ТРЕБОВАНИЯ К ОХРАНЕ АМФИБИЙ И РЕПТИЛИЙ НА ОСОБО ОХРАНЯЕМЫХ ПРИРОДНЫХ ТЕРРИТОРИЯХ МОНГОЛИИ

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Аннотация

В Монголии обнаружено 6 видов амфибий и 21 вид рептилий. С учетом изменений климата и возросшего влияния деятельности человека в докладе дана оценка современного состояния различных популяций и представлены рекомендации по улучшению их охраны, в том числе и непосредственно в пределах охраняемых природных территорий.

CONSERVATION NEEDS FOR AMPHIBIANS AND REPTILES IN PROTECTED AREAS OF MONGOLIA

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Summary

In Mongolia there are known 6 species of amphibians and 21 species of reptiles. With an allowance for risk of climate changes and increased human activities the results of assessment of different populations and recommendations elaborated for improving their conservation, including within protected areas, presented in the paper.

Amphibians and reptiles are included in two independent classes, which are upper units of animal kingdom and inseparable members of biodiversity in Mongolia as well as important part of ecosystem. If these animals are taken from the ecosystem, that normal natural substance nutrient cycle and energy flow will be destroyed. In order to keep the ecosystem balance, there is a need to study and protect the herpetological species same as with other biological groups.

When amphibians dominating in Northern region which has more lakes, streams and ponds, as a true terrestrial animal reptiles are mainly occur in Gobi Desert region of the country.

There are 6 species of amphibians in Mongolia belongs to 4 families of 2 orders and 21 species of reptiles in Mongolia belongs to 13 genera 6 families of 2 suborders. Our diversity is low, comparing with the Middle Asia, Northeast Asia and Central Asian herpetological species, due to harsh continental climate of Mongolia.

There are two main characteristic in herpetological species composition of Mongolia. First, marginal population of species widely distributed in Palaearctic region entered. Second, core zone of species originated in Central Asia is Mongolia. Based on these two characteristic, objective and future trend of herpetological study might determined.

Recently climate changes and human impacts on environment negatively influencing on the marginal population species in Mongolia.

In Mongolia, totally 6 species of amphibian species are recorded; from class Amphibia, order Urodela, family Hynobiidae one species distributed- *Hynobius keyserlingii,* from order Anura, family Bufonidae two species: *Bufo raddei* and *Bufo pewzovi*, from Hylidae family: *Hyla japonica*, from Ranidae family 2 species: *Rana amurensis* and *Rana chensinensis*. Recently some study including *Hynobius keyserlingii* in Salamandridae family, but we are preffering previous classification which including the species in independent family «Hynobiidae».

There are total of 21 species of reptiles in two suborders (snake, lizard) of a order (Squamata) distributed in Mongolia, from these 13 species of 13 genera of 6 families are lizards, as follows Kaspischer even-fingered gecko — *Alsophylax pipiens*, Przewalski's wonder gecko — *Teratoscincus przewalskii*, Gobi naked-toed gecko — *Cyrtopodion elongates*, Mongolian agama — *Laudakia stoliczkana altaica*, Toad-head agama — *Phrynocephalus versicolor*, Sunwather toadhead agama — *Ph.helioscopus*, Sand lizard — *Lacerta agilis*, Viviparous lizard — *L. vivipara*, Mongolian racerunner — *Eremias argus*, Variegated racerunner — *E. vermiculata*, Stepperunner — *E. arguta*, Multi-ocellated racerunner — *E.multiocellata* and Gobi racerunner — *E. przewalskii*, and 8 species are snakes as follows Tatar sand boa — *Eryx tataricus*, Slender racer — *Coluber spinalis*, Steppes ratsnake — *Elaphe dione*, Amur rat snake — *E. schrenckii*, Grass snake — *Natrix natrix*, Steppe ribbon racer — *Psammophis lineolatus*, Northern viper — *Vipera berus* and Halys pit viper — *Gloydius halys*.

In 1987 the first National «Mongolian Red Book» formed a major milestone for conservation of biodiversity within Mongolia, highlighting species of conservation concern and raising awareness amongst policy-makers, conservationists and the people who encounter these unique species as part of their daily lives. This first version, however, included only two amphibian species (Siberian salamander and Asiatic grass frog) and four reptile species (Gobi

naked-toed gecko, steppe runner, tatar sand boa and slender racer). A second version of the «Mongolian Red Book» was produced in 1997 in association with the Ministry of Nature and Environment, in which two new species (Pewzow's toad and Japanese tree frog) of amphibian and one reptile (Sunwatcher toadhead agama) were added. A herpetological study was undertaken in Mongolia's protected areas, including the Great Gobi Strictly Protected Areas, thereby strengthening knowledge of Mongolia's reptiles and amphibians. At the second International Mongolian Biodiversity Databank Workshop (11–15 September, 2006), participants assessed the status of 27 Mongolian reptile and amphibian species using the IUCN Red List Categories and Criteria. The assessments revealed a number of trends affecting the amphibians and reptiles of Mongolia. Six Mongolian reptile and amphibian species were identified as regionally threatened. Of these, four species are amphibians and two are reptiles. One species, the steppe runner (*Eremias arguta*) is categorized as Data Deficient. This does not necessarily imply that it is facing a lower risk of extinction than those identified as threatened, but highlights a requirement for more extensive research (Terbish et al., 2008).

Broad scope for conserving amphibians and reptiles are arising the important matter for worldwide. Mittermeier and Carr (1994) are noted in their article of «Conservation of amphibians and reptiles» from the book entitled as «Management and conservation of amphibians and reptiles», that main dangers for them are destroying habitats, trade, death from the fish nets and poor managed tourisms.

Conservation of Mongolian amphibians and reptiles are being held as follow:

1. Register and conserve in the Mongolian Red Book. There are 9 species of herpetofauna have been registered in the Mongolian Red Book, and these are Siberian salamander, Pewzow's toad, Japanese tree frog, Asiatic grass frog, Gobi naked-toed gecko, Sunwatcher toadhead agama, Steppe runner, Tatar sand boa and Slender racer.
2. Amphibians and reptiles have been conserved at Special Protected Area network. In 2008, 61 areas from Mongolian land, which are about 14% or 21.9 million hectares, have been protected as Protected Area (Table 1).

We should arrange following steps to conserve amphibians and reptiles.

1. Do not destroy habitats of amphibians and reptiles; do not pollute rivers, streams, lakes and ponds which will help for number of organisms stay in normal condition.
2. Make species list of amphibians and reptiles from Special Protected Area, and then make database of life history, breeding and development, and number of individual, and make evaluation of distribution pattern.
3. Make advertisements and provide education about conservation of amphibians and reptiles for children and adults.

4. To protect rare species of amphibians and reptiles, we must create restricted recourse area for their micro population.
5. Paying attention for restoration of mining, and make arrangement for reintroduction of destroyed amphibian and reptilian species in that area.

Suggestions

1. Organize long term monitoring, and to determine relationship of ecology, role for ecosystems and coenoses.
2. Determine effect of increased license of mining for habitats of amphibians and reptiles.
3. Make checklist of some taxonomic matter.
4. If necessary, to conserve certain area for some species of amphibians and reptiles with distributed area.
5. Closing roads across forests and along rivers in the night time will be the most important thing for conservation of amphibians and reptiles.

Make colored advertising brochures on the benefits from the amphibians and reptiles, in order to improve ecological education and knowledge about environment protection for local people and students, and create a view to protect their homeland in their mind.

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Table 1. Distribution amphibians and reptiles in protected areas of Mongolia

1	Protected areas	Areas (he)	Amphibia						Reptili											
			Hynobius keyserlingii	*Bufo raddei*	*Bufo pewzowi*	*Hyla japonica*	*Rana amurensis*	*Rana chensinensis*	*Alsophylax pipiens*	*Teratoscincus przewalskii*	*Cyrtopodion elongates*	*Laudakia stoliczkana*	*Phrynocephalus versicolor*	*Phrynocephalus helioscopus*	*Lacerta agilis*	*Zootoca vivipara*	*Eremias argus*	*Eremias vermiculata*	*Eremias arguta*	
A. Strictly Protected Areas 10,494,283 га (48.75 %)																				
1	Goviin Ikh \A, B\	5,311,730			+				+	+	+	+	+				+	+	+	
2	Khukh Serhiin nuruu	65,920																		
3	Bogdkhan uul	41,651					+										+			
4	Khasagt Khairkhan	27,448																		
5	Khan Khentii	1,227,074					+									+	+			
6	Numrug	311,205		+		+	+	+								+	+			
7	Dornod Mongol	570,374		+			+										+			
8	Mongol daguur	103,016		+			+										+			
9	Otgontenger uul	95,510																		
10	Uvs	712,545	+										+							
11	Goviin baga \A, B\	1,839,176		+					+	+			+				+	+		
12	Khoridol saridag	188,634	+														+			
B. National Parks 8,931,222 га (41.49%)																				
13	Huvsgul	838,070	+														+			
14	Khorgo-Terkhiin tsagaan	77,267																		
15	Gobi Gurvan Saikhan	2,694,307		+					+				+				+			
16	Gorkhi Terelj	293,168		+			+										+			
17	Altay Tavan Bogd	636,161														+				
18	Hangai nuruu	888,455																		
19	Har Us nuur	850,272											+							
20	Noyon Khangay	59,088																		
21	Khustay	50,620		+			+										+			
22	Tsambagarav	111,462																		
23	Siilkhemiin nuruu	142,778																		
24	Khan Khukhii Khyargas	555,924																		
25	Tarvagatayn nuruu	545,609																		
26	Onon Balj	402,100	+	+			+										+			
27	Tujiin nars	80,691															+			
28	Ulaan taiga	108,000	+																	
29	Myangan ugalzat	60,000																		
30	Khugnu Tarna	84,390		+									+							
31	Dariganga	62,860		+				+					+				+			
32	Munkhkhayrhan	300,000																		
33	Orkhonii hundii	90,000		+			+										+			
34	Ikh Bogd			+									+				+			
C. Nature Reserves 2,002,228 га (9, 3 %)																				

35	Nagalkhaan	3,076		+													+			
36	Batkhaan	21,850		+													+			
37	Lkhachinvandad	58,800															+			
38	Bulgan gol	7,657			+				+			+	+	+	+					+
39	Ugtam	46,160		+													+			
40	Sharga mankhan	390,071											+							
41	Zagiin us	273,606											+							
42	Alag khayrkhan	36,400																		
43	Burkhan buuday	52,110																		
44	Ergeliin zoo	60,910							+				+				+			
45	Ikh Nart	43,740											+				+			
46	Toson Khulstay	469,928		+			+										+			
47	Khar yamaat	50,594															+			
48	Yahi nuur	251,388		+			+										+			
49	Develiin aral	10,338																		
50	Khanjargalant	60,000																		
51	Namnan uul	29,600															+			
52	Ikh Gazriin chuluu	35,000											+							
53	Tesiin gol	101,000																		
D. Natural monuments 97,645 га (0.45%)																				
54	Bulgan uul	1,840																		
55	Uran togoo – Tulga	5,800															+			
56	Eej Khayrkhan	22,475							+			+	+							
57	Huisiin Naiman nuur	11,500																		
58	Suikhent uul	4,830											+				+			
59	Schiliin Bogd	17,200															+			
60	Hurgiin hundii	6,000																		
61	Dayandeerkhiin agui	28,000																		
Total 21,525,378 га (100%)			5	17	2	1	12	2	6	2	1	3	16	1	1	3	30	2	2	