



Using saiga antelope conservation to improve rural livelihoods

Annual Report, Year 2
April 2005



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Pictures: Family in Kalmykia being interviewed by our team, one of the winners of the children's art competition, Kalmykia.

Darwin Initiative for the Survival of Species Annual Report

Darwin Project Information

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Project Background

The project is located in two saiga range states, Kazakhstan and Kalmykia (an autonomous Republic of Russia). The project was conceived as a response to the rapid reduction in saiga populations, due to illegal hunting for meat and horns. It builds on a decade of scientific collaboration between the project partners, and extends our work into practical conservation action. The project aims to address the fact that little is known about the socio-economic drivers of poaching activity, the extent of poaching and the livelihoods of local people in saiga range areas. Without this fundamental information, conservation interventions are difficult to target effectively. We also aim to address the fact that long-term monitoring of saiga populations has weakened recently due to a lack of funding, and that there is a critical need for more quantitative and less invasive monitoring procedures. There is a requirement for an agreed set of ecological monitoring procedures to form a basis for future assessment of saiga population status. We are also addressing the issue that saiga management is not necessarily currently set up in the most effective way to ensure that local communities buy into it; this is addressed by helping to restructure conservation actions, by analysing the current level of awareness that local people have of the saiga management problem, and working to raise the profile of saiga conservation in the host countries and internationally. Finally we are addressing the issue that there is a lack of trained young researchers in the region able to carry saiga conservation research into the future.

Project Purpose

Purpose: To save the critically endangered saiga antelope from extinction and support impoverished rural communities by building a framework integrating saiga conservation and sustainable use of natural resources with communities' needs and aspirations.

Objectives:

- To assist the governments of Kalmykia (Russia) and Kazakhstan in their activities to conserve the saiga antelope.
- To involve rural communities in saiga conservation and ensure local support for and participation in saiga conservation.
- To conduct assessments of alternative livelihood opportunities for local people, as a step towards relieving rural poverty and dependence on unsustainable resource use.
- To act as a flagship for community-based conservation of natural resources in the region.
- To assist range states in developing an international strategy for saiga conservation, that leads to the recovery of the species.
- To put in place a saiga monitoring scheme, and use its results in high quality scientific research on the linkages between human activity and reproductive success.

- To share expertise between scientists in saiga range states and train young scientists in conservation, ecology and social research techniques.

Our objectives have slightly shifted to reflect the change in emphasis towards conservation and away from sustainable use, and towards a broader geographical scope, as discussed in the Year 1 Report. See Table 1 for outputs. The outputs and operational plan have not changed over the year.

Project Progress

Brief history of the project to April 2004

The project started in April 2003 with a project launch meeting held in Elista, Kalmykia. At this meeting, monitoring protocols for both the biological and socio-economic components of the work were agreed between participants, and these protocols have been implemented and refined over the last 2 years. In year 1, socio-economic surveys were carried out in two villages in Kalmykia, and biological monitoring was carried out in the Chernye Zemli Biosphere Reserve, Kalmykia. Population counts were undertaken in Kazakhstan. Public awareness materials were developed and distributed over the entire year, particularly in Kalmykia. In November-December, ecological fieldwork was carried out in both locations, to assess saiga behaviour during the rutting period. Throughout the year we conducted both high-level meetings (including with the Minister for the Environment, President and Prime Minister of Kalmykia) and local-level activities such as school visits and training of National Park rangers. At the end of Year 1, an international workshop was held in Almaty, Kazakhstan, which combined discussions of approaches to sustainable use of wildlife with an internal project review day in which we assessed progress against the project timetable, and discussed future plans. The workshop attracted substantial local and international press interest, as did the project in general throughout the year.

Progress in Year 2

The project's progress is summarised in the logframe in Annex 1. Progress against the baseline timetable is discussed below:

May 2004. Repeat saiga birth area monitoring procedure, assess its effectiveness and revise as necessary (KM & BD).

Saiga monitoring was carried out as planned in both Kalmykia and Ustiurt (Kazakhstan). This is the second year of data from Kalmykia, and interesting patterns are emerging, which are of general scientific interest. The monitoring confirmed that reproduction was healthy. In Kazakhstan, our monitoring produced alarming results. The Ustiurt region is very remote and has been less affected by heavy poaching than other areas in the past, and so has been thought of as relatively pristine compared to the heavily impacted Betpak-dala population. However, it is apparent from our monitoring that reproductive failure occurred in Ustiurt in 2004. In Kalmykia, the monitoring is going well and we are confident that we have laid the foundations for an effective long-term monitoring programme. In Ustiurt, the protocols developed for Kalmykia could not be applied due to the lack of breeding females. We had to resort to less scientifically-based search procedures. A priority for 2005 is to revisit this population and then to make a decision about how best to reconcile scientific and conservation objectives in our approach to saiga monitoring in Kazakhstan. Annex 2 gives a summary of the results of our monitoring work in each country.



Measuring newborn saiga, Ustiurt, Kazakhstan, May 2004. Team members (from left): Marcus Fry, MSc student, Imperial College; Aline Kuhl, project researcher, Imperial College. Eldos Ismagulov, young scientist, Institute of Zoology; Yuri Grachev, expedition leader, Institute of Zoology. Photo: Jean-Francois Lagrot.

June-July 2004. Consultation of village leaders in summer range on options for sustainable hunting schemes and alternative income-generating activities (KM). Public awareness and education in saiga summer range (KM & BD).

In Year 1 in Kalmykia, we carried out intensive research in 2 communities, in order to obtain a deep understanding of the drivers of illegal hunting and the livelihoods of local people. In year 2, we collaborated with a local NGO (Centre for Ecological Projects) to carry out a broader consultation with local villagers and remote farmsteads (the latter play a key role in saiga poaching but are difficult to include in village-based studies). We commissioned the CEP to do this work in order to build local NGO capacity and interest in saiga issues. The CEP's work included discovering how well informed local people were about the law dealing with saigas, probing local attitudes to saigas and asking about current livelihood activities and future aspirations. They found that people were poorly informed about the legal status of saigas, and to address this they distributed a leaflet explaining the law as it relates to saigas. The local people were keen to learn more about saiga conservation and many volunteered to help personally. They were also keen, if supported, to engage in alternative, more sustainable livelihoods, including the production of dairy products and crafts, and provision of local vehicle rental services. We distributed leaflets to a wide range of stakeholders, particularly in our study area, giving feedback on the results of our socio-economic survey in Year 1. This helped local people to follow the progress of the project, and to see that their opinions were being listened to.

We extended our detailed attitudinal and socio-economic surveys to Kazakhstan in year 2. Our collaborators (Kazakhstan National Agricultural University) chose 4 students on their Wildlife Management course to be trained by us and participate in our research in summer 2004. These students are an important resource for saiga conservation, because they are all from the saiga range area, and so able to communicate with the local people, and because they are potential future government wildlife managers, who will then bring their understanding of community-based wildlife management and conservation to their careers. We ensured that knowledge transfer took place between range states by sending Natalia Balinova, a young researcher who we trained in Kalmykia in year 1, to participate in these surveys and train the Kazakh students. One of the students from KNAU, Azamat Baysugurov, was tragically killed in December 2004.



Our team of young scientists after giving a talk on saiga conservation in a local school, central Betpak-dala, July 2004. From left: Natalia Balinova (Kalmykian young researcher), Aline Kuhl (Imperial College), Azamat Baysugurov (National Agricultural University), Almas Dzhyzbekov (National Agricultural University), Bekzhan Makasev (National Agricultural University). Photo: Aline Kuhl.

The surveys took place in the villages of Ulan-bel' and Mointi in June-July 2004. 193 households were surveyed, representing 21% of households. The results are under analysis, and we expect them to be submitted for publication next year, following our final expedition to Ustiurt this summer. However preliminary results suggest that the Betpak-dala region can be characterised as post-exploitation - the saiga population is too low for there to be any sort of economic activity based upon it, unlike in Kalmykia where profitable organised poaching still occurs. Those who do hunt saigas do it opportunistically. Anyone interested in poaching commercially must travel to Ustiurt in order to find saigas. This finding supports our decision to extend our activities to Ustiurt, both because there are economic linkages between the Ustiurt and Betpak-dala areas, and because Ustiurt is a region where active poaching is still ongoing, and hence the need for conservation intervention is high.

Our international partner, Fauna and Flora International, supported our colleagues at the Institute of Zoology in Uzbekistan with DGIS funding to carry out a broad socio-economic and attitude survey in September 2004. This was in northern Uzbekistan, which is the southern part of the Ustiurt saiga population's range. The area has not before been monitored for saiga populations or for local attitudes and behaviours, but because the Ustiurt saiga population migrates there in winter it is a crucial location for future conservation intervention. The work carried out in Uzbekistan was supported by the Darwin team; we provided our detailed socio-economic monitoring protocols, and Natalia Balinova trained the survey team in research methods. This ensured that the monitoring procedures used were comparable with our research, and helped in the general adoption of sound and comparable methods throughout the saiga's range. Results from the survey suggest that the economy of the region is quite different to that of the other saiga range areas, being based upon Soviet infrastructure provision - the villages are either at railway interchanges or oil pumping stations, and there is little indigenous settlement based around livestock rearing. The people are therefore predominately urban in outlook, and do not venture into the steppe if other employment is available. There is likely to be regeneration of industrial activity in the region in the next few years, and this needs to be managed carefully if it is to promote sustainable development and wildlife conservation rather than damage it.

In terms of public awareness within the saiga range, we have obtained substantial local press coverage in both countries. We have also carried out a number of school visits and consultations with local leaders and officials in both places. We have developed particularly close relationships with the local authorities in the Yashkul and Chernozemli districts of Kalmykia. In Kalmykia, school visits and dissemination of information was carried out by rangers from the Chernye Zemli Biosphere Reserve and Stepnoi Sanctuary, with our support. A feature on saiga conservation in Kalmykia was shown on local TV and radio. A poster and calendars for 2005 were published and widely distributed. A book for children (containing drawings, a story and poems) was published and distributed throughout the Republic. A dual language website was developed (www.saigak.biodiversity.ru/eng/) and a Russian film crew shot a film about saigas which will be shown on local and national TV this spring.



Cover pages for the children's book distributed by the project in Kalmykia.

The team has given lectures to students at the Kalmykian State University on biodiversity and saiga conservation. These activities have led to the formation of a team of students to work with us on the project, some of whom participated in distribution of information materials to their home villages.

August 2004 Monitor and assess ranger training and SMA, ability to administer a sustainable hunting scheme (KM & BD).

We continuously monitor ranger training and performance. Dr A. Lushchekina makes frequent visits to the Chernye Zemli reserve and has collated the data collected by the rangers throughout the year. Rangers in the Stepnoi sanctuary and Chernye Zemlie Biosphere Reserve have documented all observations of saiga disturbance by wolves, people, cars and steppe fires during their daily patrols, and as far as they are aware, they have completely halted poaching in both reserves. They have also patrolled non-protected areas of Kalmykia in joint expeditions with rangers from the Department of Hunting Management of the Republic of Kalmykia and were able twice to catch teams of poachers which had killed 12 saiga males between them. These joint expeditions and demonstrable successes in law enforcement are crucial building blocks for future sustainable management of the saiga antelope.

In Kazakhstan, government interest in sustainable hunting is high, and there has been press coverage suggesting that within 5 years hunting could restart. However our project team has been urging caution based on the results of our biological and socio-economic monitoring (see Annex 2 and summary

above), expressing these views both to government and the public. In our opinion, saiga conservation in Kazakhstan is still at a critical stage and requires substantially more government investment and control before the saiga population can be said to have recovered.

Sept 2004. 18 month project progress meeting (Elista). Start developing GEF project and targeting donors.

A meeting for all Russian project participants was held in Elista, and progress so far was reviewed. It was felt that all the components of project success that were within our control had gone extremely well. The only obstacles encountered were due to the never-ending reorganizations in the Ministry of Natural Resources and Ministry of Agriculture, both in Moscow and locally. This has led to some problems and some decisions on the conservation of saiga at different levels being blocked. It is not clear when this process will end, but the team is coping with the problem by ensuring a continued presence in the local media, by constantly re-engaging with new officials, and by setting up strong linkages with local district administrations, which are more stable.

The nature of GEF projects is that they must be proposed by governments and implemented by one of the implementing authorities. Our initial work was with UNEP. At our meeting at the end of Year 1, the representatives of UNDP-Kazakhstan made a strong commitment to take forward the saiga GEF proposal developed by our team, with the backing of the Kazakhstan government. However we have heard nothing from UNDP-Kazakhstan since then, despite repeated attempts to obtain progress reports from them. Our strategy therefore has been to engage at a high level with international bodies, to ensure that pressure for action from the international community continues (see below for more details), and to target donors on a smaller scale for support for our work on specific components of saiga conservation where we feel we can contribute most effectively.

Oct-Nov 2004 Consultation of village leaders in winter range on options for sustainable hunting schemes and alternative income-generating activities (KM).

Our consultations in year 2 have led to a locally-endorsed proposal being submitted to the UK FCO Small Environmental Projects Scheme at the British Embassy in Russia in March 2005, which has reached the second round of the SEPS competition. This proposal is based on ideas from local communities and NGOs, and involves a revolving cow scheme based at the premises of one of our key partners in Kalmykia, the Centre for the Study and Conservation of Wild Animals of Kalmykia. We are hoping to be able to convert our work in raising local awareness of the linkages between saiga conservation and sustainable development into concrete actions to help some of the poorest families in the region in an ongoing way. As discussed in the Year 1 report, we do not feel that it is currently appropriate to explore sustainable hunting schemes.

Dec 2004 Repeat saiga monitoring exercise, rutting areas. Assess effectiveness & revise as necessary (KM & BD).

In December 2003, project teams monitored the saiga population during the rut in the Chernye Zemli reserve. Although it was possible to obtain data on herd size and structure, detailed observations of rutting behaviour were not possible. This could be for a number of reasons, including that rutting takes place only at night or in undisturbed locations. Our conclusions from this monitoring suggest that year-round observations of herd size and structure are useful and feasible to obtain, but that our monitoring protocols developed for observation of individual behaviour during the rut are impracticable. Our partners in Uzbekistan carried out a parallel exercise (funded by INTAS) using Darwin project monitoring protocols in December 2004 and drew similar conclusions. Hence we have revised our monitoring procedures accordingly. Our partners at the Centre for Study and Conservation of Wild Animals of Kalmykia released 5 radio-collared captive-bred males in November 2004, under a grant from the University of Wisconsin, Madison and USFWS. They all integrated successfully into the wild herd. One was killed after the rut by wolves, the other four are still alive and are continuing to be monitored via satellite telemetry. Although substantially more expensive, it seems from this

experience that monitoring of the rutting behaviour of marked individuals may be the only effective way to collect data on the rut. We are in continuing discussions about this with our partners.

Jan-Mar 2005 Prepare reports on framework for sustainable hunting scheme and on options for alternative income generating activities and present to Governments, NGOs and other stakeholders.

Two developments have changed our timing on this output. In Kalmykia, we have worked together with the NGO Centre for Ecological Projects to consult local people on alternative livelihoods, and have decided to bring forward plans for a pilot project. We will then have a basis of informed experience from which to prepare a report on options for sustainable income generation in Kalmykia in year 3.

Our partners FFI have a wide range of experience in sustainable income-generating projects within the region, but not on the specific needs of local people in the saiga range areas. They were to write the report on alternate income-generating activities based on this prior experience. However, they have obtained funding from DGIS to support an income-generating project in the saiga range area, and plan to implement this in the Ustiurt region in spring 2005. This will coincide with the detailed socio-economic study carried out by our project, allowing the two approaches to exchange knowledge and ideas. By implementing the project first, and then writing the report to stakeholders in year 3, they will have a solid basis upon which to make recommendations.

As discussed before, we will not be preparing a report on frameworks for sustainable hunting.

Other achievements not envisaged in the baseline timetable

International dissemination

As mentioned in last year's report, a film crew from Marathon Productions filmed our project team's work monitoring the rut in Kalmykia in November 2003, and in the calving areas of Ustiurt in May 2004. The film was shown on Canal+, a French TV station, in late 2004. It was shortlisted for the 15th International Animal Film Festival, held in Albert, France, in March 2005. The film won a commendation in the "Prix de la Publique" category, which is the category in which the public attending the festival votes for its favourite film. There are plans to distribute the film widely in Europe and Canada, which should give valuable publicity for our project. The film crew also made a short version of the film in Russian which was given to our collaborators in Kazakhstan and Kalmykia for public education use, and donated still photographs for non-commercial use by the project.



Cover image for “Aline and the saiga antelope”, the film made about our work by Marathon Productions.
 For more details see <http://www.fifa.com/fr/> (Film Festival) and
<http://www.marathon.fr/detailcat.php?IDFICHE=313&CODELANGUE=UK&IDCAT=9> (Marathon website)

This year has seen two milestones in international awareness of the saiga’s status. In October 2004, the 13th Conference to the Parties of CITES passed a motion registering concern about the status of the saiga and urging both the range states and the international community to act to conserve the species. The momentum for this motion came largely from our first year project meeting in April-May 2004, and was driven by our partners in IUCN. The Russian delegation was also instrumental in promoting the CITES resolution, with strong involvement from our project’s Russian team members. In November 2004, the World Conservation Congress passed a similar resolution, and hosted a meeting on saiga conservation for interested parties. Data supplied by our project was presented at that meeting by a representative of FFI, and a subsequent statement, widely distributed by IUCN and the Convention on Migratory Species, acknowledged the Darwin Project as the source of the information. Project team members continue to be active at national and international levels, giving objective information about saiga status based on our work. We feel that this involvement is an important component of our catalysis for change in the status of the saiga.

Team members have presented results of our work at a number of international meetings, including the Annual Meeting of the Society for Conservation Biology in New York, a UNESCO International workshop on “Traditional Knowledge and Modern Technology for the Sustainable Management of Dryland Ecosystems” (Elista, Russia, June 23-27, 2004), a bilateral US-Russia meeting on environmental protection (Moscow, December 1-3, 2004), an international conference on “Current problems in Ecology” (Karaganda, Kazakhstan, December 2-3 2004), an international conference on the conservation of the Mongolian gazelle and Saiga antelope (Ulaanbaatar, October 2004), and the Student Conference on Conservation Science (Cambridge, March 2005). Team members also presented their work locally, at a workshop on birds of prey convened by the Center of Ecological Projects of Kalmykia (Elista, December, 2004).

There has been a lot of coverage of our project’s work in the international media this year, ranging from articles in the Chinese magazine “Life World” to the German TV magazine “Hoerzu”. A list of known press coverage is given in Annex 3.

Work plan for year 3

May 2005. Repeat monitoring of calving in the Chernye Zemli Biosphere Reserve. This will give us 3 years of data for analysis, which will be a strong foundation for long-term monitoring. This work will be carried out by our Russian partners, with assistance from Dr P. Kabat, Imperial College.

May 2005. Return to calving areas in Ustiurt, Kazakhstan. Given the disturbing results from last year's expedition to Ustiurt, it is vital that we return to monitor calving behaviour this year. The expedition will be led by Dr Iu. Grachev, Institute of Zoology, with participation from Imperial College (Aline Kuhl).

May 2005. Project meeting in Almaty, to discuss project progress in Kazakhstan, to launch FFI's parallel study of livelihood activities in Ustiurt, and to forge links between partners in Kazakhstan and Uzbekistan for future joint activities.

May-June 2005. Launch of our electronic newsletter *Saiga News*, which aims to promote dialogue between stakeholders in the range states, consumer states and internationally, and to be a forum for the dissemination of information and exchange of knowledge and ideas. The newsletter will be published in English, Russian, Chinese, and funding permitting, Mongolian, and has editorial board members from all range states, the UK and China (see Annex 4). We plan for this to be an important legacy of the project.

Throughout year. The rangers of the Chernye Zemli Biosphere Reserve and Stepnoi Sanctuary will continue to monitor saiga ecology, herd size and structure and signs of human disturbance, and pass their log books to Anna Luschekina for data processing and safe storage.

July 2005. Socio-economic survey in Saksaul village, Ustiurt. This survey will follow our standard procedures and will complete the baseline data gathering on the socio-economic component of the project. The expedition will be under the control of the Institute of Zoology and will include Aline Kuhl (Imperial College) and our 3 trained students from the Kazakh National Agricultural University. FFI will carry out a concurrent alternative livelihoods project in the same area funded by DGIS.

August 2005. Project meeting, Moscow. All the key members of the Darwin project team will attend, together with collaborators on the INTAS project. This will be an important opportunity to assess the results of our fieldwork, and to plan the last stage of the project, in which we will concentrate on dissemination and securing the project's legacy.

July-December 2005. If successful in our SEPS bid, we will implement an alternative livelihoods project in Kalmykia based on a revolving cow fund. If not we will fund a few small project ideas in local villages as pilots.

October 2005. Publication of report into the potential for alternative income-generating activities for saiga conservation, based on our experiences in Ustiurt (FFI DGIS project - funding confirmed) and Kalmykia (SEPS project - funding not confirmed).

October-December 2005. Analysis of data from biological and socio-economic fieldwork, and preparation of scientific papers for publication.

December 2005. Publication of second issue of *Saiga News*.

Jan-March 2006. Presentation of results to local people in study areas, gathering feedback from local stakeholders. Preparation of an action plan for future saiga conservation, putting in place plans for continuing conservation action and monitoring. Wide dissemination of project results at all scales from local to international. Papers submitted to journals.

March 2006. Final project meeting. To include a major awareness campaign nationally and internationally. Report to Darwin Initiative completed and submitted. Funding for continuing saiga conservation action in place.

Actions taken in response to previous reviews

The project review from Year 1 was circulated and discussed by all project participants. We were very encouraged by the positive tone of the review, and its opinion that the project had got off to a flying start. The reviewer had a few comments and suggestions:

1) It would be helpful to have some further information about how the project intends to proceed with respect to economic alternatives to saiga hunting. Is there scope for improved marketing of local products, for ecotourism or for other inputs to boost the local economy? Will this aspect be picked up by GEF?

As discussed above, we have in year 2 carried out a broad consultation on alternatives to saiga hunting in Kalmykia, and have submitted a grant application to help us to implement one suggestion which was strongly supported by local people. This is to establish a revolving cow fund. Our research has established that a single good quality cow can support a poor family through its dairy products and calves, and that people strongly feel that sustainable, high quality livestock rearing is the way forward for the rural economy. The Centre for Study and Conservation of Wild Animals of Kalmykia will establish a breeding herd of a prized local cattle breed. Particularly needy households in villages around the Chernye Zemli Biosphere Reserve will be identified and given a cow from the herd, together with veterinary support, fodder and other help as needed. The first-born female from this cow will be returned to the fund and passed on to the next needy household. The produce from these animals will be marketed with the help of the CSCWAK visitor centre and a proportion will be given to local schools. A clear link with saiga conservation will be established through the participation of CSCWAK and through the linkage between a village's eligibility to participate in the scheme and its cooperation with controlling illegal hunting and monitoring and conserving saiga populations. CSCWAK is a prominent local attraction and is the ideal location for this scheme, and for the marketing of produce from other initiatives.

The local people in Kalmykia also identified other options including handicrafts, marketing dairy produce and taxi services. We will use Darwin funding to support small-scale implementation of these other ideas if the SEPS funding does not materialise. In Kazakhstan, FFI will be using its tried and tested methods for the support of alternative livelihoods in Ustiurt, and we will compare the two experiences before making our final recommendations for further actions in each country.

It is difficult to say what the GEF funding will pick up because we do not have information from UNDP-Kazakhstan about the progress of this funding.

2) Please include a short statement about the system used to monitor, review and evaluate the project's own activities. For instance, how frequently are field data obtained and reviewed? Are reports circulated internally amongst stakeholders? How often do principal partners or other stakeholders meet, etc.

This statement is in the "Monitoring and Evaluation" section below.

Partnerships

Relationships between team members continue to be close. Imperial College has strong links with the team leaders in both Russia and Kazakhstan, and there is good exchange of information between us. It has been less straightforward to develop a direct flow of information between Russia and Kazakhstan, despite the efforts of Dr Lushchekina. We have had an exchange of expertise through secondment of Ms Balinova from Kalmykia to Kazakhstan, and the involvement of Imperial College personnel in both country's research activities helps to harmonise efforts, but there is less linkage in terms of higher level strategic thinking. This will be addressed at the project meeting in August, and will also

hopefully be improved by the launch of *Saiga News*, which is explicitly dedicated to information sharing. Within Kazakhstan, Dr Ukrainsky has continued to have personal difficulties which have hampered his involvement in the project. However, the students from KNAU who he recruited have become a very valuable resource, who we hope will continue to work with the project in Year 3.

We continue to exchange information with WWF-Russia, which has a project funded by Frankfurt Zoological Society supporting anti-poaching activities in Betpak-dala. We have developed strong links with the Institute of Zoology in Uzbekistan over the last year, and are collaborating with them to roll out the Darwin Initiative programme to Uzbekistan, a crucial region for the conservation of the Ustiurt saiga population. We also had detailed discussions with WWF-Mongolia about our research methods, and have given them our detailed social and biological research protocols, which can inform their future saiga conservation activities.

We have also developed increasingly strong links with local NGOs in Kalmykia, particularly the Centre for Ecological Projects. FFI places critical importance on capacity building among local NGOs and will be doing this during their DGIS-funded project in Kazakhstan this summer.

We have strengthened links this year with the Convention on Migratory Species, which has worked hard to raise the profile of saigas in the international community. We will continue to work with them in Year 3, particularly in the dissemination of *Saiga News*.

Impact and Sustainability

The project's profile in the range states is high, particularly in Kalmykia. Public awareness is central to our work, and has been strongly promoted this year. This media coverage suggests that the public in Kalmykia are interested in our work, and this impression is also strongly conveyed to the project team during our talks in schools, the university and local villages. For example, students at the Kalmykian State University volunteered to distribute information in their home villages after a talk by our project team members. See above and Annex 3 for further details. See Monitoring and Evaluation section for further discussion of concrete evidence for project impact.

Our exit strategy is crystallising as the project continues. Our legacy will include a robust monitoring procedure and protocols for social and biological research on saigas, which are being disseminated to all range states, including those not involved in the project itself such as Mongolia and Uzbekistan. These will continue to generate data which will enable governments to make soundly based decisions in the future. The biological monitoring is guaranteed to continue for a year after the Darwin project through the INTAS co-funding which we have leveraged.

Our project is providing a sound foundation of understanding about the socio-economic drivers of poaching, and raising public awareness in the saiga range states about saiga conservation. In the third year, we will pilot some potential alternative livelihood ideas and produce a report on our experiences as a catalyst for future action. Our exit strategy includes targeted fund-raising for future activities, including extending the provision of alternative livelihoods in Kalmykia.

Another continuing output of the project will be *Saiga News*. Currently, the Darwin Initiative project is providing some financial support for the newsletter as one of our dissemination activities. However, we aim for the newsletter to become self-funding through subscriptions, which will continue the engagement with saiga issues between and within range states that is a key objective of the project.

Post-Project Follow up Activities

Two exciting avenues would consolidate the project's legacy. In Kalmykia we are on the verge of a major breakthrough, integrating people's livelihoods with activities of the Chernye Zemli Reserve and CSCWAK Saiga Breeding Centre. These are potentially the main visitor attractions in Kalmykia and could contribute directly to poverty alleviation through employment, sale of produce and support for sustainable livestock enterprises. The Darwin project's original aim was to investigate alternative livelihoods linked to saiga conservation - we can now go further and implement these alternatives. We

would like to apply for post-project funding to develop the huge potential that our public awareness campaigns and attitudinal research have generated. It is important for local people to see concrete actions soon if momentum for conservation is to be maintained. Our partners in Kalmykia have shown strong commitment, and we have been building capacity through training, setting up student conservation groups, and engagement with the budding NGO sector.

In Uzbekistan, we have an opportunity to extend the Darwin Project's work to a new country. Our partner's research suggests that there is a resident as well as a migratory saiga population in Uzbekistan, which is important for conservation. A protected area has been established specifically for saigas, but is currently non-operational. The forthcoming revival of the oil industry is a threat but also an opportunity for biodiversity conservation, if we can influence development plans at an early stage. Our Darwin staff have built capacity in Uzbekistan, so there is a strong team ready to work with us to kick-start practical saiga conservation. The Uzbek government has shown commitment internationally by pressing for the signing of an MOU between range states; we can support them to prioritise saiga conservation internally.

Outputs, Outcomes and Dissemination

The outputs agreed in the initial schedule were:

May 2004. 20. One set of computing equipment for range state partners. Done.

June 2004. 15, 18, 19A/B. Dissemination: one press release, one radio and one TV show. This output has been substantially exceeded (see Table 1 and Annex 3 for further details on press coverage).

July 2004. 14B Presentation of results at one international meeting. Done, and exceeded.

March 2005. 9. Reports on sustainable use and alternative livelihoods. The timing has changed on this output - see above.

Project outputs are summarised in Table 1. Additional outputs not quantified in Darwin's output measures include 5 articles in national non-UK, non-range state magazines, 1 TV broadcast in a non-UK, non-range state country, and 2 international web-based news items (see annex 3). Additional dissemination activities include 8 lectures at the Kalmykian State University, 21 talks in local schools and village halls in Kalmykia and Kazakhstan, 3 presentations to MSc students in the UK (Universities of Kent, Oxford, Imperial College). A. Lushchekina and E.J. Milner-Gulland also provided expert advice to a website archiving wildlife footage: http://www.arkive.org/species/GES/mammals/Saiga_tatarica/, while A. Bekenov and V. Ukrainsky acted as judges for a film competition run by Asia Art and NABU. Additional materials produced include a pocket calendar, a children's book and a wall poster (2000 copies of each), both enclosed. More detail on dissemination activities is given in the Project Progress section above.

Table 1. Project Outputs in year 2 (According to Standard Output Measures)

Code No.	Quantity	Description
2	1	MSc, Marcus Fry, Imperial College, Sept 2004
4A	4	N. Arylova, Kalmykian State University; Azamat Baysugurov, Almas Dzhmybekov, Bekzhan Makasev (Kazakh National Agricultural University, Almaty)
4B	7	Formal training (on the job training also provided)
6A	2	Dr A. Esipov, E. Bykova (Uzbekistan) trained by N. Balinova in socio-economic survey techniques
6B	1	
8	30	A. Kuhl (18), N. Bunnefeld (6), M. Fry (6)
14B	7	See above for details
15A	2	Newspaper articles based on project's work
15B	6	Newspaper articles based on project's work
15C	2	Imperial College press office, IUCN ESUSG
17A	1	Based around <i>Saiga News</i> , see Annex 4.
18C	3	Kazakhstan - A, Bekenov appeared on channel KTK on 20 th

19C	3	February 2005, broadcast “How can we save the saiga in Kazakhstan?”. Kalmykia - Professor Yu. Arylov appeared twice (December 25, 2004 and March 17, 2005) on the local TV news programme “Vesti” interviewed about the status of the saiga and CSCWAK’s role in implementing international conservation projects Professor Yu. Arylov and Dr. B. Ubushaev have been interviewed and answered questions from local people about saiga conservation in a live broadcast by a Kalmykian radio station (October 10, 2004). Dr. A. Lushchekina appeared twice (January 23, 2004 and December 6, 2004) and was interviewed and answered questions from the public about saiga conservation on the program “Your nobleness, Madam Nature” regularly broadcasted by “Telling Moscow” radio station.
20	3000	2 computers, uniforms, binoculars, photo-cameras, power unit, night vision devices
23		Okhotzoprom (Kazakhstan) - £4000 per year for aerial surveys. WWF-Russia (Kazakhstan) - £43,123 matching funds for conservation activities in Kazakhstan. INTAS - £240,436 from April 2004 for 3 years for research on the reproductive ecology of the saiga antelope. People’s Trust for Endangered Species - £6000 for public awareness activities in Kalmykia in 2004. IFAW - substantial ongoing contributions in kind, particularly in helping us to transfer money to Russia without incurring substantial charges. ESRC/NERC - £3000 per year tuition fees, A. Kuhl. WCS \$20,000 to A. Kuhl for fieldwork expenses in the period Oct 2003-July 2005. DGIS (via FFI) - £4694 for extension of project work to Uzbekistan, July-Dec 2004. Chicago Zoological Society – \$1,500 for saiga telemetry in Kalmykia, June 2004-June 2005. [note most of these were included in year 1 too as they are recurrent grants. The DGIS and CZS grants were new in Year 2.]

In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications Database. Mark () all publications and other material that you have included with this report.*

Table 2: Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)
Journal	“The status of the saiga population in Kazakhstan in 2004.” Iu.A. Grachev, A.B. Bekenov, 2005	Steppe Bulletin 17, 15-16. [in Russian]	
Journal	“Conservation of the saiga for future generations.” A. Bekenov, 2005	Biologiya 2, March-April) [in Kazakh]	
Journal	“International meetings	Steppe Bulletin 17, 17-19. [in	

	on conservation of the Mongolian gazelle and Saiga antelope”. Kiriluk V., Lushchekina A., 2005	Russian]	
Conference Proceedings	“The saiga antelope in the drylands of Russia and how to ensure its sustainable future.” Iu. Arylov, A. Lushchekina, V. Neronov	“Combating desertification: Traditional knowledge & modern technology for the sustainable management of dryland ecosystems” Proceedings of International Workshop, Elista, Russia, 23 rd -27 th June 2004. UNESCO-MAB Drylands Series 4, p. 163-166	
Book	“In a cradle of feathergrass” D. Kuzul’tinov, G. Kukareka, 2005	Dzhangar, Elista, Russia [in Russian]	A. Lushchekina, [copy enclosed]
Journal	“The saiga antelope - teetering on the brink but still cause for hope.” Y. Arylov, V. Badmaev, A. Bekenov, J. Chimeg, A. Entwistle, Y.A. Grachev, B. Lhagvasuren, A. Lushchekina, D. Mallon, E.J. Milner-Gulland, V. Ukrainsky	<i>Oryx</i> 38 , 250-251	
Magazine	“Establishing links between saiga conservation and local livelihoods in Uzbekistan”. T. Aylett	Fauna & Flora Magazine Oct 2004	Tiffany Aylett,

Project Expenditure

Table 3: Project expenditure during the reporting period

Item	Budget	Expenditure	Balance
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Highlight any recently agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget.

The spending is close to the agreed levels. As agreed by DEFRA, we have vired some funding from Salaries to Travel, because the UK researchers working on the project have been paid their travel expenses only, and from Consumables (office expenses) to Travel because the majority of consumables are bought for fieldwork purposes and are then charged under the travel line. We spent less than expected on computers (Capital) because we managed to find good deals, and similarly for printing. Our expenditure on conferences and workshops has been paid out of the Travel line because it has predominately involved speaking at village halls and schools during our fieldwork. The salaries line is higher because, as we discussed in the Year 1 report and above, we have extended our involvement in Kalmykia to include the Stepnoi Sanctuary, and hence we have been paying more rangers than previously envisaged.

Monitoring, Evaluation and Lessons

The main mechanism for monitoring and review of the project's day-to-day activities is through the local project leaders; Dr A. Lushchekina in Russia and Prof. A. Bekenov in Kazakhstan, who meet regularly with team members to monitor progress. Dr Lushchekina also coordinates communications and activities between the two range states. Dr Lushchekina visits Kalmykia about once every 2 months, to monitor and evaluate progress and ensure financial accountability. She communicates with E.J. Milner-Gulland (Imperial College) on a daily basis by e-mail, so there is a free flow of information. On her visits to Kalmykia, Dr Lushchekina examines and validates the field data collected by the rangers. Field data are passed on to Imperial College for analysis by participants in both countries, giving a further safeguard. Imperial College takes an active part in the field research programme, ensuring that they are fully engaged in project monitoring and evaluation and that they interact with team members on an ongoing basis. After every field expedition a report is submitted to the project leaders (EJMG, AL, AB) for evaluation and to ensure lessons are learnt as appropriate. The schedule for formal meetings is given in the timetable above.

The most direct evidence for project impact on conservation is the fact that no saigas appear to have been poached in the site of our activities in the past year (Chernye Zemli and Stepnoi Sanctuaries), which is a major achievement for the rangers who we have funded, trained and equipped. We have also observed healthy reproduction in the Chernye Zemli reserve during our project, and surveys by the Kalmykian Department of Hunting Management suggest that the Kalmykian population numbers 17,600 individuals, about the same as observed in 1999, suggesting relative stability of the population. Given that up to 90% of the Kalmykian population is inside the reserve at key times of year such as for birth and the rut, and around 30% at other times, this stability is testament to the effectiveness of the reserve staff, for which we are partly responsible.

The lessons learnt from this year's work are: a) Population-level monitoring of the rut is not possible, and that individual tracking of radio-tagged or satellite-tagged males is likely to be the way forward. This has led to a refocus towards year-round observations of herd size and structure. b) Both monitored saiga populations in Kazakhstan appear heavily disturbed and virtually impossible to carry out detailed scientific work on, due to the scattered nature of the remaining herds. This has led to a reevaluation of the approach to saiga conservation in Kazakhstan, away from detailed scientific study and towards basic monitoring and international lobbying for massive increases in investment in saiga conservation, c) There is a need to move forward more quickly than anticipated on action for alternative livelihoods in Kalmykia, based on the success of our public awareness campaigns, and the knowledge gained from our social research in the past year. d) There are opportunities available for extending our approach to saiga conservation to other range states, in particular Mongolia and Uzbekistan.

Outstanding achievements during the reporting period

Our main concrete conservation achievement this year is to have contributed to the continued stability of the Kalmykian saiga population, through our ongoing support of the Chernye Zemli Biosphere Reserve and the extension of our support to the neighbouring Stepnoi Sanctuary. These areas host 90% of Kalmykia's saigas at key times of the year, and around 30% at other times. Thanks to the hard work

of the rangers, there were no observed poaching incidents within either reserve this year. Two groups of poachers were apprehended in other parts of the Republic, sending a strong law enforcement message. Our monitoring shows that saigas have been breeding well over the last 2 years, in contrast to the alarming situation in 2000/1 when reproductive collapse due to lack of males was observed in Kalmykia. Although the proportion of males in the population and the total number of individuals are still very low, the stability achieved in Kalmykia is in stark contrast to the critical status of the saiga throughout the rest of its range.

We have achieved a very high profile for the project's work in Kalmykia, with team members regularly appearing in the local press, giving talks about saiga conservation and distributing posters, calendars and leaflets throughout the Republic. This raised awareness, and the widely expressed willingness of local people to help personally in saiga conservation, will be a firm foundation for next year's activities linking rural livelihoods more concretely with saiga conservation.

We have also contributed to the saiga antelope being placed high on the agenda in international conservation circles. Our team's work in providing information, advice and lobbying contributed to the passing of motions urging action on saiga conservation at the two highest profile main conservation events of the year, the 13th Conference of the Parties to CITES and the World Conservation Congress. Our work has been reported upon in the popular press around the world, including Europe, the USA and China, and was the subject of an acclaimed wildlife documentary. The challenge for next year is to build on this recognition of the saiga's plight to leverage significant action from the international community.

■ **I agree for ECTF and the Darwin Secretariat to publish the content of this section**

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2004/2005

Project summary	Measurable Indicators	Progress and Achievements April 2004-Mar 2005	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <p>The conservation of biological diversity, The sustainable use of its components, and The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</p>			
<p>Purpose To save the critically endangered saiga antelope from extinction and support impoverished rural communities by building a framework integrating saiga conservation and sustainable use of natural resources with communities' needs and aspirations.</p>	<p>1) Foundations of a lasting conservation programme in place. 2) Saiga populations show evidence of stabilisation or improvement. 3) Building blocks for transboundary saiga conservation action in position. 4) Assessment of sustainable rural livelihoods completed and acted upon. 5) Rural communities actively participating in conservation of saiga antelopes. 6) Scientific monitoring providing reliable data.</p>	<p>1) We have contributed substantially to raising international awareness about the status and needs of the saiga antelope. We have extended our programme from the CZ Biosphere Reserve to include the neighbouring Stepnoi Sanctuary. 2) The Kalmykian population continues to appear stable, according both to Government counts and our monitoring. Reproductive output is healthy in our study area, although the proportion of males is still low. In Kazakhstan, official counts suggest slight population increases, but our detailed monitoring paints a worrying picture. 3) We have continued our transboundary monitoring project and extended it to include a socio-economic assessment using the Darwin methodology in Uzbekistan. 4) We are on track with the field data collection for this indicator, and are preparing to implement pilot projects based on the results. 5) We</p>	<p>1) Continue to engage local people, government and the international community, and obtain further funding for their work, to ensure a lasting legacy. 2) Continue monitoring and increase dissemination of our findings. 3) Build on successful extension of the project's work in Uzbekistan. Provide support and information to all who need it. 4) Implement pilot livelihoods project in Kalmykia, and publicise its outputs. 5) Involve rural communities in saiga conservation through direct, locally-driven action. 6) Publish results of our monitoring and ensure that the procedures are in place for long-term continuation.</p>

		have had a high local media profile and have engaged significantly with local people. 6) We now have a tested monitoring protocol, which is being rolled out to other areas.	
Outputs			
1) Foundations of a conservation programme able to continue saiga protection.	1) Saiga rangers employed, equipment purchased, legal powers established.	We have supported rangers by providing training, salaries, a vehicle and field equipment. We have extended this support to the adjacent Stepnoi Sanctuary.	In Kalmykia we will consolidate conservation activities and work to build relationships with the new government. In Kazakhstan we will continue to provide objective advice and information to all stakeholders. We will launch a biannual newsletter to ensure improved interactions between saiga stakeholders in the range states and internationally.
2) Trained rangers, wardens and young scientists to continue monitoring.	2) 2 young scientists, 6 rangers and 20 wardens trained in conservation and monitoring.	We have trained 6 people this year, see Table 1. This includes Wildlife Management undergraduates at the Kazakhstan National Agricultural University and at the Kalmykian State University, and scientists in Uzbekistan.	We will continue to train and support the young scientists and rangers, and in particular work to ensure that proper procedures for monitoring, data storage and analysis are in place for the future.
3) An understanding in the region of the philosophy and methods of community-based conservation.	3) Workshops held on lessons from elsewhere (yr 1) and from saiga project (yr 3). Educational materials for local people.	We have continued to use community-based conservation methods and to strengthen grass-roots support for our work. We have produced and distributed educational materials for local people.	We will implement and report upon a small pilot project for direct community-based livelihoods support. This will form the concrete basis for our catalysis of future activities. We will host an international meeting at the end of the year to report on our project's achievements and catalyse future actions.

<p>4) Sustainable livelihoods for rural people.</p>	<p>4) Framework for a sustainable use scheme for saigas set up, eventually providing revenue and resource ownership to local communities. Assessment of alternatives done.</p>	<p>We have carried out livelihoods surveys in 2 villages in the Betpak-dala region of Kazakhstan. We have expanded our consultations with villagers in Kalmykia and trained colleagues in Uzbekistan, who have also carried out livelihoods surveys. We have consulted villagers in Kalmykia about potential income-generating activities, and given them feedback on our previous findings.</p>	<p>We aim to support a livelihoods project in Kalmykia, based on the findings of our surveys. We will carry out our socio-economic and livelihoods assessment in the Ustiurt region of Kazakhstan. We will then publish our findings both locally and as a comparative study of 3 regions.</p>
<p>5) Scientific research focussed on linkages between human activities and saiga ecology</p>	<p>5) Papers in scientific journals.</p>	<p>We have decided to finish our data collection (planned for completion in summer 2005) before publishing the results in scientific journals. Our preliminary analysis indicates that results will be exciting and publishable in excellent journals.</p>	<p>We expect to submit at least 2 articles to international journals in year 3.</p>

Annex 2 - Brief summary of results of monitoring calving

Saiga antelopes give birth in large aggregations, historically tens of thousand individuals strong. These birth aggregations are short-lived, with the vast majority of females giving birth within a 10 day period in May. Calves remain hidden for the first few days of life, with their mothers returning at dawn and dusk to feed them. After about a week, the calves leave the aggregation to follow their mothers to the summer pastures.

Our monitoring starts as close to the beginning of calving as possible and continues until the last calves are too old to catch. We map the approximate extent of the aggregation and walk transects through it in the middle of the day (this minimises disturbance because the females are not present, and calves are minimally affected by capture during the day). For every calf seen within 10m either side of the transect the location and the presence of a twin is recorded (Fig. 1). Calves are captured if possible (only possible in the first 2-3 days of life) and weight, length, sex and approximate age in hours are recorded. The locations and number of placentas and information on dead calves are also recorded. Placentas provide a useful independent measure of twinning rate, and dead calves give information on neonatal mortality rates.



Figure 1. Saiga twins observed on a transect, Kalmykia 2004. Photo: Nils Bunnefeld

Throughout the year, and particularly just before and after calving, all observations of saigas within the study area are recorded, particularly the size and age-sex composition of herds. This gives an approximate indication of reproductive success. The proportion of males observed in this period is potentially misleading due to sexual segregation, so is not used.

Kalmykia

There have now been two seasons of calf data collected in the Chernye Zemli reserve. In both cases the calving aggregation has been in the same location (Fig 2).

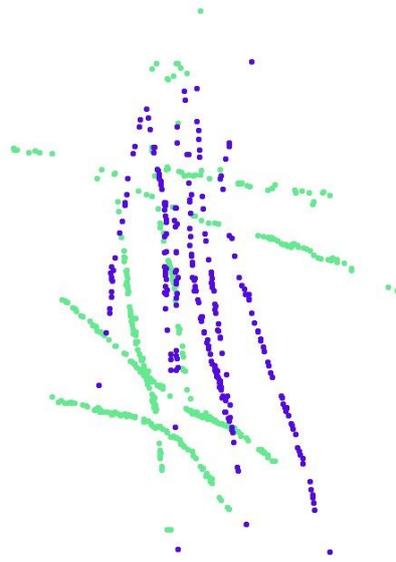


Figure 2. Locations of calves found on transect walks, 2003 (purple) and 2004 (green). Each dot is a calf.

205 live calves were sampled in 2003 and 415 in 2004. Sex ratios were approximately equal, and 40% of the calves were twins. In 2003 24 calves were found dead, and 21 in 2004. An analysis of the factors affecting calf weight using a linear mixed effects model showed that calf weight increased as the birth season went on but was not significantly different between years. There were significant differences between individual calves, depending on their sex and whether or not they were part of a twin pair. In general singletons were heavier than twins, and males heavier than females, as might be expected (Fig. 3).

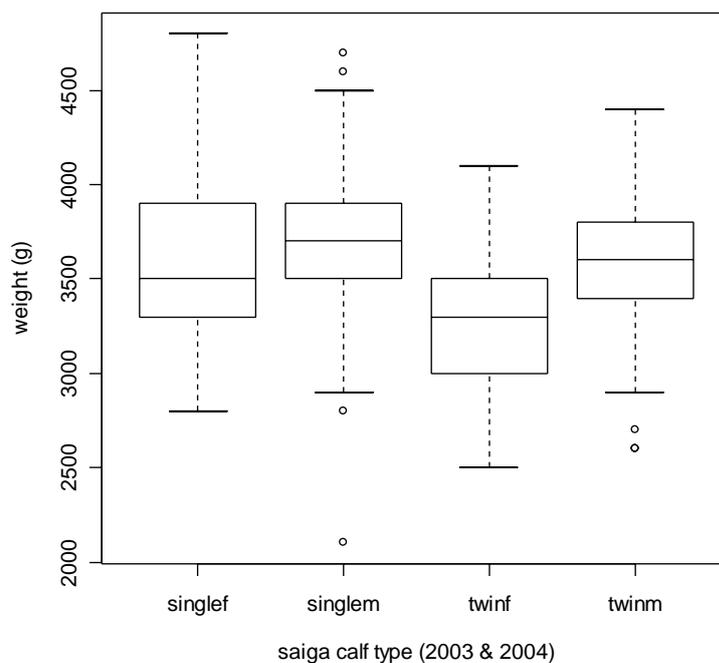


Figure 3. The mean and variation in weights of calves measured in Kalmykia, 2003 and 2004 combined. Singlef = singleton female, twinf = female born as part of a twin pair. Weights are in grammes.

An interesting finding was that a twin male with a male sibling was significantly heavier than one that had a female sibling. Biological theory suggests that among ungulates, high quality females are likely to invest in males, because the quality of male offspring makes a big difference to their future reproductive success. Lower quality females are more likely to invest in females, because even low quality females are able to produce offspring. Our study is unique in being able to look at differences in weight of newborn calves (a surrogate for female investment) in a twinning species. Although we cannot look directly at female quality due to our non-invasive sampling methods, our results suggest that the highest quality females carry male-male twin pairs, and this involves a substantial extra investment by the female in terms of foetal weight, compared to carrying a singleton or a twin pair with a female in it (Table 1). Female quality is likely to vary with age (first year saiga females almost invariably produce a single offspring, while older females routinely twin), and with individual differences between females which can be environmentally, behaviourally or genetically determined.

Table 1. Mean total weight of offspring carried by females, measured as weight of calves in the first 2 days of life, and depending on the sex and number of calves.

<i>Calf type</i>	<i>Mean weight (g)</i>
Singleton female	3581
Singleton male	3712
Female-female pair	6500
Female-male pair	6675
Male-male pair	7248

Our next step is to examine in more detail the effect of spatial location and birth date on calf weight and twinning. Anecdotal evidence suggests that higher quality females should give birth earlier in the birth period and towards the centre of the aggregation, to maximise calf survival. Now that we have a good idea of the location and extent of the calving aggregation, we can extend our survey effort in 2005 to ensure full and systematic coverage in both space and time. This will allow us to address these questions.

Although these results may seem a long way from saiga conservation, this work forms the basis for a long-term monitoring programme which will give early warning of problems for saigas in the future. For example, in particularly bad years we may see a drop in birth weights or in twinning rates, or a reduction in the size and extent of the aggregation. Human or animal disturbance may change the shape or density of the aggregation, and changes in the proportion of calves found dead is also a potentially important signal of conservation concern.

Ustiurt

In 2004 we extended our calf monitoring to the Ustiurt population. The population estimate for Ustiurt in 2004 from aerial surveys was 15,000 individuals, which compares to 19,000 in 2002 and 13,000 in 2003. This is substantially greater than the Betpak-dala population estimate of 4,000-7,000 animals in a much larger area. In Betpak-dala herds are now so scattered that monitoring birth aggregations is likely to be a futile exercise. This is particularly the case in view of the very short time in which saigas give birth, the large distances involved and the requirement to travel in a vehicle rather than an aircraft. Hence it was felt that the Ustiurt population was a better target for monitoring.

The last time that we had visiting the calving aggregations was in 1998, in a joint Imperial College-Institute of Zoology expedition. On that occasion a large aggregation was observed, and 611 calves were sampled. It was impossible to distinguish twins from singletons because the calves were too densely packed. In 2004, a very different picture emerged. We were unable to locate a calving aggregation, and could only capture 13 isolated calves, despite extensive efforts by the survey team. Walking transects were impossible to perform because of the large distances between individual calves, hence we resorted to driving large distances around the steppe attempting to locate saiga

females, which might have calves in the vicinity. See figure 4 for the routes taken and observations made.

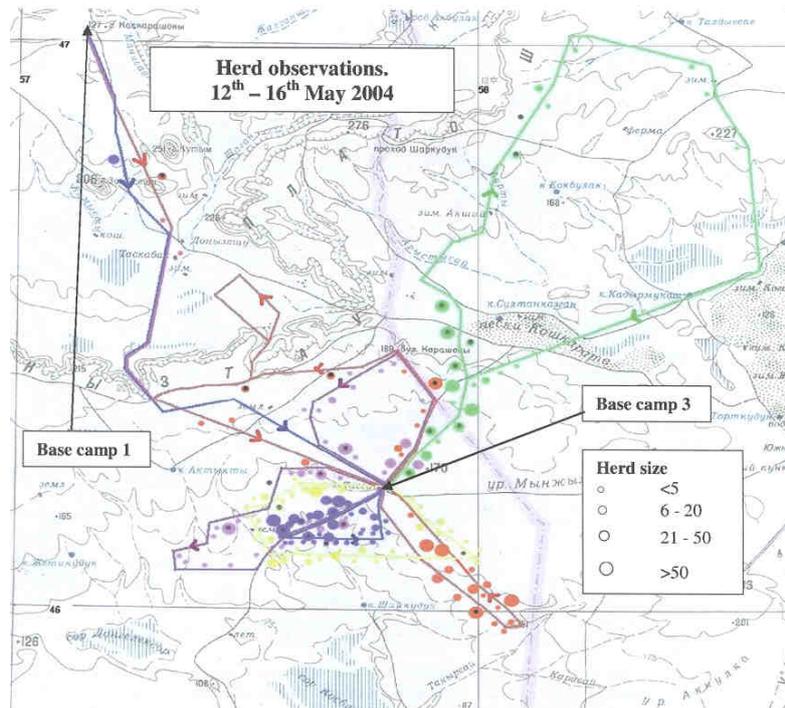


Figure 4. Locations of herd observations for the first 5 days of the expedition, Ustiurt, 2004. A one degree square, longitude 57-58W and latitude 46-47N, is shown for scaling purposes.

The only useful measurement that we could take was the composition of herds leaving the birth area, to give a crude estimate of female:calv ratios, and hence reproductive success (Fig. 5).

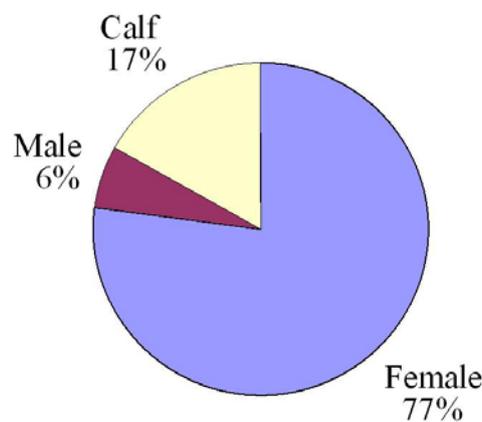


Figure 5. The sex composition of saiga herds observed in Ustiurt, May-June 2004.

The proportion of males is likely to be an unquantifiable underestimate due to sex segregation during the birth season. The calf:female ratio may be overestimated due to barren females also not congregating at the birth areas. However, the 0.22 calf:female ratio in the herds leaving the birth area is extremely low, with previous estimates for Ustiurt and Kalmykia lying somewhere between 1.5 and 0.85. In combination with our failure to find significant numbers of calves, this suggests that reproductive rates are abnormally low in the Ustiurt population.

The apparent population stability suggested by the aerial survey results is belied by the results of our monitoring and the reports of ongoing intense poaching which we received from local people on the ground. It is possible that the calf aggregations formed elsewhere in 2004 due perhaps to weather

conditions or human disturbance, however the area searched was extensive and was where aggregations have historically formed. It is also possible that this was an unusually bad year for some reason, although weather patterns were within historical norms. Hence our priority for 2005 is to revisit the Ustiurt population and confirm whether saigas are reproducing normally or not. Given the failure of our monitoring protocol, which is designed for dense aggregations, we will again use vehicle surveys. In 2004 the presence of the film crew created disturbance and hampered research, in 2005 this will not be an issue. The biological monitoring will be complemented by social surveys, which will give a clearer picture of poaching activity in the region.

Annex 3. Press coverage of the project, April 2004-March 2005

National newspapers in range state

“To restore saiga numbers it is vital to sign an agreement between the governments of Kazakhstan, Turkmenistan, Uzbekistan and Russia”. Panorama newspaper, Kazakhstan, 2nd April 2004.

“Saigas in danger - humans compete with wolves”. Science and High Schools of Kazakhstan”, 15th Feb 2005.

Local newspapers in range state

“Saiga in danger: The international community is ready to help”. Vechernaya Elista, 29th April 2004.

“A mammoth of today is living on the Kalmykian steppe” Izvestiya Kalmykii 13th May 2004.

“Steppe antelope in drawings and essays”. Izvestiya Kalmykii 20th June 2004.

“Children conserving nature”. Elista Paporama, 26th June 2004.

“Life of saigas in enclosures: experiments continue”. 3rd February 2005, Izvestiya Kalmykii

“How to guarantee the employment for potential poachers”. 26th March 2005, Izvestiya Kalmykii

Published outside range state

“No respite for critically endangered saiga antelope”. IUCN Species Survival Commission News, 15th April 2004. [International]

“Saga of the saiga” National Wildlife Magazine, April/May 2004. [USA]

“Notruf aus der Steppe”. Hoerzu Magazine, 7th May 2004. [Germany]

“Saiga antelope: the creature of the arid grassland” Life World Magazine, October 2004 [China]

“Aline and the saiga antelope”. Film by Marathon Productions, November 2004. [France]

“At the brink of extinction: saiga antelope needs urgent support”. CIC Newsletter, Issue 4, 2004. [International]

“Espèces menacées: le combat continue.” Terre Sauvage Magazine 51, Dec 2004-Jan 2005. [France]

“Saving saigas”. Ranger Rick Magazine, February 2005. [USA]