

## Abstracts

**Aitbek Menlibekov. *Aksu-Zhabagly Nature Reserve as a laboratory for complex modern biological research***

Aksu-Zhabagly Nature Reserve was established in 1926. Since that time the Nature Reserve carries out its scientific and conservation function. There are more 1500 species of vascular plants, including the famous Sievers apple tree; more 300 species of birds and more 50 species of mammals, including Snow Leopard inhabit in the Park. The system of protection is creating the best conditions for scientific research. The study methods are in accordance with biodiversity conservation. The Nature Reserve invites experienced and young scientists for the joint expeditions in the Park.

**Elmira Jumanova. *Marsh of Parks and Tulips festival in Aksu-Jabagly Nature Reserve - mass actions to involve local communities to nature conservation***

The article is a story telling about Marsh of Parks and Tulips Festival annual mass actions on the local communities involvement into the nature conservation. In 2018, 5000 participants attended the Tulips Festival held on the Red Hill famous place with the highest density on blossoming Greig Tulips (*Tulipa greigii*) in Turkestan Province.

**Smatulla Jumanov, Elmira Jumanova & Diana Shakula. *History of botanical research in Aksu-Zhabagly Nature Reserve***

The presentation represents the history of botanical research in Aksu-Jabagly Nature Reserve since late XIX century. The reserve's total area is 131 934,2 ha. The Nature Reserve's flora list consists 1312 vascular plants including more 20 relicts and 177 endemics.

**Dovutsho Navruzshoev & Beknazarova Kh.A. *The rare and endemic plants species of the flora of Mountain-Badakhshan autonomous province, Republic of Tadjikistan and their protection***

The article describes the current status of the rare and endemic plants of the Mountain-Badakhshan Province of Tadjikistan. The list of rare vascular plants at this stage of research includes 112 species from 48 families. The Red Data book list of plants history is considered. Monitoring of the status and numbers of the rare flora species is necessary for their conservation, as well as the development of a special technics for their cultivation in botanical gardens and nurseries.

**Tillo Boboev. *Enhancing Conservation of Rare and Endangered Plant species by Conduction of Field Research and Increasing the Level of public Awareness in Eastern Khatlon, Tajikistan***

Conservation of wild flora has the great significance in rural districts of Tadzhikistan. We should take into account the speed of disappearing of rare and endangered plants. They were included in the Red Data book of Tajikistan even from the Soviet Union time. More than 30 years passed and it is clear now that the Red Data book of Tajikistan list of wild plants should be increased. Some rare plants can't wait, they may disappear at all in nearest 10 years, if appropriate measures wouldn't be taken for their conservation. Local people, particularly youth are responsible for collecting herbs and wild fruits in the rural districts. As a rule, they are not qualified enough. As a result, wild plants are experiencing serious damage or totally disappeared. During spring and autumn people are selling the collected herbs in local markets. It is very important to involve communities, especially young generation, into the conservation project.

**Diana Shakula & Svetlana Baskakova. *The Lemmers Tulip (Tulipa lemmersii)– Narrow Endem of Western Tien Shan***

Mashat canyon is one of 8 sites in the World with wild-growing Lemmers Tulips. The authors have discovered 3 extra sites with the species in the region. The composition of the Lemmers Tulip's habitats plant's communities includes 59 species of vascular plants. The plan for further study was developed and measures for conservation are proposed.

**Gaiane Karagyan, Kalashian M.Yu., Ghrejyan T.L. & Danchenko A.V. *Some Endangered Insects of Armenia: Proposals for Renovation of the Country's Red Book and Development of the System of Especially Protected Nature Areas***

This extensive report contains a list of insects recommended for inclusion in the Red Book of Armenia, a justification of the criteria and a description of sites for development of the system of protected natural areas of Armenia and proposal of Concept of Important Insect Area.

**Karen Aghababyan & Khanamirian K. *Further development of Prime Butterfly Areas' network in Armenia***

The Prime Butterfly Areas (PBAs) is a conservation tool – one of the options of Important Biodiversity Areas (Anderson 2002, Heath and Evans 2000). Prime Butterfly Areas have been identified for most of Europe with an intention to support other conservation networks, such as Natura 2000, Pan-European Ecological Network, Pan-European Biological and Landscape Diversity Strategy and Bern Convention (van Swaay and Warren 2006). In Armenia, identification of Prime Butterfly Areas was started in 2013 with a

pilot project in Southern Armenia (Khanamirian et al. 2014), when the first set of seven PBAs was identified and assessed, and then continued with assessment of additional three PBAs (Khanamirian 2016). Meanwhile the country hosts 236 species of butterflies, many of those are endemics for the region (Butterfly Conservation Armenia 2019), and they are not covered with the existing network of PBAs. Quite large species diversity is conditioned by wide variety of habitats that exist in this mountainous country. Meanwhile economy of Armenia is developing and that can have a negative impact on species and habitat diversity, which are not entirely covered by the network of protected areas in Armenia. Last publication of Red Book of the Animals of the Republic of Armenia (Aghasyan and Kalashyan 2010) identified 24 species of butterflies that are threatened. The recently implemented works on Atlas of Butterflies in Armenia demonstrate necessity for inclusion of additional 72 species in the next edition of the Red Book (van Swaay et al. *in prep*). Thus, there was an obvious need for further development of the network of Prime Butterfly Areas in the country, as these areas are becoming drivers in further transformation of the lands' status, making them protected at National Level, included in Emerald Sites under Bern Convention, designated as Key Biodiversity Areas, etc. The article therefore focuses on continuation of identification and assessment of Prime Butterfly Areas in Armenia.

**Rovshan Abbasov. *Improving sturgeon habitats in rivers of Azerbaijan***

The rivers of Azerbaijan are the preferred spawning grounds for the valuable sturgeon fish of the Caspian Sea, which contains over 90% of the world's sturgeon population. European sturgeon and Russian sturgeon are the most valuable representatives and only source for black caviar. These species migrate to the downstream part of the Kura River to spawn. Intensive water withdrawals in many rivers of the region have led to significant changes in habitats of sturgeons. Improvement of habitats of sturgeons requires holistic approach and contribution of all sides. So far, these types of holistic approaches have not been used. Therefore, we have involved all the responsible sides to solution of the problem.

**Alen Shakirov. *The results of ichthyofauna research in the South-East of Kazakhstan (autumn, winter 2018)***

In 2018-2019, 48 stations were investigated at 29 reservoirs in the Almaty region; in addition, 3 stations were investigated on a pond in the Karaganda region. The taxonomic composition of the Balkhash Basin was represented by 11 native species, and 21 alien species. The rare aboriginal species are: Severtzov's Stone Loach (*Nemacheilus sewerzowii*), Seven River's Minnow (*Phoxinus brachyurus*), Common Dace (*Leuciscus leuciscus*), Plain Stone Loach (*Triplophysa labiata*) and Scaled Osman (*Diptychus maculates*). The study of the modern ichthyological composition of reservoirs within the city

of Almaty shows that the introduction is currently ongoing, resulting in the emergence of new species of fish in the Balkhash basin.

**Ilona Stepanyan, Nikoghosyan G.N. & Pipoyan S. Kh. *The Threatened Ommatotriton ophryticus* Berthold, 1846 in Armenia: State of Populations, Habitats Conditions, Threats and Conservation Activities**

*Ommatotriton ophryticus* Berthold, 1846 is listed in the Red book of Armenia as CR and in IUCN Red List as NT. In Armenia this species is presented by isolated populations inhabiting in small, degraded habitats, none of which is included in the Protected Areas network. The results of actions, concerning with the measures of conservation of *Ommatotriton ophryticus* in Armenia are represented in the present study.

**Alyona Koshkina, Koshkin A.A., Murzakhanov E.B., Koshkin A.V., Urazaliyev R.S., & Bazdyrev A.V. *About the experience of White-headed Duck *Oxyura leucocephala* tagging and monitoring in Tengiz-Korgalzhyn region for the species' migration study***

The article presents the results of the project «Identifying Migration Routes to Conserve Central Asian Population of White-headed Duck *Oxyura leucocephala*» supported by the Rufford Foundation in 2017-2018 (project reference: 22516-1). More than 7500 birds were counted in the key nesting and stopover site for White-headed Duck in Kazakhstan – Tengiz-Korgalzhyn region in 2017, which is in line with the overall positive trend of migrating aggregations observed since 2013. In 2017-2018 ten White-headed Ducks were trapped using two different methods, that were developed by the project team based on traditional trapping methods for diving ducks taking into account the local conditions. Birds were tagged with lightweight geo-locators for the first time in Kazakhstan and Central Asian region. Authors discuss the methodological problems, provide recommendations for improvement of the trapping methods and suggest the objectives for further research. The results of monitoring migrating aggregations of White-headed Duck in Kazakhstan suggest the global population size is currently considerably underestimated and needs revision.

**Georgiy Shakula & Svetlana Baskakova. *Great Bustard (*Otis tarda tarda*) Monitoring in the South of Kazakhstan***

The article contains materials of winter bustard surveys in Kazakhstan and describes the tendency of the species number increase in the recent 15 years. The main threats to the existence of the species continue to be illegal hunting and poisoning by pesticides on agricultural fields.

**Eugeniy Bragin. *The role of the Rufford Foundation Small Grants Program in Rare Birds of Prey Research and Conservation in Kostanay Province, Kazakhstan***

The funded by the Rufford Foundation Small Grants Program «Conservation and research of rare species of Birds of Prey in north-central Kazakhstan» project was implemented in Kostanay oblast in 2004-2005. The main objectives of the project were focused on the population's size assessing and rare and threatened species of birds of prey locating in Kostanay Province, determining the direction and speed of current changes and identifying key sites for the regular monitoring organizing.

**Fedor Saraev, Mark Pestov, Ongarbayev N.H., Jaskairat Nurmukhambetov, Aktan Mukhashov & Ukhov S.V. *The Results of the Assessment of Bird's Mortality Caused by Electricity Power Lines in Western Kazakhstan (Atyrau and Mangistau Provinces)***

The article highlights the results of bird mortality from electrocution on the medium-voltage power lines (PL) in two regions of Western Kazakhstan. During the survey along 1215 km of PL in Atyrau and Mangistau regions, the remains of 329 of birds belonging to 38 species were detected. Diurnal birds of prey, owls and corvids, composing 91,2% of all counted killed birds were electrocuted by the contacts with PL pole's elements. The rest of the birds died from mechanical damage when hitting the wires. Among electrocuted birds, 64.3% were species listed in the Red Book of the Republic of Kazakhstan. The dependence of the number of killed birds on the PL's design specs has been demonstrated. Recommendations for solving the electrocution problem of birds on the medium-voltage PL were presented.

**Mark Pestov, Jaskairat Nurmukhambetov, Aktan Mukhashov & Terentev V.A. *The Results of the Project on Monitoring and Feeding of Vultures in Usturt Nature Reserve, Kazakhstan***

The report provides data on the results of monitoring of 3 species of scavenging birds (*Neophron percnopterus*, *Aegypius monachus*, *Gyps fulvus*) using the bait sites with cameratraps in Ustyurt Nature Reserve in Mangystau Province (Republic of Kazakhstan), obtained during the second phase of the project supported by the Rufford Foundation in 2018: [https://www.rufford.org/projects/zhaskairat\\_nurmukhambetov\\_0](https://www.rufford.org/projects/zhaskairat_nurmukhambetov_0). Nesting was confirmed for 4 pairs of Black Vulture and 2 pairs of Egyptian Vulture in the area. In the course of the project, for the first time in Kazakhstan, several photographs of the alive Persian Leopard (*Panthera pardus saxicolor*) were obtained, confirming the presence of the species in the Ustyurt Nature Reserve.

**Georgiy Shakula & Svetlana Baskakova. *The Large-billed Reed Warbler (*Acrocephalus orinus*) in Asia. Search continues***

The article describes systematic status and diagnostic features of the Large-billed Reed Warbler *Acrocephalus orinus*. All known records of the Large-billed Reed Warbler in the World are given. The plan of future research is outlined.

**Askar Isabekov. *Awareness improvement and local people involving into Rare Birds conservation via Birdwatching Websites Network development***

Birds of Kazakhstan (birds.kz) the first site of the network was launched in 2005. Now it contains more than 150 000 photos of 483 species of birds. Participants of project found 17 new species of birds in Kazakhstan. Since 2015, based on the same framework, we developed and launched websites for other countries of Central Asia and Caucasus, and also for some regions of Russia and China. Participation in the project is free. The total number of members registered in the network is more than 1000. Many students and teachers use the data from the network in the process of education. Some global and all local ecology organizations use the network database in researches, especially in researches of rare birds and exploring of special areas.

**Georgiy Shakula & Fedor Shakula. *The Menzbieri Marmot (*Marmota menzbieri*) in Kazakhstan. Results of the study and prospects of protection***

The report describes the Menzbieri Marmot habitats and threats in Sayram-Ugam National Park. The current status on the Marmot's population is stable, but the number of animals is much less then 50 years ago. The sites in the upper of Baldabrek, Silbili and Maidantal rivers in Aksu-Jabagly Nature Reserve should be observed as well as isolated population of the species in Besh-Aral Nature Reserve in Kyrgyzstan.

Menzbieri Marmot is a narrow endemic of Western Tien Shan mountains and listed in IUCN Red Data book as "Vulnerable". The species occurs in Central Asia at the junction of three states: Kazakhstan, Uzbekistan and Kyrgyzstan - in the range of the alpine steppes on altitude of 2000-3500 m above sea level. Gentle slopes with smooth over meso-relief – moraines are the most favorable for marmot's habitats. They prefer small-earth soils, suitable for digging holes. Colonies are confined to springs, marshes and snowfields, where the animals are provided with a juicy plant food during the summer season.

Menzbieri Marmot is one of the smallest marmots. The color of the back is evenly brownish-brown, contrasting with light yellowish cheeks and belly. The top of the head is slightly lighter than the back; tail is dark, almost black, wide-striped. First year juveniles - even gray.

Menzbieri Marmot is a settled animal, which is characterized by only small seasonal movements. Each family has its own territory in 0,6-8,0 hectares.

There are usually 2-10 individuals in the family. The duration of hibernation at altitudes up to 2600 m above sea level is about 7 months: from early September to late March - early April, and at an altitude of 2900 m above sea level - 8 months: from early September to late April - early May.

Nesting chambers of wintering burrows are located at a depth of 2.5-3 m. Den has 3-4 outlets. The first appearance of marmots on the surface after hibernation is preceded by digging up to 3-5, occasionally 8-10-meter layer of snow. They feed on grassy vegetation, graze throughout the daylight time with an indistinct peak of evening activity, which occurs at 6 pm.

Reproduces once a year. Matting takes place in March-May before the exit from the holes and immediately after awakening from hibernation. There are from 2 to 8, usually 2-4 cubs in one litter. Less than half of adult females take part in reproduction. Maturity is achieved at 2-4 years old, the litter is brought within 10-12 years. The maximum age in nature is 14 years. The reproduction rate is rather low for this group of rodents.

In Kazakhstan, it occurs in a very small area in the north-eastern part of the Karzhantau ridge on an area of 140 km<sup>2</sup>, where the total population does not exceed 3000 animals. Interestingly that in the upper reach of the Saryagyr River, the area of the Menzbieri Marmot is joined to the area of the Red Marmot (*Marmota caudata*), a common and widely distributed Central Asian species. Hybrid individuals are known from this location.

Acknowledgment. I take this opportunity to express my gratitude to Rufford Small Grant Foundation, supporting my study and protection of Menzbieri Marmot in Sairam-Ugam National Park in 2013-2019.

**Nurbakhyt Abdukarimov, Maxim Kulemin, Shokputov T. & Dosbol Enkebaev. *The results of rodents studying in the mountains of the Turkestan province of Kazakhstan***

The report shows the results of small mammals trapping in the mountains of Talas Alatau (Aksu-Zhabagly Nature Reserve), Ugam range (Sayram-Ugam National Park) and Syrdaria Karatau range. The research was done with the goal to evaluate the current status of danger on infectious diseases with natural foci that are dangerous to humans and are transmitted by rodents. The list of caught and studied small mammals consists 24 species and includes 2 new ones for Aksu-Zhabagly Nature Reserve as Norwegian Rat (*Rattus norvegicus*) and Small Shrew (*Sorex minutus*).

**Mariya Gritsina, Timur Abduraupov & Valentin Soldatov. *Some Thoughts on the Status of Manul *Otocolobus manul* in the Mountainous Areas of the Republic of Uzbekistan***

The report provides information about the results of the Rufford Small Grant Foundation project «Specification of the status of manul (*Otocolobus manul*) in Uzbekistan» implemented with additional financial support from OSME

(Ornithological Society of the Middle East) in the framework of the project «Monitoring of IBA “Oygaing valley” and the adjoining territories, Uzbekistan». According to literary sources, Manul used to inhabit the Kyzylkum Desert, Ustyurt Plateau and southern (mountainous) part of Uzbekistan. This article also includes data obtained in the course of a study carried out with the support of Pallas's Cat International Conservation Alliance in the south of the country. The research was carried out between 2015 and 2017 in Western Tien Shan and the west of the Hissar-Alai region. The collected data was based on camera trapping and local people interviews. The expeditions were largely focused on collecting data on Turkestan Red Pika (*Ochotona rutila*) as one of the potential food objects for Manul and the distribution of Red Marmot (*Marmota caudata*) whose burrows can be used as shelters. As a result, the presence of Manul was not confirmed during the studies; however, some data were collected about key factors that are likely to limit the habitat of Manul in Uzbekistan. The status of Manul in the country is still unknown.

**Yuriy Yarovenko, Babaev E.A., Gamzatov E.A. & Yarovenko A.Yu.**  
***Strategy for preservation and restoration of the Persian Leopard (*Pantera pardus ciscaucasica*) in the Russian Eastern Caucasus (Dagestan)***

The habitats of Leopard in the Caucasus are decreasing. According to the conducted in Dagestan research, due to the peculiarities of the relief and the inhabitation of 6 species of wild ungulates, the Leopard's population has remained. Measures are proposed to preserve and restore the leopard population.

**Georgiy Shakula. *Record of Cheetah (*Acinonyx jubatus venaticus* Griffith, 1821) in Aral Sea Area***

Currently, the cheetah in Kazakhstan is officially considered an extinct species. However, in 2017, a live animal was encountered on the northern coast of the Aral Sea. Further study of the region, including camera-trapping, is needed to confirm the existence of the species in Kazakhstan.