

SAIGA NEWS

Published by the Saiga Conservation Alliance



Providing a six-language forum for exchange of ideas and information about saiga conservation and ecology



Saiga male in winter camouflage. Photo by Eugeny Polonsky

With additional support from:



Contents

Feature article

E.J. Milner-Gulland The sustainable use of saiga antelopes: Perspectives and prospects

Updates

Buyanaa Chimeddorj and Bayarbaatar Buuveibaatar The population of Mongolian saigas has increased
Buyanaa Chimeddorj Camel-herders' participation in Mongolian saiga conservation
Buyanaa Chimeddorj Mongolian students have fenced 5 springs in cooperation with herders
Elmira Mustafina Rutting aggregations monitored in three saiga populations in Kazakhstan
Elmira Mustafina and Bakhtiyar Taykenov Results of monitoring calving saigas in the Ustyurt population in 2020
Elmira Mustafina The proposed Centre-West transport corridor threatens saigas in central Kazakhstan
Elmira Mustafina Eight dogs from the Kazakh Border Service taught to search for saiga horns
Alan Aldashev Proof obtained of individual saigas coming into Uzbekistan from Kazakhstan
Olga Obgenova Works of art by Russian Steppe Wildlife Club members
Olga Obgenova Russian steppe clubs celebrating World Wildlife Day
Olga Obgenova, Natalya Shivaldova and Elmira Mustafina COVID-19 did not cancel Saiga Day in 2020

Articles

Valery Shmunk An innovative approach to estimating saiga numbers in the North-West pre-Caspian area
Luiza Mardonova et al. The Saigachy Reserve: saigas return to Uzbekistan
Maria Gritsina et al. The Saigachy Reserve in Uzbekistan as a case study of the introduction of a fauna and flora monitoring system
Yekaterina Berezina et al. Approaches to studying sensory laterality in saigas: experiments in the wild
Nadezda Kashinina et al. On the genetic potential for resistance of the saiga population in the North-West pre-Caspian area to helminths and other parasites

A selection of new publications

Saiga hero: Enkhtuvshin Shiilegdamba, Mongolia

In memoriam: Amankul Bekenov

Editorial team: **China:** Guihong Zhang (guihongzhang@foxmail.com), Qulong Education Ltd & Professor Zhigang Jiang (zhigangjiang@vip.sina.com), Institute of Zoology, Chinese Academy of Sciences. **Kazakhstan:** Dr. Yu.A. Grachev, Institute of Zoology (yuriy.grachev@zool.kz), Elmira Mustafina, ACBK (elmira.mustafina@acb.kz). **Mongolia:** B. Buuveibaatar, (buuveibaatar@wcs.org), WCS-Mongolia, B. Chimeddorj (chimeddorj@wwf.mn), WWF-Mongolia. **Russia:** Professor Yu. Arylov, Kalmyk State University (kalmsaigar@mail.ru) & Dr. A. Lushchekina, Institute of Ecology & Evolution (saigak@hotmail.com). **Uzbekistan:** Dr. E. Bykova [Executive Editor] (ebykova67@mail.ru) & Dr. A. Esipov, Institute of zoology, Uzbek Academy of Sciences (esipov@xnet.uz). **UK:** Professor E.J. Milner-Gulland [Advisory Editor], Oxford University (ej.milner-gulland@zoo.ox.ac.uk) & Dr. David Mallon [Reviewer], IUCN Antelope Specialist Group (d.mallon@zoo.co.uk). Graphic design by Dinara Adilova (4dinaa@gmail.com).

All contributions are welcome, in any of our six languages. Please send them to esipov@xnet.uz or to one of the Editors. We publish twice a year. Guidelines for authors are available in English and Russian at www.saiga-conservation.com or on request from the Editors. Please contact the Editors responsible for Saiga News in your country, or the Executive Editor Elena Bykova (esipov@xnet.uz), if you have any questions or concerns.

This publication is available online at www.saigaresourcecentre.org, www.saiga-conservation.com and www.saigak.biodiversity.ru/publications.html, and as a pdf or in hard copy on request to the Editors, in Chinese, English, Kazakh, Mongolian, Russian and Uzbek.

Feature article

The sustainable use of saiga antelopes: Perspectives and prospects

E.J. Milner-Gulland Oxford university and Saiga Conservation Alliance ej.milner-gulland@zoo.ox.ac.uk

Although everyone within the saiga community is united on the overall goal of our work – to once again see saigas take their place as an abundant keystone species within healthy ecosystems – the route to achieving this aim is less clear, and varies between populations and countries. One particularly challenging topic is the role which sustainable hunting of saigas could and should play within saiga conservation efforts. This topic is explicitly highlighted as a priority for research within the draft Medium Term International Work Programme for 2021-2025 under the CMS's Memorandum of Understanding on saiga conservation (which will be discussed at the next Meeting of the Parties currently planned for 2021 in Astrakhan, Russia).

In order to address this priority, the Bundesamt für Naturschutz of the German Government commissioned a report to provide a foundation for exploring the potential for sustainable use of the saiga antelope, and to define the pre-conditions which need to be fulfilled to ensure that such use would be sustainable in practice. The report was written collectively by experts from within the saiga range States and

China, and by international experts. The authors have expertise in population dynamics, wildlife harvesting and wildlife trade. They also consulted with a wider group of colleagues, including individuals responsible for saiga conservation and management in range State governments, members of academic institutions and NGOs.

The report includes chapters on the theory of sustainable harvesting with application to saiga, potential management structures for saiga harvesting, population-specific considerations, a view from China as a major consumer nation and former range state, and information on the international trade in saiga products and its status under CITES. Throughout, we endeavour both to give detailed information specific to saigas, but also to provide examples and lessons from other relevant species and geographies to provide the reader with ideas and concepts around sustainable wildlife use. Finally, we summarise the insights from the report and suggest ways forward.

Sustainable use, in the biological sense, is the use of a natural resource in such a way that it is maintained in the long term at a level that allows it to fulfil its role in the wider ecosystem. Sustainability more broadly has social, economic and ecological components; in order for the use of a natural resource to be sustainable, all three must be considered, because without one element the others will fail. The report focuses on consumptive use (i.e. hunting), as the most usual connotation of the term “sustainable use” in the saiga context. However, sustainable use can be defined to include activities such as phototourism, or any other way of obtaining benefits from using saigas in a non-consumptive way that doesn't threaten the population (and ideally enhances it).

The report was compiled based on the best available information in the scientific literature, official reports and expert knowledge. However, it is not intended to give definitive answers to the questions surrounding



Saiga rutting season in progress. Stepnoi reserve, Russia.
Photo by Eugeny Polonsky

Feature article (cont.)

sustainable use. Most importantly this is because decisions must be made by the governments and authorities responsible for saiga management. However, it is also because there are still substantial gaps in our knowledge that need to be filled in order to support any discussions about the future of sustainable use. These include:

1. The development of a comprehensive population dynamics model for each population, that can explore harvesting options.

This should include other drivers of saiga population dynamics, including disease outbreaks and climate change, and may need to be spatially explicit.

2. Exploration of the economic feasibility of different options for sustainable management.

This could include the exploration of financial models for harvesting, processing and sale of different saiga products, as well as the costs and benefits of different institutional structures.

3. Consultation with local residents to understand their behaviours and perspectives.

This should include getting an understanding of the prevalence and drivers of saiga poaching and consumption using modern indirect questioning methods. It should also include participatory exploration of local people's relationships with saigas and preferences for receiving benefits from their presence (including alternative livelihood options as well as sustainable use).

4. Development of a plan for adaptive management at the population level.

This should draw on scientific evidence and include institutional as well as biological factors. So for example it could use a model to estimate population quotas, which change every year depending on circumstances. It would also require annual data collection to feed into the model, on threats and

population dynamics. The plan would also include regular review of the institutional, social and economic functioning of saiga management, and early warning triggers for intervention if, for example, there is a change in support for management (e.g. problems experienced by hunting associations).

5. Deciding on a suitable legislative and regulatory structure.

Governments would need to ensure that a suitable legislative and regulatory framework for managing sustainable hunting is in place, including stockpile management. This could include an assessment of the requirements for institutional, administrative and enforcement capacity-building at national, regional and local levels. A consideration of the potential roles of different institutional structures for sustainable hunting (including state institutions at local, regional and national levels, private game management organisations, hunting associations, and wildlife management authorities) would also be useful.

6. Continued investment in ongoing monitoring of the system.

The monitoring and protection of saiga populations is getting better and more comprehensive, and more robust, over time. This will need to continue to improve in order to justify and support sustainable use. There should also be ongoing monitoring of social and governance aspects of the harvesting and trade systems, including equitable benefit sharing and local perceptions of saigas and of sustainable use, and of the effectiveness of trade controls.

7. Understanding and control of demand for saiga products.

Saiga poaching for international trade will only be controlled when demand for illegal saiga products in consumer countries is controlled. Currently demand is high in some countries (e.g. Singapore), but there is very little knowledge about the level of demand in other countries, e.g. China. However, there are still

Feature article (cont.)

large seizures and saiga products are still widely available online and in physical markets. There is also no understanding of how legal and illegal products might interact in consumer markets (e.g. would legal horn be seen as an inferior, superior or indistinguishable product). The potential for laundering and for demand either being reduced or exacerbated by legal products needs to be investigated.

8. Control of stockpiles in consumer countries.

The lack of registration and control of stockpiles means that there is very little knowledge of how much new saiga horn is entering international trade. Unless the illegal horn trade is brought under control, poaching will continue to be a threat to all saiga populations. There will also be no prospect of a legal international horn trade under CITES. Unfortunately, this is something that range state governments have little control over, and instead governments of consumer countries must tackle, with the support of international NGOs.

9. Investigation of the potential for non-consumptive sustainable uses.

We were not able to assess the potential of other sustainable uses in the report. However, tourism in particular has potential. Tourism in general is being heavily promoted in some parts of the saiga's range

(e.g. Uzbekistan). Saiga-focused international tourist trips have been piloted in both Kazakhstan and Russia. The infrastructure for international tourism is not fully developed in the saiga range areas, and travel to see saigas may be challenging in some parts of the range. However, nature-based tourists are more likely to be prepared to accept rougher conditions in order to see rare and unusual species. There is the potential to link saiga tourism to other attractions such as cultural sites and bird-watching. It can also generate and support local enterprises such as craft-making, guiding, and homestays.

Overall, the aim of the report is to lay the foundations for further exploration of the many issues surrounding the sustainable use of saigas in the future. The intended audience is all those interested in the conservation of saigas around the world, from a range of organisations, but particularly those responsible for making decisions about saiga management in range State governments.

The report is available online here: https://www.cms.int/saiga/sites/default/files/document/unepcms_saiga_mos4_inf.20_sustainable-use-saiga-antilopes_e_0.pdf [English] and https://www.cms.int/saiga/sites/default/files/document/unepcms_saiga_mos4_inf.20_sustainable-use-saiga-antilopes_ru.pdf [Russian].



Saiga beauty in the Stepnoi reserve. Photo by Eugeny Polonsky

Updates

Mongolia

The population of Mongolian saigas has increased

*Buyanaa Chimeddorj*¹ and *Bayarbaatar Buuveibaatar*² 1 – WWF-Mongolia, chimeddorj@wwf.mn; 2 – WCS-Mongolia, buuveibaatar@wcs.org

The Mongolian saiga is a critically endangered sub-species, which only inhabits Mongolia. In 2014, there were 15,000 Mongolian saigas. Unfortunately, thousands of them died in 2017 due to the goat plague (PPR) and a winter *dzud* (weather which combines a lack of grass, extreme temperatures and heavy snowfall) causing food shortages. Together with illegal hunting and habitat loss, this reduced the population to 3800 in December 2018. Experts from WWF-Mongolia and the Saiga Ranger Network completed a population assessment in January 2020 which showed that the population size had increased to 7,667 (95% CI = 5,074 – 11,724) individuals, an increase of approximately 20% since the last survey in December 2018.

The assessment was performed using the internationally recognized line transect method in the Shargiin Gobi, Khuis Gobi, Durgun steppe, Mankhan soum of

Khovd province, Zavkhan soum of Uvs province, and Durvuljin soum of Zavkhan province. B. Gantulga, species officer from WWF-Mongolia said “Last summer was favourable for saiga; unfortunately this doesn’t happen every year. Therefore, strong conservation efforts should continue”.

Although the Mongolian saiga population has grown substantially, this is not a source of relief because droughts, overgrazing and infectious diseases could still have devastating effects on this vulnerable population. Programmes to reintroduce Mongolian saigas into several independent populations could substantially reduce these risks. Researchers also pointed out that the protection of Mongolian saiga range by the State and a reduction in illegal hunting would also help save this extremely rare sub-species from the extinction.



Male Mongolian saiga with females. Photo by WWF-Mongolia

Updates (cont.)

Camel-herders' participation in Mongolian saiga conservation

Buyanaa Chimeddorj WWF-Mongolia, chimeddorj@wwf.mn

This year, poor pasture and harsh winter conditions are expected in most areas of the Altai Sayan region, which may reduce the number of Mongolian saigas. Moreover, many herders live in the Mongolian saiga range, leading to a shortage of grazing for wildlife and domestic animals. Therefore, WWF-Mongolia organized a “Camelmen” campaign in November, 2019 to hear herders' comments on how to properly use pasture and to promote the importance of Mongolian saigas. Herdsmen participated in the campaign, and the campaign team moved between locations by camel. According to the organizers, 14 camelmen and saiga rangers were involved in the journey, and they met about 100 herders from 60 families who lived in the saiga range to explain the importance of pasture and Mongolian saigas.

Herders said that: “Mongolian saigas are very rare this year. It's unbelievable how sparse they are. Seems like it's going to be a rough winter because there is less food for them”. They also shared their views on pasture: “Pasture use should be timely. There is a lack of legal regulation. Instead of having more livestock, it is important to have a small number of livestock that are economically and financially sustainable.” Herders agreed that without pasture, neither livestock nor wild animals would survive.



Participants in the “Camelmen” campaign. Photo by WWF-Mongolia

Updates (cont.)

Mongolian students have fenced 5 springs in cooperation with herders

Buyanaa Chimeddorj WWF-Mongolia, chimeddorj@wwf.mn

Eco-club students successfully initiated protection of the headwaters of natural springs in 2018, which was the first time this had been done in Mongolia. WWF-Mongolia has supported them from the beginning. Together with local authorities and citizens, they fenced 4 natural springs in 2018, resulting in an increase in water flow for both livestock and wildlife. Automatic camera footage prove that not only humans drink from these springs, but many wild animals as well. The eco-club students called on locals to take action to protect the natural springs, and herders from 7 soums (districts) of Gobi-Altai province donated MNT 21 million (7900 USD). In the summer of 2020, the eco-club students were more active. They collaborated with herders to fence 5 natural springs in Sharga and Khuis Gobi, which is the home range

of Mongolian saigas. The eco-club students signed a tripartite contract with the soum administration and herders, and handed over the fence key to the herders. In other words, herders are expected to be responsible for the protection of the springs. The students will conduct quarterly surveys, which will include monitoring of these automatic cameras.



Eco-club students erecting a fence at the headwater of a natural spring. Photo by WWF-Mongolia

Updates (cont.)

Kazakhstan

Rutting aggregations monitored in three saiga populations in Kazakhstan

Elmira Mustafina Association for the Conservation of Biodiversity of Kazakhstan (ACBK), elmira@acbk.kz

Between 17th and 27th December 2019, 12 researchers from the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) studied saiga rutting aggregations. They surveyed the animals' behaviour during this period, established a mean ratio of males to females and obtained information on rutting habitats. The work was implemented as part of the Altyn Dala Conservation Initiative.

This was the first study of rutting males in the Ural population, currently the largest saiga population in the world. The survey was carried out in Kaztal District of West Kazakhstan Province using a drone with a wide-angle lens. The Betpak Dala population was monitored in Kostanay, Aktobe and Karaganda Provinces, where the largest

aggregation was recorded in the Irgiz Turgay Nature Reserve, as in the previous year. Other rutting aggregations were observed in the Alty Say eco-park (<https://www.youtube.com/watch?v=9Lmuq0nlX7s>). Rutting animals in the Ustyurt population, the country's smallest population, were studied in Aktobe Province.

The survey covered a total area of 3,200 km². There were around 100,000 saiga recorded in the Ural population, about 20,000 in the Betpak Dala population and approximately 900 in the Ustyurt population. Sex and age were identified for 22,882 individuals. The mean ratio of adult males to females in the Ural population was 1:15, in the Betpak Dala population 1:10 (compared to 2017 – 1:22, and 2018 – 1:11), in the Ustyurt population – 1:5.

Results of monitoring calving saigas in the Ustyurt population in 2020

Elmira Mustafina and Bakhtiyar Taykenov Association for the Conservation of Biodiversity of Kazakhstan (ACBK), elmira@acbk.kz

Due to the state of emergency declared by the Kazakh government in May 2020, the monitoring of calving saiga aggregations by ACBK covered only the Ustyurt population this year. The survey was carried out by ACBK specialists from the Ustyurt Plateau's monitoring and wildlife conservation team and resulted in the recording of a large aggregation of calving saigas for the first time in ten years.

Before launching the expedition, the researchers obtained the following data:

- Information about all locations where saiga had been recorded for the last 3 years (2017–2019);
- Information from satellite transmitters which were used to record all locations frequented by collared

saiga between 1st and 15th May in previous years, using a transect survey method;

- Information from local people about saiga calving aggregations in the Soviet period.

Our team compared the newly obtained data with this information and identified sites for their preliminary survey.

Every day during the expedition, starting from 5th May, we recorded groups of saiga numbering 19 to 163 individuals, but did not identify any newborn animals. On the sixth day our team finally found a mass calving site 51.6 km² in area in Aktobe Province. The aggregation was studied between 12th and 17th May, during which the biometric parameters of 26 calves

Updates (cont.)

were measured. In total 986 saiga individuals were recorded, including 530 calves. The mass calving took place on a site that had suffered a fire in 2019, and which held sources of rainwater. The vegetation included *Agropyron*, *Artemisia*, *Anabasis salsa*, *Rheum tataricum* and other plants.

According to the Kazakh government's 2019 aerial survey, the Ustyurt population numbers around 5,900 individuals in Kazakhstan, making it the world's most endangered saiga population. Interestingly, in 1998-2005 this was the largest saiga population. Poaching was the main cause of the decrease in saiga numbers. Nevertheless, appropriate conservation measures have resulted in its growth in recent years; in 2018 numbers grew by 37%, in 2019 – 59.5%. The large calving aggregations recorded during the 2020 expedition indicate that current conservation measures are yielding satisfactory results.

The use of up-to-date technologies by ACBK specialists to patrol and monitor the area, such as the SMART system, drones and satellite telemetry, facilitates the accumulation of reliable data to help study and conserve saigas and their habitats. Active dialogue with local people also once again proved an efficient means to tackle poaching.

It should be added that the State Territorial Inspectorates and Okhotzooptom under the Committee for Forestry and Wildlife of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan take steps to protect large calving aggregations throughout Kazakhstan, including the Ustyurt population.

This work was implemented as part of the Altyn Dala Conservation Initiative (ADCI) aimed at conserving key species of steppe ecosystems, with the support of Fauna and Flora International.



Newborn saiga calves were tagged with ear tags for follow-up research. Photo by Bakhtiyar Taikenov



Run, little saiga, run! Photo by Bakhtiyar Taikenov

Updates (cont.)

The proposed Centre-West transport corridor threatens saigas in Central Kazakhstan

Elmira Mustafina Association for the Conservation of Biodiversity of Kazakhstan (ACBK), elmira@acbk.kz

The Kazakh government plans to build a series of transport corridors – Centre-West, Centre-South, Centre-East and Centre-North – as part of the “Nurly Zhol” programme to modernise the country’s road network. These roads will form a part of the Western Europe -Western China transcontinental corridor. The construction was ordered by the Committee of Highways under the Ministry for Industry and Infrastructural Development of the Republic of Kazakhstan. These roads will form a part of the Western Europe -Western China transcontinental corridor. The Centre-West section will connect the cities of Nur-Sultan and Aktau (about 2,000 km) (fig. 1).

Segments of the Centre-West route in Kostanay and Akmola Provinces will cross saiga migration routes. The currently proposed route between the city of Nur-Sultan and Shalkar village threatens the Betpak Dala population and within that, the Tengiz sub-population. The road will run very close to the territories of the Irgiz-Turgay and Altyn Dala State Nature Reserves and Irgiz-Turgay-Zhilanshik ecological corridor, which play an essential part in the conservation of the Betpak Dala saiga population – facts that were given little attention by the road’s Environmental Impact Assessment. Moreover, the road crosses the Turgay State Nature Reserve, which contains a system of lakes

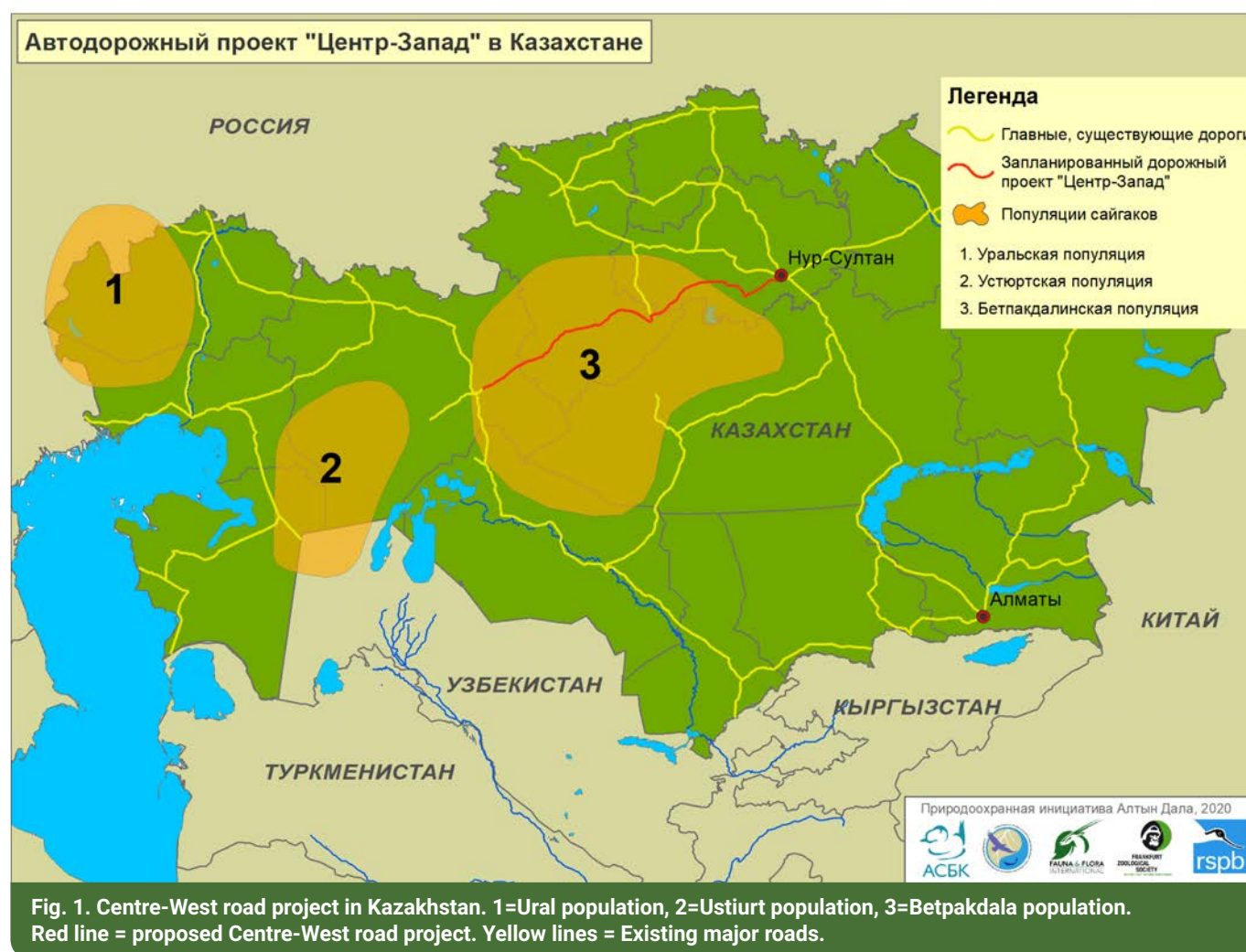




Fig. 2. The current state of Centre-West project roads between Nur-Sultan and Irgiz, overlaid with data on saiga movements. Green patches = existing protected areas, grey lines = movements of satellite-tagged saigas, black lines = existing roads. Chosen route of the Centre-West road project: Yellow line= existing asphalt road, red line = existing graded road, green dotted line= currently lacking a road.

in the lower reaches of the Irgiz and Turgay Rivers listed in the Ramsar Convention and as an Important Bird Area. This was completely neglected by project designers and the Environmental Impact Assessment.

Based on its experience in working in this region and available data on local ecosystems, the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) insists that the projected route should be changed as soon as possible for a new and more sustainable one. According to a study by ACBK, saigas from the Betpak Dala population generally avoid crossing the existing paved roads, and freely cross dirt roads (as in the Arkalyk–Irgiz segment of the road) Furthermore, saigas in the Ustyurt population fitted with transmitters did not cross the Shalkar-Beyneu railway line for over 2 years after its construction – from

autumn 2017 to late December 2019.

ACBK believes that the proposed road will become a source of considerable disturbance in these areas. The traffic will frighten off animals and be an obstruction to their movement (whether temporary or permanent) (fig. 2).

The inevitable increase in traffic will have an unpredictable impact on their migration, which may be aggravated by the presence of people and machines maintaining the road. Potential threats to the Betpakdala saiga population from the Centre-West project include:

- **Fragmentation of the range and loss of habitats** Saiga may stop using areas north of both road

Updates (cont.)

segments. This may force them to stay in areas with insufficient food, which will have a negative impact on the animals' health and reproduction.

- **Limited food resources**

Even if the saiga movement is not blocked completely, the road will most probably impact their seasonal migration to important summer pastures in the north. The animals will have to stay longer in areas with scarce food, which will impact their health and reproduction.

- **Higher risk of diseases**

Aggregations may form south of the road as saigas try to cross to reach the calving grounds during the spring migration. This may result in various epidemics, some of which may be quite dangerous (the causes of the last outbreak of Pasteurellosis in 2015 still remain largely unclear). Moreover, this will increase disease risk for domestic animals.

- **Lower saiga numbers**

The shrinkage of undisturbed areas of habitat, disturbance of migration routes and higher threat to the animals' lives may lead to a reduction in saiga numbers in both the main population and the Tengiz sub-population and a consequence loss in value as a renewable hunting resource.

- **Damage to the Ramsar site**

The breaking of ecological connections between the two clusters of Protected Areas, particularly in the Irgiz-Turgay region, will cause damage to the Ramsar wetland.

These negative impacts will make it impossible to restore the saiga population to the level of the 1980s. The only way to solve the problem is to change the course of the Centre-West road northwards, so that it bypasses the most important habitats.

Since 2017 ACBK has submitted a series of official requests to the authorities to change the course of the road in connection with the potential threat to the saiga's habitats. However, our appeals have been ignored and the transport corridor project is now 80% completed. In 2020 ACBK has been more active in attempting to solve the problem, appealing to the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan and promoting coverage of the issue in the mass media.

You can follow the campaign to change the course of the Centre–West road via the hashtags [#SaveSaigaWays](#), [#КийікЖолы](#), [#СохранимПутиСайгака](#), as well as on the website savesaiga.kz.

Eight dogs from the Kazakh Border Service taught to search for saiga horns

Elmira Mustafina Association for the Conservation of Biodiversity of Kazakhstan (ACBK), elmira@acbk.kz

Between 10th February and 18th June 2020, eight dogs from the Kazakh Border Service took an initial training course under the Searching for Derivatives programme, where they were taught to find saiga and argali horns, snow leopard skins and steppe tortoises. The course was held in Almaty, at the Dog Centre under the Financial Monitoring Committee, Ministry of Finance of the Republic of Kazakhstan.

Officers from the Border Service and their dogs successfully passed all their exams, where they were asked to show their practical skills in detecting wildlife derivatives in hand luggage, road vehicles and railway carriages. On 19th June, all the dogs demonstrated their ability to find saiga horns at an exhibition performance marking the completion of the training.

Updates (cont.)

The trained dogs will operate in strategically important locations on the border. In total, 17 specialist dog-handlers will work on controlling the illegal trade in wildlife products.

Since 2014 the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) has been implementing this project to train officers and their dogs to detect wildlife derivatives as part of the Altyn Dala Conservation Initiative. The work is supported by Fauna & Flora International.



Dog handlers with dogs. Photo by Dina Djulayeva

Proof obtained of individual saigas coming into Uzbekistan from Kazakhstan

Alan Aldashev Association for the Conservation of Biodiversity of Kazakhstan (ACBK), alan.aldashev@acbk.kz

In January 2020 camera traps captured a few saigas in the Saigachy Reserve in Uzbekistan (see the article by M. Gritsina et al. in this issue). This piece of news inspired specialists from the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) to drive to the border with Uzbekistan to see if the saiga had used the special gaps cut in the border fence in 2015 as a result of the joint efforts of ACBK, the Committee for Forestry and Wildlife under the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan and the country's Border Service (see *Saiga News*, 21).

In April 2020 specialists from ACBK and rangers from the Border Service surveyed a 335-km section along the border by car and detected saiga footprints in seven locations. They established that in three cases the animals travelled along the fence, and in four locations they managed to cross the border. In addition, according to border soldiers and local people, several saiga individuals were recorded near the border fence in December 2019 and April 2020.

Therefore, the efforts to mitigate the negative impact of the border fence on the saiga migration have begun to yield results. More trips in the migration season

are planned to further study this issue, as well as to fit satellite transmitters on several saigas from the Ustyurt population.

This work is implemented as part of the Altyn Dala Conservation Initiative (ADCI) with the support of the Committee for Forestry and Wildlife under the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan and Fauna and Flora International (FFI).



Saiga crossing place over a wire fence on the border between Kazakhstan and Uzbekistan. Photo by Bahtiyar Taykenova

Updates (cont.)

Russia

Works of Art by Russian Steppe Wildlife Club members

Olga Obgenova Association for Steppe Wildlife Clubs of Russia, obgenovaob@gmail.com

The Steppe Wildlife Clubs established with the support of the Saiga Conservation Alliance in Russian rural secondary schools near saiga habitats in the North-West pre-Caspian area hosted a series of events in the first half of 2020.

The clubs organised various competitions and training courses and staged theatrical performances and sporting events, competitions and quest games. One of the most remarkable was a competition to make handicrafts and leaflets held by the Tropoi Saigaka (Along the Saiga's Path) Steppe Wildlife Club (Troitskoye village). Club members made a series of plywood badges, called Saigas in Flight, and a 'saiga' cup, which were awarded to the winners of Saiga Day competitions (see O. Obgenova's article about Saiga Day in this issue). A master class in origami at the Druzya Prirody (Wildlife Friends) steppe club (Elista city) resulted in the creation of a unique and very touching paper saiga by the children from the club.

The clubs were also involved in the celebration of Maslennitsa (Shrovetide) – an ancient holiday dedicated to parting with the winter and welcoming the spring. At the festival kids from the Vozrozhdeniye (Resurrection) steppe club put on saiga masks, sang and danced in a ring, and distributed colourful hand-outs and calendars with images of saiga to their neighbours to remind them of the antelopes living side-by-side with them and wanting care and protection (see <http://saiga-conservation.org/2020/03/06/goodbye-winter-hello-spring>).

The "Ecology. Wildlife. Human" poetry competition organised in Russia in March 2020 by the Idea All-Russian Centre for Civil and Youth Initiatives helped to spotlight a large number of young poets. The poem *Saiga Herd* by 11-year-old Alexandra Myasyayeva from the Elvg-delvg Erdnikhn steppe club was



The process of making an origami saiga. Photo by Ye. Kh. Tsorkhayeva

a prize-winner, while the poem *The Legend About Saigas* by 12-year-old Lilia Abasova from the Vozrozhdeniye club won a prize at the regional contest "The Wildlife of Astrakhan Province through the Eyes of Children". Ekaterina Pakhomova and Lilia Abasova, members of the Vozrozhdeniye steppe club (Liman village), continued the poetic marathon by reading their collection of poems on the school radio under the common title of "The Beauty of the Steppe" as part of the "We Speak about Wildlife in Verse" programme.

Children presented new drawings at the *We Draw Saigas* competition held annually at every Steppe Wildlife Club. Five students from the Elvg-delvg Erdnikhn steppe club (Erdniyevsky village) took part in an all-Russian competition and were awarded with various diplomas and souvenirs for drawings about saiga protection and the wildlife of their native steppe.

Updates (cont.)

Russian steppe clubs celebrating World Wildlife Day

Olga Obgenova Association for Steppe Wildlife Clubs of Russia, obgenovaob@gmail.com

'Sustaining life on Earth' was the subject chosen in 2020 for World Wildlife Day, celebrated across the globe on 3rd March. The International Fund for Animal Welfare (IFAW), in cooperation with UNDP and the CITES Secretariat, organised a drawing competition for children and young people aged between 4 and 18 from 20 countries around the world. Two members of the Vozrozhdeniye club from the village of Liman, Astrakhan Province of Russia, won this prestigious competition (see <http://saiga-conservation.org/2020/03/19/world-wildlife-day>).

In addition, as part of World Wildlife Day celebrations, members of the Druzya Prirody Steppe Wildlife Club (Elista city) gave a lesson about wildlife entitled The Relict Antelope, and a master class in drawing a saiga. They also organised a competition to guess the names of plants from the saiga's vegetarian diet, to identify food chains in steppe communities, and negative impacts on saiga, such as poaching, infectious diseases, deep snow or hard snow crust (*djut*), and irrigation structures preventing saiga movements. The website for this lesson (see <https://заповедныйурок.рф/lessons/?cat=6&search=1>) suggested that kids complete a test to gain the status of 'saiga friends'.



Wildlife Day in the village of Liman. Photo by T. A. Gaydukova

Members of the Vozrozhdeniye steppe wildlife club organised an extracurricular event, Wildlife Day, for year-four pupils. They familiarised the pupils with the history of the festival, told them about animals living in their native land and suggested that the children take part in an interesting competition which consisted of several stages: *Sounds of Wildlife*, *Quiz*, *Who Am I?* and *Who Lives in the Fairytale?* The students were asked to guess the names of animals from their voices; identify animals by letters written on their behalf; and imagine fairytales with wild animal protagonists. By the close of the event the kids attached beams to the sun which cast light upon everyone. The little participants were awarded with notepads and badges with images of saigas from the Stepnoy Reserve.



Abasova Liliya and Shevchenko Ekaterina, the winners of World Wildlife Day Youth Art contest. Photo by T. A. Gaidukova

Updates (cont.)

International

COVID-19 did not cancel Saiga Day in 2020

It is clear that Saiga Day is the most important annual event for Steppe Wildlife Clubs. Shortly after Saiga Day in 2019, the Clubs began planning for the 2020 festival. But the unexpected coronavirus pandemic resulted in various restrictions and thwarted all their plans. In this difficult year, the coordinators of the Steppe Wildlife Clubs in all the saiga range states made a joint decision to celebrate the event online so as to meet all sanitary norms and restrictions.

Russia

Olga Obgenova Association for Steppe Wildlife Clubs of Russia, obgenovaob@gmail.com

Since online event organisation was new to us, we faced some initial difficulties in setting up our communications network. It went more smoothly when Steppe Club managers identified children's and their parents' willingness to use mobile phones for communication, their access to the internet, and their skill in using social networks. To involve a broader public in saiga conservation we set up Facebook and Instagram groups (<https://www.facebook.com/groups/538287830414698>, https://www.instagram.com/rusaiga_stepnyekluby). From the very first day these groups began to receive numerous works of art by members of steppe clubs and interesting posts about saiga conservation. They thus proved excellent platforms for exchange of experience and information.

The first joint activity for Saiga Day was the Saiga Challenge online competition organised by the World Wildlife Fund (WWF) Russia. Children from various

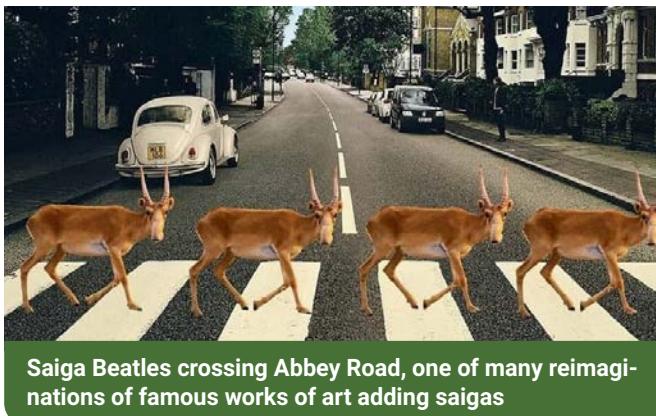
age groups enjoyed creating collages in which saigas were placed into pictures by famous artists. They posted their works on their webpages and on Facebook and Instagram, where they could be followed via hashtags [#большесайгака](#) [#saigaday](#) [#wwfrussia](#).

Members of the Vozrozhdeniye (Resurrection) Steppe Wildlife Club posted a video, where they congratulated viewer on Saiga Day and recited poems they had written themselves (see <https://www.youtube.com/watch?v=sz4PsvJtEVg>).

A series of activities for various age groups was developed to involve as many children as possible in the online celebration of Saiga Day. Electronic colouring books entitled *"Let's draw a Saiga"* and *"Our Antelope"* were distributed via our network to the parents of primary school pupils, who used them to familiarise themselves with the saiga and discover the interesting world it lives in, as well as to learn to draw this unique animal.

Junior secondary school pupils took part in the Handmade Ecobook competition, where they were given a chance to show off their creative abilities and knowledge about saigas and learn new forms of distant cooperation.

Senior pupils joined the Youth for Saiga international smart mob. The activity was done at home; many involved their family members. Using ecomasks and face painting, teenagers developed their own



Saiga Beetles crossing Abbey Road, one of many reimaginings of famous works of art adding saigas

Updates (cont.)

unique saiga image. The kids posted their selfies in masks with a placard, with an inscription calling for saiga protection on their personal webpages, with hashtags #Мызасайгака #Weforsaiga and on Facebook and Instagram (see <https://www.facebook.com/100050522689931/videos/125933805767375>).

The online celebration of Saiga Day was interesting and eventful. All six Russian steppe wildlife clubs took part. Moreover, the members' exciting posts on social networks attracted other pupils from various schools. Thus, over 110 children took part in the Saiga Challenge, including from the remote village of Achinery in Chernozemel' District and the village of Uldyuchiny in Priyutnensk District, both in the Republic of Kalmykia, where pupils are now planning to organise new Steppe Wildlife Clubs.

The finale of the online celebration of Saiga Day 2020 was on 5 June; World Environment Day. The participants and winners were awarded electronic certificates and diplomas. After the quarantine is over the prize winners will be given souvenirs and certificates and diplomas in paper form. The club with particularly outstanding results will be awarded



Children from the Tropoy Saygaka steppe clubs with their handmade Saiga in Flight plywood badges. Photo by Yu. B. Arsenova

the Saiga Cup designed and created by Tomirlan Burvyashov and Aldar Badmayev – members of the Tropoy Saygaka (Along the Saiga's Path) steppe club, Troitskoye village, Republic of Kalmykia. A proud and majestic saiga silhouette rises from a pedestal with the inscription 'saiga' ('todo bichg') in the Old Kalmyk script.

Other members of this club, Aylana Kolkanova and Gilana Kikayeva, guided by their technology teacher Alexei Borisovich Khulkhachiyev, created a plywood badge, Saiga in Flight. To design the sketch for this wonderful work the girls made a deep study into saiga behaviour, body structure and proportions. Now all the members of the Tropoy Saygaka club proudly wear these badges. Prize winners of various competitions held on Saiga Day will also be awarded such badges.

In conclusion, I would like to express the opinion of Russian Steppe Wildlife Club members and their friends and parents: we want to improve the saiga's situation, we want their numbers to grow in our steppe, and we will make every effort to achieve this!



Handmade Saiga Cup. Photo by Yu. B. Arsenova

Updates (cont.)

Uzbekistan

Natalya Shivaldova NGO Ecomaktab, nshivaldova@mail.ru

Saiga Day is traditionally celebrated in early May, because this is when saiga babies are born on the Ustyurt Plateau. The quarantine imposed in many parts of the world changed the ways we celebrated but did not impact on our celebratory traditions or change the goal of the festival that has become so popular over the years. Unfortunately, illegal hunting for horns and meat has led to a sharp decrease in saiga numbers. Therefore, the main goal of all activities related to the Saiga Day is to acquaint people more closely with this unique antelope and let them learn more about its unusual ability to adapt to its environment and its complex history from ancient times to the present day.

How to support saigas online: an original approach and diverse opportunities

Given the current conditions caused by the quarantine, a group consisting of experts from the Institute of Zoology, Ecomaktab NGO, teachers and Steppe Wildlife Club managers, supported by the Saiga Conservation Alliance, developed various interesting competitions and quizzes. To raise interest and knowledge in children and their parents three competitions were designed for various age groups.

A quiz book was prepared for primary school pupils, who could download it to their smartphones or computers and complete the tasks in standard paper notebooks. Older pupils were asked to compete in designing an ecological book with a saiga or a saiga family as a protagonist(s). The students were provided with recommendations on how to use various techniques, including plasticine and dough modelling, comics and appliqué, to design their eco-book, aiming to help the children find their own artistic style. Senior students were offered participation in the Youth for Saiga smart mob. This task also required creative approaches and new ideas. The first step was to develop their image using face painting and masks. The next thing to do was to design a mini-placard with a phrase in support of the saiga. The final stage

included taking a selfie and posting it on Telegram or Facebook with hashtags [#Молодёжьзасайгака](#), [#Youthforsaiga](#).

Results, surprises and discoveries

Children from four steppe clubs in the villages of Karakalpakstan (secondary school No. 26) and Jaslyk, the town of Muinak (school No. 1) and the city of Nukus (school No. 46) took part in the competitions. In total, through social networking groups the competitions reached over 1,000 children. About 300 kids posted their works on social networking sites to take part in the competitions.

The pupils' creative abilities came as a true surprise to the organisers. Amalia Rakhmatullina, a nine-year student from school No. 46 in Nukus, made a 3D saiga mask and later uploaded a master-class in making such masks which she had developed (see <https://www.facebook.com/100003618498772/videos/pcb.3037319206337951/1969791519818112>). Aygerim Isabayeva, an eight-year student from school No. 26 in the village of Karakalpakstan, designed an eco-book by hand-embroidering all the characters of her fairytale, using silk thread on black velvet and alternating embroidery and appliqué. Eleonora Tursynbayeva, a seven-year pupil from school No. 46 in Nukus designed a series of fabulous characters using traditional Karakalpak embroidery. The style she used is very laborious and requires a lot of assiduity and concentration. In the old days Karakalpak girls used to fill their dowries with dresses they themselves had decorated with handmade embroideries that told stories about herself, her family and her dreams. Nowadays, traditional Karakalpak embroidery is being gradually replaced by mechanical needlework. So the organisers were truly happy to meet one of these wonderful girls who had inherited this traditional craft from their mothers and grandmothers.

The pupils prepared theatrical performances and made home videos, where children and saigas were

Updates (cont.)

the main characters. These home performances featured numerous characters usually played by their brothers and sisters with the involvement of their parents and grandparents. Some of the children operated cameras, others edited videos, while others acted as scriptwriters and directors. We were very happy to receive these family works, where adults took part and were truly engrossed by the process. As a result, entire families became more environmentally conscious and understood saigas better.

The face painting competition also proved a pleasant surprise: the kids used no-toxic paints to create complex steppe scenes on their faces. There was enough space for several saiga individuals on a child's little face.

Probably, all these works of art created by young talents could not be arranged in an ordinary exhibition hall, but in the online gallery there was enough room for every piece of art. So everyone could exhibit their work and view others' made using a wide range of techniques, as well as vote for those they liked best. Every young storyteller and artist managed to reflect their dream: 'The saiga has been restored, it is close to us and we will do our best to protect it.'



The youngest participant in Saiga Day from Uzbekistan. Photo by Neli Kim

Kazakhstan

Elmira Mustafina Association for the Conservation of Biodiversity of Kazakhstan (ACBK), elmira@acbk.kz

"Saiga Friends" clubs across Kazakhstan celebrate Saiga Day annually, organized by ACBK with the support of the Saiga Conservation Alliance. In 2020, Saiga Day was held online. Children received tasks, coloring books and other materials specially prepared by ACBK for their independent participation. They also took part in the competition "Who hides the mask?", in which club members hand-made masks of animals living in steppe, desert and semi-desert ecosystems.

The authors of the best works will receive prizes from ACBK and the Saiga Conservation Alliance. In total, 5 clubs from the following villages took part in the celebration: Akkaytym (Aktobe region), Borsy (West Kazakhstan Region), Baitursynov and Koskol (Kostanay region).

Articles

An Innovative Approach to Estimating Saiga Numbers in the North-Western pre-Caspian area

Valery Shmunk *WWF-Russia office in the Russian Caucasus ecoregion, vshmunk@wwf.ru*

Reliable data on the state of populations of rare species are essential to develop conservation measures and evaluate the results of interventions. However, owing to its biological features it is quite hard to estimate the size and, particularly, the sex-and-age structure of a saiga population. These steppe antelopes are extremely cautious and almost incessantly on the move. A variety of traditional methods have been used to estimate the size of the saiga population in the north-west pre-Caspian Sea area (Yashkul' and Chernozemli Districts of Kalmykia and Liman District of Astrakhan Province), including surveys from light aircraft and vehicles, which often result in considerable errors. Moreover, these methods were not safe for the environment, as vehicles moving in parallel lines close to each other to survey an area damage steppe soils. The sound of the engines of light aircraft flying low above the ground disturbs the animals, sometimes even causing panic.

According to leading specialists in this field, to this day no completely satisfactory method of counting saigas has been developed, which minimises both error and disturbance at the same time. This hampers the planning of activities to restore this once-abundant species. The estimates of population size made by various experts greatly diverge and therefore cannot be used as reliable indicators to develop Russia's Saiga Conservation Strategy. It is thus extremely

important to design and put into practice a reliable approach to counting saigas.

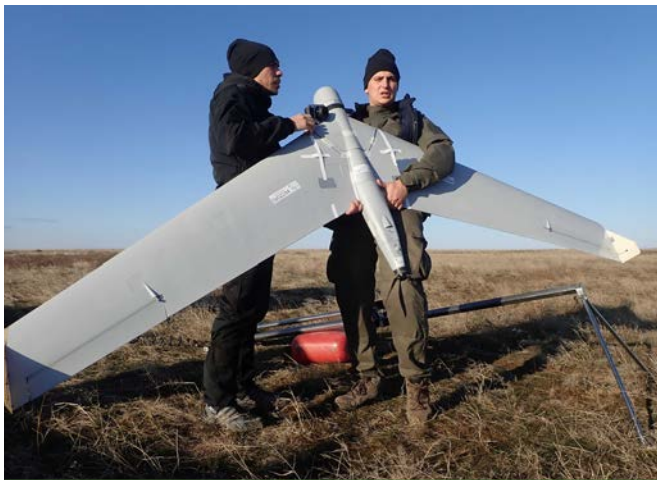
Despite the availability of a huge amount of data on saiga biology, specialists' opinions diverge about the optimal season for undertaking a census. Some experts suggest flights over calving aggregations (April–May), others – in the rutting period (November–December). A third group believes that air surveys should be done in June, sometime after the calving, when saigas concentrate near drinking places. The first option is inappropriate because of the disturbance which will inevitably take place, however cautiously specialists may behave. The other two options have been tested by researchers with the support of WWF-Russia since 2018.

The tests include the use of drones manufactured by ZALA Aero (model 421-16E) equipped with photo, video and thermal cameras on a gyro-stabilised platform. Importantly, the drones have low-noise electric engines and a relatively long range of 50 km. The low vibration and noise cause very little disturbance to the animals, which is essential for surveys. The result is that the animals pay almost zero attention to a drone flying 350 m or higher above the ground. Only in the rutting period, according to latest aerial data, the saiga's sensitivity to noise grows, which makes it necessary to raise the drones to a height of 400 or even 500 m. Another advantage of drones is that the photo and video material thus obtained can be re-analysed in future. Monitoring using modern drones makes it possible to obtain precise data without causing damage to the environment and to complete a survey of a relatively small saiga population within a few days.

In June 2019 drone surveys were carried out with the support of WWF-Russia when saigas formed aggregations near artesian pools in protected areas, such as the Chernye Zemli and Mekletinsky Reserves (Kalmykia) and Stepnoi Reserve (Astrakhan Province).



Articles (cont.)



Drone before launch in the Chernye Zemli Reserve. Photo by WWF Russia

During the survey specialists recorded 5,150 individuals, 11% of which were adult males. Over 4,200 animals were recorded near a big artesian well not far from the field station in Stepnoi reserve, about 500 in Chernye Zemli and 200 in Mekletinsky reserve.

In November 2019 the team estimated the drones' potential in the rutting period. The use of thermal cameras and the low temperatures allowed for night-surveys, which are almost impossible in summer. According to the survey, the steppes in the north-west pre-Caspian area are inhabited by a population of about 6,350 saiga individuals. Nevertheless, the need to survey at a greater height than in June considerably complicated the identification of the sex of adult animals. In addition, in the rutting period saiga does not form compact aggregations so the groups were scattered over an extensive area, which required longer survey routes: in comparison with summer the total distance grew almost three-fold; from 1,015.5 km to 2,968.3 km, which also increased the cost of the operation.

Each of the two periods has its advantages and shortcomings. The survey in June requires much less flying time (3-4 times less than the rutting period), which is very important from many aspects, including financial, since every kilometre of flight is quite expensive. Besides, the saiga's noise-sensitivity in the

rut (requiring higher flying) makes it more difficult to identify the animals' sex and age. On the other hand, the winter period allows for efficient use of thermal cameras. The main threat that has led to a critical decrease in saiga numbers is selective poaching targeted at males, which is why it is very important to know the proportion of males in a population.

In total, during the survey the drones covered a distance of 4,207.3km in the Chernye Zemli, Mekletinsky and Stepnoi Reserves, which required 69 operating hours. Both in winter and in summer, most of the animals (68%) were recorded in Stepnoi reserve.

Before the end of 2020 draft methodological instructions for saiga monitoring will be prepared with the support of WWF Russia. After discussion with a wide range of specialists, they will be forwarded for approval to the Ministry of Natural Resources and Environment of the Russian Federation.

See also: <https://snob.ru/entry/191865>, <https://wwf.ru/resources/news/bioraznoobrazie/wwf-rossii-podvel-itogi-otsenki-chislennosti-saygaka-po-innovatsionnoy-metodike>, <https://nat-geo.ru/nature/russkaya-koza>

Articles (cont.)

The Saigachy Reserve: saigas return to Uzbekistan

Luiza Mardonova¹, Alisher Abdurakhmonov², Sarvar Akhmedov¹

1 – Biodiversity and Protected Areas Department, State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection; 2 – Saigachy Reserve

Corresponding author: Luiza Mardonova mardonova.luiza@mail.ru

The Saigachy Reserve was established following Resolution No. 238 (Cabinet of Ministers of the Republic of Uzbekistan, 22nd July 2016) ‘*On measures to streamline issues related to the creation and organisation of integrated (landscape) nature reserves*’ and was granted the status of Protected Area of National Importance. The goal of the Saigachy reserve is to conserve the original condition of natural objects and complexes which are ecologically important for the region. It is situated in the northern portion of the Ustyurt Plateau, in the Muinak and Kungrad Districts of Karakalpakstan. The reserve has a total area of 628,300 ha and a core zone of 219,800 ha.

The main objective of the Reserve is to conserve and restore saigas and other rare and endangered species of fauna and flora included in the Red Data Book of Uzbekistan and IUCN Red List. The activities implemented in the reserve form a part of Uzbekistan’s obligations under international conventions, including the CBD and the CMS MoU Concerning Conservation, Restoration and Sustainable Use of the Saiga Antelope, as well as the bilateral agreement between Kazakhstan and Uzbekistan on protection, restoration and sustainable use of the saiga population.

In November 2019, 10 camera traps were installed in the Saigachy Reserve as part of a project to develop a standard biodiversity monitoring approach for cold winter desert biomes, which was supported by the Central Asian Desert Initiative (CADI; *see the article by Gritsina et. al. in this issue*). Alongside endangered species, researchers obtained information on other mammals, such as the Steppe Cat *Felis silvestris ssp. ornata*, Red Fox *Vulpes vulpes*, Wild Boar *Sus scrofa*, Asian Badger *Meles leucurus*, and some bird species, including diurnal raptors.

The camera traps are installed in permanent monitoring spots, which allows for monthly updating of information on wild animals inhabiting the reserve. The camera trap monitoring programme will soon cover almost the entire territory of the reserve. It will be used to improve the efficiency of management of the protected area, as well as to develop an action plan to conserve rare species of wild animals and their habitats.

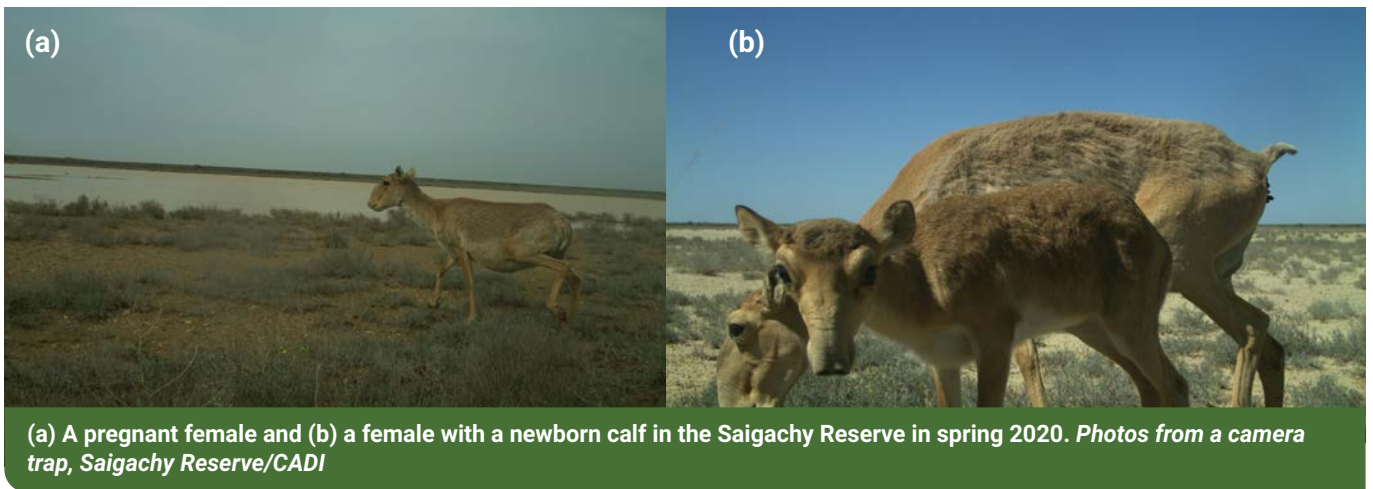
To prevent poaching, boards have been installed in human settlements and near the reserve, carrying the inscription “Saiga hunting prohibited”. The project team, in cooperation with specialists from the Karakalpak Department of the Uzdaverloyikha Institute, used GPS to specify coordinates for the edge of the Protected Area, where they installed border-marking signs.

Rangers patrol the Reserve on a daily basis. The enormous area and absence of cellular communication cause difficulties in ensuring the rangers’ security and coordinating work during their operations and monitoring activities. Lawbreakers generally use fast and mobile motorcycles, so it is often very difficult or even impossible for rangers in vehicles to catch them on the steppe.



Watering places organised for wild animals in the reserve.
Photo by Saigachy Reserve

Articles (cont.)



The Reserve staff have also begun organising watering places for saiga and other wild animals, by installing pumps in 10 unused wells. The water from these wells flows into troughs (fig. 1). A few artesian well pools are to be constructed soon in two sections of the reserve, Almambet and Beleuli.

To develop an ecological culture in local people, Reserve staff are organising activities to raise the awareness of children and adults about the importance of protecting rare animals and plants. So, they told attendees at a meeting with people from Jaslyk village how to monitor animals with the help of camera traps. Reserve staff also met pupils of secondary schools from the same district to tell them about rare species of fauna and flora in the region and the importance of conserving them. Similar events were organised in schools in Nukus.

As an additional step, signs informing citizens about their legal responsibilities, including concerning poaching for saigas and other endangered species, were designed and placed in railway stations, school buildings, markets and other structures within human settlements.

In conclusion, after its reorganisation the Saigachy Reserve is gradually becoming an efficient instrument to protect an area of the Ustyurt Plateau containing unique fauna and flora. The return of a small group of saigas to their original wintering and breeding grounds has aroused hope that this species' population will be restored in Uzbekistan.



Articles (cont.)

The Saigachy Reserve in Uzbekistan as a case study of the introduction of a fauna and flora monitoring system

Maria Gritsina¹, Natalia Marmazinskaya², Luiza Mardonova³, Maksim Mitropolsky²

1 – Institute of Zoology, Academy of Sciences of the Republic of Uzbekistan; 2 – Uzbek Zoological Society; 3 – Biodiversity and Protected Areas Department, State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection

Corresponding author: **Maria Gritsina** mgritsina@gmail.com

In 2019, activities to develop a fauna and flora monitoring system were carried out as part of the Central Asia Desert Initiative (CADI) project supported by the Biodiversity and Protected Areas Department under

the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection. This system will be used in the Saigachy Reserve on the Ustyurt Plateau in the northern part of Karakalpakstan (fig. 1).

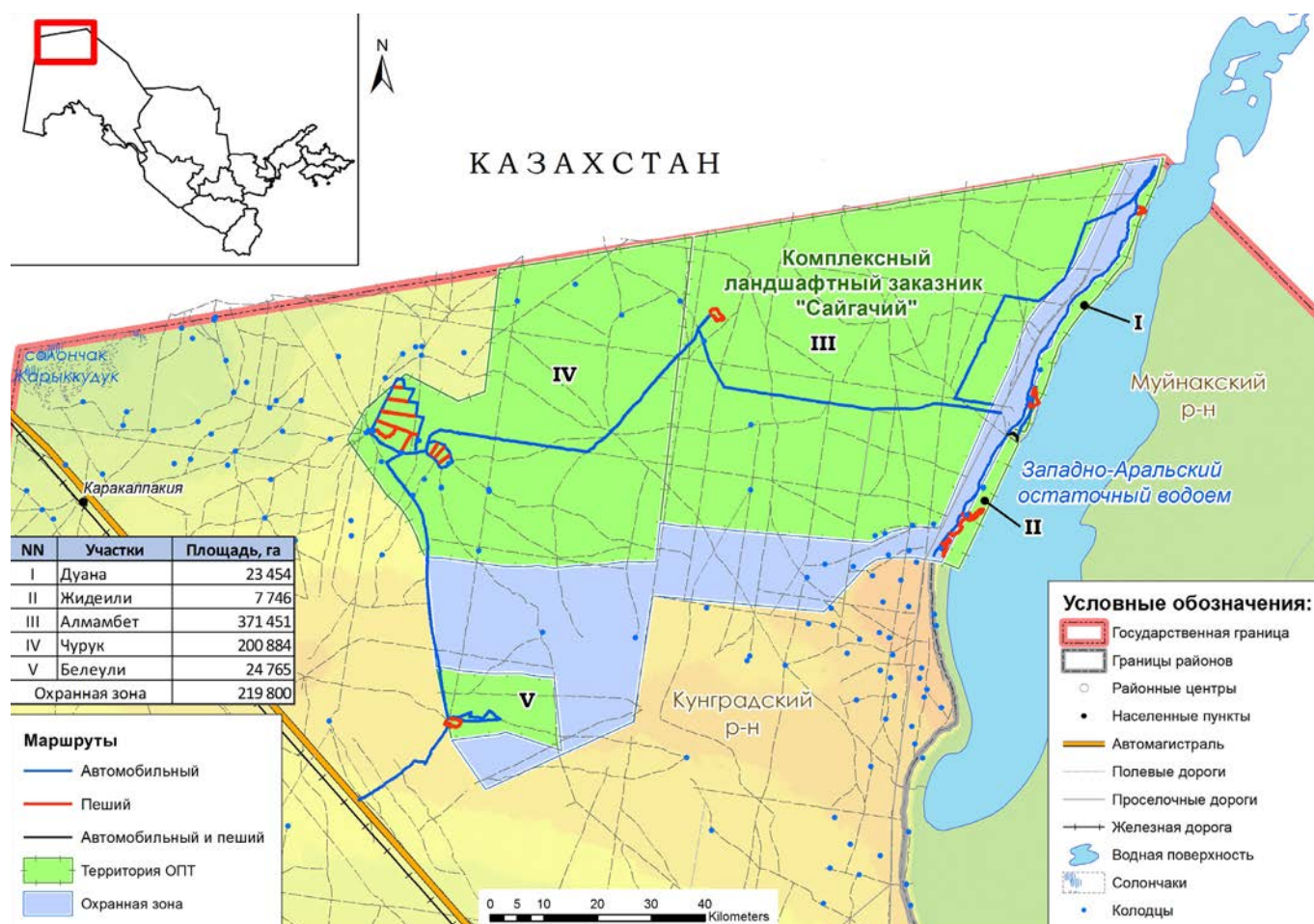


Fig. 1. Map of the Saigachy Reserve (locations, sections and zones)

Table of parts of the reserve and their area in hectares: I – Duana, II – Zhideili, III – Almambet, IV – Churuk, V – Beleuli, Buffer zone

Blue lines: Road, Red lines: Walking routes, Black lines: Joint vehicle and walking routes, Green polygon: Territory of the Saigachy Landscape reserve, Blue polygon: Buffer zone

Red line: State border, Grey line: District border, Grey dot: District centre, Black dot: Village, Orange line: Main road, Thin grey lines: Tracks, Cross-dashed line: Railway, Blue: Waterbody (remains of Aral sea), Shading: Saldpan, Blue dots: Wells

Articles (cont.)



Saigas in the Almabet zone of the Saigachy reserve. Photo by Saigachy/CADI/Maksim Mitropolsky

The goal of the project was to design a monitoring concept and put it into practice with the help of the Protected Area staff. The project included:

- identification of sites with higher levels of biodiversity within Saigachy reserve, based on a literature review, examination of satellite maps and study of the results of field research carried out in April 2019;
- specifying permanent monitoring routes;
- installing camera traps;
- collecting samples of flora (higher vascular plants) and fauna (birds and mammals);
- specifying the technical support level required and identifying the ranger team's needs;
- identifying the rangers' level of knowledge in regional biodiversity and their skills in operating the monitoring and survey equipment available at Saigachy (camera traps, range finders, GPS and other);
- preparing a brief identification guide to typical reptile, bird and mammal species and developing methodological guidance for the monitoring of fauna and flora.

In November 2019 the project team held a training course in biodiversity monitoring for employees of the Saigachy Reserve and Kungrad State Forestry and Hunting Enterprise, where the trainees learnt

about the legal basis for monitoring activities, census and survey methods, use of GPS and installation of camera traps. During the practical part of the training the project team and the reserve's rangers installed ten camera traps in the Saigachy reserve's main landscapes (in the Duana, Zhideili, Almambet, Churuk and Beleuli sections of the reserve), in locations where it was possible to record the rarest representatives of the local fauna. The participants also carried out vehicle and point surveys of birds and mammals.

Between November 2019 and January 2020, the camera traps recorded nine mammal species, four of which – the Brandt's Hedgehog *Hemiechinus hypomelas*, Turkmen Caracal *Caracal caracal michaelis*, Corsac Fox *Vulpes corsac* and Saiga *Saiga tatarica* – are listed in the Red Data Book of Uzbekistan (2019).

The most important achievement of this project was a recording of 20-25 saiga individuals in the Almambet section of the reserve. A camera trap captured the animals regularly between 2nd and 4th January 2020 (95 photos in total). The herd included at least two mature and four juvenile males; the rest were females. According to the rangers, in total there were 35 saigas in this section.

In addition, the reserve's rangers reported about one male and three females in the Beleuli section in March 2018. In the winter of that year they observed a group of 10–15 individuals along the Aral Sea shore. On 21st December 2018, 6 saigas were recorded in the Almambet section, including one adult male. Some saiga individuals are known to stay throughout the

Articles (cont.)

year in the Duana section, in an area between the escarpment (chink) and the Aral shore. Abdusalom Normatov also reported observing about 100 individuals on the former Vozrozhdeniye (Resurrection) Island on 18th February 2020. In addition, several records of groups of 15–20 saigas were made during the winter of 2019–2020 in the forest plantations on the dry bottom of the Aral Sea.

The Ustyurt saiga population is known to be impacted by the border fence built by the Kazakh government in 2012 and by the segment of the Kazakh Railway between Beyneu and Shalkar which was opened in 2017. Both block their traditional migration routes. In 2016 some changes were made in the structure of the border fence; 125 openings with a total length of 150 km were cut in the fence (Olson, 2013). Individual animals use the openings, but no significant migration has been recorded in recent years (Bykova et. al., 2016). However, according to records made in the winter of 2019/2020, a small number of saigas overcame the barrier and crossed the state border to winter in Uzbekistan. This fact was confirmed by Saigachy Reserve employees, who identified saiga footprints and faeces near the openings in the border fence (oral report by A. Abdurakhmanov) and researchers from the Association for the Conservation of Biodiversity of Kazakhstan who found saiga tracks in seven locations along the barrier (see the update above). Since it is obvious that saigas are crossing these linear structures, it would be appropriate, in cooperation with the border service and ranger team, to monitor regularly the territory along



Caracal captured by camera traps in the Duana zone of the Saigachy Reserve. Photo by Saigachy/CADI/Maksim Mitropolsky, Natalia Marmazinskaya



Joint work with Saigachy rangers. Photo by Natalia Marmazinskaya

the border between Uzbekistan and Kazakhstan to learn more about the animals crossing the border, their mortality as a result, and to inspect pipelines and trenches in the area. Continued use of camera traps will help researchers to estimate the numbers of saigas crossing these linear structures and migrating into the territory of Uzbekistan. The reports of saigas in the Aralkum desert (Aral sea bed) suggest the need to start regular monitoring here as well.

To conclude, the reliable recent data on the presence of migrating saigas, together with records of a number of other rare mammal species, are another confirmation of the importance of the Saigachy Reserve for the conservation of regional biodiversity. The monitoring system developed for the Saigachy reserve in this project will be put forward for consideration and approval to the State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection and Academy of Sciences of the Republic of Uzbekistan.

The CADI project (<https://cadi.uni-greifswald.de/en/home>) is implemented jointly by the University of Greifswald, Michael Succow Foundation (Greifswald city) and Food and Agriculture Organisation of the United Nations (FAO) as part of the International Climate Initiative (IKI), with the support of the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU) provided on the basis of a resolution by the German Bundestag.

Articles (cont.)

Approaches to studying sensory laterality in saigas: experiments in the wild

Yekaterina Berezina, Andrey Gilev and Karina Karenina Saint Petersburg State University, Department of Vertebrate Zoology

Corresponding author: *Karina Karenina* angil_1305@mail.ru

Sensory laterality happens when paired sensory organs work asymmetrically. This is caused by stimuli on the right and left sides of the body being received differently, called functional interhemispheric asymmetry (Bragina, Dobrokhotova, 1988). The asymmetrical functioning of sensory systems affects some important aspects of animal behaviour, such as their ability to identify food, detect a source of danger and react accordingly, and their success in competitive and cooperative intraspecific interactions (Vallortigara, Rogers, 2020). It is possible to study sensory laterality in wild animals using non-invasive methods such as watching them as they respond to various stimuli, for example, how they use the vision field of one eye to examine an unfamiliar object.

An object in an animal's environment which it has not come across before may be a threat, so studying lateralised behaviour in examining an object like this makes it possible to estimate the role of the different cerebral hemispheres in the processing of information about new potentially dangerous stimuli. This has been studied in wild striped dolphins, which were offered a series of objects more or less familiar to the animals, such as a model of a fish, a ball and a toy. The work showed that dolphins preferred using their

right eye to study an unknown object (Siniscalchi et al., 2012). However, sensory laterality has never been studied in terrestrial mammals dealing with unfamiliar objects in their environment, and there has been little research into laterality in saigas. There are a few works discussing the saiga's asymmetric perception of social information. In mother-baby relations, babies demonstrated a preference to use their left eye vision field to watch their mothers (Karenina et al., 2017). Research on adult saiga individuals in herds showed that males mostly used their left eye to chase a rival and right one to chase a female (Giljov et al., 2019).

Saiga antelopes are good subjects for research into the asymmetry of sensory organs. The animal has eyes on the side of their head so their vision fields overlap only in a small area, which allows the saiga to have a panoramic monocular vision. All vertebrates have their optic nerves intersecting, with information from one monocular vision field conveyed to the opposite hemisphere. Thus, the information received with the left eye is first processed in the right hemisphere and vice versa. In addition, animals with lateral eyes often examine objects with one eye, which also makes it easier to estimate the asymmetrical perception of a stimulus.

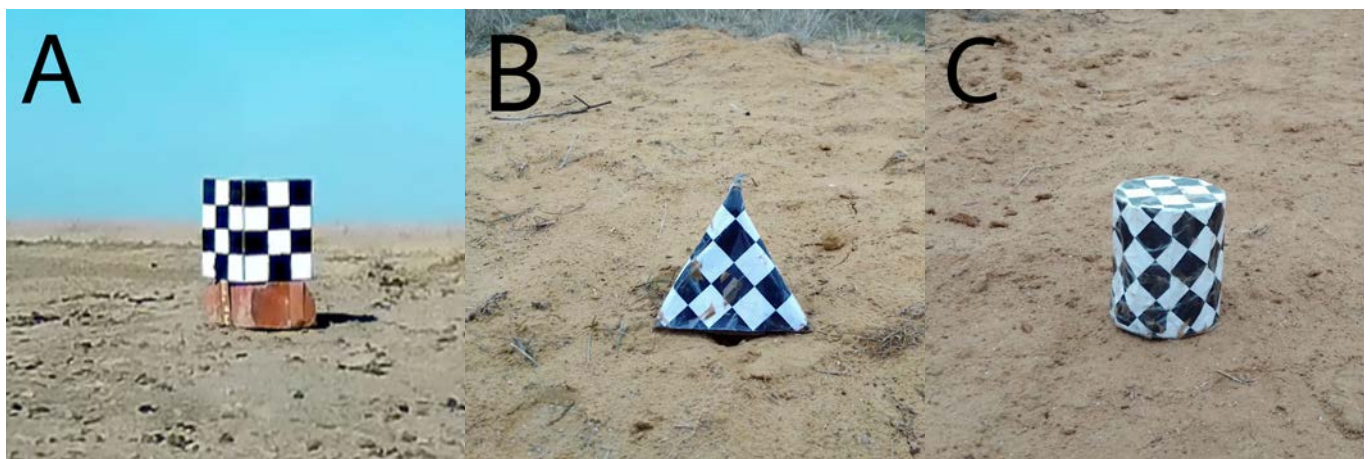


Fig. 1. Photos of the objects. A – cube, B – tetrahedron, C – cylinder

Articles (cont.)

Olfactory laterality is a less studied area than visual laterality, because it is often difficult to identify a nostril an animal uses to respond to a stimulus. Here, again, saiga proves a very appropriate subject, as it is easy to see which nostril it uses to sniff an object by the contraction of the respective side of its proboscis-like nose (Fourie, 2019). Importantly, olfactory laterality should be interpreted differently from visual laterality because olfactory tracts do not intersect and information from one nostril arrives to the hemisphere on the same side of the body.

As part of the research we carried out between 12 and 30 September 2019 we elaborated and successfully tested a method to estimate sensory laterality in saiga based on previous studies, which included field experiments in the wild (see Fourie, 2019). To watch how animals examine unfamiliar objects in often-frequented locations (we chose a pool around an artesian well in the Stepnoy Reserve, Astrakhan Province) we used an object of an unusual shape and colour we thought would be very unfamiliar to the animals. We used geometric figures – a cube, cylinder and tetrahedron covered in paper with a chequered pattern (fig. 1). Each figure was provided with a camera activated for 30 seconds by a motion detector. Every day the objects were moved about

1m away from their previous location in an attempt to prevent the saigas from becoming accustomed to them and to prevent the specific placement of the objects from affecting the resulting data. One of the cameras was placed near the well away from any of the objects to obtain the animals' reaction to the camera itself.

We analysed only those shots where the saiga used their field of vision asymmetrically, that is, when they used only one of their eyes to examine an object. Situations when the animals used both eyes were excluded from the analysis. Furthermore, we took into account only individuals that reacted the object in any way – that is, those which stopped or approached it (fig. 2). We also noted actions that followed the monocular examination of the object – approaching the object, avoiding it or just moving on calmly as before. In addition, we analysed any binocular examination of the object that followed the monocular examination, including its duration. We analysed olfactory laterality in the same way. We noted which nostril the saiga used to sniff at an object and recorded its subsequent actions – approaching, avoiding or continuing to move without any special response to the object.

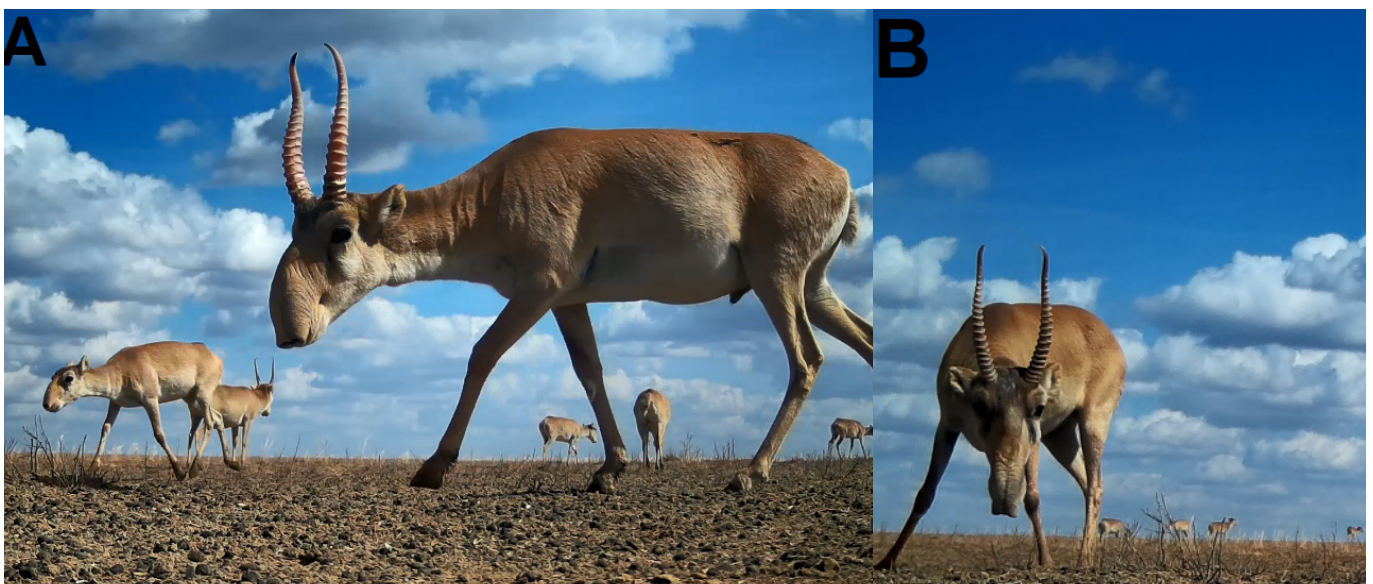


Fig. 2. Saiga examining an object. A – monocular examination, B – binocular examination

Articles (cont.)

The method was successfully used to obtain data on saiga's visual and olfactory laterality. The number of individuals approaching the objects varied daily between 6 and 955. The analysis of visual preferences showed that saiga mostly used their right eye to examine an unfamiliar cylindrical object (monocular examination $n = 439$; binominal test $z = 5.15$, $P < 0.001$). This indicates that the right hemisphere plays a leading role in processing visual information about a stimulus of this kind. Therefore, our method proved quite efficient.

Alongside the obvious dependence of the number of individuals approaching the object on the number of animals coming to drink water during the day, we established that the location the object was placed in also impacted greatly on the frequency of reaction. So, on the same day only 3 individuals might approach the object in the least-frequented location and 680 individuals in the most-frequented one. In addition, the frequency of visits varied from day to day and did not depend on the shape of the unfamiliar object. Thus, in order to use this approach successfully to study laterality it is important to place objects in different locations. As a preliminary measure it is best to identify locations frequented by saiga using camera traps or video cameras before positioning the objects.

Research into the saiga's reaction to unfamiliar objects will make it possible to specify if this species has any preferences as to which senses to use to perceive new stimuli in the wild and, therefore, to suggest the leading role of the contralateral hemisphere in analysing sensory information on such stimuli. The study of reactions following the asymmetrical sniffing or eying of an object may help establish the correlation between the hemisphere used and the reaction to an unfamiliar stimulus, which may testify to the specialisation of a hemisphere in processing certain types of reaction.



Fig. 3. Saiga sniffing at an object

The work was done with the support of the Russian Science Foundation – RSF (grant No. 19-14-00119). The authors express their thanks to the staff of the Stepnoi Reserve and personally its director Vladimir Kalmykov for their extensive support of this research and their priceless contribution to the conservation of saiga.

Articles (cont.)

On the genetic potential for resistance of the saiga population in the North-West pre-Caspian area to helminths and other parasites

Nadezda Kashinina, Marina Kholodova, Pavel Sorokin, Karina Tarasyan, Anna Lushchekina

Severtsov Institute of Ecology and Evolution, Moscow

Corresponding author: [Nadezda Kashinina nadezda.kashinina@yandex.ru](mailto:nadezda.kashinina@yandex.ru)

To assess the potential viability of species, populations, and individuals, it is essential to research the diversity of functionally important genes and gene complexes responsible for their adaptive abilities. The genes of the major histocompatibility complex (MHC) occupy a special place, as they play a key role in the formation of an immune response in vertebrates to various infections and parasites. Most often researchers focus on MHC Class II genes, which are largely responsible for resistance to bacteria and parasites. In ungulates the most informative gene from this class is DRB3, which has high variability. Studying the diversity of the alleles of this gene is particularly important for populations and species in a state of ongoing depression. This applies to the saiga (*Saiga tatarica*), which is included in the IUCN Red List, and particularly to the north-west pre-Caspian population, which has declined to a critical level over the last 30 years due to direct and indirect anthropogenic impacts and unfavourable climatic conditions.

The goal of our work was to study the adaptation of the immune system of this saiga population to extracellular agents causing various diseases, including parasites, based on the description of the allelic diversity of DRB3 MHC gene.

The whole-genome next-generation sequencing (NGS) method was used to describe for the first time the allele composition of the DRB3 MHC gene. We examined samples of 29 saiga individuals from the north-west pre-Caspian population collected during the current depression of the population. Ten alleles (fig. 1) and 15 genotypes of the DRB3 gene were identified and described. We recorded a high level of heterozygosity – about 0.90 (with a maximum value equal to 1.00). The translation of DNA nucleotide sequences into amino acid sequences showed that the level of allelic diversity and heterozygosity also remains high in the protein products of DRB3 MHC gene. These results were quite unexpected, given the relatively long period over which the population had been at a low level.

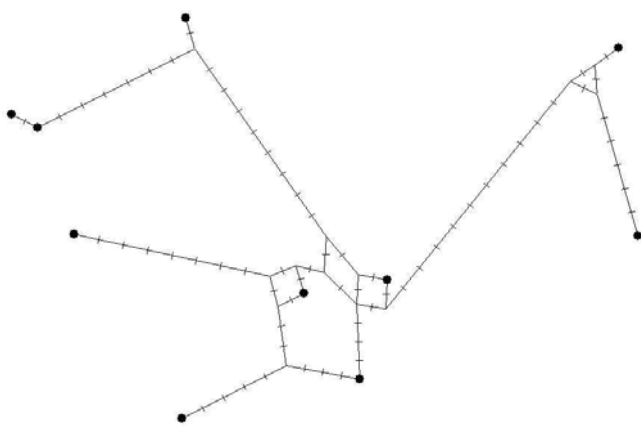


Fig.1. Median network of the alleles of DRB3 MHC gene in the north-west pre-Caspian saiga population

We suppose that the high diversity of alleles in DRB3 MHC gene in saigas may be associated, first of all, with the fact that a wide range of disease-causing agents have affected saiga populations throughout the species' history, including bacteria such as *Pasteurella multocida* (causing pasteurellosis), as well as approximately 55 endoparasite species, including 10 protozoans, 32 nematodes and 7 cestodes (Bekenov *et. al.*, 1998). In addition, there is a hypothesis that the high diversity of this gene originates from the ancient ancestral saiga population, which was extremely diverse genetically. Our results correspond with the advantageous heterozygote selection hypothesis described by P. Doherty and R. Zinkernagel (1975), according to which the more combinations of gene

Articles (cont.)

alleles there are in the organism, the more difficult it is for an agent to penetrate into it, while an individual with two different alleles in each MHC molecule (that is, a heterozygous one) is more resistant to infection than one with identical alleles in each of its loci.

The study thus showed a high level of variability of DRB3 MHC gene in the north-west pre-Caspian saiga population and a high genetic potential for resistance to various bacterial and parasitic diseases, including helminthiases, which may also apply to saigas from other populations.



Saigas at an artesian well. Stepnoi Reserve. Photo by Nadezda Kashinina

The work was carried out with the financial support of the Russian Foundation for Basic Research (RFBR) (grant No. 17-04-01351) and the Presidium of the Russian Academy of Sciences, Program No. 41 'Biodiversity of natural systems and biological resources of Russia'.

The genetic analysis was carried out at the molecular diagnostic laboratory, Institute of Ecology and Evolution, Academy of Sciences of the Russian Federation, in the Instrumental Methods in Ecology centre.



Saigas at the sunset in "Chernye zemli" Biosphere Reserve, Kalmykia. Photo by Alexandr Lipkovich

New publications

Karimova, T.Y., Lushchekina, A.A., Neronov, V.M., Pyurvenova, Yu., Arylov, Yu. N.

Biological Features of the Northwest Pre-Caspian Saiga Population at Different Sizes. *Arid Ecosystems* 10, 298–304 (2020) <https://doi.org/10.1134/S2079096120040113>

The abundance of the saiga antelope (*Saiga tatarica tatarica* L., 1766) in the Northwest Pre-Caspian region has remained at an extremely low level over the past 20 years. Comparison of some biological parameters of the population between periods with population sizes reveal a number of features of low abundance periods. Along with a decrease in the number of saigas (from 800,000 in 1958 to 4,500 in 2016), its habitat area also decreased (from 60,000–70,000 to 2000–3000 km²), and a significant proportion of the population transitioned to a sedentary lifestyle in the protected areas of the Chernye Zemli ecoregion. A long-term deficiency of sexually mature males in the population (less than 10%) led to a decrease in growth rate and, consequently, to a decrease in numbers. At the same time, the overall fecundity of females

decreased (from 1.27 ± 0.25 calves in years of high abundance to 0.92 ± 0.39 recently) due to an increase in barrenness in different age groups caused by the lack of males in the population. The newborn sex ratio is male-biased (51.9 and 48.1%, respectively). The increased weight of newborn saiga calves (100g increase on average for both males and females) and their decreased mortality in the first days after birth (under favorable weather conditions) indirectly indicate the normal course of embryogenesis and a sufficient quantity and quality of feed. An increase in the proportion of sexually mature males will lead to an increase in the population size, as the reproductive functions of the population remained unchanged during the period of its depression.

Ding, X., Zheng, H., Jin, K. and Liu, X.

Duplex PCR-based molecular sex determination of *Saiga tatarica*. *Conservation Science and Practice*, 12(1), 21-23. 2020

A simple and reliable molecular assay to identify sex would be valuable for the management and conservation of critically endangered species such as the antelope *Saiga tatarica*. To this end, we developed a duplex PCR system to co-amplify the SRY-related HMG box and the ZFX/ZFY genes in a single reaction. The amplification of HMG-box produced a 162 bp amplicon for the male sagas, and none for the

female. In contrast, amplification of ZFX/ZFY genes resulted in 739 and 854 bp amplicons for the male and a single 854 bp amplicon for the female. Thus, the duplex PCR assay produced three amplicons for male sagas and one for the female. Blind testing further demonstrated the reliability of this assay system, which could also be used for the sex determination of other herbivores, including buffalo and sheep.

Doughty, H., Wright, J., Veríssimo, D., Lee, J.S., Oliver, K. and Milner Gulland, E.J.

Strategic advertising of online news articles as an intervention to influence wildlife product consumers. *Conservation Science and Practice*, 2(10), 272. 2020

A simple and reliable molecular assay to identify sex would be valuable for the management and conservation of critically endangered species such as the antelope *Saiga tatarica*. To this end, we developed a duplex PCR system to co-amplify the SRY-related HMG box and the ZFX/ZFY genes in a single reaction. The amplification of HMG-box produced a 162 bp amplicon for the male sagas, and none for the

female. In contrast, amplification of ZFX/ZFY genes resulted in 739 and 854 bp amplicons for the male and a single 854 bp amplicon for the female. Thus, the duplex PCR assay produced three amplicons for male sagas and one for the female. Blind testing further demonstrated the reliability of this assay system, which could also be used for the sex determination of other herbivores, including buffalo and sheep.

Saiga heroes

We are happy to introduce our latest Saiga hero – Enkhtuvshin (Enkhee) Shiilegdamba. Enkhee is a wildlife veterinarian who graduated from the School of Veterinary Medicine, University of California, Davis (UCD). She studied foot and mouth disease outbreaks and epidemiology in Mongolia for her graduate research thesis. Following graduation, she worked at the Western Institute for Food Safety and Security at the University of California in Davis as a post-doctoral researcher on food-borne illnesses and outbreak investigations. Currently, she is the Director of the WCS-Mongolia Country Program. As is traditional, we would like to ask Enkhee some questions.



Editor: When did you first take an interest in the saiga?

E.SH.: The saiga is one of the species affected by livestock infectious diseases, thus I became interested in saigas during my graduate studies at UCD starting in 2002, which were focused on infectious diseases transmissible between livestock and wildlife.

Editor: When did you start your activities in saiga research and conservation?

E.SH.: My first study of livestock infectious disease testing in saiga was implemented in 2010 in collaboration with Dr. Edward Dubovi, of the virology laboratory at Cornell University.

Editor: Can you tell us any interesting story about the saiga?

E.SH.: The saiga is one of the fastest animals in Mongolia with a running speed of up to 80 km/h even though it has a rather small body size. The

nose structure is also quite unique and provides an opportunity to filter out dust and warm up cold air, enabling the saiga to stay low to the ground and speed up even in freezing-cold weather.

Editor: What are the main problems in your work?

E.SH.: The Mongolian saiga population is quite low – currently approximately 5,000 individuals. The species was impacted by the viral disease Peste des Petits Ruminants (PPR) with clear clinical symptoms leading to mass mortality of up to 60% of the entire population within 2-3 months. Although PPR is widely spread in Africa, Middle East and Asia, major mortality has only been detected in Mongolian saiga. Thus, the Mongolian saiga is thought to have a less resilient immune system than other wildlife species in Africa, the Middle East and Asia. Because the saiga habitat continues to shrink in Mongolia and the implications of climate change are becoming more prevalent, palatable plant species are less and less available now within the saiga range. This leads to increasing competition for food resources between livestock and saiga. Therefore, saiga conservation is a critical issue in Mongolia. However, it is important to understand that the issue can only be addressed in conjunction with improvements to the agricultural and veterinary sectors. These require major support on a national and/or international level.

Editor: How can be the obstacles to your work be removed?

E.SH.: WCS is working closely with national and international wildlife health organizations to highlight the importance of wildlife health for species conservation. With national or international support,

improvements can be made to the health of livestock and natural resource management can be carried out that provides the opportunity for saigas to persist and survive in their habitat.

Editor: What is the best thing about your work?

E.SH.: I love working with endangered species such as saigas and being able to visit their remote habitats, while also having a chance to make a difference to the future of the species and for conservation in general – so that our children and the next generations can co-exist with, and appreciate, the unique diversity of wildlife.

Editor: What are the prospects for saiga conservation? What needs to be done first to help this species survive?

E.SH.: The first priority is to increase and secure saiga habitats in Mongolia by applying better protection measures. Following this, we need to implement preventative management actions focused on livestock disease. These measures will not just be beneficial for livestock, but they will also reduce disease transmission to wildlife.

Editor: You have worked in nature conservation for more than a decade. What has changed over this time and what are current trends in this sphere?

E.SH.: A decade ago environmental and veterinary national agencies were not very aware of, or concerned with, the issue of wildlife disease and its impact on species conservation. Thanks to WCS's efforts in Mongolia, the national government now recognizes the importance of this issue and is willing to support the necessary activities. Nevertheless, Mongolia is a low-income country with a developing economy, which makes it impossible to support all the system-wide changes which are necessary.

Editor: When did you first take an interest in the saiga?

E.SH.: The saiga is one of the species affected by

livestock infectious diseases, thus I became interested in saigas during my graduate studies at UCD starting in 2002, which were focused on infectious diseases transmissible between livestock and wildlife.

Editor: When did you start your activities in saiga research and conservation?

E.SH.: My first study of livestock infectious disease testing in saiga was implemented in 2010 in collaboration with Dr. Edward Dubovi, of the virology laboratory at Cornell University.

Editor: Can you tell us any interesting story about the saiga?

E.SH.: The saiga is one of the fastest animals in Mongolia with a running speed of up to 80 km/h even though it has a rather small body size. The nose structure is also quite unique and provides an opportunity to filter out dust and warm up cold air, enabling the saiga to stay low to the ground and speed up even in freezing-cold weather.

Editor: What are the main problems in your work?

E.SH.: The Mongolian saiga population is quite low – currently approximately 5,000 individuals. The species was impacted by the viral disease Peste des Petits Ruminants (PPR) with clear clinical symptoms leading to mass mortality of up to 60% of the entire population within 2-3 months. Although PPR is widely spread in Africa, Middle East and Asia, major mortality has only been detected in Mongolian saiga. Thus, the Mongolian saiga is thought to have a less resilient immune system than other wildlife species in Africa, the Middle East and Asia. Because the saiga habitat continues to shrink in Mongolia and the implications of climate change are becoming more prevalent, palatable plant species are less and less available now within the saiga range. This leads to increasing competition for food resources between livestock and saiga. Therefore, saiga conservation is a critical issue in Mongolia. However, it is important to understand that the issue can only be addressed



Enkhtuvshin collecting a sample for PPR research with Prof Richard Kock and colleagues at Khovd Province Veterinary Laboratory. Photo by WCS Mongolia

in conjunction with improvements to the agricultural and veterinary sectors. These require major support on a national and/or international level.

Editor: How can be the obstacles to your work be removed?

E.SH.: WCS is working closely with national and international wildlife health organizations to highlight the importance of wildlife health for species conservation. With national or international support, improvements can be made to the health of livestock and natural resource management can be carried out that provides the opportunity for saigas to persist and survive in their habitat.

Editor: What is the best thing about your work?

E.SH.: I love working with endangered species such as saigas and being able to visit their remote habitats, while also having a chance to make a difference to the future of the species and for conservation in general – so that our children and the next generations can co-exist with, and appreciate, the unique diversity of wildlife.

Editor: What are the prospects for saiga conservation? What needs to be done first to help this species survive?

E.SH.: The first priority is to increase and secure saiga habitats in Mongolia by applying better protection measures. Following this, we need to implement preventative management actions focused on livestock disease. These measures will not just be beneficial for livestock, but they will also reduce disease transmission to wildlife.

Editor: You have worked in nature conservation for more than a decade. What has changed over this time and what are current trends in this sphere?

E.SH.: A decade ago environmental and veterinary national agencies were not very aware of, or concerned with, the issue of wildlife disease and its impact on species conservation. Thanks to WCS's efforts in Mongolia, the national government now recognizes the importance of this issue and is willing to support the necessary activities. Nevertheless, Mongolia is a low-income country with a developing economy, which makes it impossible to support all the system-wide changes which are necessary.

In memoriam

The year of 2020 turned out not to be easy for all of humankind. The outbreak of the coronavirus pandemic led to seemingly impossible outcomes – many enterprises stopped their activities, flights got cancelled all over the world, conferences, workshops and meetings have been postponed or switched to an on-line format. Additionally, our losses became more evident, even though we found out about them with some delay. On July 23, 2020, Amankul B. Bekenov, Doctor of Biological Sciences, Professor, Honorary Member of the Saiga Conservation Alliance, who was part of SCA from the very beginning, passed away after a long illness at the age of 81.



Amankul Bekenov's work is strongly associated with the Institute of Zoology of the Academy of Sciences (later the Ministry of Education and Science) of the Republic of Kazakhstan, where he worked for more than 50 years, going from graduate student to Director of the Institute. In 1977-2013 he led the Laboratory of Theriology, whose research was focused on the problems of ecology, protection and rational use of mammals. This work was successfully completed under his leadership resulting in the fundamental summary "Mammals of Kazakhstan" (in 4 volumes, 9 books, 1969-1985), which was initiated by Arcady Sludsky. For this major work, A. Bekenov and other authors were awarded the First Prize of the Moscow

Society of Nature Experts in the category "best works in the field of natural science".

The main area of Professor Bekenov's scientific research was desert mammal fauna. The subjects of his research included ground squirrels, jerboas, gerbils, voles, and some species of predators and ungulates; saigas, gazelles, kulan, Ustyurt mountain sheep and more. In total, he published more than 300 scientific papers on mammals, including 6 monographs, as well as 13 popular science books and brochures in the Russian and Kazakh languages.

Amankul Bekenov is one of the co-authors of the monograph "Saiga: phylogeny, taxonomy, ecology, protection, use" (Moscow, 1998), and author and co-author of many articles on saigas published in the Kazakh and foreign literature. He was a participant in many domestic and international zoological conferences, congresses and symposia, and an organiser of a number of meetings related to saiga research and conservation as part of international projects funded by INTAS, WWF, Darwin Initiative and others. He was also one of the founders of the Saiga Conservation Alliance and a member of its Executive Committee. In any activity, A. Bekenov was distinguished by his high efficiency, purposefulness, and sense of responsibility.

The merits of Professor Bekenov in the field of research into, and conservation of, the animal kingdom was recognised by many certificates from the Presidium of the Academy of Sciences and the Ministry of Education and Science. He was awarded the State Prize of the Republic of Kazakhstan in the field of science and technology as well as the government's order of merit "Algys Khat".

In memoriam (cont.)

Amankul Bekenov was a very friendly person and enjoyed the respect and love of his colleagues, friends and students. His passing is a great loss for theriological science and for all of us. His memory will remain for a long time with everyone who worked with and communicated with him.

Yuri Grachev,
SCA Steering Committee member, Kazakhstan

I am very sad to hear of the death of Professor Amankul Bekenov. He was a hugely important figure in biological studies of the saiga and other species, and he was also a kind and generous person. As the Director of the Institute of Zoology, he steered it through some incredibly difficult times in the transition from the Soviet period to independence. He was very supportive of our joint research programmes during these times, and did everything he could to facilitate our various projects on saiga ecology. I feel privileged

to have known and interacted with him, and thankful for all his support of our work over the years.

E.J. Milner-Gulland,
SCA Chair

Amankul B. Bekenov will forever remain in my memory as a worthy example of a scientist, a prominent saiga specialist, a wonderful colleague, an open, kind, and hospitable person.

Yuri Arylov,
SCA Steering Committee member, Russia

Amankul Bekenov participated in the creation of the Saiga Conservation Alliance, becoming one of its founders, generously sharing his knowledge, infecting the “saiga community” with new ideas, supporting and strengthening international cooperation in the study and conservation of this unique and beloved species. In recognition of his long and tireless work



Prof. Bekenov among the participants of the 1st Saiga Conservation Alliance Meeting in Tashkent, 2007. Photo by Alexander Esipov

In memoriam (cont.)

in saiga conservation, in 2010 at the annual meeting of the Saiga Conservation Alliance held in Ulan Bator, Mongolia, Professor Bekenov. was elected its first and only Honorary Member.

Over the years, I have been lucky to use those wonderful publications full of important information that were written by Amankul Bekenov, his associates, students, or published under his leadership. But our first meeting happened only in the early 2000s, when, under the leadership of Professor E.J. Milner-Gulland, a team of specialists launched an international project covering the saiga range in Kazakhstan, Russia and Uzbekistan. After that, I was repeatedly lucky to meet this bright and wise man, listen to his interesting and exciting stories, and enjoy his hospitality.

Despite the fact that Amankul Bekenov retired from active work for health reasons several years ago, co-operation within the Alliance continued and his ideas made a significant contribution to saiga conservation.

I am proud that for many years I had the good fortune to be a colleague and friend of Professor Bekenov, and grieve over his passing. Expressing my condolences and words of support to the family of Amankul Bekenovich, I want to say that this loss is great both for the global zoological community, in general, and for the “saiga community” in particular.

*Anna Lushkina,
SCA Trustee, Russia*

With great sadness, we learned about the passing away of Professor Amankul Bekenov, an outstanding zoologist, an expert on the nature of Kazakhstan and Central Asia, the author of many scientific works, and at the same time a very kind and open person. We were brought together by fate many years ago in our joint work on an international project to assess the risk of extinction of Central Asian animals, and after that, for a long time, we cooperated in the activities of the Saiga Conservation Alliance, where Kazakhstan has always been at the forefront. Professor Bekenov willingly shared his knowledge of saiga biology, migratory behavior, and the specifics of species monitoring. Until very recently, Prof. Bekenov remained as a co-editor of Saiga News and continued this work despite illness and poor health. Now it is difficult to imagine who can replace him in this role. I remember that in life Amankul Bekenov was a very cheerful and hospitable person, open to communication. We always warmly remember our traditional disputes about where ‘pilaf’ and ‘beshbarmak’ are better prepared – in Uzbekistan or Kazakhstan. We remember his cheerful smile.... We will miss Amankul Bekenov very much, but the memory of this outstanding personality will always remain with us.

*Elena Bykova and Alexander Esipov,
SCA Steering Committee members, Uzbekistan*

Acknowledgements

We would like to express our deep gratitude to all the people whose donations of money and time support the work of the Saiga Conservation Alliance. We are particularly grateful to the Wildlife Conservation Network, which supported this issue of the newsletter.



SAIGA CONSERVATION ALLIANCE

Saiga Conservation Alliance
www.saiga-conservation.com

Saiga Resource Centre:
www.saigaresourcecentre.com

Email: mail@saiga-conservation.com

©Saiga Conservation Alliance 2020 /
Registered charity England and Wales

© Andrey Gilyov
& Karina Karenina