

SAIGA NEWS

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



Photo by Valery Malteev

A retrospective assessment of saiga antelope *Saiga tatarica* die-off in Western Kazakhstan 2010-2011

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The current most plausible hypothesis for the die off of saigas in West Kazakhstan in 2010 and 2011 is that, after calving, adult saigas entered an area of relatively rich pastures. This was a time of rapid growth of vegetation. After eating the vegetation, saigas developed problems with their ruminal function. This led to bloating, mild diarrhoea and a respiratory based sudden death syndrome, similar to "Fog Fever"

Investigation of an outbreak of disease affecting saiga antelopes is a difficult task for a number of reasons; the remoteness of populations, difficulties observing individuals closely and inaccessibility of animals for clinical examination. Delays in initiating investigation

result in examination of carcasses many hours or days *post mortem*, when decomposing bacteria can confuse pathological diagnosis.

History tells us that saiga populations suffer large, apparently spontaneous disease outbreaks, causing massive mortality. There have been a number of events recorded in relatively recent times in Kazakhstan: 1955, 1956, 1958, 1967, 1969 and 1974, 1981, 1984, 1988, 2010 and 2011 with Foot and Mouth Disease and pasteurellosis the attributed causes in most events. These are viral and bacterial diseases which can cause major epidemic mortality in herbivores, both domestic and wild animals. Given current low saiga population sizes,

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epidemic disease is a major threat and extinction is a very real possibility.

Here we review the reported die-off of saiga in both 2010 (~12000 - 15000 animals) and 2011 (400+ animals) in the region of Borsy, West Kazakhstan, based on extensive discussions, a field mission and analysis of available data. Our main conclusions are that the diagnosis of pasteurellosis, based purely on isolation of *Pasteurella multocida* from organ tissues taken from saiga *post mortem*, without supporting pathological and epidemiological evidence, is unreliable. In general, outbreak investigation protocols were inadequate, in both years, for a comprehensive conclusive diagnosis but probably, based on environmental and tissue sampling, poisoning from some contaminant can be ruled out. Specifically, the method of data collection, necropsy and sampling was sub-optimal. This is unfortunate but understandable given the constraints and lack of specialised staff. Seeking an alternative explanation is a considerable challenge but several features of the two events allow some speculation on a possible cause.



Aerial shot of pasture showing intense green patches and carcasses dotted around in Borsy.

Firstly, the syndromes in both years were identical, occurring in virtually the same week of the year and in the same physical location, causing ~75% mortality of the affected population in 2010. Mortality rates were similar in 2011 but only affected a sub-population of ~500 animals, which moved onto the area of the previous die-off whilst the remainder of the saigas remained healthy, grazing in other areas (Figure 1). This in itself would suggest that infectious disease was an unlikely primary cause, assuming it was the same population affected in both years, since acquired immunity would have reduced subsequent mortality rates. *Pasteurellosis* (pneumonic or haemorrhagic septicaemia) is usually associated with stressors and there was no evidence for unusual aggregations, densities or extreme stress events whether physical, environmental or weather related. Calving is a stressful time for animals but there was no reason to suspect that these

years were any different than previous ones. It is also notable that there was no parallel outbreak amongst livestock in the area. Isolation of bacteria like *Pasteurella* and *Clostridia* is not unusual from tissues sampled *post mortem*: these organisms are normally present in the respiratory and gastrointestinal tracts and therefore opportunistically invade the body. Poor necropsy technique can also lead to sample contamination with these bacteria.

It is proposed that although the isolation of *Pasteurella* and *Clostridia* from some of these cases is not in doubt, it is uncertain whether these organisms played a primary role in the disease pathogenesis.

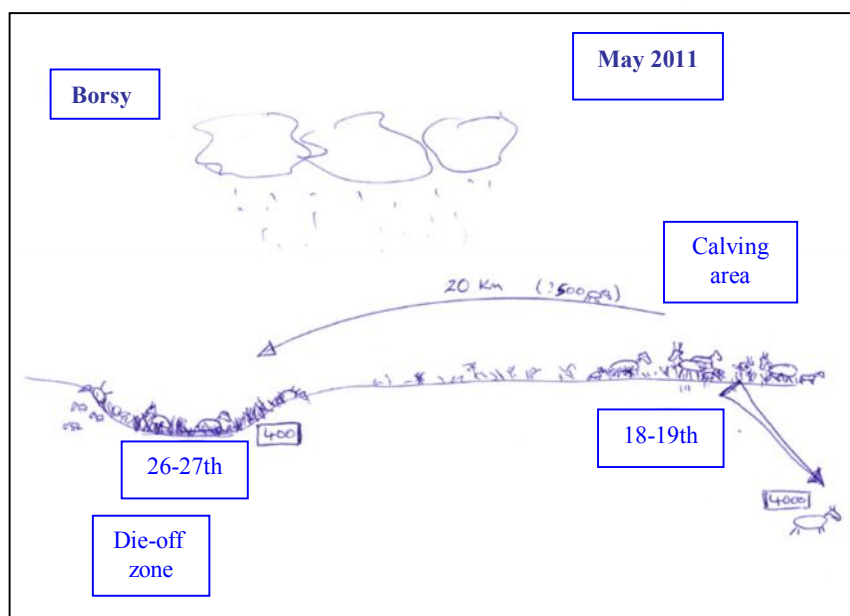
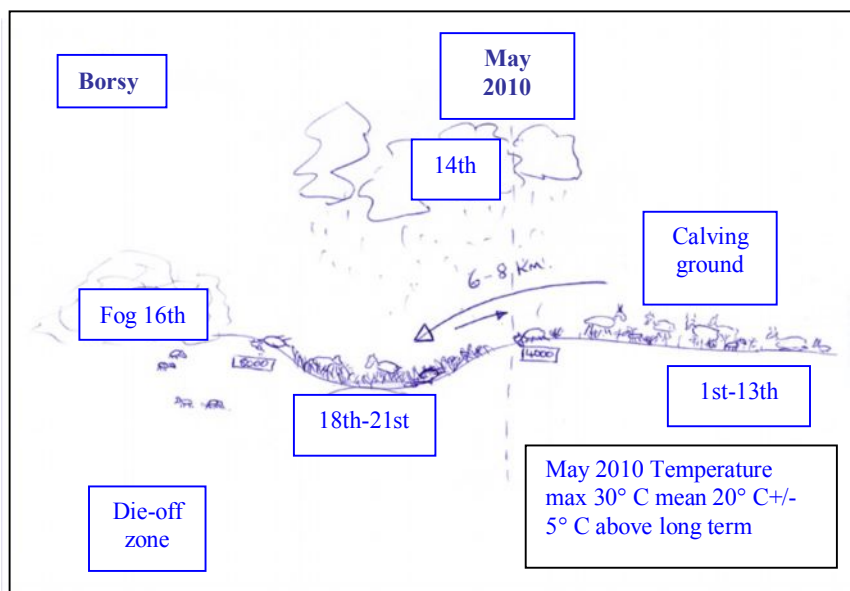
Secondly, these two years were not exceptional with respect to the general pattern of saiga movements around the time of calving but the latitude was further North than usual, the longitude further West and the seasons were relatively warmer and wetter than earlier years.

Other observations of importance were the apparent sudden death of adults whilst grazing, over only a few days, whilst calves were apparently less affected, probably dying after the females through starvation. This is not typical of infectious disease. And **most important** the pattern of mortality occurred in both years in the same general area, and this suggests a location-specific or pasture association. The general character of these areas includes, higher density grass-dominated pastures with some concentration of potentially toxic plants (*Lepididium perfoliatum*, *Lepidium ruderalis*, *Descurainia sophia*, *Thlaspi arvense*), and other potentially bloat-forming plants (alfalfa - *Medicago sp.* (26%), *Potentilla sp.* and *Polygonum sp.*). These species were concentrated in wetter nutrient-rich pastures in slight depressions in the topography.

Video and photographic evidence and observations suggest that the animals suffered rapid onset bloat, mild gastroenteritis and respiratory distress with sudden death whilst grazing on rich steppe pastures. Warmth and wetness in spring results in rapid nutrient-rich vegetation growth which is why saiga have evolved to calve at this time, but this is also a more risky diet, which can lead to digestive disturbance. Livestock suffer a similar syndrome associated with particular pastures or plants in spring and autumn. This is sometimes called "Fog Fever" due to its association with foggage pastures (rich grass pasture used for hay).

To move saiga health science forward and to ensure appropriate intervention in the future, it is recommended that:

- **Surveillance** is situation based i.e. it is adaptive to the circumstances, combining both passive and active methodologies. This will involve creating a



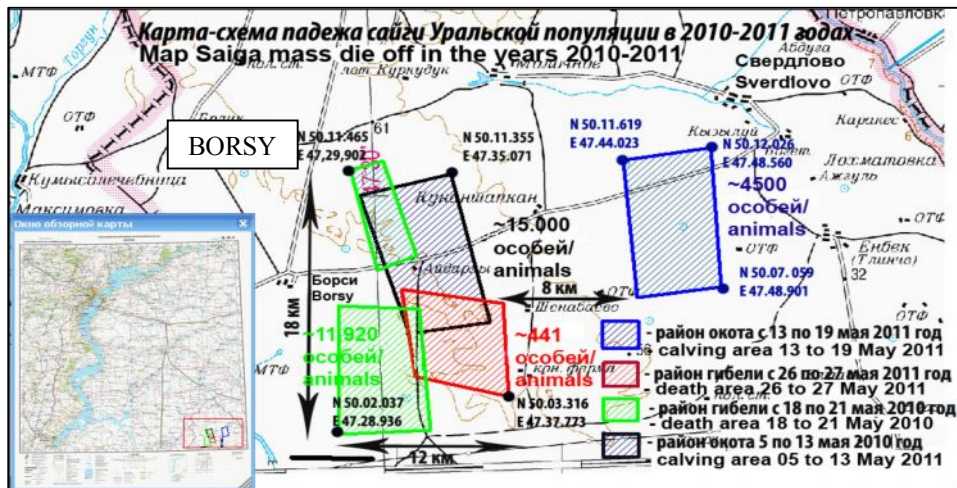
Sketches of Borsy region May 2010 and 2011 showing saiga calving and grazing movements, highlighting the rich pasture associated with the local topography at time of heavy rain and unusually warm temperatures.

responsible coordinating office for saiga health, preferably in the wildlife authority and enhanced passive patrol-based monitoring and reporting systems.

- Given that the majority of major saiga die-off events are seasonally related, at or about the time of calving, it is recommended that a **surveillance team, is constituted annually**, to spend 3-4 weeks observing and studying the main saiga populations in Kazakhstan, **during and after calving**.
- **Research** focuses on establishing normal health parameters, undertakes analysis of the ecological context for health; behavioural, habitat, climate and food (pasture) related aspects. In the event of an **outbreak**, a full investigation by a predetermined team should be initiated immediately.
- **Intervention** during a disease outbreak depends on the epidemiological information and opportunities to influence the outcome.
- For **definitive diagnosis** of any disease, a

multidisciplinary team is required and a set list of laboratories and contact persons must be established, for the various tests that might be applied, and resources provided to ensure swift analysis. Where appropriate this should include international laboratories.

- **Capacity building** will be essential. This should involve multiple institutions. It is recommended that a unit is established and based in the Ministry responsible for saigas, including, a rangeland scientist or general ecologist, a veterinary epidemiologist or disease ecologist and a wildlife field veterinarian (with access to appropriate support staff and equipment for field work), trained in the appropriate scientific discipline to enable effective wildlife health and disease investigation, analysis, intervention and control or management.



Map of Borsy district, showing the approximate extent of the calving and die-off areas (provided by Bakytbek Dysekeev (cites@minagri.kz) modified from original Okhotzooptom figure for clarity by Til Deiterich).



Pictures (extracted from the video of Okhotzooptom) of a dying saiga showing collapse, bloat, cyanosis (asphyxia) and blood tinged froth exuded from the respiratory tract post mortem.

Updates

CMS COP10: Networking for Migratory Species

Aline Kuhl and Christiane Roettger, UNEP/CMS Secretariat



At the end of 2011 the representatives of more than 80 governments met in Norway to discuss the global conservation of migratory species such as the saiga antelope. The overall theme of the Tenth Conference of the Parties to the Convention on Migratory Species (CMS) was “Networking for Migratory Species”. This served not only to highlight the importance of critical site identification and connectivity between sites for the conservation of migratory species, but also the importance of closer collaboration between all the different stakeholders, from governments to local people. Out of the 28 Resolutions adopted at COP10 a number are of relevance to the saiga community.

Resolution 10.3 on Ecological Networks is likely to pave the ground for further international ecological networks for migratory species. For the saiga antelope the need for identification and protection of critical sites, on either a temporary or permanent basis, was already highlighted at the 2nd Meeting of Signatories (Ulaanbaatar, September 2010) and at a CMS workshop addressing implementation of the CMS Saiga Memorandum of Understanding (MoU) in Kazakhstan (Astana, February 2011).

UNEP/CMS in collaboration with GRID-Arendal launched a Rapid Response Assessment on “Living planet: connected planet” at COP10 highlighting the urgent need for ecological networks. The saiga antelope was featured as a case study thanks to significant input from the saiga expert community.

Maps from the publication are available for free download and unrestricted use here:

<http://maps.grida.no/go/collection/living-planet-connected-planet-rapid-response-assessment>

The saiga range states Kazakhstan, Uzbekistan and Mongolia were present in Norway and actively contributed to the Scientific Council and COP10 discussions. Neighbouring countries present included Kyrgyzstan and Tajikistan; Tajikistan one of the proponents of the successful listing of the argali (*Ovis ammon*) on CMS Appendix II. Central Asian countries also actively participated in the working group concerning the up-listing of the Saker falcon (*Falco cherrug*) on CMS Appendix I. Prior to COP10 the first Meeting of Signatories to the Memorandum of Understanding on the Conservation and Restoration of the Bukhara Deer was held in Bergen with a number of Central Asian countries participating.



Eva Klebelsberg, ACBK, presents trends and lessons learned on saiga conservation in Kazakhstan.

The conservation of saiga antelopes and argalis was comprehensively discussed during two side events. Problems of infrastructure development posing barriers to the migration of large ungulates in Mongolia received great attention during the Scientific Council meeting and side events. A case study on the effects of infrastructure developments such as roads and trains on habitat fragmentation and the migration routes of ungulates such as the saiga and Mongolian gazelle was presented by WWF Mongolia (see the article in this issue of Saiga News). This study was funded by Monaco and was welcomed by participants as a first step towards further action to mitigate the negative effects of infrastructure on migratory mammals.



The Bukhara Deer MoU with Christiane Röttger, Khairbek Mussabayev, Elizabeth Mrema and Melanie Virtu.

Saiga antelopes are also likely to benefit from activities related to the draft CMS Action Plan on Central Eurasian arid land mammals, which were discussed at the Scientific Council and which will be further developed in close consultation with range states and experts over the course of 2012.

For further information, see www.cms.int and <http://www.cms.int/bodies/COP/cop10/media.htm>. You can also contact Ms. Christiane Roettger, CMS Regional Officer for Central Asia croettger@cms.int, and Dr. Taej Mundkur, Appointed Councillor for Asiatic Fauna, taj.mundkur@wetlands.org.

The 10th anniversary WCN conservation exhibition

Nadezhda Arylova, The Centre for Wild Animals of the Republic of Kalmykia, arylova@gmail.com

The 10th annual conservation exhibition ('Expo') organized by the Wildlife Conservation Network (WCN) was held on October 1, 2011 in San Francisco, USA. This proved to be a spectacular event not only for WCN but for all its partners engaged in the conservation of threatened species worldwide.

In this remarkable year, WCN again presented conservationists with a unique opportunity to tell the American public about their achievements, explain the challenges they face, meet donors, volunteers, experts in many different spheres of conservation and, most importantly, exchange experiences with other environmentalists who operate many thousands of kilometres apart yet encounter the same difficulties and devote themselves to their work with the same unflinching passion.

As usual, along with the Expo proper, workshops and meetings with donors were organised for WCN partners during Expo week. At the first session, as a grant holder of WCN's program for the support of young scientists, I presented the results of my work on saiga



Charlie Knowles introduces the WCN grant holders to the public.

conservation in the North-West pre-Caspian region of Russia. Together with young scientists from other countries, I was privileged to express my great appreciation of WCN's support of our activities, both during the official receptions and in personal interviews with the program sponsors, donors and WCN staff.

My participation in the workshops allowed me to learn at first hand about the subtleties of fundraising including practical advice on how to carry on a dialogue with donors, practical recommendations and master-classes on skills such as grant-writing, performance evaluation and strategic planning, use of business technologies and unconventional monitoring methods (such as sniffer dogs). Based on the information obtained, I have acquired a real practical understanding of modern methods in conservation, which will be especially important for working in Russia.

A guest of honour and a fascination at the dinner party was the famous Hollywood actress Isabella Rossellini, who not only inspired the ecologists by her presence but also undoubtedly attracted public attention to the animal species which are in need of aid and WCN's conservation activities for them. The event had an informal way of communicating that was very surprising for me, since it allowed conservationists to make new acquaintances, exchange information and experience, and to establish personal contacts with potential donors.



Photos by Martin Varon

The SCA stand.

conservationist Jane Goodall was an impressive event. She said: *“For me coming to these meetings each year is so important, so inspirational. We are living in a world in trouble and coming here and finding so many passionate dedicated people – especially young people – is tremendously inspiring”*. The presentations by the conservationists – representatives of WCN’s partner organizations and newly invited potential partners - aroused great interest. In the hall and at the and the demonstration stands, the Expo guests familiarized themselves with all kinds of animals, with the peculiarities of their ecology, and also with the people and culture of the countries where they live.

It may safely be said that the SCA is one of the most active WCN partners. Over the years of their cooperation with WCN, a great deal of work has been put in to promoting saiga conservation to the international community. The Expo was a success, the saiga attracted great interest and support from the public. My participation in the 2011 Expo was very important and useful for me and I am sure that it has given me a new powerful impetus for further activities for the conservation of this unique steppe antelope. I am taking this opportunity to express my sincere gratitude to WCN for the organization of this event and for the opportunity to take part in it.



Photos by Martin Varon

Actress Isabella Rossellini makes a speech.

It was the Expo day itself that was the grandest and most thrilling event; it gathered together over a thousand guests - nature enthusiasts and scientists, representatives of conservation organizations from all the corners of the globe. The speech by the world-reknowned

First international saiga ecotour to southern Russia

Anthony Dancer, SCA, mail@saiga-conservation.com

The 7th September 2011 saw the successful completion of the Saiga Conservation Alliance’s first saiga ecotour. The SCA has worked over the last two years to develop a tour of the saiga range area in southern Russia in order to provide much-needed support for saiga conservation projects in the region, whilst also providing a source of income for the local economy and fostering links with the wider international community. To this end the SCA collaborated with a with a local tour company, Saga Voyages, who arranged a 10-day tour of the area’s rich natural history and iconic cultures.

Starting in Rostov-on-Don, a group of North American tourists worked their way through the Republic of Kalmykia to the historic city of Astrakhan, visiting key SCA project sites along the way, including the Centre for Wild Animals in the Republic of Kalmykia and Stepnoi nature reserve in Astrakhan province. Other highlights included visits to Yashkul’ village school and the Rostov Biosphere Reserve, and a boat trip on the Volga Delta.

We are indebted to a number of conservation experts who kindly accompanied the tour at various points

Photo by Yuri Arylov



Photo by Anatoly Khludnev



Tourists at the Yashkul' captive breeding centre (left) and during the boat trip on the Volga River (right).

throughout the trip, including the Director of the Rostov Reserve Ludmila Klets and her colleagues Alexander Lipkovitch, Vladimir Kazmin and Viktor Fedosov; Viktor Petrenko of the Steppe Wildlife Association; Yuri Arylov (Director of the Centre for Wild Animals); and Anatoly Khludnev (Director of the Stepoi nature reserve).

Feedback from the tour was extremely positive, focusing on the personal element provided by direct contact with saiga conservationists. Canadian Debbie Chorneyko commented "To meet the people who are trying to help the saiga, to see their incredible dedication and caring

was so encouraging, it gives me hope."

It is hoped that the tour will continue to operate on an annual basis, providing a consistent and reliable stream of support for saiga conservation and drawing international attention to the challenges faced by biodiversity in southern Russia. Preparations are now underway for the next tour, with departure planned for late August 2012. The tour will be advertised to the SCA mailing list and at the SCA website, as well as to the general public.

Please contact mail@saiga-conservation.com if you are interested.

The first saiga photo safari to Altyn Dala

Dagmar Andres-Brümmer, Frankfurt Zoological Society, andres-bruemmer@zgf.de

From 31 May to 9 June 2011 the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) together with Nomadic Travel conducted the first "Saiga Photo Safari" to the project area of the Altyn Dala Conservation Initiative. The trip was a pilot project, exploring the options for nature and wildlife tourism in the Golden Steppe of Kazakhstan. The idea behind the project is that well managed eco-tourism could be a sustainable source of funding for the ACBK wildlife management areas, as well as a source of income for the local population in this very remote area. So the intention of this trip was to find out whether or not bringing

nature-loving tourists to these wild steppe areas would work and whether it could benefit local people as well as conservation.

The tour went into the centre of the Kazakh steppe, one of the last large wilderness areas of the world and an ecosystem rich in biodiversity, which depends on the grazing of one of the last long-distance migrating ungulates, the saiga antelope. As the Betpak-Dala population of saigas has increased significantly over recent years, it seemed feasible to conduct this first tour to this area. The tour was timed for June, when the saigas

Photo by Dagmar Andres-Brümmer



Observation for Caspian plover that is rare species for European bird watchers

had already given birth to their calves and had just left the calving grounds.

The tour began and ended at Zhezkazgan Airport and was guided by saiga experts Orken Shaimukhanbetov and Eva Klebelsberg of ACBK as well as rangers from the wildlife management area. The group travelled to Ulytau and spent the night at a private farm. The hospitality of the family was impressive and accommodation and meals were very traditional and authentic, making the stay a great experience for all guests. The following morning the group drove to the camp at Altybai, in the centre of the ACBK wildlife management area, where they would stay for 6 days to observe saigas and other wildlife.



Photo by Dagmar, Andres-Brimmer

A tourist helps to set camera for wolf monitoring.

A Camp in the Steppe

The camp was located far from civilization on the river banks of the small meandering river Uly-Zhylanshyk. Two traditional yurts, comfortably furnished and decorated with traditional Kazakh carpets and ornaments, served as accommodation. Two cooks from a local community prepared excellent traditional Kazakh food - just slightly adapted to European taste.

The area around the Altybai camp represents a very rare ecosystem in the steppe. Wild boar, wolves and many bird species use the oleaster groves for shelter and food. The large variety and abundance of birds makes it attractive to bird watchers, especially as rare birds such as the Caspian plover can be observed. Many different species of small mammals, reptiles, dragonflies or beetles are present and easy to observe. Tracks and signs of wolf, wild boar, badger and of course of saiga can easily be found. An exciting area for anybody who is interested in ecology and nature.

The Invisible Saigas

The Betpak-dala population has been increasing and just a few weeks prior to the "Saiga Safari" ADCI team members had observed approximately 20,000 saigas in one place during calving. This raised hopes that approaching the herds to take pictures of the animals would be feasible. Unfortunately the weather and the saigas were not very co-operative. The spring of 2011 was fairly rainy and so the saigas did not need to visit the usual watering holes, as the ACBK team had expected. For 6 days we tried to find those legendary "large herds" that rangers had seen quite close to the camp just a few days previously. But the saigas remained more or less invisible. The closest we came to a herd of maybe 30 to 40 animals was a few hundred meters, but the herd quickly vanished behind the horizon. To make matters worse, heavy rains during the first two days led to bad road conditions, limiting daily field trips in the vicinity of the camp. But nevertheless we saw saigas. And given the fact that these animals still are under pressure from poaching and that the population is still small compared to what it once was, we can consider ourselves lucky. Only two or three years back this would certainly not have been possible.

A Chance for Tourism

With regards to the very special steppe landscape and the remoteness of the area, Altyn Dala could be a destination for special interest groups. Even though the number of tourists will never be extremely high, there is potential to establish nature tourism on a sustainable level. And local people could clearly benefit from tours stopping at their farms for an overnight stay or for meals.

Furthermore safaris to the area could be combined with other activities such as hiking or horse riding, making it attractive to different target groups. And with the planned reintroduction of Przewalski's horses and wild asses, the Altyn Dala area will become even more attractive to eco-tourism. Furthermore there seems to be interest in "wolf watching", so the wolf population could be an additional asset for nature tourism in the area. Besides that, tourism could potentially raise awareness within the country of the need of conservation.

If you are interested in taking a steppe safari tour with us, please contact Olga Klimanova,
Olga.klimanova@acbk.kz

How to see a real saiga, or a trip to the Yashkul' Breeding Centre

Chingis Minkeyev, Lidzhi-Goryayev Tyurbya North secondary school, Lagan District, the Republic of Kalmykia, Russia

In November, 2011, the students of the 9th-10th classes of our school visited the Yashkul captive breeding centre in order to consolidate the knowledge about the saiga that the children had gained during their biology lessons. Only here could the children see with their own eyes the saigas about which they had read in books, learn about the

current status of the saiga population in the North-Western pre-Caspian region, the causes of their decline, and what is being done in our Republic to preserve this antelope which is recognized as the world's natural heritage. The children could see how the saigas live in large, spacious enclosures and how the breeding centre

staff attend to them. In the Visitor Centre we had the opportunity to watch a video about the saiga in Kalmykia which evoked a lot of emotion; we learnt about the work of the Centre's staff in more detail; asked interesting questions; and we saw art works about saigas created by children from other schools in the Republic.

It was also very interesting to watch other animals kept in the Centre's enclosures; a bison, wild boars, an ostrich, wild birds, camels. As a result, the children got to know a lot of amazing and interesting things about their native land, realized the importance of their involvement in the conservation not only of the saiga but of all the unique biodiversity of our Republic and the world as a whole. The children liked the excursion very much and it was very useful for the teachers.

We are grateful to the Centre staff for the opportunity that they gave us to visit and for their warm welcome, and to the organizers for making this trip a reality.



Students of the Lidzhi-Goryayev Tyurbya North secondary school at the entrance to the Yashkul' captive breeding centre.

A new documentary film about the saiga has been screened in the Ustyurt villages

Elena Bykova, SCA, esipov@xnet.uz

In autumn 2011, presentations were held in Uzbekistan of the new documentary film about saiga conservation, "At the End of the Line". The film was created by the GALA-Film studio on the initiative of the SCA and with financial support from Coins for Change Disney Canada, the Marsh Christian Trust and DVV International. The film narrates the inseparably associated fates of the people and saigas who have lived side by side on the Ustyurt plateau for many centuries. It was created with the active support and participation of the communities of Jaslyk, Karakalpakiya and Kubla-Ustyurt. The film's authors highlighted the causes of the ongoing illegal saiga hunting in Uzbekistan, introduced viewers to the unique habitat of this animal, and to its biological characteristics. The film shows how to improve the protection of this endangered steppe antelope based on existing nature protection legislation and traditional modes of economic management. The film was shot in Uzbekistan and Russia and is released in 4 languages: Uzbek, Karakalpak, Russian and English.



Film producer Galina Vinogradova and cameraman Alexander Klepalov at the filming site in the Astrakhan region.

The authors thank everybody who has supported the making of this film.

Please contact us at esipov@xnet.uz and mail@saiga-conservation.com if you would like to receive a copy of the documentary.

Media reports:

A bilateral agreement on the conservation of the Ural saiga population is in preparation

Russia and Kazakhstan plan to sign an agreement on the conservation, restoration and use of the Ural saiga population. The draft agreement has been prepared and is ready for signing by the Ministry of Agriculture of the Republic of Kazakhstan and the Ministry of Natural Resources and Ecology of the Russian Federation.

The agreement provides for joint activities to determine the timing of saiga use of specific areas, the directions and lengths of their migratory routes, to develop monitoring methods and to track their movements in border areas. The parties will also prepare proposals on the improvement of legislation for conservation of endangered species.

For more information, refer to:

<http://www.newsland.ru/news/detail/id/802756/>,

<http://eco.ria.ru/nature/20111014/458980750.html>.

The institutional structures of the Irgyz-Turgai nature reserve have been put in place

In October 2011, the Ministry of Agriculture of the Republic of Kazakhstan completed the development of the administrative structures for the Irgyz-Turgai state nature reserve. Created in 2007, the Irgyz-Turgai nature reserve is the first Protected Area with this designation in the steppe region of Kazakhstan. It is located in the Aktyubinsk oblast and covers an area exceeding 700 thousand hectares. The nature reserve has an authorized staff size of 99 employees. The reserve's main objective is ensuring the protection of the Bekpakdala saiga population, as a symbol of the Kazakhstan steppe.

For more information, refer to:
<http://inform.kz/rus/article/2413477>.

A saiga ground survey has been carried out in Kalmykia

On October 22-25, 2011, a vehicle survey for saigas was conducted in the Republic of Kalmykia. The census estimated the total number of animals at 12,870, about 2,000-4,000 higher than the 2010 population estimate (based on different methods). An inter-departmental commission was created to carry out the census, using guidelines developed by the Moscow branch of the All-Russian Scientific Research Institute of Hunting and Animal Breeding and the Chernye Zemli Nature Reserve.

Prior to the census, reserve staff collected information about the current location of the saiga population within the Republic. The census area was defined based on this information and 10 parallel north-south transects were driven spaced 5 km apart and 40–65 km long. The number of saigas observed at each encounter was noted, along with the time, vehicle speed, distance along the transect, if possible the age/sex composition of the group, and the distance between the group and the transect at first and last detection. The data obtained were processed using the “Saiga Assessment” computer program.

Based on the results of the survey, the commission has made a number of recommendations and proposals. Specifically, it was recommended the Ministry of Natural Resources and Environmental Protection of the Republic of Kalmykia should set up two new regional reserves (zakazniks) in order to enhance saiga protection; one between the Chernye Zemli reserve and the Meklektinsky federal zakaznik and another near the village of Artezian. It was also recommended that the Federal Ministry of Nature Protection and the Ministry of Nature Protection of the Republic of Kalmykia should create a joint anti-poaching team.

For more information, refer to:
<http://savesteppe.org/ru/archives/7447>.

«The Saga of the Saiga 2» has won a special prize at the Baikal Film Festival

On October 7-10, 2011, the 10th Anniversary Baikal International “Man and Nature” Festival of Documentary, Popular Science, and Educational Films was held in Irkutsk (Russia). The film “The Saga of the Saiga 2” was a winner in the category of best animation for children.

The film also received a special prize from the phone company Mega-Fon, the festival’s main sponsor, and the Diploma of the Baikal-Lena State Wilderness Area. The film, a sequel to the highly successful “Saga of the Saiga”, is based on stories submitted by schoolchildren to a writing competition.

The cartoon's director, Makhsut Zharimbetov (Kazakhstan), tells the story of life today in the Central Asian steppe. The central characters are the saigas, once abundant in this part of the world, but whose numbers are decreasing from year to year due to people's actions. “It is important that not only professional film directors and script writers participated in the creation of this film, but children as well. This very educational, warm and moving story is a good lesson for future generations” noted the manager of the Irkutsk regional branch of Mega-Fon during the awards ceremony.

For more information, refer to:
http://www.snews.ru/press_reliz.php?id=31481.



Photo by Sergei Makhtov

Makhsut Zharimbetov at the awards ceremony.

TNT continues to support the saiga conservation programme in Kalmykia



Since 2003, the Russian branch of TNT Express has been giving support to the Yashkul' saiga breeding centre, part of the Centre for Wild Animals of the Republic of Kalmykia (see *Saiga News-3*). In October 2011 on the initiative of the company director Karro van Graafland, a grant of 300,000roubles was given to the Centre for the purchase of fodder and fuel, repairs, extension of enclosures and other costs. TNT's assistance could not have come at a better time since winter had set in, requiring a lot of effort to care for, feed and protect the animals. Currently, 76 saigas are housed at the breeding centre, including 26 juveniles born in spring 2011. As a token of gratitude for his ongoing support, Mr. van Graafland was awarded a Certificate of Honour of the Government of Kalmykia. *For more information, refer to the newspaper "Izvestiya Kalmykii", October 22, 2011.*

Cases of saiga poaching

The Ustyurt population

August 19, 2011

In the Aktyubinsk region of Kazakhstan three jeeps were observed, which managed to escape. Four dehorned saiga carcasses were found. This incident has been registered by the Department of Internal Affairs; the investigation is underway.

For more information, please follow the link <http://kt.kz/?lang=rus&uin=1133167994&chapter=1153543930>.

August 28, 2011

At the Gisht-Kuprik customs office in the Tashkent region of Uzbekistan, a pair of mature saiga horns and a single maral horn were confiscated. They had been brought into the country by a resident of the Fergana Valley in neighbouring Kazakhstan. This case is currently under investigation.

December 27, 2012

State inspectors of the Specialized Amudarya Inspectorate of the State Biological Control Agency (under the State Committee for Nature Protection of the Republic of Uzbekistan) detained a group of saiga poachers in Muinak district of the Republic of Karakalpakstan, Uzbekistan. The dressed carcass of a young saiga female was confiscated as material evidence. While being arrested, the poachers, residents of Muinak, put up resistance. Evidence has been submitted to the Aral nature conservation public prosecutor's office and an investigation is underway. The poachers' vehicle and two rifles were confiscated and kept by the District Department of Internal Affairs.

On the same day an Uzbekistan citizen carrying 67

pairs of saiga horns was detained at the railway station in Samarkand city. The illegal load was detained by the transport police and passed for identification to the Inspectorate for the Protection of Fauna and Flora. The case has been submitted for examination to the Samarkand transport prosecutor's office.



Photo by the State Biological Control Agency of the Republic of Uzbekistan

Saiga horns confiscated in Samarkand.

The Betpakdala population

September 25, 2011

Two poachers were detained in the Irgiz district, Aktyubinsk Region, Kazakhstan, by officers of the and the game management organisation Okhotzooptom. Two pairs of saiga horns and a sporting gun were found on them. Two dehorned saiga carcasses were found not far from the place where they were detained. A criminal case under section 288 of the Criminal Code (covering illegal hunting) is under consideration.

For more information, please follow the link <http://www.newskaz.ru/incidents/20110929/1950792.html>.

October 20, 2011

In the course of their operations, the environmental police have detained poachers engaged in illegal saiga hunts, residents of Terenozek village, Syr Darya region, Kazakhstan. The police found five saiga carcasses and cartridges on the poachers. A criminal case under section 288 of the Criminal Code (illegal hunting) is under consideration. *For more information, please follow the link*

http://www.kazakhstan.kz/index.php?option=com_content&view=article&id=46398:2011-10-20-05-13-10&catid=14&Itemid=80

November 17, 2011

On the border of the Kyzylorda and Karaganda regions, Kazakhstan, a joint operation of the environmental police and the game management organisation Okhotzooptom detained two residents of Karaganda region aged 31 and 38, engaged in illegal hunting of saigas. A saiga carcass and a sporting gun with cartridges were found in their vehicle. A criminal case has been initiated under section 288 of the Criminal Code.

For more information, please follow the link <http://today.kz/ru/news/incident/2011-11-17/54344>

December 29, 2011

Officers of the Irgiz District Department of Internal Affairs, Aktyubinsk Region, Kazakhstan, detained two poachers, residents of the Saksaul station, Kyzylorda region, who had hunted saigas in the Bestobe area, Irgiz district. In the passenger compartment of their Toyota Land Cruiser the police found and confiscated an unlicensed double-barrelled sporting gun. Five dehorned saiga carcasses were found along the route of the detainees' vehicle. A criminal case has been initiated under section 288 of the Criminal Code (illegal hunting).

For more information, please follow the link <http://inform.kz/rus/article/2429757>

January 6, 2011

A joint operation of the environmental police and the game management organisation Okhotzooptom detained a Toyota Land Cruiser 120 kilometres from Kyzylorda. In the off-road vehicle's boot, the police found three saiga carcasses, and a sporting gun and cartridges in the passenger compartment. The poaching group comprised four residents of Kyzylorda and one person from Shieli district. The Kyzylorda Department for Internal Affairs has initiated a criminal case under section 288 of the Criminal Code.

For more information, please follow the link <http://inform.kz/rus/article/2431127>

Late 2011-early 2012

Five former police officers have been detained for shooting saigas in two separate incidents in Kyzylorda province, Kazakhstan. On 30 December 2011, environmental police officers detained two suspicious off-road vehicles in the steppes of the Karmakshi district. Inside the vehicles were three people, one of whom was the former deputy head of Zhalagash District Department of Internal Affairs. Twenty-six saiga carcasses were found in the vehicles. On 14 January 2012, officers of the Syrdarya District Department of Internal Affairs detained a vehicle in the Kumkol area, in the boot of which they found 32 saiga carcasses. Two residents of Kyzylorda were in the vehicle, one of whom had been dismissed from the Department of Internal Affairs in 2006 and the other in 2010. Legal proceedings have been initiated.

For more information, please go to: <http://www.caravan.kz/article/40313>, <http://inform.kz/rus/article/2434028>

Russia/Kazakhstan border

November-December, 2011

Over a week at the end of 2011, the Atyrau police and frontier guards prevented three cases of smuggling of saiga horns into Kazakhstan from Russia. These cases of horn smuggling are becoming more frequent, and Kazakh customs inspectors are keen to discover the cause of this trend in collaboration with their Russian colleagues, as well as the origin of the horns. It is possible that a criminal gang is poaching saigas in the Astrakhan region.

On November 28, at the Shep checkpoint in the Kurmangaz district of Kazakhstan, police officers

detained a Toyota with a Russian licence plate driven by a citizen of Astrakhan (Russia). The vehicle contained a bag of 93 saiga horns. According to the driver, the bag belonged to the vehicle's passenger, who was from South Kazakhstan region.

On November 30, frontier guards and Kurmangaz District Department of Internal Affairs officers stopped a vehicle which was crossing the Russia-Kazakhstan border near the village of Baida. The 51-year-old passenger, from South Kazakhstan region, was carrying 177 saiga horns.

Another case of smuggling at the Shep checkpoint happened on December 1 2011. Police officers stopped a vehicle with a resident of Astrakhan region at the wheel, and found a bag of 46 saiga horns belonging to a 20 year old South Kazakhstan resident. In order to avoid being charged, the man attempted to give the police officers a bribe of 5000 tenge and 1000 roubles. A criminal case has been initiated under section 183 of the Criminal Code of Kazakhstan, while charges of smuggling and attempted bribery are still under consideration.

For more information, go to: <http://inform.kz/rus/article/2423696>, <http://www.volgograd.kp.ru/online/news/1029132/>, <http://caspionews.kz/?p=8476> and others.

China

October 1, 2011

Manchurian customs have detained a Chinese citizen who was attempting to smuggle 6 saiga horns from Russia to China. During the examination of the man's luggage at customs, the officer noticed some suspicious conical-shaped items. This case is currently under investigation.

For more information, go to <http://www.chita.ru/news/33468/> and http://legal.gmw.cn/2011-10/01/content_2728912.htm.



Photo by the Kyzylorda Department for Internal Affairs press-service



Photo by ACBK

A saiga carcass found in the car boot, Karaganda region, Kazakhstan (left). «I will buy old saiga horns» - these ads filled the streets of Aktau, Kazakhstan in summer 2011 (right).

Articles

Analyzing the effects of infrastructure on migratory terrestrial mammals in Mongolia

B.Lkhagvasuren, B.Chimeddorj and D.Sanjmyatav

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Many animal species all over the planet have habitats that are used for only part of the year, because of seasonal climate changes or shifts in the food supply. Animal species whose life histories entail long-distance movements may be especially sensitive to habitat fragmentation and human-generated barriers to movement. Linear developments such as railways, roads and pipelines can have significant impacts on wildlife movement and survival. The CMS has identified barriers to migration as a key priority for the conservation of migratory species. In Central Asia and in Mongolia in particular, the number of planned and constructed large infrastructure projects (including railways, mining sites, pipelines, border fences, roads, etc.) has increased rapidly over the last few years.

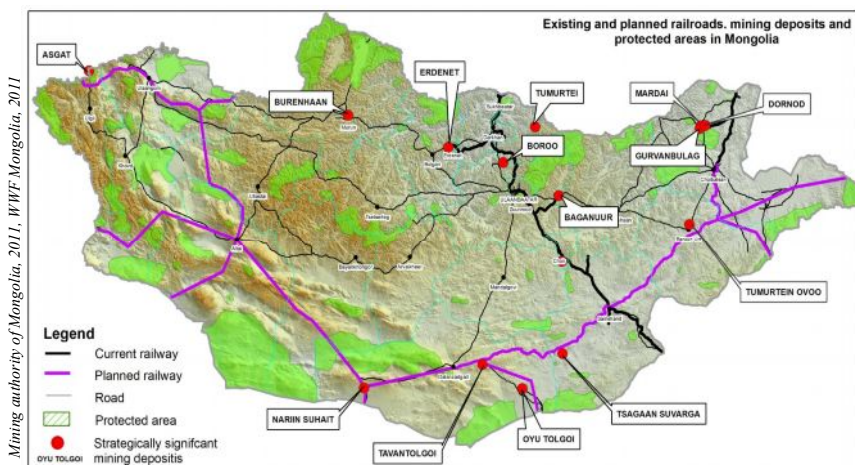
Given the number of infrastructure projects planned and currently being implemented in the open and still largely interconnected landscapes of Mongolia (e.g. the Millennium Road project by the Mongolian Government, the Asian Development Bank's road improvement projects etc.), a comprehensive assessment of the effects of these projects on migratory mammals is needed to inform relevant policy processes and ensure that the integrity of habitat and migration routes is maintained.

UNEP/CMS agreed to cooperate with the WWF Mongolia Programme Office to analyse the effects of linear infrastructure on migratory terrestrial mammals in Mongolia as a case study. There is an urgent need to identify the effects of the current infrastructure developments on CMS-listed migratory ungulates such as the goitered gazelle (*Gazella subgutturosa*), Mongolian gazelle (*Procapra gutturosa*), Asiatic wild ass or kulan (*Equus hemionus*), and Mongolian saiga (*Saiga borealis*) in order to develop recommendations and appropriate measures to avoid negative impact on these species.

The planned road and rail constructions will run through critical habitats for these species and, without mitigation measures, will represent a major barrier to migration. After construction of the planned railway in 2025, the Mongolian gazelle population will be divided into nine isolated populations separated by railway and border fences, while the kulan population and goitered

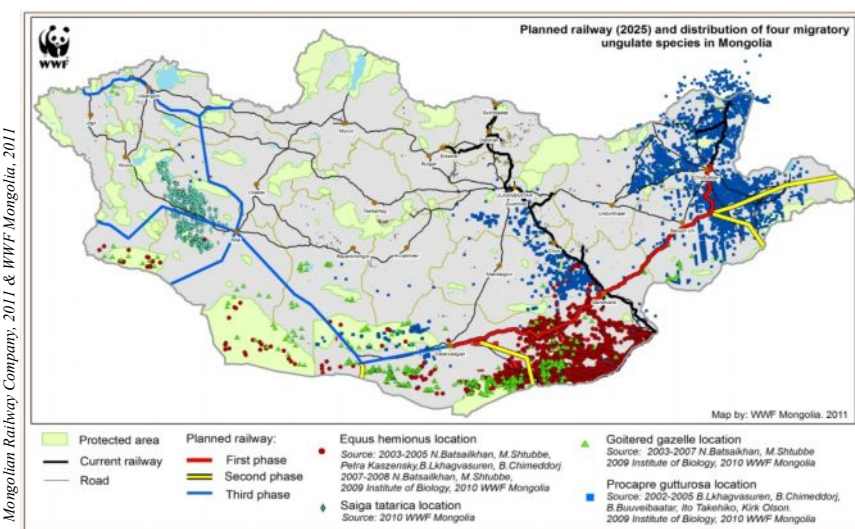
gazelle populations will be divided into five and seven populations respectively. The Mongolian saiga population will be isolated in two separate populations.

Busy transportation routes and long fences impede the movement of large herbivores by creating barriers to accessing important resources or by forcing them to make large detours to gain access. Both barriers and habitat fragmentation, reduce the capacity of wildlife populations to “outrun” droughts or harsh winters by moving to better areas. Without this escape option, intra- and inter-specific competition is likely to be high, resulting in poor body condition, poor recruitment, and high mortality.



Map 1.

Location of strategically significant mining deposits in Mongolia.



Map 2.

Existing and planned railways through the habitats of migratory ungulates in Mongolia will divide ungulate populations into small and isolated populations.

Measures to mitigate impacts and recommendations

The study showed that the migratory ungulate species likely to be most affected by these developments are the Mongolian and goitered gazelles and the kulan. Currently, the Mongolian saiga population is not affected by infrastructure developments within its range, although the plans to construct paved roads and railways through its range in around 2025 are on the policy agenda.

The report recommended that governmental and non-governmental organizations, national and international bodies involved in mining and infrastructure developments in Mongolia should take into account wildlife-friendly options in their construction and development projects, so as not to repeat the mistakes and mismanagement that have occurred in the recent history of Mongolia.

Detailed biodiversity assessments need to be undertaken in the affected regions as a basis for developing and implementing a long term biodiversity monitoring programme. Environmental Impact Assessment (EIAs) must be done prior to any developments, including monitoring of wildlife movements and identification of critical habitats and seasonal ranges. In order to mitigate potential

unavoidable impacts, biodiversity offsets should be considered. Guidelines should be developed on appropriate measures to mitigate negative impacts, such as development of under- or overpasses at critical migration points. If fences are mandatory, then unfenced areas should be left where wildlife is frequently trying to cross the railway, and fences constructed only in areas where human and livestock densities are high. If fences are constructed, there should be no barbs on the top and bottom strands of wire.

The full report upon which this article is based is available at:

http://www.cms.int/bodies/ScC/17th_scientific_council/Inf_23_Migration_Barriers_WWF_Mongolia_E.pdf

Editor's note: In accordance with Wilson and Reeder (2005) the Appendix-II listings of saiga antelope by the CMS and CITES have been updated to include two species, *Saiga tatarica*, in place of the sub-species *S.t. tatarica* and *Saiga borealis* in place of the sub-species *S.t. mongolica*. Hence for the moment we are referring to the Mongolian saiga as *S. borealis*. However, the evidence underlying this decision needs to be fully examined. We plan an article on this topic in the next issue of Saiga News.



Photos by Iadim Kiriyk

Mongolian gazelle caught in barbed fence.



Photos by Iadim Kiriyk

Running gazelles divided by fence.

Food habits and dietary overlap among livestock and saigas in Mongolia

Bayarbaatar Buuveibaatar, Gundensambuu Gunbat and Todd K. Fuller

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There are increasing concerns worldwide concerning the effects of livestock on wild ungulates through competition for forage and access to water. This is particularly the case in Mongolia because the country has a long history of livestock grazing as well as harbouring wild ungulates such as the Mongolian gazelle (*Procapra gutturosa*), the kulan or wild ass (*Equus hemionus*), argali sheep (*Ovis ammon*), and Mongolian saiga (*Saiga borealis*). The Mongolian saiga occurs in the western Mongolian Gobi steppe-desert with an estimated population of 5,000-7,000 individuals. Although the saigas are relatively safe from poaching due to enhanced protection, overgrazing by livestock is an imminent threat

in Mongolia. As result of the privatization of livestock in the 1990s, livestock numbers have increased rapidly and livestock biomass in the saiga range currently exceeds that of saiga by a ratio of nearly 50:1. Recent increases in livestock numbers have potentially reduced the capacity of habitats to sustain saigas because of forage or interference competition. Since livestock husbandry is one of the most important industries for Mongolia, sustainable use of the grassland by good livestock management is needed to minimise their negative impacts on the ecosystem, including the saiga. This is the first study on the food habits and dietary overlap between Mongolian saigas and livestock.

We studied the potential for forage competition between saigas and domestic livestock in Sharga Nature Reserve (SNR), western Mongolia (Fig. 1). Fresh pellets of saigas and livestock (goats, sheep, horses, and camels) were collected and used for the analysis of plant fragments. To ease plant identification, reference samples were made using leaves of representative food plants. The faecal analysis was done with the aid of a digital microscope. The degree of overlap in food composition was calculated using Pianka's overlap index (OI). A value of 0 means no overlap, and 1 means complete overlap.

During the summer of 2010, 36 newborn calves (1- to 3days old) from 35 females were captured and fitted with 70-g expandable VHF radio-collars to help understand survival, movement, and habitat selection (Fig. 2). Animal handling methods were approved by the University of Massachusetts Amherst

Institutional Animal Care and Use Committee. All radio-collared calves were monitored via telemetry 3–4 times weekly. During Jun 10–Aug 20, 2010, 105 plots were established where marked saiga antelopes had been observed within and beyond SNR, in order to understand habitat selection by saiga calves (Fig. 1). Each plot was subdivided into 5 adjacent 1-m² quadrats and the plants within were surveyed (n = 525 quadrats). The frequency and percentage of occurrence were calculated for each plant species recorded in the plots.

Twenty-five plant species were recorded in the vegetation plots, with .5 shrub species, 6 grasses, and 14 forbs. Onions (*Allium polyrrhizum* and *A. mongolicum*) were the most frequently occurring species (in 432 of 525 plots). Among the 5 most abundant species (those with percentage of occurrence >40%), there were 3 species of forbs (*Anabasis brevifolia*, *Allium polyrrhizum* and *A. mongolicum*), one grass (*Stipa gobica*) and one shrub (*Artemisia sp.*).

The faecal composition of camels was different from that of the other ungulates (Table 1). Camels predominantly fed on shrubs, with 49% of the faeces comprising shrub species. *Allium* appeared in greater proportions than other plants in saiga, goat, and sheep

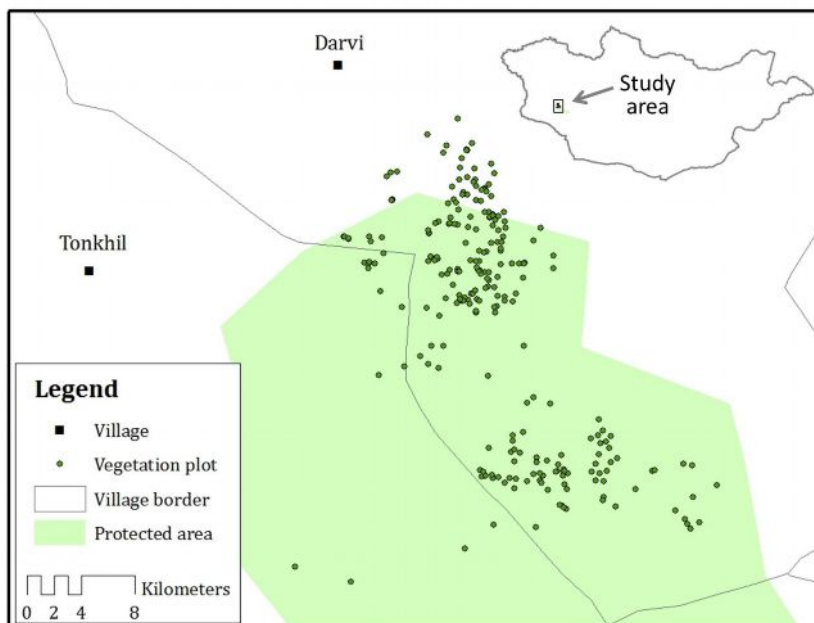


Figure 1.
A map of the study area and vegetation sampling points in western Mongolia.

Table 1.
Pianka's indices of among-animal food overlap in western Mongolia

	saiga	sheep	goat	horse	camel
saiga	--				
sheep	0.96	--			
goat	0.95	0.98	--		
horse	0.88	0.92	0.96	--	
camel	0.73	0.78	0.71	0.78	--

faeces (19-27%), *Stipa* grasses were dominant in the faeces of horses (32%). Although *Anabasis brevifolia* was the third most frequently observed species in the vegetation plots after *Allium spp.* and *Stipa gobica* (Table 1), it was found only in the faeces of saigas and camels, accounting for about 10% and 12%, respectively. The food habits of the Mongolian saiga in SNR were quite similar to those of sheep (OI = 0.96), and goats (OI = 0.95) but were different from those of horses (OI = 0.88), and camels (OI = 0.73; Table 1). The least food overlap was observed between goat and camels (OI = 0.71), while the overlap index was the greatest between goat and sheep (OI = 0.98; Table 1).



Grazing herds of saiga antelopes in western Mongolia.

Photo by Gundensambuu Gumbat

The results suggest that saigas have a preference for feeding on high quality plants such as *Allium spp.* and *Anabasis brevifolia*, although vegetation availability and diversity is low in comparison in study areas in other parts of the country. Further, the food habits of Mongolian saigas were quite similar to sheep and goats but different from horses and camels, indicating that competition for food resources between saigas and some livestock species during food-limited periods is potentially high. Similar research on Mongolian gazelles and argali sheep in Omnogobi and Dornogobi showed they also have potentially competitive interactions with livestock, particularly goat and sheep. Thus, from the viewpoint of pasture management and conservation of the endangered saiga antelope, grazing by goats and sheep should be avoided in key saiga areas during the autumn. This will help to lessen food competition and guarantee adequate food resources for the saigas to survive harsh winters.

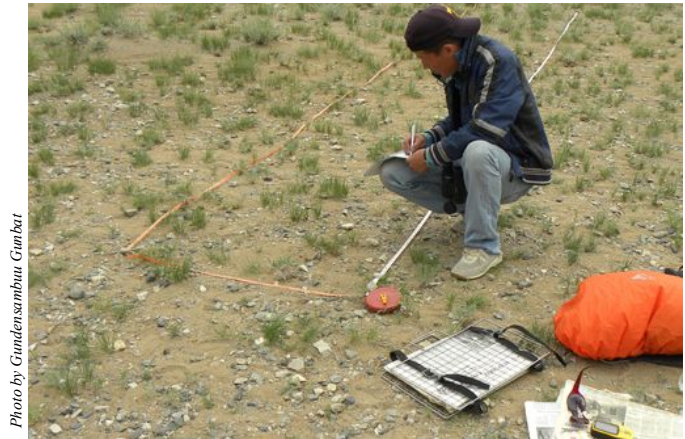


Photo by Gundensambuu Gunbat

Conducting the vegetation survey in locations where marked saiga antelopes were observed.

Editor's note: This research was supported by an SCA Small Grant to Gundensambuu Gunbat as well as a WCN scholarship to Bayarbaatar Buuveibaatar.

Avenues for future research into the migration of the saiga antelope

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Research into animal migration is currently undergoing a transformation worldwide, which has relevance to the study of saiga migration. Recent technological advances, such as GPS collars, have enabled researchers to move towards studying the migration of individuals rather than large groups of animals. For example, research on the causes of saiga migration has so far worked by looking for associations between large groups of saigas and the seasonal high and lows of vegetation productivity in different areas. Now that GPS collars have been fitted to saigas (see *Saiga News-10, 12*), it will be possible to work at the individual level, allowing migration routes to be more accurately predicted, by examining how and why how individual animals decide upon their migratory route.

Migration research also now takes a more integrated approach and involves a number of different disciplines. Studies now take account of factors such as genetics, physiological processes and external conditions, the interactions between them and how these factors feed

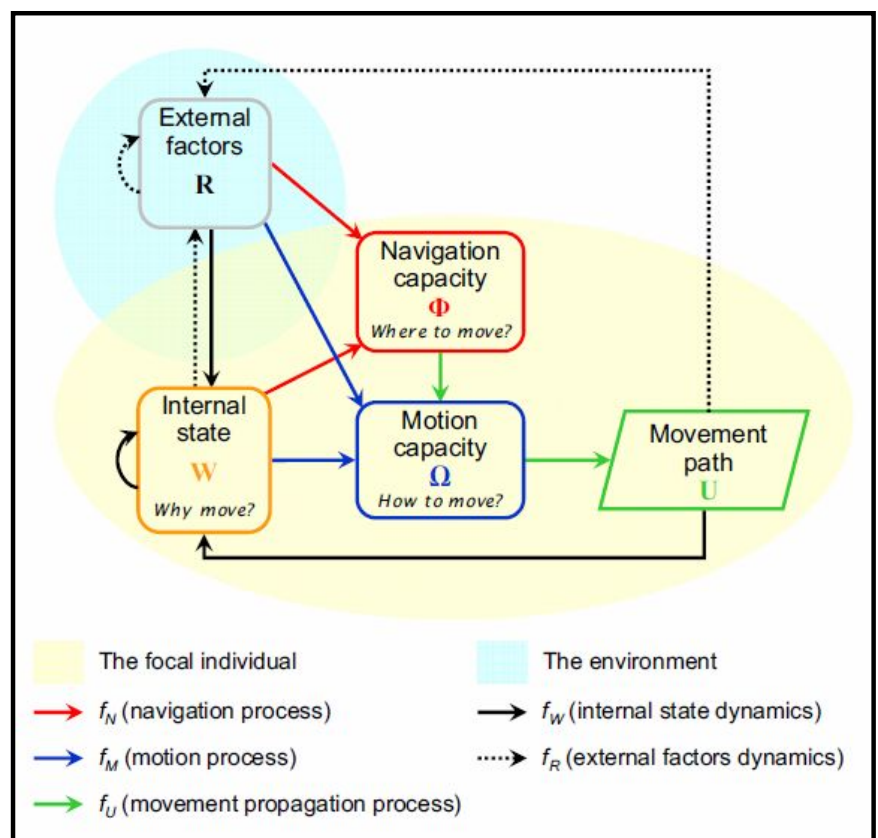


Figure 1.
A framework for the study of animal movement proposed by Nathan et al 2008.
Internal state (why move), Navigation capacity (where to move), Motion capacity (how to move) and external factors all feed into to the movement path of an organism and interact with one another.

A framework prepared by Nathan et al. (2008) communicates this new interdisciplinary concept of migration research (Fig. 1).

Studying migration in line with this new research concept requires not only data on an animal's location but also information on the behaviour of the animal, its health (such as weight), environmental variables, and many other factors. This bottom up approach takes the view that migratory choices are determined by factors originating within the animal such as an animal's perception of the environment.

There are three scales at which an animal's movement can be examined in order of increasingly fine scale (both over time and space); the lifetime track, movement phases and movement steps (Fig. 2). A movement step refers to two successive pieces of information on the location of the animal received via GPS- this is the finest scale at which analysis of movement can take place. A movement phase consists of a number of movement steps that represent a behaviour intended to fulfil a certain goal (such as to escape a predator or reach an area of pasture). Movement phases are recognised as being vital in linking traditional observational research methods to new individual-based approaches. New methods of analysis such "net squared displacement" (NSD) can be used to identify different movement phases by examining statistically the differences in distance, timing and duration of movement.

The new migration research methodology opens up numerous opportunities for saiga research. For example, to what extent can individual saigas adapt their migration patterns? The answer to this question will have important implications for the saiga's ability to cope with climatic and other changes in their environment and hence has important consequences for conservation planning. The ability of individual saigas to adapt their movements to changes in their environment will in large part depend on the mechanism through which their migration operates. For example, is it reliant upon memory (perhaps genetically determined), or do individuals respond directly to cues in the environment and decide upon the best way to migrate? The drive to migrate in saiga is almost certainly genetically determined. Saiga calves raised in captivity exhibit strong migratory urges. Whether the migratory direction of saiga is genetically fixed is however unclear. Studying the inter-year degree of consistency in the route of individual saigas using GPS collars may help to answer this question. If individual saigas are found to exhibit substantial inter-year variability in their migratory route this would be suggestive of the lack of a fixed genetic or memory-based control on their direction of migration, and instead suggest that saigas use environmental cues to determine their migratory routes.

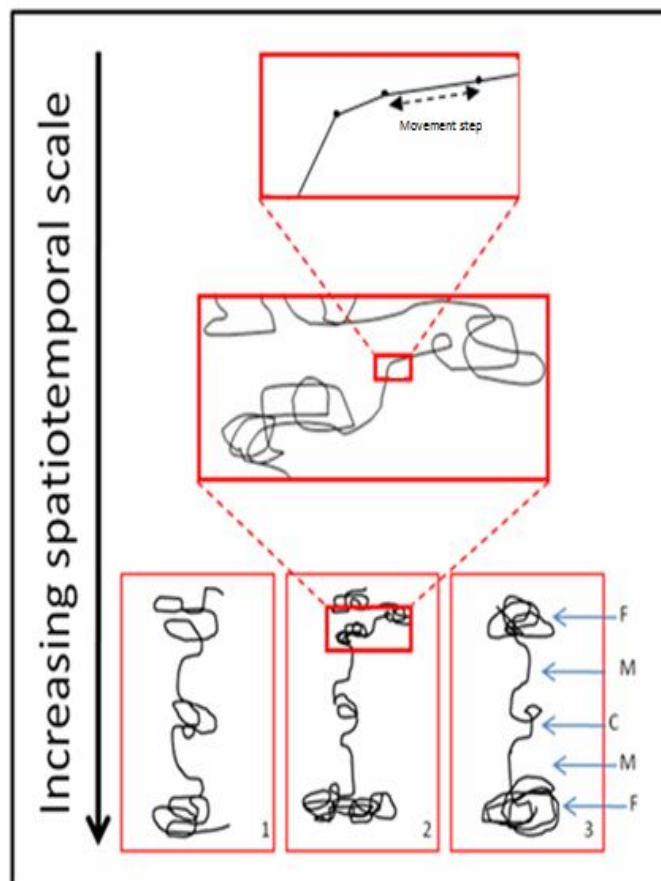


Figure 2.

Hypothetical yearly movement tracks for a saiga individual (1. Movement path in year one, 2. Movement path in year two, 3. Movement path in year three). The middle picture shows a movement phase (a foraging phase). The top picture shows a fine scale movement within the movement phase (a movement step). F. Foraging phase, M. Migration phase, C. Calving phase.

The degree of variation in the migratory patterns of different saiga individuals is currently unknown. Factors such as sex, age and dominance have been found to affect movement patterns in other species such as moose. GPS data, analysed using the NSD method, could be used to study the basis for such variation in saiga populations. Performing such analysis is important for conservation because considering only population-level patterns could lead to areas utilised by certain components of the population (e.g. males) being excluded from protected areas.

Movement simulations that take account of individual variation could be used to more accurately model saiga movement in the face of climatic and other environmental change. Analyses such as these could use future environmental projections (such as those provided by the inter-governmental panel on climate change). An individual based movement model could then be run in these projected future environments and areas for conservation prioritised based on the results obtained.

An Evaluation of Potential Monitoring Methods in Uzbekistan

Suzanne Offord

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A priority action of the CMS Medium Term International Work Programme is to obtain baseline information about the seasonal distribution of saigas in the Ustyurt population. However, in recent years saiga monitoring in Uzbekistan has been quite limited as it faces many challenges. Carrying out monitoring is expensive so it is important to ensure it is carried out in the most cost effective and accurate way. However, it is difficult to know which method would be the most successful without trialling it in a pilot study. In June 2011 I worked with collaborators in Uzbekistan to evaluate potential methods that could be used to monitor saigas in order to inform a pilot study.

I evaluated all monitoring techniques used for ungulates



Photo by Alexander Esipov

Suzanne Offord and SCA team at a shepherd's farm.

worldwide as well as the methods used both currently and historically in all saiga populations. Information was also collected on local resources, conditions and constraints, as well as potential monitors. A simulation was then used to evaluate the cost of each method and the accuracy and precision of the data that would be obtained. The study identified the following:

1. Estimating detectability substantially improves the accuracy of the monitoring data. Distance sampling would produce the most accurate data.
2. Cars or motorbikes were the most cost effective and feasible transport to use.
3. Counting saigas rather than faecal pellets or tracks should produce higher precision in the results
4. The wages of the surveyor was generally the highest cost in a monitoring program and so affected the cost effectiveness of any method.

The study recommended that the most cost effective and accurate monitoring method involved local scientists on motorbikes travelling along transects counting saigas using distance sampling. A pilot study implemented under a Whitley award to Elena Bykova using this method is now currently being piloted. We hope to see the results of this pilot later in 2012. If you would like a copy of the full report please contact me, Elena Bykova (esipov@xnet.uz) or E.J. Milner-Gulland (e.j.milner-gulland@imperial.ac.uk). The report is currently available in English and will soon be available in Russian.

Building public engagement for conservation of the Ural saiga population following a mass die-off

Carlyn Samuel, Olga Klimanova, Mirbulat Urymbaev, E.J. Milner-Gulland

Corresponding author: Carlyn Samuel, Imperial College London, carlynsamuel@o2.co.uk

The Saiga Conservation Alliance's project "Building public engagement for conservation of the Ural saiga population following a mass die-off" was initiated in August 2010 with the financial support of the Save Our Species programme, People's Trust for Endangered Species and the Disney Wildlife Conservation Fund. The project arose in response to the mass death of saigas in Ural in May 2010 (see *SaigaNews-11* but also the article in this issue), and was coordinated by the SCA's in-country partners the Association for the Conservation of Biodiversity in Kazakhstan (ACBK), in conjunction with Imperial College London.

The project involved the implementation of an environmental education campaign which was aimed at children and adults in key seven villages in the saiga's

range. The campaign aimed to increase knowledge about the saiga and the challenges that the population faces, such as from poaching and disease. The overall goal was to promote pro-saiga attitudes and behaviour, laying the foundations for a long-term engagement programme working towards restoration of the saiga population.

ACBK visited each of the villages in January 2011 before the campaign began, and interviewed villagers to ascertain their knowledge of and attitudes toward saiga. Then ACBK ran information evenings in each of the villages as well as education days in schools. The campaign culminated in a Saiga Day in each village, these were well attended and positively received by the villagers and their children (see *Saiga News-12*).

To assess the effectiveness of the project, almost 400 local residents and children took part in a survey at the end of the project, in June 2011. Comparing the results from this survey with the initial survey helped provide an insight into how knowledge, attitudes and behavioural intentions may have been influenced by the campaign, and the major variables which influenced the success of the campaign. Additionally, the results shed light on how 'external' conservation measures and processes are judged by local people, and how this impacts their success. The study highlighted a successful campaign with feelings of goodwill towards saiga conservation in general, leading to a feeling of optimism for the role of local people in the conservation of the saiga. After the campaign respondents' knowledge was significantly higher than before the campaign, which may suggest that the campaign has led to better saiga knowledge in the population as a whole. After the campaign respondents were 38% more likely than before to report that they had all the saiga information that they felt they needed. 93% of respondents thought that the information given to them during the campaign was important, with one respondent stating; *'Soon the saiga will disappear totally and it will be just like the mammoth'*.

Interestingly having the campaign delivered by people from outside their villages gave the information more prominence. Some people felt having the campaign run by 'outsiders' gave it more weight, especially as *'No one has ever come to us before and we didn't know about the problems saiga face, our children have never seen saiga and now they understand their importance.'*

One participant felt that the plight of the saiga has had a low profile in Kazakhstan and the awareness campaign had had a positive effect in drawing attention to this: *'The awareness campaign helped us understand that the loss of saiga is our primary wildlife problem; many of us have always lived here but never heard about saiga, now everyone is talking about them all the time.'* Several respondents thought the campaign was a success as it *'teaches children from an early age to respect and preserve nature and wildlife'*.



Photo by Carlyn Samuel

This local girl was a very active participant in Saiga Day.

Some respondents rated their experience of the campaign positively because they appreciated the fact that events were free and in their own village.

People's attitudes towards saiga conservation have significantly improved since the campaign started. Before the campaign most people stated that they cared to a certain extent that saiga may disappear, with some stating that they did not care if saiga disappeared. After the campaign only a handful of people said that they would not care if the saiga disappeared and the majority agreed with the statement *"I care very much that saiga may disappear"*.

The project has demonstrated that awareness campaigns help to improve people's attitudes towards saigas, and that local people in the Ural region are keen to get involved in saiga conservation. The next step is to build saiga awareness events and environmental education into the annual school calendar and build a constituency of support for saiga conservation in the region. This will enable the strong positive feelings that have been generated by the project to continue to grow, so that local people feel that they themselves are able to contribute to saiga conservation, not just outsiders.



Photo by Carlyn Samuel

Carlyn Samuel with local residents and a group of ACBK volunteers and students.

The development of a national plan for saiga conservation in Russia

Olga Pereladova

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One of the Russia's high priority tasks is the implementation of the Action Plan for saiga conservation and restoration as part of its commitment under the CMS Memorandum of Understanding signed by the Russian Federation in June 2009 in Bonn. This requires a revision of the national plan for the conservation of this threatened species. The revision and further implementation of this plan is urgent because in Russia, and specifically in the north-west pre-Caspian region (Kalmykia, the Astrakhan Region and the adjacent areas), most regrettably, the saiga population continues to decrease. It has reduced from 18-20,000 in the early 2000s to around 7,000 now (see *Saiga News*-13 but also the article in this issue), but also the article in this issue). Meanwhile, over the same period, under the same weather conditions and a similar pattern of vegetation change, in Kazakhstan the total number of saigas has grown from 20,000 to more than 100,000, and numbers in the Betpakdala population from an estimated 3-4,000 in 2002-2003 to over 70,000 in 2011. The example of the Republic of Kazakhstan demonstrates that restoration of the species is truly feasible.

With a view to the rapid fulfillment of the commitments undertaken by the Russian Federation, in autumn 2010 WWF-Russia embarked upon the coordination of the revision of the Action Plan on saigas for the period 2011-2015. The draft was submitted for discussion to a wide range of experts and organizations and appropriate regional government agencies; in the process of revision all the comments, amendments and additions were accepted.

The draft plan includes a package of measures for the development of international cooperation for saiga protection, and the improvement of

the regulatory and legal framework for the protection and restoration of the species. Serious attention is directed to the need to upgrade the network of protected areas in order to secure the species' migratory routes, and also to the enhancement of saiga protection outside protected areas, and to the planning and implementation of a package of measures to improve the condition of the species' habitat. Other sections of the Action Plan provide for the development of focussed scientific research as well as upgrading of population monitoring, in particular the monitoring of the saiga and its habitats using methods which do not harm the population. The Action Plan also includes various outreach and educational activities, aimed at engaging local communities in conserving the saiga population in Russia.

At the meeting of the Threatened Species Commission on October 31, 2011, the draft Action Plan was approved and, in accordance with established procedure, submitted to the Ministry of Natural Resources and Ecology of the Russian Federation for finalization, official approval, and implementation.



Photo by Nadezhda Arylova

Saigas at the Centre for Wild Animals of the Republic of Kalmykia.

Saiga heroes

Editor's note: In this issue we publish our Editor's interview with Aleksandr A. GRIGORYANTS, acting head of the State Biocontrol Department of the Nature Protection Committee of the Republic of Uzbekistan. Mr. GRIGORYANTS has worked on the protection of Uzbekistan's unique natural heritage for many years. The most striking memorable moments of his career are connected with his operational work combatting poaching. He is also in charge of the implementation of international conventions including CITES and CMS, which cover saiga conservation actions.

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

A.G.: Since my childhood I have always been very much interested in the life of wild animals and when I saw a saiga in a picture (I do not actually remember when), its unusual appearance really amazed me. But I began to take a keen interest in this species when I started work at the Inspectorate in 1976.

Editor: What is your ordinary day like?

A.G.: Currently I have to do a lot of administration and paperwork. I constantly meet with different people who come to our organization to discuss various issues; if our staffs are unable to resolve these problems at their level, than I have to get involved in solving them. Most regrettably, currently I do very little operational, inspection work.

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

A.G.: I encountered saigas very often when I was engaged in operations. There were many different situations, yet it was just my work, I did not perceive it as something extraordinary.

Editor: What are the main problems in your work?

A.G.: The main problems include: technical equipment of the inspectors, staff training, developing additions and amendments to the law with regard to the strengthening of controls over the use of natural resources.

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

A.G.: Awareness about conservation should be enhanced among decision-makers. In addition, we need to educate them about conservation. The politicians and economists must understand that it is easier and better to invest millions in nature conservation today than invest billions in restoration of the environment in the future.

Editor: What is the best thing in your work?

A.G.: The very best thing is that I enjoy this work and

would like to do everything in my power to improve the situation for nature conservation.

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

A.G.: Many years ago the saiga was also on the verge of annihilation but severe laws helped it to recover. We need to attract attention to the issue of conservation, strengthen legislation, raise awareness among local people and strictly comply with the requirements of the law. I am sure we will manage to restore saiga numbers.

Editor: You have worked in conservation for many years. What has changed over these years and what are current tendencies in this sphere?

A.G.: Yes, I have worked in this field for rather a long time and can say that a tendency for the better is starting to show. Many more people are beginning to understand that conservation is not just a folly of some fanatics, but that it is a vital necessity for the preservation of life on Earth, our shared Earth. Nature does not have borders and many, including politicians, are beginning to realize this. I believe that this will lead directly to a significant improvement in nature conservation in the near future.



Photo by Alexander Espov

Alexander Grigoryants in his office.

Project round-up



The 2011 SCA Small grants competitions

In 2011 we were fortunate to be able to run two separate small grants competitions. The first, supported by CIC and WCN, is the continuation of our ongoing initiative to support grassroots projects and build capacity of those working to implement the priority actions of the Medium Term Work Programme of the MOU on saiga conservation under the Convention on Migratory Species. The winners were selected by the Steering Committee of the SCA in September 2011. This year we were pleased to be able to support three excellent projects, which represent a broad range of activities and geographical locations. They are:

- Mingxia Zhang (China) “Reducing the illegal trade in saiga horn in Guangzhou, China”
- Makhsut Zharimbetov (Kazakhstan) “Creation, duplication and distribution of the comic book *Saga of the saiga*”
- Viktoria Nostaeva (Russia) “Creation of a mobile wide-frame information stand about the saiga and delivering lectures for the ecological education of schoolchildren in the Republic of Kalmykia”

The SCA was also asked by the United States Fish and

Wildlife Service to administer a one-off small grants competition on their behalf. This had the same aims as the annual SCA competition, but supported projects with a budget of up to \$20,000 rather than \$2,000. Seven international independent experts were involved in the panel to select the best projects. We were pleased to be able to support four excellent projects, again representing a range of priority activities and carried out in three different countries:

- Anatoliy Khludnev (Russia) “Improvement of technical equipment of the Sanctuary “Stepnoi” to reinforce the struggle against poaching and to improve saiga conservation in Astrakhan region”.
- Yuri Arylov (Russia) “Monitoring of Saiga populations in the Northwest Pre-Caspian using the observations and knowledge of the local people”.
- Batkhuyag Baldangombo (Mongolia) “Building capacity for preventing transboundary trade of Saiga derivatives in the Western parts of Mongolia and China”.
- Yan Xie (China) “Enhancing Capacity of Government Law Enforcement to Reduce Illegal Saiga Horn Trade in Guangzhou, China”.

We congratulate all seven winners, and look forward to reading about their work in future issues of *Saiga News*.



Photo by Nadezhda Arylova

Announcements

Coordination of the CMS MTIWP



In February 2011, the Saiga Conservation Alliance (SCA) and the Association for the Conservation of Biodiversity in Kazakhstan (ACBK) signed an agreement with the Convention on Migratory Species (CMS) to coordinate implementation of the Medium Term International Work Programme on saiga conservation. Supported by a small grant from CMS, ACBK and the SCA have been working on two main activities; the creation of a database of saiga projects and experts (led by ACBK) and the creation of an online Saiga Resource Centre, SRC (led by SCA). The two will be combined so that the databases become both searchable and updatable online. This information will be available only to registered users.

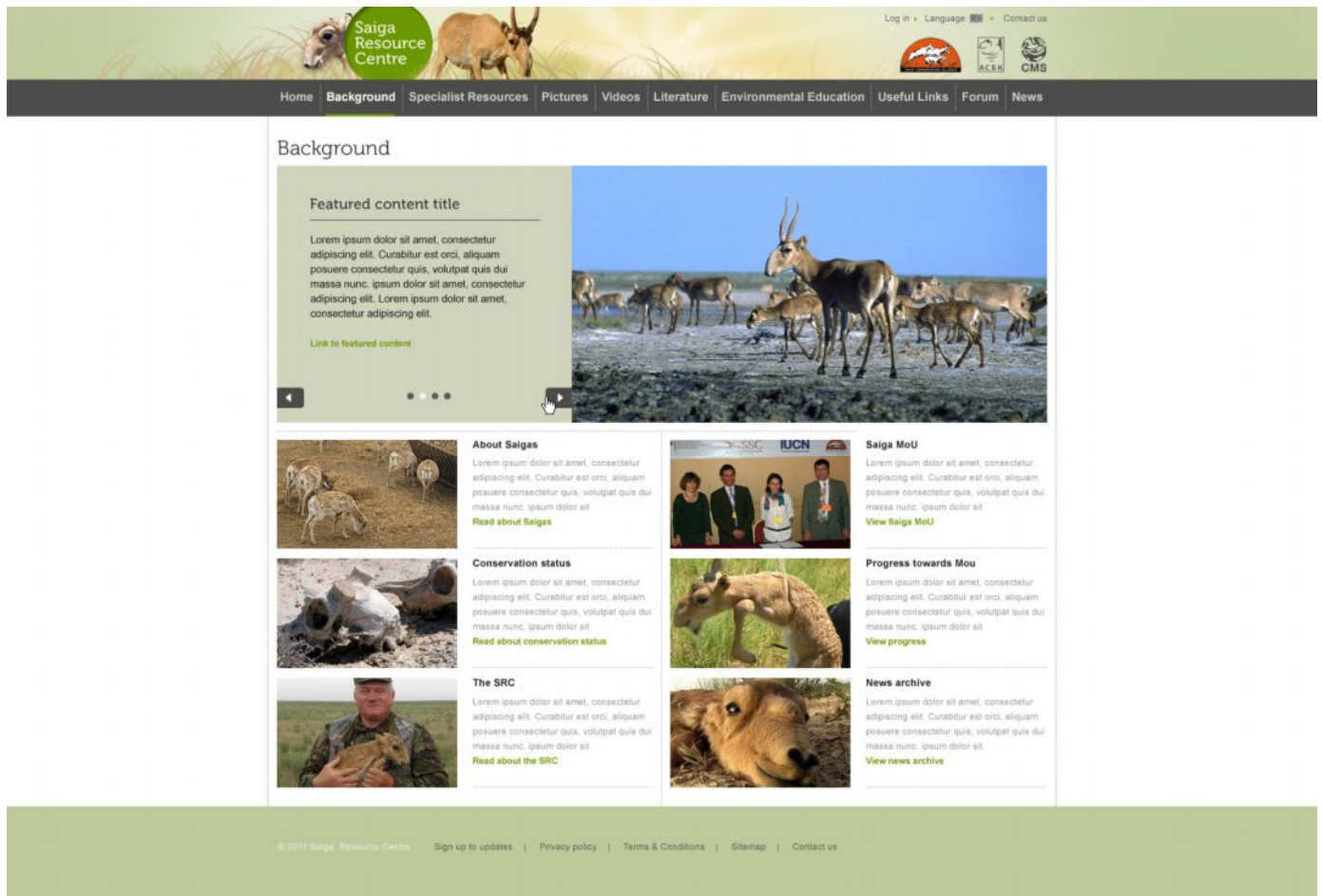
The SRC website will also include a public area, where anyone can access photos, documents, videos and other information about saigas. There will be a dedicated area for environmental education materials, sponsored by Disney Coins for Change. The SRC will have both English and Russian language documents available, and

we hope that, with more funding, we will be able to increase the amount of information in Russian, and translate the site into the other languages spoken within the saiga range.

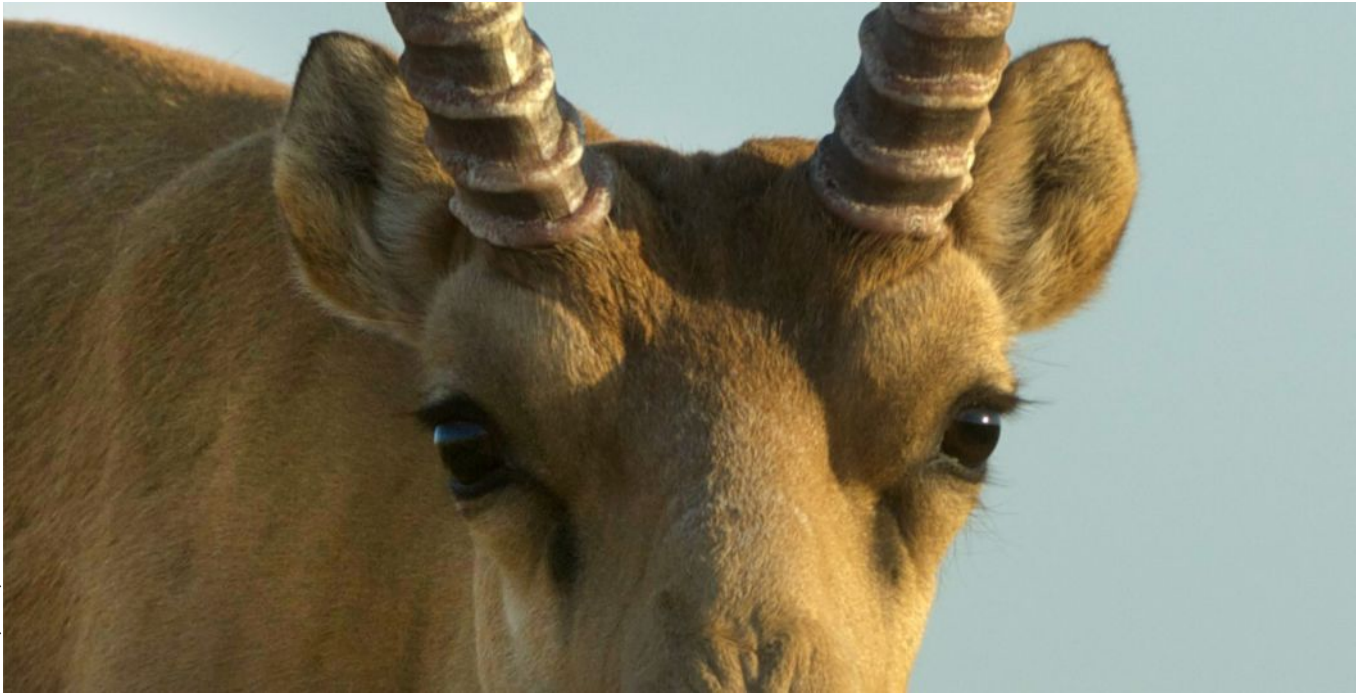
The SRC website, including the database, will be going live in the next few weeks. In the meantime, we ask everyone working on saigas to complete the Project and Expert forms which will ensure that your details are included in the databases. You can access these forms at <http://www.saiga-conservation.com/saiga-resource-centre.html> or by emailing Alyona Shmalenko, alyona.shmalenko@acbk.kz.

Please also send any documents, photos or other materials which you would like to share at the SRC to Adam Phillipson, adphil100@yahoo.com, who is working with the SCA to collate the materials for the site.

We hope that all those who are working on saiga conservation will participate in this initiative, which will support the implementation of the MTIWP and promote collaboration and information sharing for improved saiga conservation.



Screen grab of a page of the Saiga Resource Center, under development.



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