species at Lake Arpi with a large breeding colony found on two small islands of the Lake.

3 species of amphibians are reported for the area including the green toad (*Bufo viridis*), two species of frogs (*Rana macrocnemis* and *Rana ridibunda*). Of reptiles, six species of lizards and and four species of snakes are known.

Former native fish species of commercial interest to local communities included the three species of *Salmo fario* (Lakeform), *Leuciscus cephalus orientalis*, and *Barbus lacerta cyri*. In the early 1960s, Coregonid fish species from northern Russia jointly with Carp (*Cyprinus carpio*) were introduced to Lake Arpi. At a later stage, the Crucian carp (*Carassius carassius*) from southern Russia spread throughout the Lakes and Ponds of the Plateau including the Arpi Reservoir and Ardenis Pond. As a result, the native fish fauna and the benthic flora and fauna changed dramatically.

The number of insects and other invertebrates is rather low, but the presence of many endemic species for Armenia, Southern Caucasus and the wider Caucasus Ecoregion is seen as particularly valuable. Lake Arpi and its adjacent areas are characterized by mostly water related species. For this area 10 species of dragonflies have been recorded.

The number of recorded plankton animal species in natural conditions was 27 (Rotatoria 14, Cladocera 10 and Copepoda 3). The average biomass of the zooplankton was 8 g m⁻² of which Cladocera 18%, Copepoda 82%. After regulation of the water-level the number of plankton animal species decreased to 4, the biomass to 0.5 g m⁻².

Before water-level increase the main benthic animals were oligochaetae, leeches, mollusk *Limnea stagnalis*, crustaceous *Gammarus pulex*, aquatic ticks, larvae of dragon-flies and Chironomidae. At present the total biomass of the zoobenthos is about 0.1 g m⁻² of which 75% are Chironomidae, 20% oligochaetae, and the rest 5% Turbellaria, Gastropoda, Crustacea, Trichoptera, Coleoptera and Ephemeroptera.

Noteworthy flora

The plant community “hygrophilous tall grasslands” (upper limit is 2,000 m) is dominated by *Phragmites australis*, *Typha latifolia*, *T. angustifolia* or *T. laxmanii*, *Schoenoplectus lacustris* and *Sch. tabernaemontani*. Rare and endangered species such as the Siberian iris (*Iris sibirica*), Slender gladiolus (*Gladiolus imbricatus*), *Traunsteinera sphaerica* and *Sellia rosenii* which are all included in Armenia’s Red Data Book are still common to the tall grasslands typifying the surroundings of Lake Arpi and the Akhuryan wetlands. “Hydrophilous short grassland” has developed above 2,300 m elevation. It is confined to small areas. Dominant species include several species of the *Equisetes* genus. Smartweed (*Polygonum amphibium*) dominates the Lake Arpi vegetation.

The landscapes of Javakheti Plateau represented by steppes, meadow-steppes, sub-alpine and alpine meadows, wetlands and petrophilous vegetation. Meadows and meadow-steppes are most characteristic for the Javakheti Region. Steppe plant communities (located between 1,800 –2,500 m) grow mostly on chernozem soils. They are characterized by *Festuca sulcata* and *Stipa capillata* grasses, mostly found along slopes of southern exposure and in flat areas. Dominant herbs include *Dactylis glomerata*, *Trifolium alpestre*, *Medicago dzavakhetica* and several *Geophytes* (i.e., *Gagea*, *Muscari* etc.). Field steppes occur only along northern slopes which are dominated by *Stipa tirsia* accompanied by *Betonica macrantha* and *Aster ibericus*. The vegetation of the region is characterized by mesophilous features.

Around 670 species of higher plants have been recorded in the area of which 22 are included in the Red Data Book of Armenia and 22 are endemic to this part of the Caucasus. The abundance of many ornamental plants – orchids, gladioluses, irises, poppies and lilies – makes the area very attractive in spring and summer time.

