

Zoology

New Data on Animal Biodiversity of Georgia

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ABSTRACT. Animal biodiversity of Georgia encompasses more than 16,000 species. 758 species of the total number belong to Chordata. Some of the vertebrates and invertebrates are included in the “Red List” of Georgia. By animal biodiversity Georgia holds a special place in Europe. © 2007 Bull. Georg. Natl. Acad. Sci.

Key words: biodiversity, “Red List”, anthropogenic stress, endemism.

Biological diversity is a unique phenomenon of animate nature. It is a result of long-term evolution of life on the planet and most important characteristic of the present state of the biosphere and the ecosystems forming the biosphere.

In landscape, ecosystem and species diversity we consider species diversity, which conditions the stationary state of ecosystems. The stability of ecosystems is defined by the interrelations between the taxons comprising them. The more diverse these relations, the more stable the ecosystem is, if no geological cataclysms occur.

Each bioregion or landscape is characterized by a certain peculiarity of the living population. This statement is true for both plant and animal inhabitants. The Caucasus, in general, and Georgia, in particular, represents an extremely interesting bioregion, distinguished by landscape and ecosystem biodiversity, which conditions the diversity of the animal population.

Despite the fact that the animal world has been intensively studied in Georgia, data on Georgia’s animal biodiversity were not properly summarized and analyzed until recently.

Substantial data accumulated on the basis of investigation of different taxonomic groups, but these data were scattered in different publications, both local and foreign.

The first notes on the diversity of representatives of different taxons can be found in a number of separate monographic works [1-4], but it is impossible to comprehend the general state of animal biodiversity on their basis. The first attempt to generalize the data available was made at the I National Conference, organized by Tbilisi State University, held on May, 28-29, 1999 in Tbilisi. The conference was dedicated to biological and landscape diversity (Biological and Landscape Diversity of Georgia) [5].

The study “The Present State of Species Biodiversity of Fauna in Georgia”, published in the Proceedings of the Conference, can be considered as an attempt to assess the biodiversity of Georgia’s animal population. The data on the species composition of animal population (or the second level of biodiversity), collected by the authors, are brought together and summarized in the above-mentioned work [6].

Eight years have passed since the Conference was held. Many new data on Georgia’s animal biodiversity have accumulated during this period. Now it is time to revert again to the problem of Georgia’s animal biodiversity.

A considerable number of studies dedicated to different taxons and mainly to the biodiversity of invertebrates, have been published during recent years [7-18]. These studies contain more precise data on insects, different groups of worms, spiders and Crustaceae. Data on

Table 1

Animal diversity of Georgia according to main taxon

Protozoa	[293]	Order Lepidoptera	1635
Metazoa	[15761]	Order Coleoptera	4600
Phylum Spongia	[1]	Order Hymenoptera	1680
Phylum Coelenterata	[5]	Order Diptera	900
Phylum Plathelminthes	[470]	Others	610
Class Turbellaria	5	Phylum Echinodermata	[1]
Class Trematoda	170	Phylum Chordata	[758]
Class Monogenoidea	103	Subphylum Acrania	[1]
Class Cestoda	192	Subphylum Vertebrata	[757]
Phylum Nematelminthes	[1151]	Class Cyclostomata	1
Class Nematoda	1148	Superclass Pisces	188
Class Nematomorpha	3	Superclass Tetrapoda	568
Phylum Acanthocephales	[39]	Class Amphibia	13
Phylum Annelida	[201]	Order Urodela	4
Class Polychaeta	66	Order Anura	9
Class Oligochaeta	118	Class Reptilia	54
Class Hirudinea	17	Order Squamata	51
Phylum Mollusca	[283]	Order Chelonia	3
Class Bivalvia	45	Class Aves	390
Class Gastropoda	238	Class Mammalia	111
Phylum Arthropoda	[13252]	Order Insectivora	10
Class Crustacea	138	Order Chiroptera	28
Class Arachnida	1591	Order Logomorpha	1
Class Myriopoda	52	Order Rodentia	39
Class Insecta	11471	Order Cetacea	3
Subclass Entognata	51	Order Carnivora	22
Subclass Ectognata	11420	Order Artiodactyla	8
Order Orthoptera	184		
Order Homoptera	862		
Order Hemiptera	600	Total	16054

the species composition of birds and mammals were refined. Despite the fact that the information available today is more accurate and more complete than that dated by the year 1999, it may be understood that refinement should be continued further.

Table 1, given below, contains data on the species belonging to particular taxons, starting from the highest taxons and ending with orders in particular cases. These data are taken not only from published works, but also from unpublished materials possessed by our colleagues. Taxon names are given in Latin. The total number of each major taxon is bracketed.

Biodiversity of vertebrate animals, especially of mammals, deserves special attention, as they are greatly threatened by being the objects of trade. Due to this, some groups of mammals are viewed separately. As seen from the Table, the type of arthropods, especially the class of insects is especially numerous. The number of species of arachnids and annelid worms has significantly increased. According to the latest data, the number of bird species has also significantly increased. Several mammal species have been added also. The number of fishes has also grown.

Table 2

Carnivorous Mammals of Georgia (Carnivora Bowdich, 1821)

№	S P E C I E S	Status
1	<i>Martes martes</i> Linnaeus, 1758 – Common Marten	LC
2	<i>Martes foina</i> Erxleben, 1777 – Rock Marten	LC
3	<i>Mustela nivalis</i> Linnaeus, 1766 – Weasel	LC
4	<i>Mustela erminae</i> Linnaeus, 1758 – Stoat	NE
5	<i>Mustela lutreola</i> Linnaeus, 1761 – European Mink	NE
6	<i>Mustela vison</i> Schreber, 1777 – American Mink (Introduced species)	NE
7	<i>Vormela peregusna</i> Gldenstdt, 1770 – Marbel Polect	NE
8	<i>Lutra lutra</i> Linnaeus, 1758 – Common Otter	VU
9	<i>Meles meles</i> Linnaeus, 1758 – Badger	LC
10	<i>Procion lotor</i> Linnaeus, 1758 – Common Raccoon (Introduced species)	DD
11	<i>Ursus arctos</i> Linnaeus, 1758 – Brown Bear	EN
12	<i>Hyaena hyaena</i> Linnaeus, 1758 – Striped Hyena	CR
13	<i>Canis aureus</i> Linnaeus, 1758 – Jackal	LC
14	<i>Canis lupus</i> Linnaeus., 1758 – Wolf	LC
15	<i>Vulpes vulpes</i> Linnaeus, 1758 – Red Fox	LC
16	<i>Nyctereutes procynoides</i> Grey, 1834 – Raccoon-like dog (Introduced species)	LC
17	<i>Felis chaus</i> Gldenstdt, 17756 – Jungle Cat, Chaus	VU
18	<i>Felis silvestris</i> Schreber, 1777 – Wild Cat	LC
19	<i>Felis libyca</i> Forster, 1780 – Steppe Cat	NE
20	<i>Panthera pardus</i> Linnaeus, 1758 – Leopard, Panther	CR
21	<i>Lynx lynx</i> Linnaeus, 1758 – Lynx	CR
22	<i>Monachus monachus</i> Hermann, 1779 – Monk Seal	BE

Table 3

Artiodactyls and Cetacea of Georgia (Arctiodactyla Owen, 1848) and (Cetacea Linnaeus, 1758)

N ^o	S P E C I E S	Status
1	<i>Sus scrofa</i> Linnaeus., 1758 – Wild Boar	LC
2	<i>Cervus elaphus</i> Linnaeus., 1758 – Red Deer	CR
3	<i>Capreolus capreolus</i> Linnaeus., 1758 – European Roe Deer	LC
4	<i>Capra aegagrus</i> Erxleben, 1777 – Wild Goat	CR
5	<i>Capra caucasica</i> Gldenstdt et Pallas, 1783 – West Caucasian Tur	EN
6	<i>Capra cylindricornis</i> Blith, 1840 – East Caucasian Tur	VU
7	<i>Rupicapra rupicapra</i> Linnaeus, 1758 – Chamois	EN
8	<i>Gazella subgutturosa</i> Gldenstdt, 1780 – Goitreb Gazelle	RE
9	<i>Delphinus delphis</i> Linnaeus., 1758 – Common Dolphin	LC
10	<i>Tursiops truncatus</i> Montagu, 1821 – Bottle-nosed Dolphin	DD
11	<i>Phocoena phocoena</i> Linnaeus., 1758 – Common porpoise	VU

According to recent data, more than 16,000 species of invertebrate and vertebrate animals are registered in Georgia. 758 of them belong to Chordata.

It has been established on the basis of an evaluation of the animal biodiversity of Georgia [19] that Georgia's fauna is distinguished in Europe. For example, by the number of mammals Georgia holds the leading positions in Europe. The same is the case with birds. As to reptiles, Georgia holds the third place after Spain and Azerbaijan. If we consider the total diversity of vertebrates (fishes, amphibians, reptiles, birds and mammals), it will turn out that Georgia occupies the first place in Europe in this respect too.

As concerns endemism, mainly endemics to the Caucasus are found in Georgia, though endemics of Georgia are numerous among invertebrates: in some groups the number of endemics exceeds 25%

In Tables 2 and 3 given below the list of some order of mammals is presented, which are found in Georgia's fauna (carnivores, artiodactyls, Cetacea). In Table 2 the white-belly seal (*Monachus monachus*), entered in the "Red List" of Georgia, is listed [20] despite the notification that the species "is extinct in the coastal waters of Georgia". *Gazella subgutturosa* entered in our list (Table 3) as it also appears in the "Red List". We did not enter *Cervus nippon* in the list, entered might be only occasional in Georgia, though some specialists considered it to be a representative of Georgia's fauna [21]. American mink is also entered in the list (Table 2), as it is not specified yet whether it is still preserved in local

fauna after being introduced in Kvareli district in the 1930s.

As seen from the Table, 8 of 22 species of carnivorous mammals, including the white-belly seal (*M. monachus*), are entered in the "Red List", and of 8 species of artiodactyls 6 appear on the "Red List", and 2 Cetacea species of 3 were in the list.

Also 35 species of birds, 11 species of reptiles and 2 species of amphibians are present in the "Red List". Apart from this, several fish species and 23 species of invertebrates (among them 4 species of annelids, 1 species of mollusks and 18 species of arthropods) [20]. Some of them are presented in the IUCN Red List (2006) as well.

Of the animal population of Georgia big-size mammals, especially artiodactyls and also some orders of birds are under the most severe anthropogenic stress, as they have always been the objects of trade and at the same time greatly dependent on their habitats. If we consider the rate of destruction of animal habitat caused by forest clearing (deforestation), it becomes clear why the biggest part of these animals is included in the "Red List". Habitat destruction negatively affects the diversity of animal groups, including invertebrates.

The existing data evidence that in order to preserve Georgia's animal biodiversity it is essential to undertake effective measures of *in situ* protection. For some species the method of re-introduction should be applied.

Continuation of taxonomic and faunistic investigation targeted at a further study of the animal population will contribute to the fulfillment of this important task.

ზოოლოგია

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