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SAIGA NEWS

Saiga males at a waterhole. Photo by Stepnoi reserve

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All contributions are welcome, in any of our six languages. Please send them to ebykova67@mail.ru or to one of the Editors. We publish twice a year. Guidelines for authors are available in English and Russian at 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 (ebykova67@mail.ru), if you have any questions or concerns.

E. I. ILYASHENKO[1*], V. YU. ILYASHENKO[1]

Saiga antelopes in the trans-Volga parts of Saratov and Volgograd oblasts in the summer of 2025

The Ural saiga population, inhabiting West Kazakhstan province, has been showing steady growth in recent years. As of May 2025, it reached a size of about 2.3 million individuals, which was one of the reasons for the animals' mass northward migration to areas bordering the Russian Federation.

According to official data from the Ministry of Natural Resources of Saratov province, in that period Saratov province alone was visited by about 1 million saigas, which damaged agricultural lands and caused concern to local farmers. These ungulates 'invaded' Alexandrovo-Gaysky, Pitersky, Atkarsky, Novouzensky, Dergachyovsky and partially Krasnokutsky districts of Saratov province, where they damaged a total of 18,500 hectares of farmlands on 93 farms. To tackle the situation, the Russian Ministry of Natural Resources and Environment suggested that the Ural and Betpakdala saiga populations should be excluded from the Red Data Book of the Russian Federation (2020) in order that their numbers could be regulated. Meanwhile, according to the officials, the North-Western pre-Caspian population, which lives year-round in the Republic of Kalmykia and Astrakhan province in almost complete isolation, should retain its special conservation status.

A resolution taken at a meeting of experts from the Ministry of Natural Resources of the Russian Federation and supported at the regional level was used as a basis for the draft Decree 'On amendments to the list of wildlife in the Red Data Book of the Russian Federation'. The final resolution, in accordance with the established procedure, must be made upon an expert opinion by the Academy of Sciences and a recommendation by the Interdepartmental Commission on the Red Data Book. After that, appropriate amendments will be made to the federal law on hunting and to the regional Red Data Books. A public discussion of this draft decree produced various opinions.

While implementing a project in April and June 2025 to preserve populations of the demoiselle crane Anthropoides virgo in the trans-Volga parts of Saratov and Volgograd oblasts, supported by the Priroda i Lyudi (Nature and People) Foundation, we recorded encounters with the saiga. Most of the encounters were in Alexandrovo-Gaysky district of Saratov oblast in an area that, like a promontory, juts out into western Kazakhstan. On 25th and 26th April, on a 360-kilometre transect we came across single males, small mixed groups of 2 to 15–20 individuals, and herds of 100 to 5,000-6,000 animals. In a series of interviews with local residents, one of the farmers showed us a place where he said he had seen a herd of about a million saiga antelopes (between Tugasy and Novy Pendeyev farms). However, when we arrived at the location, we found a herd of only 15,000–20,000 individuals (Figure 1). The herd was followed by about 15 steppe eagles Aquila nipalensis and two white-tailed eagles Haliaeetus albicilla. These birds are called 'shepherds', and accompany the herds before and during the calving, feeding on afterbirths or newborn saiga. Small groups of saiga antelopes were cautious and did not allow us to get closer, while large herds moved without stopping across roads and through farms.

On 1st–3rd May, we encountered a single male and a group of 12 females on a 760-kilometre transect in the trans-Volga region of Volgograd oblast (near Lake Elton in Pallasovsky district) and about 40 individuals on the Kapustin Yar shooting range on the border with Astrakhan oblast (Figure 1).

On 20th June, researchers recorded saigas in Alexandrovo-Gaysky district of Saratov oblast. They did not come across large herds, but across the steppe they saw single males, females with babies, and groups of 20 to 100 individuals at a distance of 1–5 km from each other. Probably, by that time, most of the saigas had already returned to Kazakhstan. Corpses of young and adult saiga antelopes were found quite often. The males had had

their horn sheaths removed. According to local residents, most saigas died when they were crossing the Bolshoy Uzen River, which has steep banks.

On 21st June, a herd of 200–300 saiga antelopes was recorded in Staropoltavsky district of Volgograd oblast, on an agricultural field near the village of Verkhnyaya Vodyanka. The saigas did not enter the fields themselves, where the crops were already quite tall and dense, which indicates that the animals cannot cause significant damage to crops in this period. Nevertheless, areas around farms were already heavily overgrazed by horse and sheep herds.

In interviews, none of the farmers gave a clear answer to any of the questions. All of them repeated news from newspapers or television — that 'from 1 to 2 million saigas came from Kazakhstan and caused great damage to crops'. When asked which crops were damaged in the steppe and where, they answered vaguely, referring to some mythical neighbouring plots occupied by corn and sunflower. Some farmers claimed that saigas had brought many ticks with them to the area.

In conclusion it is necessary to add that no visible damage to either steppe rangelands or agricultural fields was recorded in the surveyed area. We believe that the information spread by the media about the large-scale damage is significantly exaggerated.

Nevertheless, we think it reasonable to exclude the trans-Volga (Ural and Betpak-dala) saiga populations from the Red Data Book of the Russian Federation and to lift the ban on recreational hunting. Regulating the population by hunting or with the use of corrals is possible only in Kazakhstan and only in autumn and winter. In Russia, large numbers of saigas are recorded only in spring and summer, in the calving season, when herds consist largely of pregnant females, which makes hunting at this time completely

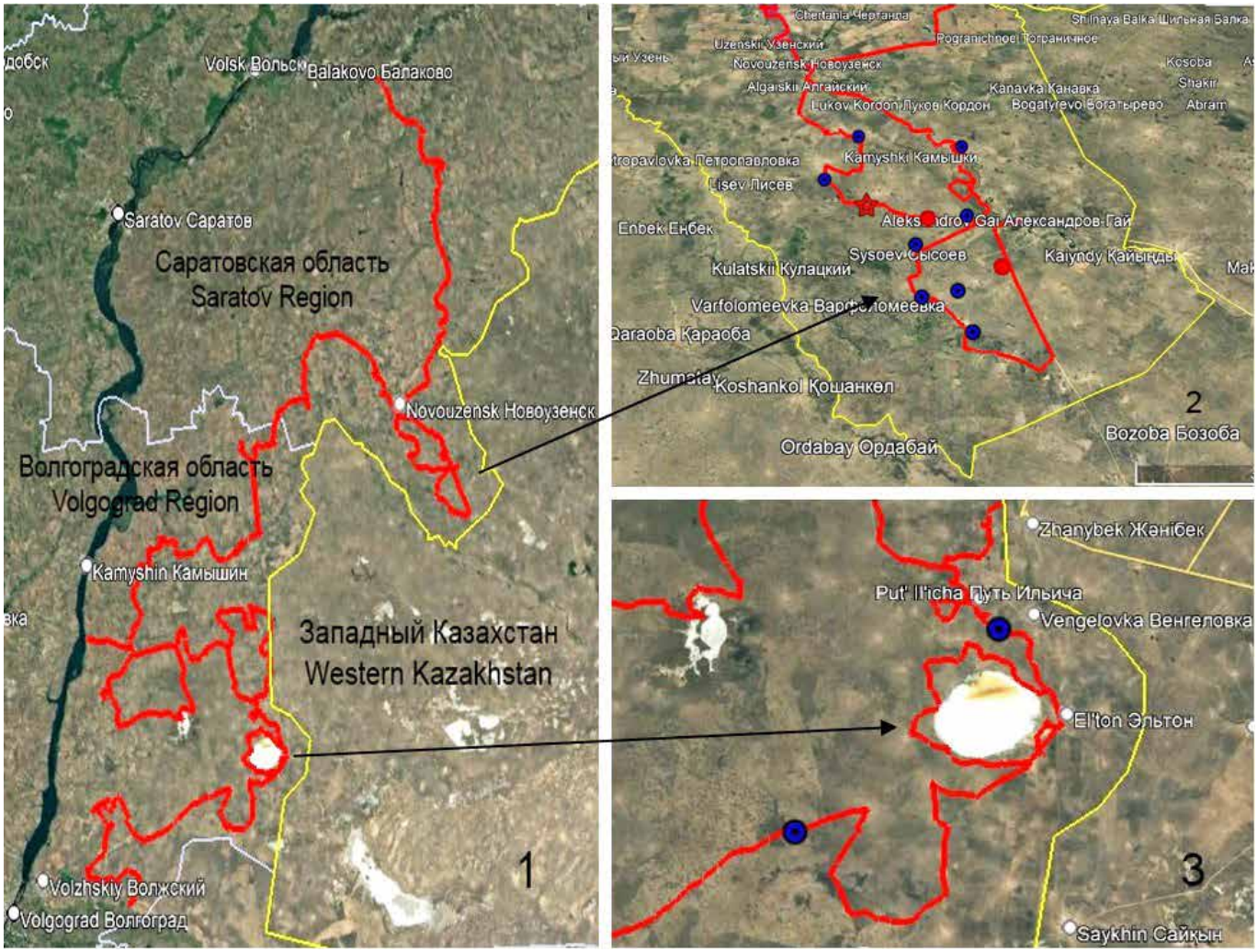

Figure 1. Route (1) and saiga records in Alexandrovo-Gaysky district of Saratov oblast (2) and in Pallasovsky district of Volgograd oblast (3) in April 2025: blue circles — up to 150 individuals, red circles — from several hundred to 5,000-6,000 individuals, red star — largest herd at the Novy Pendeyev farm, Saratov oblast

unacceptable. Moreover, it is almost impossible to preserve saiga products at high air temperatures. Saiga numbers can be effectively regulated through agreement between the Russian and Kazakh governments to install protective border structures on spring mass migration routes. Fencing certain areas in spring would make it possible to regulate the flow of antelopes coming into Russia. In autumn, the animals will return to Kazakhstan through the same passages. Another method to reduce damage to agricultural fields could be to delineate the large steppe areas which saigas use traditionally for migration, calving and raising calves for saiga conservation.

For more information see:

- almaty.tv/ru/news/obschestvo/chislennost-saigakov-v-kazakhstane-dostigla-4-1-mln-osobei
- vzsar.ru/news/2025/06/04/saratovskiy-ministr-ojidaet-chastichnogo-iskluchenija-saygakov-iz-krasnoy-knigi.html
- tass.ru/obschestvo/25209789
- sev-in.ru/node/4270
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- vzsar.ru/news/2025/06/04/nashestvie-saygakov-direktor-zapovednika-predypredil-ob-opasnyh-zabolevaniyah.html
- asi.org.ru/2025/06/25/min-prirody-predlagayut-iskluchit-dve-populyaczii-sajgaka-iz-krasnoj-knigi-rossii

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Herd of thousands of saiga antelopes on 26th April, 2025, at the Novy Pendeyev farm in Alexandrovo-Gaysky district. Photo by E. Ilyashenko

POLINA ORLINSKIY[1]

Saiga conservation integrated into the regional framework of Central Asian Mammals Initiative through 2032

At the Third Meeting of Range States to the Central Asian Mammals Initiative (CAMI) in Tashkent (24–26 June 2025), the Range States and partners reinforced their commitment to the conservation of Central Asian mammals including the Saiga Antelope (*Saiga* spp.) by endorsing the CAMI Work Programme for 2026–2032. For the first time, the Work Programme features maps highlighting priority transboundary conservation regions that require focused interventions to protect migratory mammals.

The Government of Uzbekistan hosted the Meeting in the frame of its Presidency of the 14th Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS). The Meeting was organized by the CMS Secretariat with funding from the "Central Asian Mammals and Climate Adaptation (CAMCA)" project under the International Climate Initiative (IKI) of the German Government.

Delegates from Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan, representatives of scientific institutions, NGOs and international organizations, such as UNDP, IUCN and GIZ participated in the in-person meeting. The participants discussed advances such as those in Saiga, Snow and Persian Leopard conservation efforts and remaining challenges in conserving these and other migratory species and their habitats as well as presented proposals to amend CMS Appendices.

The Meeting elected Uzbekistan as the Chair of CAMI and Turkmenistan as the Vice-Chair until 2032, who will provide political support to the implementation of the Work Programme in accordance with agreed Terms of Reference. The Range States agreed to meet regularly in an informal Implementation Committee for CAMI to review progress in the implementation of the Work Programme, discuss funding opportunities, and collaborate on project proposals. The Terms of Reference for advising experts, the CAMI Species Focal Points (SFPs) were updated at the meeting and the SFPs for Saiga Ms. EJ Milner-Gulland and Mr. Steffen Zuther confirmed their willingness to continue for the next term.

Participants of the Third Meeting of CAMI Range States in Tashkent, Uzbekistan. Photo by The Ministry of Ecology, Environmental Protection, and Climate Change of the Republic of Uzbekistan

Opening session of the Third Meeting of CAMI Range States, Tashkent, June 2025. Photo by The Ministry of Ecology, Environmental Protection, and Climate Change of the Republic of Uzbekistan

During the Meeting participants discussed and agreed on a set of measures to conserve CMS -listed mammals and their habitats and conditions to ensure sustainability of their use, where applicable, incorporating these into the CAMI Work Programme. Saiga Range States and Saiga MOU Cooperating organizations, including SCA, ACBK, FZS, NABU contributed collaboratively to align the Medium-Term International Work Programme (MTIWP) for Saiga (2025–2030) adopted in March 2025 in Astana, Kazakhstan and the new CAMI Work Programme 2026–2032.

The CAMI framework seeks to harmonize conservation efforts for 17 migratory mammal species across 14 Range States that share similar threats and habitats. The new Work Programme adopts a clear area-based approach, focusing on identified thirteen priority transboundary conservation regions, identified by Range States and experts. This approach aims to help Range States target and coordinate their conservation actions in a more strategic way. In addition, the programme includes cross-cutting activities applicable to all CAMI species — including the Saiga — which complement the more species-specific measures outlined in the Saiga Medium-Term International Work Programme (MTIWP). Since entering into force in 2006, the Saiga MOU has established a solid foundation of technical expertise and a trusted network connecting governments, scientists, NGOs, and technical support organizations such as SCA and ACBK.

CMS's CAMI builds on the achievements of Saiga MOU and other policy instruments by facilitating exchange among scientists and decision-makers working on herbivore and carnivore conservation across Central, West, and South Asia. Terrestrial species listed on CMS face similar threats — including barriers to migration, loss of habitat due to unsustainable land use, poaching, and human-wildlife conflict — and such exchanges aim to promote the development of harmonized conservation approaches across their ranges.

Additionally, structures established under CAMI—such as the political support of the CAMI Chair and Vice-Chair and the informal Implementation Committee, as well as establishment of SFPs — offer valuable tools to strengthen and coordinate Saiga conservation efforts.

CMS Parties will review the endorsed CAMI WP and will have a chance to provide further input at CMS COP15 in March 2026 in Campo Grande (Brazil). Once adopted, the new CAMI Work Programme will provide a regional framework for the years to come, guiding Saiga conservation action within the broader context of conserving Central Asian migratory mammals and their habitats through 2032.

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Second Edition of the CAMI Atlas Presented — A Digital Tool for Analyzing the Impact of Infrastructure on Central Asian Wildlife

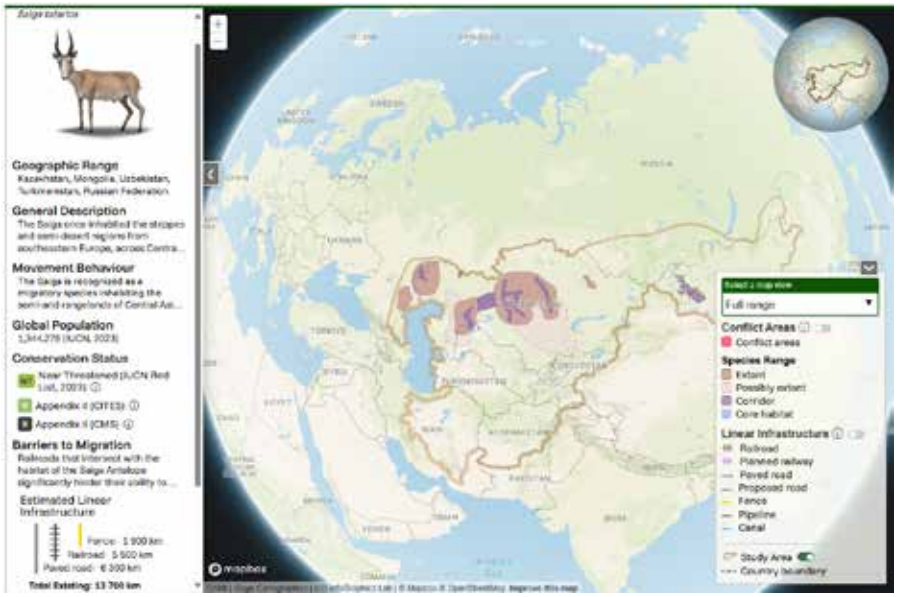
During the Third Meeting of the Range States to the Central Asian Mammals Initiative (CAMI), held in Tashkent from 24–26 June 2025 (*see above*), the Second Edition of the CAMI Atlas, Atlas of Central Asian Mammals Migration and Linear Infrastructure | Central Asian Mammals Initiative, was officially presented. The updated Atlas includes revised maps, analytical materials, and an advanced online tool designed to assess the impact of infrastructure on migratory wildlife species across the Central Asia.

The Atlas is the result of years of collaboration among scientists, conservation organizations, and government agencies from Central Asian countries, supported by the Secretariat of the CMS and CAMI partners. The new edition consolidates the latest data on the distribution and migratory routes of large mammals – such as the Saiga Antelope, Asiatic Wild Ass (Kulan), Goitered Gazelle, Argali, Snow Leopard, and others—and analyzes how transport, energy, and border infrastructure development affects their movements and survival.

Particular attention is given to the Saiga Antelope (*Saiga* spp.), one of the most vulnerable migratory species in the region. The Atlas demonstrates how roads, fences, and industrial facilities often create insurmountable barriers along its seasonal migration routes, disrupting traditional pathways and increasing the risk of habitat loss.

The online version of the Atlas features interactive maps and modeling tools that enable experts to evaluate the effects of existing and planned infrastructure projects and to develop scenarios for mitigating negative impacts. Proposed solutions include the construction of eco-bridges and underpasses, optimization of road layouts, and the adoption of wildlife-friendly infrastructure planning standards.

Range States commended the Atlas for its high practical value as a tool for spatial planning and environmental assessment. It is expected to play a key role in promoting the principles of "green infrastructure" and ensuring a balance between economic development and the conservation of natural ecosystems in Central Asia.



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Call for Participation: Saiga Horizon Scan

If you have any knowledge or experience related to the saiga antelope, we invite you to take part in a short (~ 10-minute) questionnaire to nominate emerging threats and opportunities that could affect the species over the next decade.

This questionnaire is part of a University of Oxford MBiol research project by Jessica Hass, supervised by E.J. Milner-Gulland and Peter Damerell. The project is the first-ever "horizon scan" at the species level. Horizon scanning is a method used to identify new or emerging developments that could shape the future. By looking ahead to identify potential threats and opportunities for the saiga, we aim to reduce the risk of being caught off guard and instead provide the evidence needed to support proactive, forward-looking conservation action.

We would greatly value your insights. By gathering as many ideas as possible and drawing on a wide range of perspectives and expertise, we can reduce the risk of missing important emerging issues. We also hope that Saiga News readers will be keen to participate in the research further.

Please follow this link tinyurl.com/saigasurvey or scan the QR code below to take part in this project — and please share this invitation within your networks to help broaden our understanding of the saiga's future.

Saigas at a watering hole. Photo by Lilia Filonenko

Record Saiga Numbers in Kazakhstan and the Need to Regulate the Population

The Atlas is the result of years of collaboration among scientists, conservation or According to media reports, in the spring of 2025, the results of aerial surveys and field studies estimated the saiga population in Kazakhstan at approximately 3.9 million individuals. Some sources cite even higher numbers — around 4.0–4.1 million animals. This figure is almost three times higher than the historical maximum recorded in 1974 (~1.2 million). The Ural population numbered about 2.3 million individuals, showing a 42% increase compared to 2024. The Betpak-Dala population was estimated at 1.6 million, which is 39 % higher than in 2024.

The smallest, the Ustyurt population, reached about 78 thousand individuals, a 22.6% increase compared to 2024, The annual population growth is estimated at 37.7% to 44.7%. (Reports from: time.kz, tengrinews.kz, zakon.kz and other sources).

Given such a significant increase, authorities have decided to regulate the populations of the Ural and Betpak-Dala saigas. Planned management measures include the hunting of up to 20 % of the population in some regions, e.g. about 460,000 animals in the West Kazakhstan region. The hunting periods have been set as follows: males — from July 1 to November 30, and females and yearlings — from September 1 to November 30. The regulation of saiga numbers is justified by the need to maintain ecosystem balance and prevent conflicts between wildlife and agriculture. Farmers have reported considerable damage caused by saigas trampling crops and pastures and disrupting agricultural processes. Report from: centralmedia24.kz.

It is also being discussed to transfer part of the population abroad — in particular, around 1,500 saigas are planned to be sent to China, ru.arasha.kz, and 500 individuals to Uzbekistan, forbes.kz. The process of transferring saigas to another country requires the implementation of a complex set of procedures in accordance with international and national legislation. At this stage, the issue is under review, according to the Ministry of Ecology of Kazakhstan, as reported by centralmedia24.kz.

Saiga herd. Photo by time.kz

Uzbekistan and Kazakhstan Join Forces to Restore the Saiga Population

See more details at gov.uz/ru/eco/news/view/70690 and gazeta.uz/ru/2025/07/23/saiga).

The Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan and the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan are systematically developing intergovernmental cooperation to conserve the saiga antelope.

As part of the bilateral dialogue between Uzbekistan and Kazakhstan, a Memorandum of Understanding on Saiga Conservation is being prepared for signing. This document will serve as the foundation for comprehensive programs aimed at restoring the saiga population in Uzbekistan.

The memorandum envisions a wide range of joint activities, including:

- establishment of transboundary protected areas and migration corridors to ensure the free movement of saigas along their traditional routes;
- restoration of natural pastures, water bodies, and ecosystems that are critical for the species;
- development of a saiga reintroduction program;
- organization of scientific research, monitoring, and knowledge exchange, including field expeditions, joint patrols, training of specialists, and data sharing on saiga populations.

The cooperation will cover key areas of saiga conservation, including joint monitoring of the transboundary Ustyurt population; development of habitat restoration plans and prevention of habitat fragmentation; exchange of scientific and technical information; application of satellite tracking and veterinary monitoring; combating poaching through strengthened protection measures; conducting public awareness campaigns; harmonizing population assessment methods and creating a shared database; as well as engaging international partners in the implementation of nature conservation programs.

The unification of efforts between the two countries in saiga conservation marks an important step not only in preserving biodiversity but also in strengthening sustainable transboundary environmental cooperation. It demonstrates both nations' commitment to international environmental obligations and their shared determination to preserve the region's natural heritage.

Chinese Court Sentences Six Smugglers to 6–9 Years for Illegal Trade of 1,474 Saiga Horns Worth 118 Million Yuan

The court of the Huochenkeng Development Area (Xinjiang Production and Construction Corps, PRC) delivered a verdict in October 2025, in a case concerning the cross-border smuggling of Saiga horns intercepted in Xinjiang. The court found six members of the criminal group guilty, sentencing them to prison terms ranging from 6 to 9 years.

The saiga is a species subject to the highest level of protection under China's Law of the People's Republic of China on the Protection of Wild Animals. According to case materials, starting in July 2023, the group, led by a Mr. Lan, collaborated with smugglers in Kazakhstan to illegally move Saiga horns across the border using footpaths and backpacks. Intermediaries and logistics networks were then used to transport and sell the horns within the country.

During the investigation, 1,474 Saiga horns were seized, with a total estimated value of 118 million Yuan (approximately US$16.2 million).

Mr. Lan, the primary organizer of the scheme, received the maximum sentence of 9 years in prison and an additional fine of 60,000 Yuan. The other participants were sentenced to terms ranging from 6 to 8 years.

This case represents one of the largest efforts to combat illegal wildlife trade in Xinjiang and underscores the strong determination of the Chinese authorities to suppress the cross-border trafficking of products derived from rare and endangered species.

Source: chinapeace.gov.cn/chinapeace/c100068/2025-10/15/content_12805871.shtml

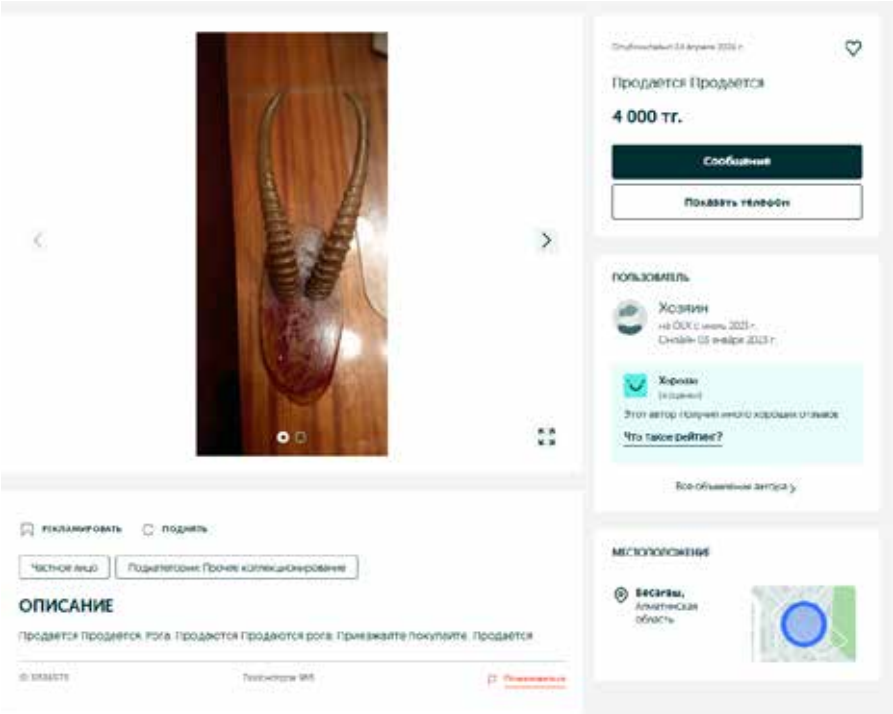
IRINA VYUSHKOVA[1]

Real horns for sale: how online animal derivatives trading is monitored in Kazakhstan

Since April 2023, ACBK has regularly monitored the Kazakh online market for trade in wild animals, their parts and derivatives. Regular monitoring was conducted in August and September 2023, and December, January and April 2024. At various stages, this work was supported by Panthera, Fauna & Flora and Earthshot Prize. The monitoring focuses on the sale of live animals, body parts and products made from them, as well as services for the production of stuffed animals, skins and souvenirs. We search by the keywords 'horns,' 'skin' and 'stuffed animal' and by the names of threatened and game species. For each advertisement we record data on the animal species and product type, how many times the offer was published, as well as the region and platform it was placed on. Each case of advertising a rare species is reported to a regional police department.

We have found about 150-250 advertisements per year offering wild animals and their parts and derivatives. This suggests that, despite legal restrictions, online wildlife trade remains an urgent problem in Kazakhstan. OLX (olx.kz) is the main online marketplace for trading wild animals. Advertisements can also be found on avi.kz, salexy.kz, and kaspi.kz. The most traded items are live Russian tortoises (about 30 advertisements), souvenirs and amulets from wolf body parts (more than 40), and stuffed ungulates and their horns (argali — 33, Siberian ibex — 27, roe deer — 39, saiga — 7, maral — 4, and single advertisements offering parts of the goitered gazelle and mountain sheep). Less common are stuffed birds (eagles and owls), bear skins, live owls (7 advertisements), and raptor chicks. Most of the offers are published in the city of Almaty and Almaty province, followed by Karaganda and Astana.

OLX.kz prohibits advertising of fauna and flora (including stuffed animals and parts of animals) listed in the Red Data Book of the Republic of Kazakhstan, as well as animals taken from the wild (except for game species). Nevertheless, traders find ways to circumvent these prohibitions. Since 2024, the website has toughened its rules and rejects publications with keywords in the title or description. Advertisements about saiga horns are the most disguised. You can hardly find any directly referring to the saiga. Instead, the sellers place keywords in images and intentionally spell them incorrectly, hoping that 'knowing' buyers will understand what exactly is on sale. Most of the ads are not repeated, but it is impossible to know whether this is because the advertisement period has terminated or the object has been sold successfully.



Screenshot of a disguised advertisement: after being contacted, the seller avoids mentioning saiga horns, but continues to use photos of the horns

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MADINA TAUYEKELOVA[1]

How service dogs help fight animal smuggling

Over the past eleven years, service dogs in Kazakhstan have become reliable assistants in the fight against the smuggling of wild animals and their derivatives. This project is a cooperation between ACBK and dog training centres belonging to various law enforcement agencies.

The dog training centres of the Agency for Financial Monitoring (AFM) and the Border Guard Service have trained 24 dogs, 18 of which are still active. They have helped prevent more than a hundred attempts to illegally export animals and their parts abroad, including hundreds of tortoises, some rare birds of prey and thousands of saiga horns.

The organisation rears and trains Malinois shepherds, Belgian and German shepherds, labradors and springer spaniels. All these breeds are distinguished by outstanding stamina, intelligence and sense of smell. Puppies are prepared from an early age. From the age of two months, they are taught communication with people, reaction and basic obedience. From the age of six months they are put to the test, and at eight months they begin special training, where they learn to distinguish between scents and correctly identify a find.

The trainees of the AFM centre are not just dogs, but also their handlers: since 2001, over 1,100 dog handlers have been trained from Kazakhstan and other countries. The course for dog handlers is as substantial as the one for the dogs. Accepted on a selective basis, the students study dog physiology, training methods and the principles of animal behaviour.

Handler with a dog named Uran at the AFM centre. Photo by Abduaziz Madyarov

The work is based on trust and respect for the animal. The centre uses clicker training, a positive reinforcement method that makes teaching safe and efficient.

Each year, the centre prepares at least seven dogs that are deployed to AFM territorial units. Many of them work in several areas, searching for drugs, derivatives and rare animals. Each successful detention with the help of these four-legged specialists is another contribution to the conservation of Kazakhstan's biodiversity.

The work is implemented in partnership with Fauna & Flora, with the support of the IWT Challenge Fund, US INL, USFWS, Disney and other organisations. The participation and support of governmental agencies and dog training centres in Kazakhstan, as well as partners from across Central Asia, is also very important.

Dog named Shanti trained to find animal body parts. Photo by Abduaziz Madyarov

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CHIMEDDORJ BUYANAA[1]

The Mongolian saiga comes home

WWF-Mongolia has been engaged in Mongolian saiga conservation since 1997, working in collaboration with local stakeholders. As a result of 30 years of dedicated, comprehensive efforts and support from local stakeholders and donors, the Mongolian saiga population has reached 23,215 according to a 2024 survey. Most notably, the Mongolian saiga has returned to its historic range after 70 years, making this an example of good practice and a success story for species conservation.

The number of saigas coming back to their historic range was estimated as 1,660 by a WWF-Mongolia survey in 2024. This increase demonstrates that the saiga population can reproduce naturally and provides for the full recovery of the population in the areas they once roamed. Most importantly, WWF-Mongolia has shown that effective conservation can ensure and support natural survival to increase species populations in historical ranges, without the need for species reintroduction.

One effective conservation approach is to designate saiga areas as Nature Reserves under national protection. To support this goal, specialists from the WWF-Mongolia have actively collaborated with stakeholders to develop the justification for protection, conduct trainings, and carry out public awareness campaigns. As a result of these efforts, the local parliament of Naranbulag region has endorsed a proposal to classify 133,866 hectares of the saiga's northern range as a Nature Reserve. The next step is for the provincial parliament of Uvs province (within which Naranbulag region lies) to officially endorse the designation of this area as a Nature Reserve. This issue is expected to be discussed in December 2025. If approved, it could pave the way for the matter to be brought before the Parliament of Mongolia for further consideration in due course.

For more information please watch this short documentary: youtube.com/watch?v=CwijuORZc78

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A herd of Mongolian saiga. Air photo by WWF Mongolia

CHIMEDDORJ BUYANAA[1]

Eco-club children lead planting efforts to protect spring headwaters

A successful initiative to protect natural spring headwaters has been implemented in the Mongolian saiga rangelands, with strong participation from local communities. At the heart of this effort, eco-club children are playing a leading role by monitoring fenced spring areas and carrying out planting activities. Recognizing that fencing alone cannot fully safeguard these fragile water sources, the children began planting native woody species to help establish self-sustaining "oases" in the desert landscape.

As part of a pilot effort, eco-club members from 4 regions planted seedlings near 6 protected springs. In total, around 100 schoolchildren planted 537 seedlings, achieving a survival rate of 45–50%. Their efforts were supported by 55 public servants, 21 herders, and 7 unemployed community members. This initiative has sparked interest among residents, many of whom have expressed a desire to participate in future planting activities.

The children are also working closely with agroforestry specialists to improve their planting techniques and are actively engaging local authorities to advocate for sustained support and funding. While ecological transformation takes time, the initiative is already showcasing the potential of youth-led, community-based conservation.

Beyond tree planting, the eco-club children are also monitoring local wildlife using camera traps, supported by biologists. These activities are helping to collect valuable data on species presence and behaviour, contributing to broader ecosystem monitoring and conservation planning.

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Native Caragana species growing near a spring. Photo by WWF Mongolia

CHIMEDDORJ BUYANAA[1]

Mongolian Saiga Day

Every year, WWF-Mongolia and eco club students jointly celebrate “Saiga day” to raise public awareness about the Mongolian saiga antelope’s value and to mobilize community efforts for conservation of the species. As part of this, many activities have been successfully organized and implemented.

Children from herder families living in the saiga habitat have initiated a study focused on collecting data about rangeland plant condition at specific grazing sites near protected springs. The aim is to help herders better understand rangeland capacity and assess whether current livestock numbers align with the carrying capacity of both pastures and springs. This effort was piloted with the active participation of herders' children, who collected baseline data from 26 locations under the instruction of the Gobi-Altai Province Meteorology and Environmental Monitoring Agency. Over the coming years, the collected data will be analyzed to identify grazing sites with the highest and lowest pasture reserves. Based on these findings, children will help raise awareness among herders about the importance of adjusting livestock numbers—avoiding increases in areas with high pasture reserves and reducing numbers in areas with limited capacity—to promote sustainable rangeland management.

Children from herder families living in the Mongolian saiga habitat collecting data on pasture condition. Photo by WWF Mongolia

On Mongolian Saiga Day, members of eco-clubs taught the "Mongolian saiga song" to approximately 8,000 students from schools located in key saiga habitat areas. To further raise awareness, a documentary film about the Mongolian saiga was screened for 2,000 children, offering valuable insights into the species’ unique ecological role and the urgent need for its conservation.

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CHIMEDDORJ BUYANAA[1]

Awareness board on Mongolian saiga

Improving public awareness and attitudes is crucial for the effective conservation of critically endangered species. To this end, WWF-Mongolia has developed a 3x6 meter awareness board, entitled "The Mongolian saiga – from the Ice Age" and highlights that this species has walked alongside ancient species in the grassland steppe. It also emphasizes the importance of protecting this rare species. WWF- Mongolia has also produced a short video to showcase the installation and purpose of the board. Together, these outreach efforts aim to strengthen national appreciation and mobilize greater public support for saiga conservation.

The Mongolian saiga — from the Ice Age. Photo by WWF Mongolia

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EVGENIA SAMTANOVA[1], AIDA BAYGAZIYEVA[1]

Parade by Friends of the Saiga Baby — a celebration that unites friends of the steppe

The Zhivoye Naslediye (Living Heritage) children's steppe club has successfully operated for many years within the Yashkul Multidisciplinary Gymnasium named after Khaglysheva. Its members regularly participate in environmental activities and events dedicated to the conservation of the saiga, the symbol of the Kalmyk steppes.

In 2025, young environmentalists from the club took part in the Druzya Saigachonka (Friends of the Saiga Baby) parade, as part of Saiga Day celebrations. This was not just a march, but a real holiday filled with creativity, joy and love for nature. Students from grades 5 to 7 united in groups with symbolic names — 'Friends of the Steppe', 'Young Saigas', 'Ecowatch', 'Steppe Antelope', and 'Saiga'. The activities included thematic quizzes and competitions. The children competed in developing a design, speech, motto, and visiting card for their squads and creating a poster calling for the protection of nature in their native land. The main idea of the festival is to remind children and adults about the importance of caring for the environment of their small homeland and the need to protect the steppe antelope.

Evgeny Tarlov, school director, Evgenia Samtanova, head of the club, and Victoria Pechen, the club's president, addressed the participants of the parade with a welcoming speech. They stressed that, although some success has been achieved in protecting the saiga, this unique species still needs our support. Celebrated on May 5, International Saiga Day unites people throughout the species' habitat. The Republic of Kalmykia and its neighbouring regions in Russia are not the only ones inhabited by the saiga. The animal that lived alongside the mammoth also lives in Kazakhstan and Uzbekistan, where it is also under strong protection.

The parade opened with marching by the squads of young environmentalists, who chanted their slogans and mottos: 'Let's save the saiga together!', 'Saiga is the pride of the steppe!', 'Saiga lives in the steppe and protects our nature! By saving the saiga we preserve our ecosystem!' .The main slogan of the festival was 'Protect and preserve!'.

Before the competitions, the participants saw the documentary Wanderers of the Great Steppe filmed by Anatoly Kovalev in the Chernye Zemli Nature Reserve. The film recounts the life of saigas on the Kalmyk steppes and how they manage to survive, overcoming numerous challenges. Inspired by what they saw, the children expressed a wish to take more care of saigas and help them survive in harsh conditions.

During the competitions, the young environmentalists from each squad, supported by their leaders from grade 8, presented their visiting cards, read poems, shared interesting facts about the saiga, showed flyers, wall newspapers and posters, and organised a quiz entitled 'Journey to the Saiga's Homeland'.

Participants in Saiga Day.
Photo by Aida Baygaziyeva

The winners of the competitions were given awards in categories such as 'Best ecosquad' and a certificate entitled 'Let's Save the Saiga Together 2025'. The winners, second and third placed teams were awarded prizes given by the Chernye Zemli Nature Reserve. Gifts were distributed to best quiz players and ecoleaders.

At the close of the event, Evgenia Samtanova, head of the Zhivoye Naslediye club, delivered a speech. She thanked the children for their participation in celebrating International Saiga Day and encouraged the young environmentalists to continue working to protect the saiga antelope. After all, only our indifference prevents us saving this beautiful steppe animal!

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Grade 6 students from the Ecowatch squad explaining the idea of their visiting card. Photo by Aida Baygaziyeva

Best ecoleaders awarded prizes by the Chernye Zemli Nature Reserve. Photo by Aida Baygaziyeva

ALEXANDER ESIPOV[1]

The First Solar-Powered Watering Point for Saiga in Uzbekistan

In September 2025, the first solar-powered automatic watering point for saiga antelopes and other wildlife was installed in Uzbekistan, within the Saigachy Complex (Landscape) Reserve on the Ustyurt Plateau.

Saiga antelopes face a growing shortage of reliable water sources due to habitat degradation and the impacts of climate change — particularly during the hot, arid summer months. To support the animals during this critical period, the project team decided to apply the successful Wild Solar approach to building solar-powered watering systems.

Historically, the Ustyurt Plateau — part of the saiga's range — was used for livestock grazing, and shepherds constructed wells to water their herds. In the northern Uzbek part of Ustyurt alone, several dozen wells were dug more than fifty years ago. However, most of them are now abandoned. This presented a unique opportunity: to convert disused wells into life-saving water sources for saiga.

For the pilot project, the team selected a well located along traditional saiga migration routes with good water quality. Together with the staff of the Saigachy Reseve, they installed a system consisting of a submersible pump, solar panels, water sensors and a flow meter, as well as a shallow 3 m³ concrete basin with gently sloping sides to ensure easy access for wildlife.

The entire system operates fully autonomously. Human intervention is required only twice a year — in autumn to shut it down before winter freezes, and in spring to restart it and carry out maintenance.

The watering point is already operational, and camera traps have been set up to monitor which species are using it. In the long term, the initiative envisions a network of watering points for saiga and sources of freshwater for the rangers of the Saigachy Reserve across the Ustyurt Plateau.

In the face of climate change, such projects are vital for the recovery and long-term survival of saiga populations in Uzbekistan.

This project was possible thanks to the technical and financial support of our partners and donors in the United States — the Wildlife Conservation Network (WCN), Stephen Gold, and the Wild Solar team.

See youtube.com/watch?v=TBw-69T8eIUU for a video about this installation.

The solar watering point works! Photo by Maxim Esipov

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NATALYA SHIVALDOVA[1], DINARA ADYLOVA

“Green Customs”: A Digital Tool from Uzbekistan to Combat Illegal Wildlife Trade

Illegal trade in wildlife and plants remains one of the most serious threats to global biodiversity. According to the World Bank, the combined impact of illegal logging, fishing, and wildlife trade causes an estimated USD 1–2 trillion in annual losses to ecosystems, while governments lose USD 7–12 billion each year in uncollected tax revenues.

Uzbekistan is no exception. Between 2004 and 2023, authorities recorded 248 cases of attempted illegal import or export of wildlife, including both invertebrates and vertebrates, as well as their derivatives. Among vertebrate species, the Saiga Antelope ranks among the most frequently trafficked, accounting for 1,184 individuals, 4.1% of the individual animals or plants involved in recorded export attempts. In recent years, saiga horns have also become an imported product, brought in from neighbouring Kazakhstan for use in crafting traditional Uzbek knife handles popular with tourists. In 2024–2025 alone, customs officers intercepted several shipments of saiga horns and uncovered numerous online advertisements promoting their sale.

To effectively combat such crimes, strict regulation of international wildlife trade is essential. The main global framework for this work is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Customs officers play a key role in implementing these measures, often being the first—and sometimes the only—line of inspection for CITES-listed specimens crossing borders. To support their work, Uzbekistan has launched a modern digital resource – the “Green Customs” platform, yashiltamojnya.uz – designed to help officials make informed, timely decisions when encountering shipments containing flora and fauna.

The platform consolidates up-to-date information on international wildlife trade in Uzbekistan. It enables users to identify species, verify their CITES

status, and check the authenticity of import and export permits. In addition, it provides access to training materials, legal references, international agreements, and contacts of national expert organizations.

"Green Customs" is optimized for all devices, including smartphones, and supports offline use through downloadable reference guides. The platform employs Cloudflare CDN to ensure security, encryption, and fast content delivery.

Future plans include regional integration — adding multiple languages, incorporating Central Asian legislation, and building a shared regional biodiversity database. A mobile app is also under development to improve accessibility.

By bridging science, government, and society, the "Green Customs" platform serves as a digital gateway for protecting Uzbekistan's and Central Asia's natural heritage.

The platform was developed under the INL project "Strengthening Capacity and Promoting Action to Combat Wildlife Crime in Central Asia" by the environmental resource center Ekomaktab and the Institute of Zoology of the Academy of Sciences of Uzbekistan, with administrative support from the Ministry of Ecology of the Republic of Uzbekistan and financial and expert backing from Fauna & Flora.

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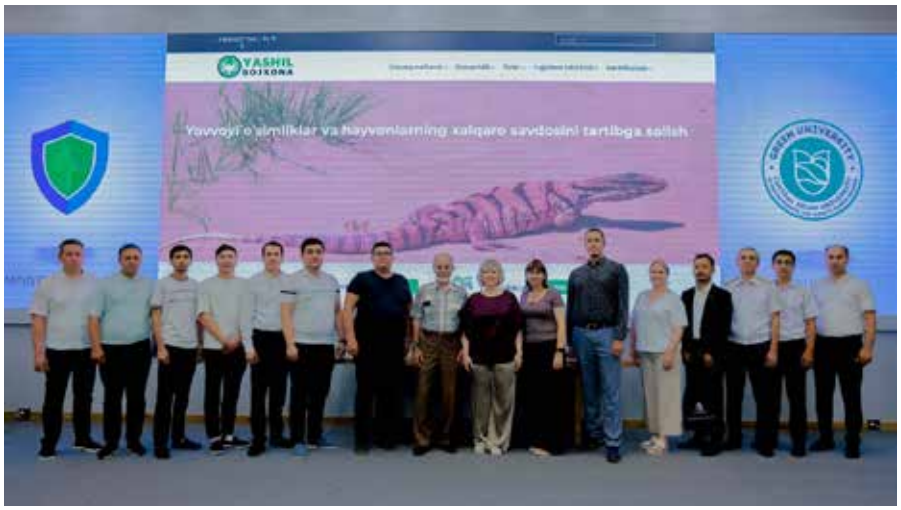
A knife with a handle made from raw saiga horn at a market in Tashkent. Photo by Elena Bykova



Participants at the meeting to launch the Green Customs online platform, Green University, Tashkent. Photo by Ministry of Ecology of the Republic of Uzbekistan

NATALYA SHIVALDOVA[1], RUSTAM OLIMOV[1]

Saiga Day: celebrating life and nature in Karakalpakstan

Celebrated for more than 15 years in Karakalpakstan, Saiga Day has become very popular in the villages and cities of the Republic. Moreover, since 2023, the celebration has been formalised through Presidential Decree No. 171 and become mandatory for protected areas throughout Karakalpakstan. Long-term cooperation with local communities has resulted in the designation and creation of several protected areas near saiga habitats to conserve and restore its population on the Ustyurt plateau. These include the Saigachy Complex Landscape Reserve (Zakaznik), Barsakelmes State Reserve, South Ustyurt National Nature Park and Aralkum National Nature Park, the last one being situated on the dry bottom of the Aral Sea. That is why we decided that this year's Saiga Day would be about protected areas as a network of life, so as to strengthen children's and adults' understanding of the role of protected areas in the conservation of the saiga and of entire ecosystems on the Ustyurt plateau and in the Aralkum desert.

In 2025, specialists from protected areas actively participated in all Saiga Day events, talked to children about their work, and showed photos and videos from camera traps confirming that the saiga has returned to Uzbekistan. They taught the children the basics of organising a field camp, shared their observations and told them about some unique moments in the life of nature.

The series of events opened with an online workshop in May 2025, which was attended by innovative teachers and the leaders of Steppe Clubs operating at schools in the cities of Nukus and Muynak and the villages of Kyrkyz, Elabad, Jaslyk, and Karakalpakstan. The teachers acquainted themselves with a detailed lesson plan entitled 'Network of life and the role of nature reserves'. The purpose of the lesson is to foster in pupils ideas about food chains and nutrient cycles, let them understand the role of the saiga as a key species of steppe ecosystems, and acquaint them with the main protected areas in Karakalpakstan. A special focus was on the development of environmental thinking, analytical skills and an ability to draw conclusions.

Aigul Fazylova, the head teacher of school No. 46 in Nukus, shared her impressions after an open lesson: 'Environmental education gives a teacher much room for creative and methodical self-fulfilment. It enables them to integrate environmental topics into various academic subjects. Pupils learn through emotions and creativity. There is not a single pupil or teacher indifferent to the difficult life of the saiga and other animals on the Karakalpak steppes'.

In total, the Saiga Day events in 2025, which were held at Steppe Clubs within schools, involved more than 1,000 children and 300 adults — teachers, parents, and ordinary people in villages in Kungrad district and the cities of Nukus and Muynak, as well as 30 specialists from various protected areas.

Saigachy Reserve staff taking part in an open lesson in the city of Nukus. Photo by Rustam Olimov

As in previous years, the programme was not limited to open lessons. The activities included sports, such as football, volleyball, cycling marathon and traditional games, where the participants competed for the Saiga Cup. The competitions attracted many people, both children and adults.

Intellectual games occupied a special place in the holiday. They included an environmental crossword puzzle about saigas and steppe plants and a "What? Where? When?" quiz, where schoolchildren answered videoed questions from villagers. The celebration closed with a bright concert show with dancing, playing of traditional musical instruments, an award ceremony for the teams and singing the traditional saiga anthem.

The annual celebration is possible thanks to the support of the Saiga Conservation Alliance, organisational support of the Institute of Zoology under the Academy of Sciences of the Republic of Uzbekistan, and the methodological assistance of the NGO Ekomaktab.

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Environmental crossword puzzle about saigas and steppe plants in the village of Jaslyk. Photo by Rustam Olimov

Young participants in Saiga Day from the village of Karakalpakstan with their artworks dedicated to the saiga. Photo by Rustam Olimov

TIL DIETERICH[1], STEFAN MICHEL[1], ALEXEY GRACHEV[2], AIBAT MUZBAY[2,3*], NURLYKHAN ISMAILOV[3], ORKEN SHAYMUKHANBETOV[2,3]

New approach to saiga monitoring: using ear-tagged satellite transmitters

Figure 1. CERES ear tag GPS tracker

Satellite monitoring has been used to study saigas in Kazakhstan since 2009. Traditionally, the animals' movements were tracked with the help of GPS collars fixed on adult individuals. However, due to the saiga's physiology, it is extremely difficult and costly to catch live adult animals. Capturing newborns is considered more practicable – over the years, hundreds of saiga babies aged 1–3 days have been caught in Kazakhstan for research purposes over the calving period.

Experience from Mongolia has showed that collars on saiga antelope calves can be used for up to 2-3 months. Their rapidly growing neck requires lightweight and safe devices with a self-release mechanism, such as those with magnetic locks or made of materials that decompose. The main problem with the satellite collars is their weight: traditional devices with batteries are too heavy for young animals.

New solar-powered ear tag trackers weighing only 30 grammes have been a breakthrough (Figure 1). Initially, such transmitters were used only for livestock breeding. However, they have now been successfully adapted for the saiga. Their implementation was initiated by experts from the Nature and Biodiversity Conservation Union (NABU). NABU sponsored the purchase of 18 devices for the Tabigi Orta Association. The new approach facilitates long-term and less invasive saiga monitoring, making research much more efficient and providing a more reliable scientific basis for developing measures to conserve and manage populations of this species in the face of increasing anthropogenic impacts and climate change.

Figure 2. Installing GPS tags on saiga babies

On 4th and 5th May 2025, Kazakhstan saw a unique experiment to tag newborn saigas from the Ustyurt population with ear satellite transmitters (Figure 2). A total of 13 miniature tags was fixed on animals aged 1–2 days. As of 1st September 2025, 11 of the 13 attached transmitters was continuing to function stably and transmit data on the activity of the tagged animals and their spatial movements (Figure 3). The loss of one of the two ear tags was caused by technical malfunction: the device stopped working one month after being attached. The other one was found in a field after two months of stable operation, with

no signs of death or injury of the animal. We assume that the animal could have torn the tag out of its ear tissue, for example when scratching. The technology's high reliability and potential for further application in field research are supported by our results and the zero deaths recorded from the use of ear tags.

The use of lightweight solar-powered satellite ear tags in newborn saiga antelopes in Kazakhstan shows great potential for improving long-term monitoring of this rare species. This method can become an effective tool for studying the behavioural ecology and dynamics of saiga populations, including the key parameters of the survival rate for young individuals, seasonal migration routes, and spatial and temporal distribution. Successful data reception from most of the installed devices within a few months confirms both the technical feasibility and the safety of this innovative approach. Compared to traditional collars, ear tags are a less invasive and energy consuming and more sustainable tool, which can significantly improve the efficiency of saiga population research. The results of this experiment provide a solid foundation for expanding the method in future research and environmental programmes, contributing to more efficient management and conservation of saiga populations in Kazakhstan.

The work is being carried out by the Tabigi Orta Association in cooperation with the Institute of Zoology of the National Academy of Sciences of the Republic of Kazakhstan, with financial support from the Science Committee under the Ministry of Science and Higher Education of the Republic of Kazakhstan (Programme No. BR23591114 “Development of a system for the sustainable use of the Betpak-dala and Ustyurt saiga populations”). The authors also express their gratitude to the Aktobe group of the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) for their help in field work.

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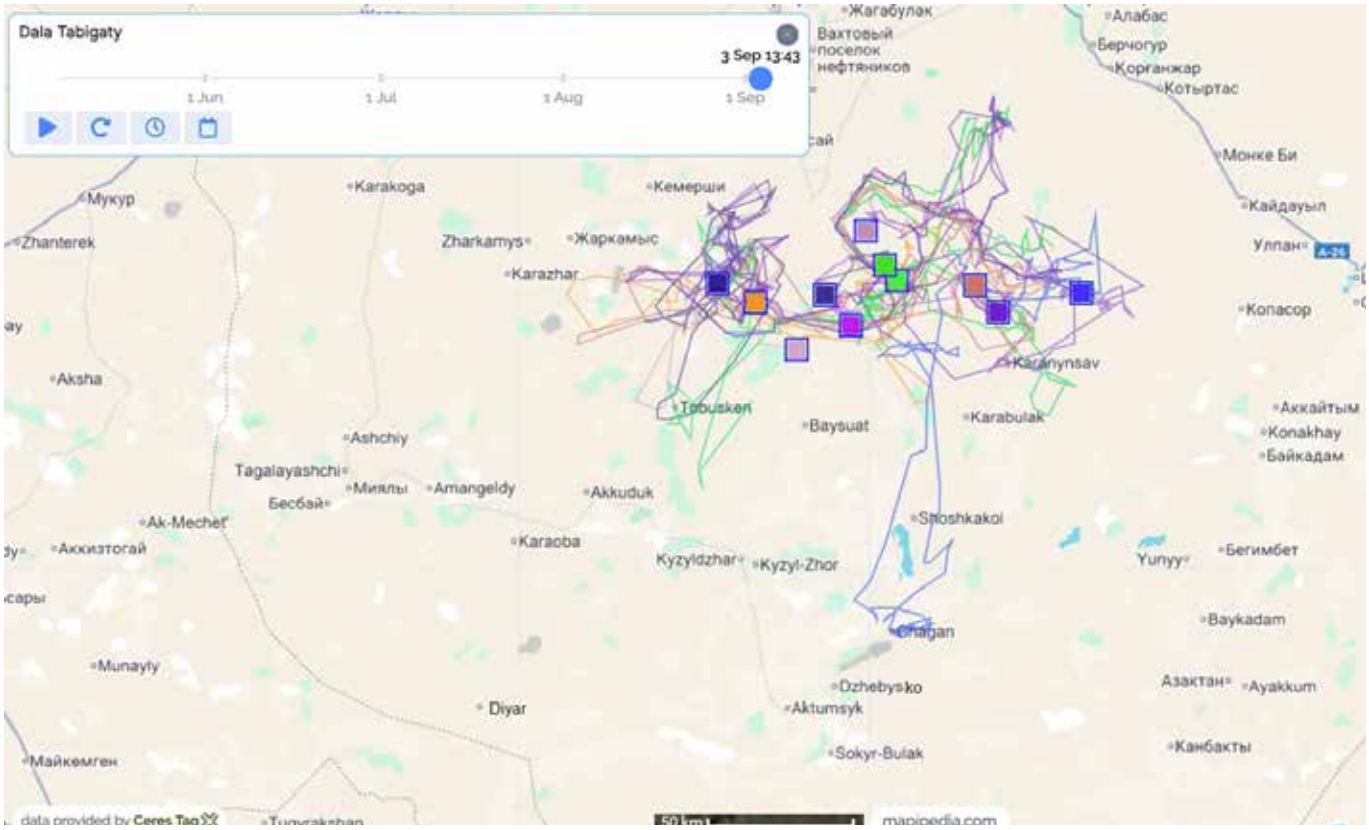

Figure 3. Map of the movements of saiga babies tagged with satellite trackers between 5th May and 3rd September, 2025

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G. I. ERDNENOV[1]

The current state of the saiga population in the North-Western pre-Caspian region; conservation prospects

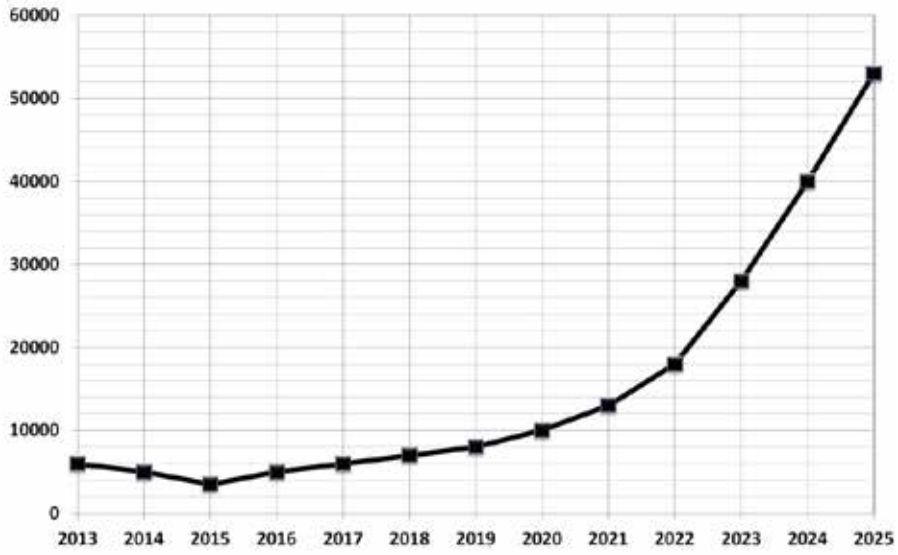
The North-Western pre-Caspian region (mainly the eastern part of Kalmykia and western part of of Astrakhan province) encompasses some of the main habitats of the only extant saiga population in Europe, which plays a key role in the functioning of arid ecosystems in southern Russia.

Poaching that flourished in the region in the late 1990s led to a sharp decrease in the North-Western pre-Caspian population from 180,000 individuals in 1998 to 15,000–19,000 in 2001. When hunting was banned and a series of conservation measures was taken, the population decline stopped after a historical record low in 2015, when it consisted of only 3,500 animals with an extremely low (3%) proportion of mature males. Since then, the population has been gradually but steadily recovering throughout its range (Figure).

In 2020, the saiga was listed in the Red Data Book of the Russian Federation, and by 2025 its numbers increased to about 53,000 individuals (Fig.). The growth in the saiga population draws attention to problems such as habitat degradation, poaching, and prospects for sustainable use of the resource.

Long-term studies of the state of the saiga population in the North-Western pre-Caspian region have been conducted within the Chernye Zemli State Nature Reserve (zapovednik) and Mekletinsky Sanctuary (zakaznik). Rangers and researchers from the reserve staff observed the animals and monitored their numbers year-round from 2017 to 2024. The methods they used included car patrolling on regular routes, watching from towers with the help of binoculars and Pulsar thermal imagers at night, photographing and filming, and monitoring with the use of DJI Phantom-4 Mavic quadrocopters. Interviews with local residents helped obtain more information on the state of the population.

The rutting season usually begins in early December and lasts about two weeks. A sharp air temperature drop below zero is, probably, the main signal for the animals to start mating. During the rut, saigas divide into several large groups, numbering 3,000 to 6,000 individuals, and occupying traditional sites in the north-western and north-eastern parts of the Chernye Zemli Reserve and in the Stepnoy Sanctuary. The main aggregations actively exchange individuals. Males strongly compete with each other. On average, harems consist of 5-7 females (up to 15), and fierce fights often cause serious injuries and even deaths to males.



Saiga population dynamics in the North-Western Caspian region in 2013-2025

The birth of a new generation is one of the most important periods in the saigas' life cycle. The first signs of calving aggregations can be seen in late March and early April. For one month, the animals actively migrate into the future calving site, which traditionally occupies gently sloping and slightly undulating sandy and loam-sandy plains with sparse ephemeral grass vegetation. Since 2017, calving most often takes place in the Polygon section of the north-western part of the Chernye Zemli Reserve. With the steady population growth in recent years, large calving aggregations are being recorded in different parts of the region: in the north-eastern part of the reserve and in the Mekletinsky and Stepnoy Sanctuaries. Small isolated calving groups are also found quite far away from traditional sites. Calving lasts about two weeks, with most of the babies born in early May. The size of the calving sites varies from year to year, averaging 103 km², with the core area containing a denser concentration of animals 3-4 times smaller. The average death rate among babies during the observation period was 15.6 individuals/km², up to 68 individuals/km² in some areas. Presumably, most of the deaths of females giving birht were caused by pathological delivery, while the babies mostly died of predation and hypothermia. The recent population recovery and the resultant rebounding of the sex-and-age structure back to normal led to an increase in the average birth rate from 0.83 to 1.47 babies per female.

After the calving season is over, in the first half of summer, specialists assess the increase in saiga numbers and the sex-and-age composition of herds (newborns, males and females of different ages).

Since 2021, when the population growth stabilised, saigas began increasingly to leave the main core of their range, located within various protected areas, and migrate broadly in small groups, both northwards and southwards, around the territories of the Republic of Kalmykia and Astrakhan oblast, possibly even entering Rostov oblast and the Republic of Dagestan. No saiga mass mortality from epidemics has been recorded in recent years. However, small groups have died naturally of tympany (excess gas accumulation), dehydration, food shortage and drowning. Wolf predation remains the main natural cause of saiga mortality. The saiga population growth and the animals' spread beyond the boundaries of protected areas in recent years have triggered poaching and increased conflicts with agricultural producers due to competition for rangelands. The numbers of road accidents involving saigas and deaths from collisions with electric fences are also increasing.

We estimate that, if the North-Western pre-Caspian saiga population continues to grow, it may reach 200,000 individuals by 2030, which will definitely raise the question of excluding the saiga from the Red Data Book of the Russian Federation and necessitating scientifically based population management. This will require air or satellite counting and assessment of habitat capacity and rangeland productivity. Key biotechnological measures required include cleaning the Chernozemli Canal and filling it with water to ensure reliable drinking water sources for the summer and designating new regional protected areas in key habitats and along migration routes to protect against anthropogenic threats. It is also advisable to install warning signs and banners along roads to reduce the number of car accidents and prohibit the use of electric fences on saiga migration routes.

Male saigas in rut. Photo by B. I. Ubushayev

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RUTH ARNOLD[1*], PETER DAMERELL[2], E. J. MILNER-GULLAND[1]

Mapping the Saiga Product Supply Chain: Evidence Gaps, Estimates, and Priorities

Efforts to curb illegal wildlife trade require a clear picture of how products move from source to end use. For saiga antelope horn, the available information is scattered across languages, time periods, and countries, and varies in reliability. This study set out to organise that evidence, judge its strength, and fill the most important numerical gaps with structured expert judgement. The study asked three questions: what is already known, and not known, about the saiga supply chain ; how do conservation projects align with those gaps; and what did informed experts say about the scale of trade flows and the size of national stockpiles where data are scarce. The intention is practical: to help saiga conservationists decide where to focus their research and interventions.

Study Design and Methods

The three elements of the work were:

i) To identify evidence in the grey and published literature — from as many sources as possible, including peer-reviewed papers, CITES and TRAFFIC reports, and Saiga News — about the saiga supply chain. The review was for the period 1995 to 2023, and the information was organised by actor level (harvesters, intermediaries, vendors, and end-consumers), country, and time period, and weighted by its reliability.

ii) to map known projects on saiga trade, including those funded or implemented as part of the US Fish and Wildlife saiga conservation portfolio, onto the supply chain. This was in order to see where these projects addressed the largest information needs. Unfortunately the USFWS projects have now been halted due to withdrawal of funding, but the hope is that they could resume at some point.

iii) to use a structured expert-elicitation protocol, called the IDEA protocol to map trade flows between countries and the presence and size of national stockpiles. The IDEA protocol involves experts giving their best estimates, and an assessment of their certainty about their answers, and then reviewing their answers in the light of others' answers. This approach is designed for situations with limited data. Eleven saiga experts took part in this component of the study.

Findings

What the documentary record shows

The literature on saiga trade has concentrated on Kazakhstan and China. Across the literature, Kazakhstan, Russia, China, Singapore, and Uzbekistan appear most often as exporters, while China, Hong Kong, Singapore, Malaysia, and Japan appear most often as importers. These results don't mean that this is where most of the saiga horn has been traded, but they do show where the literature has focused.

At the harvester level, Mongolia has the largest and most persistent gaps in evidence. Kazakhstan, Russia, and Uzbekistan have broader historical coverage, particularly before 2016, yet important questions remain weakly evidenced everywhere: the size of national markets, how harvesters respond to price changes or substitutes, and how enforcement shapes behaviour. Recently, projects have been set up in Kazakhstan, Mongolia, and Uzbekistan to get information on harvesting levels. Coverage appears more limited for Russia in recent years.

At the intermediary level, the record is sparse. Kyrgyzstan is mentioned as a transit country but there is no documentary evidence about its role. Gaps are also notable for Ukraine, Thailand, Vietnam, and Hong Kong from 2006 onward. Where intermediary evidence exists, it often addresses stockpiles, motivations, or methods for avoiding enforcement, usually drawn from a small set of secondary sources. Basic information on who the intermediaries are, how many there are, how prices move, and how they connect markets is largely missing. There's little explicit focus on intermediaries in the USFWS projects we reviewed.

At the vendor level, large gaps persist in Hong Kong, Japan, Thailand, and Vietnam. China, Kazakhstan, and Russia have comparatively better coverage, often about enforcement, but there is little information on horn quantities sold, seasonal or temporal patterns, or vendor responses to market signals. There is very little focus on

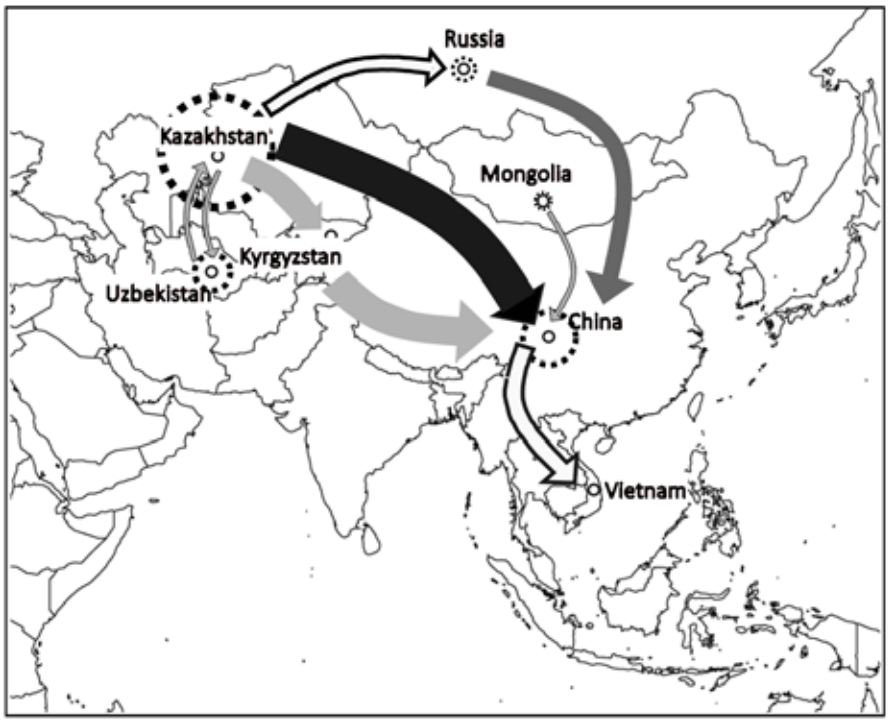
vendor-level questions in the USFWS projects, in the places where the evidence is most limited.

For end-consumers, there is very little information about Australia, Hong Kong, Mongolia, New Zealand, Thailand, and Vietnam, even though the literature suggests that there are consumers in these countries. Missing information includes the number of consumers, frequency and context of use, perceptions, and the existence of household or retail stockpiles. Evidence is stronger for China, Kazakhstan, and Singapore from 2006 onward, and there were USFWS projects addressing these questions in China and Singapore.

What expert elicitation adds

The elicitation produced indicative estimates for nine trade links between countries, with the greatest expert coverage for flows to and from Kazakhstan (see Figure). However, there was a lot of uncertainty about trade flows. Estimated mean annual flows span roughly two orders of magnitude: the smallest among the assessed links is Mongolia to China at about 12.5 kilograms per year; the largest is Kazakhstan to China at around 1,940 kilograms per year. Aggregated across all estimates, the mean best-guess exports from Kazakhstan are about 3,594 kilograms per year, and the mean best-guess imports to China are about 3,895 kilograms per year. Credible intervals are wide, including for the largest flow, which reflects the limits of the underlying information.

Experts also pointed to a Kazakhstan → Kyrgyzstan → China pathway. This is consistent with recent suggestions about Kyrgyzstan's role as a transit state, yet the review of the literature shows almost no intermediary-level evidence for Kyrgyzstan. This mismatch highlights a concrete research priority. One expert proposed a Vietnam → China flow, suggesting potential two-way movement within East Asia and the need to examine online and cross-border dynamics more closely. For stockpiles, the elicited numbers



The arrows indicate the directions of trade, and the widths of the arrows are approximately proportional to the experts' mean best guesses for the average volumes of saiga product traded (in kg) between 2012 and 2022. The dotted circles represent stockpile estimates, where the radius is proportional to average volume (in kg) across the same time period. Confidence in the estimate is indicated by the colour of the arrows (white with black border = one expert guess; very low confidence, light grey = two expert guesses; low confidence, dark grey = three expert guesses; medium confidence, black = four experts; higher confidence).

Figure. *Saiga tatarica* Product Trade Flow Patterns, from the expert elicitation

varied widely by country and were constrained by the lack of data in several key countries.

How saiga trade projects aligned with the gaps

When the known saiga trade projects were mapped onto the gap analysis, clear mismatches appeared. Several countries with persistent evidence gaps — such as Hong Kong, Japan, Thailand, Vietnam, and Kyrgyzstan — have limited or no project coverage. By contrast, there is good coverage of questions about harvesting in Kazakhstan, Mongolia, and Uzbekistan. Work in Russia appears reduced in the most recent period, which aligns with broader constraints on collaboration and funding.

Recommendations

This study suggests four practical directions for future evidence-gathering.

First, shift attention toward the least-understood nodes of the chain — **intermediaries and vendors** — in countries where both the documentary record and the expert elicitation point to trade taking place. Kyrgyzstan is a priority for understanding the characteristics of its role as a transit country. Similar attention is justified in Hong Kong, Japan, Thailand, Vietnam, Malaysia, and Singapore, with a focus on vendor operations, market sizes, and the status of commercial and household stockpiles.

Second, **restart the saiga trade projects** that were stopped after withdrawal of USFWS funding, as they add key evidence around the supply chain, particularly in Kazakhstan, Uzbekistan, China, Japan and Singapore.

Third, carry out **foundational studies** in countries with little or no data, but where it appears there are consumers, including Australia, New Zealand, and the United States. Without basic understanding of the prevalence, frequency and motivations of saiga product use, behaviour-change or demand-reduction efforts cannot be targeted or evaluated effectively.

Fourth, **strengthen and broaden expert elicitation**, and carry out such studies regularly. This includes recruiting more participants from key importer states and by adding live discussion sessions to complement the surveys. This is likely to improve clarity, reduce over-wide intervals, and increase convergence on the most uncertain parts of the supply chain.

These steps do not replace work to **understand trade in the range states**. Harvester-level monitoring and enforcement in Kazakhstan, Mongolia, and Uzbekistan remains important. However, the additional benefit from evidence-gathering could be greatest in the poorly described middle of the chain and in several under-documented consumer markets.

The documentary record is uneven across languages and countries, and some of the evidence relies on a small number of secondary sources. The expert pool lacked strong representation from several key importer countries, which limited coverage for some flows and stockpiles. Wide credible intervals on major links, including Kazakhstan → China, show that the results should be treated as provisional until new primary data narrow the uncertainty.

Conclusion

By combining a review of the literature, weighted by the uncertainty of the evidence, with structured expert judgement, this study provides a more coherent picture of what is known about the saiga product supply chain and where the most important gaps lie. This approach offers a transparent way to prioritise questions, generate estimates of trade flows, and align research projects with the parts of the chain that matter most and are least evidenced. The main message is that intermediaries and vendors in several Asian countries remain poorly described despite their likely central role in the trade. Targeted primary data collection in those places would support better control of the international saiga trade.

We thank all the saigs experts who gave their time to participate in this study, as well as USFWS and the University of Oxford for supporting this work. If you would like more details about the study, please follow this link: iccs.org.uk/wp-content/uploads/2024/07/R_Arnold-Saiga-Thesis-General-2024.pdf.

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Selected new publications

Bayarmaa, Ch, B. Nyambayar, B. Buuveibaatar, N. Batsaikhan, O. Munkhtogtokh, B. Gantulga, B. Bayartogtokh. 2025. Seasons of sustenance: Unveiling the dietary patterns of Mongolian saiga and livestock. Mammalian Biology. 105: 341-353. doi.org/10.1007/s42991-025-00482-2

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Saiga at sunset. Photo by L. Philonenko

Dr. Buuveibaatar Bayarbaatar, Mongolia

Buuvei holding a saiga calf during fieldwork in the western Mongolia. Photo by WCS

Dr. Buuveibaatar Bayarbaatar (Buuvei) is a Senior Scientist with the Wildlife Conservation Society (WCS) Mongolia Program. He studies and helps protect Mongolia's nomadic ungulates, including khulan, gazelles, and saiga antelope. He also represents Mongolia as Scientific Councillor to the Convention on Migratory Species (CMS). In addition, Buuvei serves on the Steering Committee of the Saiga Conservation Alliance and is a member of the IUCN Equid Specialist Group and the IUCN Antelope Specialist Group.

Editor: When did you first become interested in the saiga?

Dr. BB: My interest in saiga started back in 2006 when I was a young researcher at the Mongolian Academy of Sciences. That year, I had the opportunity to join a WCS project focused on saiga conservation. In September, we travelled to the saiga range in western Mongolia, and it was the first time I saw this remarkable species in the wild.

What immediately struck me was how different saiga are from other ungulates. They run with their heads held low and never leap, which gives them a strange, almost prehistoric appearance. During that trip, our team made history by capturing and collaring adult saiga using a drive-net method — something that had never been done for the species before. Seeing and handling these animals up close was an unforgettable experience. That was the moment I truly became fascinated by the saiga.

Editor: When did you start working on saiga research and conservation?

Dr. BB: My direct involvement began in 2006 during that first movement study. Later, our team introduced systematic distance sampling surveys, which was the first time this approach had been used for saiga in Mongolia. These surveys have since become the national standard for estimating population size and trends.

A few years later, I led a study on reproduction, calf survival, and causes of mortality. Over three years, we captured and collared 116 saiga calves to track their survival and movements. This work eventually became the foundation of my master's thesis at the University of Massachusetts Amherst, USA. Since then, I have continued working on saiga research, focusing on their movement ecology, interactions with livestock, and threats from infrastructure development and disease.

Editor: Do you have a memorable story from your fieldwork?

Dr. BB: Yes, one that I will never forget. In 2008, we went on our first field mission to capture and collar saiga calves. We had purchased 40 radio collars, but none of us had ever seen a newborn saiga before. Based on herder accounts and limited scientific literature, we expected births to occur in late May, so we planned our expedition accordingly.

Every day, from sunrise to sunset, we followed pregnant females, hoping to spot newborns. Saiga mothers are known to nurse every two to three hours, so we spent long hours observing them patiently. After a week of searching, we had not found a single calf. Even our team leader, Dr. Joel Berger, had to leave when his scheduled field days ended. We were tired and discouraged, still carrying all 40 unused collars.

Then one evening, as we were driving back to camp, we heard faint bleating sounds through the open window. We stopped the vehicle and began searching the area. Suddenly, one of

Weighing a saiga calf during field research in western Mongolia in 2009. Photo by WCS

our team members called out. There, lying motionless on the ground, was a tiny saiga calf perfectly camouflaged against the desert soil. Moments later, another teammate found a second one. They were newborn twins, each weighing about 2.5 kilograms.

That discovery changed everything. Over the next week, we began finding calves regularly and managed to deploy all 40 collars. From that study, we learned that Mongolian saiga typically give birth around June 10, with most births occurring between June 13 and 20. Most females give birth to twins, although the rate drops after harsh winters. Sadly, about half of the calves die within their first year, mainly due to predation by foxes and eagles.

Editor: What are the biggest challenges in your work?

Dr. BB: Fieldwork in Mongolia's desert regions is always demanding. The distances are long, the weather can be extreme, and access to basic facilities such as water, fuel, and communication is limited. Every expedition requires careful preparation and endurance.

Beyond logistics, the conservation challenges are complex. Habitat degradation continues to worsen due to overgrazing by livestock, mining, and infrastructure development that fragments migration routes. Disease outbreaks such as Peste des Petits Ruminants (PPR) and Foot and Mouth Disease (FMD) can devastate populations in a matter of weeks.

Another challenge is ensuring long-term funding and institutional commitment. Saiga conservation requires sustained effort over many years, yet most projects operate on short-term grants. Keeping government partners and local communities engaged over time can be just as demanding as the fieldwork itself.

Editor: How can these challenges be addressed?

Dr. BB: Many of these challenges can be reduced through stronger collaboration among government agencies, researchers, and local communities. Conservation is most effective when responsibilities are shared and efforts are coordinated.

Better infrastructure planning is also critical. Roads and railways should incorporate wildlife-friendly designs to maintain habitat connectivity and prevent fragmentation. Expanding disease surveillance and rapid response systems is equally important to prevent mass die-offs.

Finally, we need to invest in people. Training and equipping rangers, supporting community-based monitoring, and securing stable long-term funding will help maintain progress even when external support fluctuates. Building local ownership and institutional commitment is the most sustainable way forward.

Editor: What do you enjoy most about your work?

CS: For me, the best part of my work is being out in the field, traveling across Mongolia's vast steppe and mountain landscapes and observing wildlife in its natural environment. I feel most inspired in these places, from the endless grasslands and desert plains where gazelles and saiga roam to the rugged mountains where snow leopards live.

I started my career studying Mongolian gazelles and was later drawn to the saiga. Over time, my work has

Spotting saiga calves is a challenging task that often requires many hours of careful observation. Photo by WCS

expanded to include other species such as the Asiatic wild ass, goitered gazelle, and more recently, the snow leopard. These experiences have deepened my appreciation for the resilience and diversity of Mongolia's ecosystems. Every field trip brings something new: the challenge of tracking elusive animals, the excitement of collecting fresh data, or simply the quiet beauty of dawn on the steppe.

Editor: What are the prospects for saiga conservation, and what needs to happen next?

Dr. BB: I am optimistic about the future of saiga in Mongolia. The population has shown resilience, but its long-term survival depends on maintaining healthy habitats and connectivity between seasonal ranges. The first priorities should be to restore degraded pastures and water points and to ensure that new infrastructure avoids key migration routes.

In recent years, saiga have started to reoccupy parts of their historical range and form small, permanent subpopulations. Strengthening these new populations and keeping them connected to the main group is vital. At the same time, we must continue to improve disease monitoring and management to prevent future outbreaks from wiping out small, isolated herds.

Editor: You have worked in conservation for more than two decades. What has changed during that time?

Dr. BB: Over the past 20 years, I have seen remarkable progress in nature conservation in Mongolia. Rural livelihoods have improved as the national economy has grown, largely due to mineral exports, and livestock numbers, which are the main source of income for herders, have increased significantly.

Public awareness of wildlife conservation has also grown, legal frameworks are stronger, and collaboration among scientists, government agencies, and local communities has improved. As a result, poaching, once a major threat, has declined noticeably.

However, these gains have also brought new environmental challenges. Habitat degradation has worsened due to development and overgrazing, and climate change has led to more frequent and severe extreme weather events.

Mongolia is moving in the right direction, but the main challenge is to find the right balance between economic development and environmental protection. This balance is essential to ensure that unique species like the saiga continue to thrive for generations to come.

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