IMPERIAL LAUNCHES CULTURAL EXCHANGE TO HELP SAVE ENDANGERED ANTELOPES

See also...
-Centre for Environmental Policy

External Sites:
-BBC Wildlife Magazine
-Imperial College Conservation Science
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By Danielle Reeves
Tuesday 11 July 2006

Imperial scientists researching endangered Saiga antelopes in Kalmykia, Russia, have received a £64,600 Darwin Initiative grant for conservation research. The grant will be used to support Saiga conservation through a cultural exchange programme between Kalmykia and the UK to increase awareness of the Saiga's plight.


A ranger with a baby Saiga during calf monitoring

The exchange, which will take place in spring 2007, will give three people from the UK the chance to spend 10 days working on Saiga conservation projects on the Eurasian steppe and exploring the Kalmykian lifestyle with a host family. In return, the British exchange partners will welcome their Kalmykian counterparts to the UK in June 2007 and work with them to publicise Saiga conservation projects and Kalmykian culture and wildlife. The research team are looking for applicants for the scheme with a wide range of interests and backgrounds, including members of wildlife trusts and environmental groups, school teachers, artists, people working in the zoo sector and people interested in finding out more about the cultural life of the Buddhist people of Kalmykia.

Dr EJ Milner-Gulland, reader in conservation science at Imperial's Division of Biology and leader of the Saiga research project, explains: "Our unique exchange programme will allow people from different backgrounds to spend time working and living in the dramatic steppe landscape of Kalmykia. We hope that the links forged during this scheme will be long-lasting and will ensure much-needed support from the UK for future Saiga conservation projects."

A traditional Kalmykian dance is performed at the opening of a Saiga breeding centre

"Alongside the cultural exchange scheme, our new Darwin Initiative grant will enable us to evaluate the effectiveness of a variety of different Saiga conservation schemes in influencing the attitudes of local people, from traditional antipoaching patrols, to education projects and support for the livelihoods of poor people living with Saigas."

The distinctive Saiga, with its trunk-like nose, is one of the World Conservation Union's most critically endangered species. It is closely intertwined with the culture, folk songs, poems and dances of the Kalmykian people who settled in eastern Europe, from western Mongolia, over 400 years ago.

After the break-up of the Soviet Union Saigas were hunted extensively for their meat and horns, the latter of which are used in traditional Chinese medicine. This resulted in a 95% decline in numbers during the 1990s. The Saiga antelopes were once a prominent feature on the Eurasian steppes, including Kalmykia, Kazakhstan and Mongolia, with the tracks of their migrations marking the landscape. The dramatic reduction in their numbers in recent years is largely due to a poaching problem that persists to this day, although a number of different conservation initiatives are reversing this trend.

For more information about the cultural exchange and Imperial's work for Saiga conservation, visit Dr Milner-Gulland's website at www.iccs.org.uk or see the August edition of the BBC Wildlife Magazine.

ENDS

THE PENALTY OF HAVING A SISTER – WHY SIBLING SEX MATTERS FOR MALE SAIGA ANTELOPES

New study finds that males with a twin sister do not achieve an optimal birth weight - *News Release*

Date	07 Mar 2007
Category	All

The research team's work with wild saigas in Kalmykia has enabled them to gain an unprecedented insight into the birth weight of calves over a three year period
Photo: Nils Bunnefeld

See also...

Division of Biology

External sites:

Saiga Conservation Alliance

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Imperial College London News Release

Strictly embargoed for

00.01 hours GMT
Wednesday 7 March 2007

Having a twin sister could put male saiga antelopes at a reproductive disadvantage, says new research published today. The study shows that male twins with a sister are born lighter than those with a brother, making them smaller than the optimal size for males. The research also shows that saigas are the supermums of the hoofed animal world with no other similar species investing more in their offspring during pregnancy.

The study's results call into question current understanding of the development of male and female foetuses of this species, and give scientists a new insight into the importance

of sibling sex and what implications this may have for the animals as they mature.

This study shows that when a female is pregnant with mixed-sex twins, the male foetus does not undergo the substantial amount of growth that occurs in a male foetus with a brother, resulting in a sub-optimal birth weight. Saiga males mate with many females and face strong male-male competition during short mating seasons. This means that size matters for males - being smaller than average is one of the major limiting factors for reproductive success.

Aline Kühl from Imperial College London's Division of Biology, lead author of the paper, explains that although they do not yet understand the precise mechanism behind this suboptimal development in male twins, its existence is clear. "When siblings in a litter vary in sex, maternal investment should be sex-specific, meaning that the male foetus grows bigger than the female. However, it seems there are limitations in the ability of the mother to provision mixed twin litters in the womb," she said.

The researchers point out that mixed-sex litters have been shown to have an impact on animal health elsewhere in the animal world. In dairy cows for example, it is well known that calves from mixed litters are less fit. Female heifers from mixed litters are generally infertile. But unlike dairy cows, in cases of saiga mixed-sex twins, the male foetus appears to be worse off, not the female.

Aline adds that the effect of size on male saigas later in life cannot be underestimated: "Even a relatively small decrease in birth weight is likely to have an amplified negative effect on male reproductive fitness in species where competition amongst males for mates is very high."

The saiga antelope provides scientists with an ideal opportunity to investigate the effects of mixed-sex twin litters on size and development, because there are a high proportion of twin births in the population, and because the optimal birth weight for males and females of the species are dramatically different.

The researchers' study of female saigas and their young also showed that they invest more in their pregnancy than any other hoofed mammal, with some mothers carrying young up to 38 per cent of their own body weight.

The research was carried out on populations of saiga antelopes living on the Eurasian steppe in the autonomous Republic of Kalmykia, Russia. Data from saiga antelope monitoring during Soviet times from the Betpak-dala saiga population in Kazakhstan were also analysed. Both data sets are from different populations of saiga, from both before and after the recent extreme decline in saiga numbers – yet the results of both datasets are qualitatively the same.

The research team, alongside local rangers, weighed and measured saiga calves during the birth season in May over a period of three years. Saiga have a mass calving behaviour, whereby females come together in a densely packed herd to all give birth within a week. This makes it relatively easy to monitor the reproductive state of the population. Such monitoring has become vital since saiga have seen a dramatic decline in numbers of over 95 per cent in recent years, making them one of the most critically

endangered species on earth.

Future research will investigate what role sibling sex plays for lifetime reproductive success. The monitoring protocol of saiga antelopes is currently being improved to include non-invasive methods for monitoring to determine fecundity rates (from faeces analysis).

In order to restore saiga antelope populations Imperial's Dr EJ Milner-Gulland, Aline Kühl and long-term colleagues in the saiga's range states have recently set up the Saiga Conservation Alliance. To find out more visit http://www.iccs.org.uk/SaigaAlliance.htm

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Notes to editors:

1. The 'big spenders' of the steppe: sex-specific maternal allocation and twinning in the saiga antelope, *Proceedings of the Royal Society B: Biological Sciences*, Wednesday 7 March 2007.

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2. About Imperial College London

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With 62 Fellows of the Royal Society among our current academic staff and distinguished

past members of the College including 14 Nobel Laureates and two Fields Medallists, Imperial's contribution to society has been immense. Inventions and innovations include the discovery of penicillin, the development of holography and the foundations of fibre optics. This commitment to the application of our research for the benefit of all continues today with current focuses including interdisciplinary collaborations to tackle climate change and mathematical modelling to predict and control the spread of infectious diseases.

T he College's 100 years of living science will be celebrated throughout 2007 with a range of events to mark the Centenary of the signing of Imperial's founding charter on 8 July 1907.

Website: www.imperial.ac.uk