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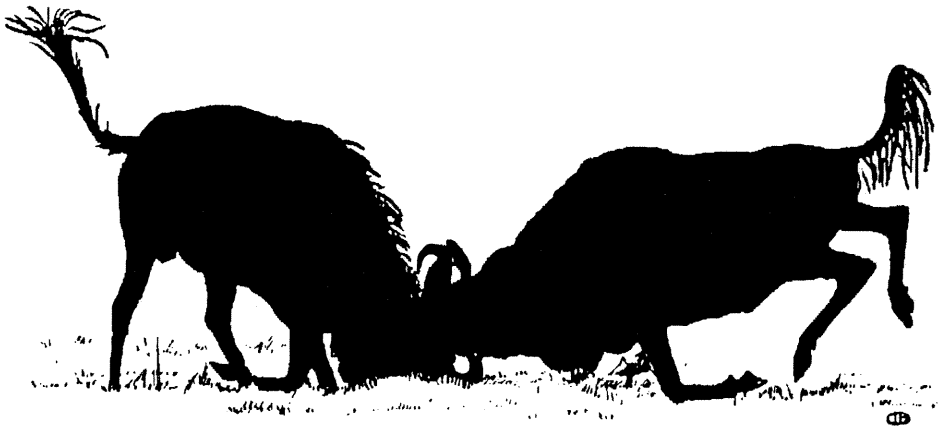
Edited and Published by
Richard D. Estes, Chairman (ret.)
5 Granite Street
Peterborough, NH 03458, USA
Tel/fax 603 924-9804
Email: richarddestes@earthlink.net

Antelope Specialist Group



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ASG NEWS

Chairman Steps Down

Now that Holly Dublin has taken over leadership of the Species Survival Commission, she is hoping that specialist group chairs will contribute even more time and effort than in the past. In my correspondence with Holly, she explained that "Revised TORs will be put in place for SG Chairs and a number of taxonomic and regional assessments, including the Global Mammal Assessment, are in the queue for initiation or completion over the coming four years".

She went on to explain, "I am just trying to get a major conservation agenda underway, and SSC needs a lot of stoking, stroking and changes to make that happen".

As I cannot spare more time from other commitments than heretofore, my resignation has been accepted and the appointment of two new Co-chairs will soon be announced.

It's really high time for me to step aside, as I've been Chair and Co-chair (with Rod East from 1984-2000) since the ASG was created, on the initiative of the late Harold J. Coolidge, in 1978. However, I intend to round out 25 years of producing the *Gnusletter;* I'm now working on Vol. 24 No. 1. At Holly's suggestion, the ASG newsletter will soon be published (perhaps exclusively) on line, with links to the SSC, and an ASG website www.asg-antelope.org, is now up and running. It is the creation of Petri Viljoen, who is not only Co-chair of the ASG Southern African Region but also a professional web designer. [One example of his work: http://www.africanlion.org.] In an email of 29 June, Holly informed me that I have been granted a lifteome appointment as Member Emeritus. So, my participation in ASG matters won't end next year with publication of *Gnusletter* Vol. 25.

By then, I hope a new editor/publisher will be on board. Any volunteers?

Antelope News

At Last: Photographic Proof the Giant Sable Survived the Civil War

Story courtesy of IRIN

IUCN, Gland, Switzerland, 11 April 2005. The rare giant sable antelope (*Hippotragus niger variani*), unique to Angola and feared extinct after almost three decades of civil war, has survived.

A majestic but notoriously skittish beast, the 'Palanca Negra' is informally regarded as the country's national animal. The striking curved horns of the adult male, which can grow up to 165cm long, appear on the logo of Angola's national airline and football team.

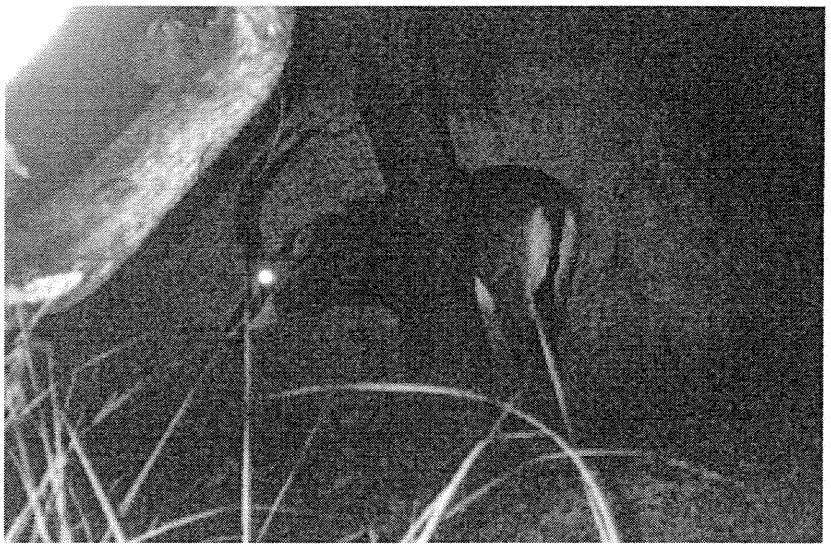
Many assumed that 27 years of fighting had wiped out the species because there had been no confirmed sighting since 1982. Even when peace reigned, poachers in search of commercial bushmeat or food for survival posed a serious threat.

Now a team from the Catholic University's Centre for Scientific Studies and Investigation, using remote cameras triggered by an infrared beam, have managed to catch a herd of giant sable on film in the Kangandala National Park in the northern province of Malanje.

The news has delighted the Antelope Specialist Group (ASG) of IUCN's Species Survival Commission as determining the status of the giant sable has been its long standing priority.

Visiting the giant sable reserves only became possible after the civil war ended in 2001. In 2002 the ASG Chair Richard Estes, accompanied an expedition to the reserves organized by the Kissama Foundation. This included overflights of the Luando Reserve in an Angola army helicopter and a foot safari into Kangandala National Park.

Signs of feeding and fresh droppings resembling those of giant sable were noted and a total of five giant sables were seen fleetingly by members of the party. But proof sufficient to convince sceptics – in the form of photos or DNA analysis of giant sable genotype - was not secured. However, a 2004 expedition in which Jeremy Anderson, Vice-chair of the Southern African ASG Region, took part, brought back dung and hair samples both from the Luando Reserve and Kangandala that were identified as giant sable.



Camera (upper left) trap photo of 2-yr male by Vaz Pinto

The last proof of giant sable survival was secured by Estes during a visit to Kangandala in 1982. He and his wife had made the first full-year study of the giant sable in 1969/70. Re-establishing protection and a comprehensive plan to secure the species' survival remain a top ASG priority.

"We had been seeing droppings and tracks of the giant sable for around two years, but that was not good enough; we needed proof. This is the first definitive sighting backed with concrete evidence in more than 20 years," said Pedro Vaz Pinto, who led the project.

With at least two of the cows pregnant, Vaz Pinto was confident that the herd was thriving.

"If they survived 30 years of war under those difficult circumstances, I'm sure they can continue to thrive," he said.

Vaz Pinto warned that rediscovering the Palanca Negra also brought a host of new challenges, not least putting in place some form of protection for the animal, which could fall victim to agricultural encroachment, unscrupulous breeders or trophy-hunters, and poachers.

Not only local people in Malanje, but Angolans across the country view the antelope as a mystical, almost sacred creature, and had helped to protect it from poachers.

There is hope that proper protection and a comprehensive survey to determine how many are left could lead to much-needed employment and income generation in an area desperate for development.

The next step is to involve the Angolan government and international conservation organisations in developing a strategic plan to safeguard the animal, considered by many to be one of the most beautiful antelopes in the world.

For further information contact: Anna Knee or Andrew McMullin, IUCN Species Programme Communications Officers
Tel: +41 (0)22 999 0153; Email: alk@iucn.org or mcmullina@iucn.org

Psst! Wanna buy giant sable?

From the Mail & Guardian, South Africa
July 8,2005

Within months of the discovery that Angola's unique giant sable antelopes managed to survive almost 30 years of civil war, South African wildlife dealers are offering to sell them to overseas zoos.

When Angolan conservationists discovered a small herd of the striking sables by filming them on a trip camera in February, they feared news of their survival could pose their biggest threat. This week it emerged the immediate threat is not from hunters or poachers, but live removal for the lucrative wildlife trade.

Giant sables, which have sweeping curved horns and white facial markings, are a national symbol in Angola and are also known as royal sables. They are used on the national banknotes, are a mascot for the country's football team and the logo for its national airline.

They were so elusive during the civil war that they were believed to have become extinct. Conservationists now estimate there may be a couple of hundred left, in Cangandala National Park and Luando reserve in the north-west of the country.

An e-mail circulating among zoo staff in the United States offers "royal sables" from Angola and claims "government officials want to export a few, and apparently it's quite serious". The communication, from Pretoria-based wildlife capture outfit CatchCo, was passed on to the Mail & Guardian by worried conservationists.

One source, who did not want to be named, said he had been told that six sables were on offer and the asking price for each animal was between $1-million and $1,5-million.

Pedro Vaz Pinto, a senior conservationist in Angola who re-discovered the sables and is trying to get a project together to protect them, is outraged by the claim that his government would sell them.

"Saying the Angolan government wants to sell a few is ridiculous. Such a claim could only have originated from someone who doesn't know much about Angola, the Angolans and how they feel about this animal, our national symbol," he told the M&G.

His concerns include not only that the sable population will be depleted but that breeders may cross-breed them with ordinary sables, losing the uniqueness of the giants.

CatchCo's Douw Grobler said his company had been asked by South African clients to help raise funding and to sort out the logistics for a sable breeding project in Angola. He denied that he had sent out the e-mail, or that the plan was to send the antelopes to the US.

Sahelo-Saharan Interest Group Summary of 6th Annual Meeting

Steve Monfort email: monforts@si.edu

June 4, 2005

First, let me start by thanking Philippe Chardonnet, Odile Caillot, and IGF for generously organizing our 6th annual SSIG meeting. The venue at Parc de la Haute Touche / MNHN[1] was fantastic, and their staff was extremely gracious in ensuring a productive and enjoyable meeting. Persons interested in Sahelo-Saharan wildlife conservation from 12 countries participated in the meeting, which included conservation and science presentations covering 9 North African countries (Morocco, Tunisia, Algeria, Libya, Senegal, Mauritania, Mali, Chad and Niger).

This was a special meeting for our group because it marked the unveiling for the Sahara Conservation Fund (SCF), a legally constituted and registered not-for-profit organization that is independently governed by a Board of Directors. SCF is an international, non-governmental organization committed to conserving the wildlife of the Sahara and bordering Sahelian grasslands. Plans are underway to recruit an Executive Director who will assume responsibility for its day-to-day operation management. The SCF Board consists of Steve Monfort (Chairman), François Lamarque (Vice-Chairman), Terrie Correll (Secretary), Heiner Engel (Treasurer), Bill Houston, Koen de Smet, Mar Cano, Tim Wacher and Tim Woodfine.

Our vision is to ensure that the Sahelo-Saharan region is well conserved and managed, where ecological processes function naturally, species exist in self-supporting numbers across their historical range, and support for conservation is derived from stakeholders across all sectors of society. SCF will continue to host an annual conservation and science meeting—the SSIG meeting—which will serve, as always, as a venue for like-minded individuals to share information and ideas, and to develop effective conservation partnerships. We believe that partnerships are the key to our success and to achieving our common goal—the conservation of deserts and their unique natural and cultural heritage.

Our 6th annual SSIG was another excellent example of how partnerships can lead to conservation action. On Day 1 John Newby delivered an inspiring talk that examined the history of wildlife and management of Ouadi Rime – Ouadi Achim Game Reserve, Chad (1972-1977); this presentation revealed important lessons learned and provided a vision for restoring wildlife such as the scimitar-horned oryx to areas where they once roamed in abundance. Roseline Beudels (CMS Scientific Council) provided an update on the CMS Sahelo-Saharan Antelopes Concerted Action Plan and Arnaud Greth (CMS/FFEM Regional Coordinator) gave a report on ongoing CMS/FFEM projects with special emphasis on 1) vision, priorities and planned activities; 2) opportunities and obstacles, and 3) potential partnerships and synergies. The take-home message was the CMS/FFEM are moving forward on several key fronts, and they are actively looking for engaged, long-term partners to assist in project implementation.

A major concern shared by all meet-

ing participants was the issue of unsustainable hunting practices, and it was agreed that the CMS and SCF would continue to work towards keeping up the pressure on range-country governments and perpetrators, while also seeking to find win-win solutions that can remove the pressure caused by a relatively small number of irresponsible individuals.

On Day 2 we had a number of extremely interesting presentations on various conservation and science projects, including

Overview of wildlife survey in the Hoggar and Tassili National Parks, Algeria (Tim Wacher)

Coordinating requests for animals for reintroduction in Tunisia (Bill Houston)

Metapopulation management of addax and scimitar-horned oryx in Tunisia (Ed Spevak)

Dama gazelles in the South-Tamesna, Mali? Yes, there are! (François Lamarque)

A total count of the dorcas gazelles on Tidra Island, Parc National du Banc d'Arguin, Mauritania (François Lamarque)

A report on Sahelo-Saharan antelopes in Libya (François Lamarque)

Research studies on scimitar-horned oryx conducted in the UK (Tania Gilbert)

Relations between wild ungulates and pastoralists in the Sahara: the case of Teda-Daza and Beri people (Chad, Niger, Sudan) (Jérôme Tubiana)

Dama gazelle and scimitar-horned oryx reintroduction in Senegal (M. Abdelkader Jebali)

An introduction to the IUCN/SSC/ASG – Northeast African Regional Subgroup (Jens-Ove Heckel)

Tiang migration in Eastern Chad (Daniel Cornelis)

Soft and social method of scimitar-horned oryx reintroduction in sub-Saharan Africa (Philippe Chardonnet

CI/IUCN's Global Mammal Assessment (Philippe Chardonnet)

Contributions to the study of Sahelo-Saharan fauna (Francoise Claro)

Priority Setting Exercise for Endangered African Antelopes (Frauke Fischer)

Day 3 consisted of working-group discussions to formulate priorities and strategies for conservation as follows: Group 1, Morocco, Tunisia, Algeria, Libya and Egypt; Group 2, Niger, Chad, Senegal, Mauritania, Mali. These groups worked on establishing concrete action steps, i.e., what can we accomplish working together during the next year.

A very brief (and incomplete) list of priorities and action steps, by country, are listed below:

Morocco

Create a reserve at Daklah of 1000 ha.

Inventory Cuvier's gazelle of the high north-eastern plateau.

National workshop on wildlife management, reintroduction, translocation, and habitat assessments.

Undertake training course in Bou Hedma National Park for Moroccan staff.

Develop public awareness campaigns.

Conduct genetic research for dorcas gazelles.

Algeria

Provide assistance on GEF project for Hoggar / Tassili National Parks.

Provide training for Algerian scientists in wildlife conservation techniques.

Extend ongoing wildlife survey work / training begun with Hoggar National Park.

Explore feasibility of antelope reintroductions in Hoggar and Tassili National Parks.

Libya

Explore possibilities of developing partnerships with Libyan authorities (Libya has joined CMS).

Egypt

Explore providing assistance to Gebel Elba National Park staff on Barbary sheep inventory and management.

Assist Cairo Zoo with genetic management of oryx population.

Tunisia

Conduct training courses and baseline wildlife surveys.

Continue Dorsal Mountain wildlife surveys.

Undertake first addax / oryx translocations linked to multi-national training sessions in Bou Hedma.

Prepare antelope breeding facilities in Dghoumes National Park.

Develop slender-horned gazelle conservation strategy.

Continue work on creation of new proposed national parks and reserves, including meta-population management.

Niger

CMS is providing financial support for a general awareness campaign related to VIP hunting, supporting SOS Faune du Niger (an NGO) who have been particularly vocal on this issue.

Note: It was recognized that this is a much broader issue and that whatever was being done in Niger needed to be incorporated into the multi-national programme. It was decided that it would be appropriate for SCF to draft a letter needed to bring this issue to the formal attention of affected range states and international agencies and authorities. It is recognized that it will be important to distinguish between this sort of hunting (illegal/uncontrolled) and hunting undertaken under controlled conditions. The SCF (SSIG) has made it very clear that they are not anti-hunting.

CMS is providing support to Niger DFPP, buying one vehicle, computers, and funds to support a national coordinator; a memorandum between CMS and Niger will soon be signed.

Develop infrastructure to support Termit conservation program (see above).

Develop community-based initiatives, including stakeholder workshops in Zinder for Termit stakeholders (planned for early in 2006).

CMS is seeking a long-term commitment for an international partner, including co-funding, field capacity and an in-

stitutional framework. SCF will be meeting with CMS/FFEM to discuss developing terms of reference for a formal partnership with CMS/FFEM on Termit.

IGF has applied for funds to provide co-funding for a reintroduction program in Gadebeji and they are ready to begin planning and implementing a project in the field.

Provide technical support and matching funds (5,000 Euros) to support an ostrich breeding program in cooperation with a local NGO.

Chad

Director of Chad Wildlife Service reported that the fauna has suffered greatly from drought and civil war; in fact wildlife has been decimated. The Chadian authorities are seeking broad-based conservation assistance, including financial support, capacity building, local awareness campaigns and concrete conservation action on the ground.

Develop a project in Ouadi Rime - Ouadi Achim; SCF, CMS and WCS are interested in partnering on this project.

Conduct stakeholder workshop (with CMS grant) during late 2005.

There are three captive dama gazelles in N'djamena that should be exported given their incredible genetic value and the lack of capacity to care for them properly in captivity within Chad.

Mali

Conduct wildlife survey in Tamesna this year; this should support the creation of Tamesna reserve.

Senegal

Guembul has new Conservator who is keen to develop ties and to expand his technical expertise. Director of National Parks received big increase in his budget for national parks of the country which is very good news. Funds from CMS have been provided for transport of animals from Guembul to the Ferlo.

Develop a long-term strategy for management of animals released into the Ferlo.

Captive herds in Senegal need to be bolstered by the importation of new animals.

Mauritania

There is need for a wildlife survey of the Majabat, but due to on-the-ground safety issues (i.e., bandits) an aerial is probably the only feasible option; fundraising will be pursued.

This is only a quick synopsis of our activities from the SSIG meeting in Parc de la Haute Touche, and a more complete meeting report will emerge in the next couple of months that has a tremendous amount of excellent information. Additionally, we will soon have our website operational and we hope to be able to keep it updated with lots of current reports and useful information on how we can work together to help conserve the wildlife of the Sahelo-Saharan region, and the habitats they require for their survival.

[1] Muséum National d'Histoire Naturelle, France

Saiga on the Web

Elena Bykova (Editorial Manager)

Dear colleague,
This e-mail is to inform you of the publication of our new E-bulletin, "Saiga News", which is now available for downloading from the websites www.iccs.org.uk/saiganews.htm and http://saigak.biodiversity.ru/publications.html.

The first issue includes articles about the status of saigas in Turkmenistan, the role of saiga horn in traditional Chinese medicine, and genetic differentiation between saiga populations, as well as updates on regional and international saiga conservation activities in the last 6 months, and highlights of press coverage of saigas in the range states and elsewhere.

We will be publishing Saiga News twice a year, and hope that it will be used as a forum for the dissemination of saiga information to all interested parties. It is currently available as a pdf and in hard copy on request, in English and Russian. Chinese and Mongolian versions will be available in the near future.

If you have information which you would like to contribute to the next issue please let us know. Please also contact us if you know of other people who would like to receive the bulletin.

Regional Rundown

NIGER

Ghiazza Captures Roan in W NP

Riccardo Ghiazza, who became notorious in 1998 when South Africa's NSPCA charged him with the cruel treatment of baby elephants captured in Botswana's Tuli Game Reserve, has continued his business (African Game Services) in capturing and selling animals in many different African countries. His ability to conduct operations inside parks and reserves of Central and West African countries, such as CAR, Burkina Faso, and Togo, suggests he knows how to gain the support of officials who are employed to protect the animals. The latest case involves the capture of roan antelope, Western hartebeest, and giraffe in W National Park, the largest national park in West Africa. The following account was printed in *Le Républicain* N° 664, 14 au 20 avril 2005.

Gestion de la faune
Les hippotragues capturées dans le parc

Oumarou Keïta

Dans notre précédente édition, avions

rapporté la capture dans des conditions troubles de huit (8) hypotragues, une espèce communément appelée antilopecheval. Le camion qui les transportait, immatriculé au Togo, a finalement été autorisé à traverser le territoire burkinabé et à franchir la frontière entre le Burkina et le Togo. Officiellement, ce camion devrait décharger la « commande » au Togo.

En effet, c'est par lettre N° 32/MERF/CAB en date du 15 février 2005 que le ministre togolais de l'Environnement et des Ressources forestières, a demandé à son homologue nigérien le prélèvement des espèces suivantes : 3 girafes (dont une femelle et deux mâles), 15 hyppotragues (dont 10 femelles et 5 mâles), 15 buffles (dont 10 femelles et 5 mâles) et 10 bubales (dont 8 femelles et 2 mâles).

Le général Zoumaro Gnofame a indiqué que ce prélèvement rentre dans le cadre de la conservation de la diversité des aires protégées de son pays, dont le parc de Djambé situé à 430 km de Lomé. « La facture de cette importation sera prise en charge par le gestionnaire du parc de Djambé en l'occurrence M. Ghiazza Riccardo », conclut le général Gnofame.

En réponse à son homologue togolais, le ministre d'Etat nigérien chargé de l'Environnement, M. Abdou Labo, a accordé le prélèvement à des fins de conservation de deux couples d'hyppotragues et deux autres couples de buffles. « Pour le reste des espèces se trouvant en effectif réduit ou dans un statut particulier une réponse appropriée vous sera donnée plus tard... Les frais (permis et taxes de capture, transport, divers) inhérents à ce prélèvement sont à la charge du gestionnaire du parc de Djambé, M. Riccardo Ghiazza. Pour toutes informations complémentaires, l'importateur prendra attache avec le directeur de la faune, de la pêche et de la pisciculture », conclut Abdou Labo. En lieu et place de 2 couples hyppotragues accordés par le ministre, 8 individus ont été prélevés. Quia a autorisé le surplus ? Au profit de qui ?

Est-ce que la facture a été réglée, et les produits versés au Trésor national ? Comment le conservateur du parc national du W peut-il signer un ordre de déplacement à l'agent Idé Maïtchido chef de poste forestier de Boumba, chargé du transfert de ces 8 hyppotragues jusqu'à Djambé ?

Riccardo Chiazza avait défrayé la chronique en juillet 1998 pour avoir fait capturer 30 éléphanteaux au Botswana. Celui qui a été considéré comme l'un des plus grands vendeurs ou trafiquants d'animaux, a été traîné devant les tribunaux sud-africains par des défenseurs des éléphants, qui remportent le procès.

Ces antilopes n'ont pas aussi échappé à la capture

Near East & Asia

ISRAEL

Sunset of the Acacia Gazelle

The Nature Reserves and National Parks Protection Authority have finally stopped supporting David Blank's 15-year effort to conserve a small herd of Acacia gazelles, a distinctive subpopulation or possibly a subspecies of *Gazella gazella* in Israel's semi-desert southern Arava Valley that is protected in the Yotvata Hai-Bar (Wildlife Preserve) Nature Reserve. (The plight of the Acacia gazelle has been reported in *Gnusletter* 10(2-3), 1992, 15(2), 19(1), and 20(2)). The reserve managers halted Blank's observations and management of the gazelles early this year, after deciding the herd should be confined in an enclosure to protect them against wolves and other carnivores. Blank is convinced that confinement will lead to the demise of the Acacia gazelle.

In a recent email he wrote, "They proposed to fence only a small part of the gazelles' habitat and to drive Acacia gazelles into the enclosure by a line of cars and people. I am sure that such a method is the shortest way to kill the whole population. Besides, during the last 2-3 months the managers decided to stop giving extra-food (fixed fodder) and closed the water for irrigation of the natural vegetation which has provided additional food for Acacia gazelles during last 4 years. In short, all my achievements with Acacia gazelles were liquidated.

"As you remember, we had 10 gazelles (including 1 male) in 1996-97. Then gazelle numbers began to increase up to 24 in 1999-2000). After this they decreased again to 16 gazelles in the summer of 2004, because of the high number of wolves. But they increased again up to 18 gazelles in Jan. 2005). You can see that the bad situation in which Acacia gazelles have been for many years is a complicated problem.

"I found four main causes of this problem: (a). changes of vegetation in the habitat because of agriculture [following settlement], (b) the Arava speed way [a highway that runs through the reserve], (c) carnivores, and (d) genetic problems. I think that such problems demand long-term patience and experience. The quick decision for these gazelles [confinement] will in reality end by killing the whole population."

In an email of 7 May, Blank writes, "Unfortunately, the last decisions (27.12.04) of the Israel Nature Reserves and National Parks Protection Authority have borne fruit: the number of Acacia

gazelles has dropped to 12 individuals."

The website of the NRNPPA doesn't even acknowledge the existence of the Acacia gazelle in the account of the Yotvata Hai-Bar (Wildlife Preserve) Nature Reserve. On the other hand, captive-breeding of non-indigenous species such as the onager, scimitar oryx, and addax is featured.

MONGOLIA

Ecology and Conservation of the Mongolian Gazelle: The last migratory ungulate in the Mongolian steppe

AN INTERNATIONAL SYMPOSIUM
DATE & TIME: August 2, 2005
CONVENER: Seiki Takatsuki
PLACE: UNIVERSITY OF TOKYO

The Mongolian gazelle (*Procapra gutterosa*) is a unique ungulate living in the steppe in Mongolia and the surrounding countries. It forms huge herds and migrates long distances. The steppe, the habitat for this unique wildlife, has been sustainably utilized by nomadic people for several thousand years without deteriorating the grassland ecosystem and without wildlife extinction.

Recently, however, the situation surrounding the Mongolian gazelles is rapidly changing. Huge numbers of gazelles are poached and more than 30,000 of them are legally hunted annually. Besides, overgrazing of livestock results in deterioration of the grassland and loss of good habitat for the gazelles.

It is therefore urgently needed to improve these circumstances. What is most needed is scientific knowledge and approaches for the conservation of the gazelles and the steppe. Though there are descriptive studies from the early 20th century, it is only recently that modern ecological approaches including new techniques are being used. These have been done by Mongolian scientists in cooperation with Russian, American, and Japanese scientists. Nevertheless, their activities have been somehow independent so far, and it was only in 2004 that these scientists met and shared mutual concerns.

Though the products of these studies are not completed and the researches are going on, some information is quite important. Japanese and American scientists are revealing the routes and timing of migration of the Mongolian gazelles in southern and eastern Mongolia by radio collars and GPS collars, which were unknown before 2001. These results are analyzed utilizing remote sensing techniques to determine the important factors affecting the migration. These studies are trying to find the mechanisms of the migration by considering environmental factors. They also suggest the existence of barrier effects of railroads and the possibility of negative effects of future large-scale roads on migration. Other studies have shown the food habits of the Mongolian gazelle, and pointed out the unique feeding ecology: the gazelles selectively eat forbs and browse in spite of small availability in the steppe. They have also found similarity of the food utilized by gazelles and sheep/goats and dissimilarities with horses and wild asses (*Equus hemionus*). These results suggest the possibility of competition between the gazelle and sheep/goats.

All these results are important not only for basic ecology but also for conservation. However, much is still unknown. For example, population estimates, one of the most important kinds of information, are quite incomplete, which makes it difficult to manage the populations. We know almost nothing about diseases. [But see Sharon Deem et al's evaluation of Mongolian gazelle health in *Gnusletter* 20(2) &21(1).2002] Plants and other associated animals are also poorly known. All these are interrelated with the key species, the Mongolian gazelle.

This symposium aims to study these new findings together and discuss the future needs for the conservation of this unique and precious ungulate. It also aims to find better solutions of trans-boundary problems resulting from the wide range and the migratory nature of this gazelle. International cooperation is quite necessary but so far not well considered for mammal species.

S2101 B. Lhagvasuren: **History of range and population of the Mongolian gazelle in Mongolia**

S2102 K. Olson, D. Odonkhuu, M. G. Murray, T. K. Fuller[1], and G. B. Schaller: **Migration and habitat use of Mongolian gazelles, *Procapra gutturosa*, in eastern steppes of Mongolia**

S2103 T. Y. Ito, N. Miura, B. Lhagvasuren, B. Enkhbileg, S. Takatsuki, A. Tsunekawa, Z. Jiang, B. Chimeddorj, and B. Buuveibaatar: **Factors affecting migration of the Mongolian gazelle in the Gobi Area: Plant productivity and barrier effects of a railroad**

S2104 A. Lushchekina and V. Kiriliuk: **A comparison of the Mongolian gazelle in the 1980s and at present**

S2105 Seiki Takatsuki, Y. Yoshihara, A. Campos-Arceiz, T. Y. Ito, and Z. Jiang: **Food habits of the Mongolian gazelle and the relations with livestock**

S2106 Jiang Zhaowen, Seiki Takatsuki, W. Wang, and J. Li: **Seasonal feeding and digestive strategy of the Mongolian gazelle**

S2107 T. Mueller, K. Olson, P. Leimgruber, G. B. Schaller, M. G. Murray, and T. K. Fuller: **Tracking biomass and habitat use by migrating Mongolian gazelle from space**

S2108 K. A. Olson, D. Odonkhuu, D. Damery, T. K. Fuller, and G. B. Schaller: **Subsistence hunting of Mongolian gazelles, *Procapra gutturosa*, in Eastern Mongolia: Implications for sustainable management**

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animals in while fencing the wild ones out?

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SAMPLE ABSTRACTS

S2101

History of Range and Population of The Mongolian Gazelle in Mongolia

B. Lhagvasuren
Institute of Biology, Mongolian Academy of Sciences, Ulaanbaatar-51, Mongolia (e-mail: ecolab@magicnet.mn)

The Mongolian dry steppes are the world's largest intact grasslands, with one of the world's last great migratory ungulates, the Mongolian gazelle. Historically, the Mongolian gazelles have been distributed in Russia and China; however the poaching, intensive agriculture development, increased livestock herding and other human developments in both countries threatened the species to disappearance in Russia, and to very low numbers in China. The situation in Mongolia is also a cause for anxiety due to a sharp distribution decrease and population decline. Compared to 1940s, the distribution area in Mongolia shrunk to its smallest size in late 1970s and 1980s from 780,000 to 250,000 sq km. However, the gradual increase of distribution range has occurred from 1990s, and now reaches to almost 500,000 sq km.

The number of Mongolian gazelles is another matter of concern. According to the first scientific report, during the 1940s about 1million gazelles inhabited Mongolia. Severe winters and prolonged droughts are the main natural factors threatening the gazelle populations throughout its range. After 1950s the poaching and uncontrolled hunting, human and livestock population increase remained the biggest anthropogenic threats to the gazelles. Different authors suggested different population numbers according to their experience. The last assessment of the Mongolian gazelle population size was made in Eastern Mongolia in 1997 and suggested that around 2 million gazelles have been distributed in this area. Nevertheless, the number of gazelles is still decreasing. The paper is discussing natural and anthropogenic threats as well as conservation measures taken and proposed for the Mongolian gazelle in Mongolia.

S2102

Migration and Habitat Use of Mongolian Gazelles, *Procapra Gutturosa*, in the Eastern Steppes of Mongolia

K. A. Olson[1,4], D. Odonkhuu[2], M. G. Murray[3], T. K. Fuller[1], and G. B. Schaller[4]
[1]Department of Natural Resources Conservation, 160 Holdsworth Way, University of Massachusetts, Amherst, MA 01003-9285, USA (e-mail: kolson@wcs.org); [2]Department of Ecology, National University of Mongolia, Ikh Surguuliin Gudamj, Building 2, Ulaanbaatar, Mongolia; [3]Ashworth Labs, Institute of Evolutionary Biology, West Mains Road, Edinburgh EH9 3JT, United Kingdom; [4]Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, NY 10460, USA

Economic development initiatives and natural resource extraction in Mongolia's eastern steppes could potentially become barriers to Mongolian gazelles and prevent them from accessing seasonal ranges. In response, a priority has been placed on understanding the movements of Mongolian gazelles. We conducted systematic driving surveys, fit VHF radio collars onto Mongolian gazelle calves, and used satellite PTT collars on adults from 2000 to 2005 to develop a greater understanding of the movement patterns of gazelles in eastern Mongolia. One-way distances traveled by individual animals were as much as 400 km and ranged over 41,000 km^2 (minimum convex polygon). Intraseasonal movements did not follow any directional or regional pattern. There was an observed shift in locations from summer to winter ranges but animals in different regions moved seasonally in different directions. Between seasons and years, there are shifts in density but no clear migration routes emerged. Animals marked over multiple years shifted to the same summer and winter ranges but did not follow the same route to reach them. Over half the marked adults encountered the China-Mongolia border fence at some point during the study. In addition to tracking primary productivity from spring to fall, winter range used by marked animals had greater crude protein and lower Neutral Detergent Fiber than summer. range. Winter range vegetation had slightly higher concentrations of calcium, magnesium, and potassium than summer range. Qualitative observations suggest insect abundance in wintering ranges could contribute to the timing of summer and winter range shifts. Additionally, gazelles may be seeking out areas with the lowest human population density due to hunting and/or competition with livestock. Conservation actions should include identifying and protecting remaining blocks of uninhabited grasslands, adopting a no barriers land use policy, and limiting livestock densities to avoid overgrazing and competition with Mongolian gazelles.

Factors Affecting Migration of the Mongolian Gazelle in the Gobi Area: Plant Productivity and a Barrier Effect of a Railroad

T. Y. Ito[1], N. Miura[2], B. Lhagvasuren[3], B. Enkhbileg[3], S. Takatsuki[4], A. Tsunekawa[1], Z. Jiang[5], B. Chimedorji[3], and B. Buuveibaatar[3]
[1]Arid Land Research Center, Tottori University, Tottori 680-0001, Japan (e-mail: ito@alrc.tottori-u.ac.jp); [2]PASCO Corporation, Tokyo 153-0043, Japan; [3]Institute of Biology, Mongolian Academy of Sciences, Ulaanbaatar 51, Mongolia; [4]The University Museum, The University of

Tokyo, Tokyo 113-0033, Japan; [5]Yamanashi Institute of Environmental Sciences, Yamanashi 403-0005, Japan

Conservation and management are urgently required for Mongolian gazelles (*Procapra gutturosa*), which mainly inhabit the Mongolian steppe. We captured three adult females in Dornogobi Province and two adult females in Omnogobi Province, southern Mongolia, and collared them with satellite transmitters.

We examined the potential influence of the international railroad in Mongolia on gazelle migration, and whether their seasonal migration pattern corresponded to shifts in satellite-based normalized difference vegetation index (NDVI) in their habitat. The mean NDVI values of their annual, summer, and winter ranges were calculated by Moderate Resolution Imaging Spectrometer (MODIS) imagery. Satellite tracking proved gazelles' ability to move long distances (more than 1,000 km/year) and provided details of their migration routes.

The tracked gazelles captured near the railroad never crossed the railroad during the whole tracked period for three years, despite movements that mainly followed the railroad in winter and higher NDVI values on the opposite side. It is likely that the railroad had a barrier effect on gazelle migration because it split the gazelles' habitat. The shift in NDVI values between summer and winter ranges corresponded with seasonal migrations of gazelles in Omnogobi. In contrast, NDVI values were higher in the winter ranges than in both the summer and annual ranges throughout the year in Dornogobi, although NDVI values in the summer ranges were higher during summer and lower during winter than that in the annual range.

The results showed that NDVI is a good indicator of gazelle habitat, but NDVI alone cannot explain all seasonal migration of gazelles. It is important to evaluate the effectiveness and limitations of NDVI as an indicator of habitat quality. Our methods using satellite tracking and remote sensing and results have utility in studies on migration in ungulates.

A Comparison of the Mongolian Gazelle in the 1980s and at Present

A. Lushchekina[1] and V. Kiriliuk[2]
[1]Institute of Ecology and Evolution, RAS, Moscow, 119071 Russia (e-mail: mab.ru@relcom.ru); [2]WWF-Russia Far East Branch, Vladivostok, 690091 Russia

From 1975 and for more than 15 years a special team of Russian-Mongolian Biological Expedition conducted studies of the Mongolian gazelle (*Procapra gutturosa*) in Eastern Mongolia. All quantitative data of censuses conducted in warm seasons we put on the map showing positions of census routes subdivided into 10 km sections. Features of seasonal distribution and habitats preferred by gazelles were determined accordingly. For analysis of factors impacting on character of quantitative gazelles distribution the standard UTM grid (0.5° x 0.5°) system and a number of geographical maps were used. As a result the maximum and minimum levels of gazelle numbers in each square were known and accordingly areas with permanent (or variable) gazelle habitation were outlined. During 2000-2004 quantitative mapping in Eastern Mongolia was continued. Censuses have been made along transects (mostly off roads) which densely covered the whole area. Using GPS types of habitats, degree of degradation of vegetation and location of yurts and livestock herds were mapped. These data have been processed and used for compiling GIS.

We detected changes in the range structure of gazelles in Eastern Mongolia. There is remarkable reduction of the gazelles' range, population density and areas with high numbers situated to the South of Kherlen River. On the contrary, to the North of the Kherlen River high gazelle density areas appeared and the general distribution and animal numbers increased many times.

Spatial distribution and the intensity of use of some habitats depend on the level of vegetation cover degradation and number of yurts and livestock in these areas. Impact of these factors determines a redistribution of gazelles from optimal habitats to territories which in past had secondary importance. In general anthropogenic factors reinforce natural changes in spatial-temporal structure of populations, particularly within habitats used by gazelles during the dry season..

CHINA

Background of Saiga Horn Use in Traditional Chinese Medicine

These horns not only make the saiga become famous species in TCM, but also lead it into the lists of endangered animals of IUCN and CITES.

Aili Kang
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Saiga horn in TCM

The popular name of saiga horn in Chinese is "*Lin Yan Jiao*". The pharmaceutical name of 'Ling Yang Jiao' is *Cornu Antelopis*. It also has Japanese name (reiyôk aku) and Korean name (y'gyanggak). It is as famous and valuable as musk, pilose antler and rhino horn, the four most-renowned animal medicine materials in the traditional Chinese medicine (TCM thereafter). The text record of using "*Lin Yan Jia*"' may trace back to the "Shengnong" (Divine Husbandman's Classic of the Materia Medica) 2000 years ago.

In TCM, the properties of saiga horn are identified as salty and cold. From 1990 to 2004, we collected 161 papers for saiga horn research in TCM, among which 63 papers refer to clinical tests. It shows that saiga horn can be used for treatment of 1) high fever, esp. caused by virus infection; 2) childhood convulsions due to high fever, 3) epilepsy, 4) hypertension due to ascendant liver yang, 5) cerebral hemor-

rhage or other head disease, 6) asthma and other tracheitis of children, etc.

According to those papers, 40 kinds of traditional medicine or patent medicine contain saiga horn. In *New-Edited Chinese Patent Medicine* (Song and Guo 2002), saiga horn is the main component of 18 kinds of medicines for detoxification, cold treatment and illness of lung. The manufacturers of those medicines distribute in provinces of Jilin, Heilongjiang, Hunan, Shanghai, Henan and Zhejian, etc.

In addition to medicine, people can use horns directly, cut them into powder or slice and boil them in water. Afterwards, its decoction can either be taken together with other decoctions or drunk separately. In our collection, 30 papers discussed direct use of the horn for illness, esp. for cold or high fever.

Substitute for saiga horn

In China, there are 6 species in subfamily Antilopinae, including the Tibetan antelope (*Pantholops hodgsoni*), Tibetan gazelle (*Procapra picticaudata*), Przewalski's Gazelle (*Procapra przewalskii*), Goitered gazelle (*Gazella subgutturosa*), Mongolian Gazelle (*Procapra gutturosa*) and Saiga antelope (*Saiga tatarica*). All of their horns can be called *Ling Yang Jiao*. . Based on comparison between *Ling Yang Jiao* producing areas mentioned in historical references with historical distribution of the saiga population, Zang (1990) suggested that *Ling Yang Jiao* may relate to more than one species.

In view that saiga disappeared in the field of China but the high demand of TCM use continued, State Health Department had asked local institutes from 1978 to conduct research on horns from Goitered gazelle and Mongolia gazelle as substitutes (reviewed by Xu 2003). The potential substitutes include horns from Mongolian gazelle, Angora Goat (*Capra hircus*), Tibetan antelope), Goitered gazelle or sheep (*Ovis aries*) or buffalo (*Bubalus bubalis)*. Some researchers even tried to use hoof of Angora Goat to take the place of the saiga horn in their medicine.

The earliest report about Mongolian gazelle as substitute was published in 1963 (Xu 1963). However, most past researches focused on component analysis and comparison. There is a lack of wide clinical tests on the effect of those substitutes. There seem to be few researchers or corporations that apply themselves to filter and develop medicines from the potential substitutes. Meanwhile, TCM people have not known much about the endangered status of wild saiga antelope populations. Therefore, the application of those substitutes has not been developed until now.

Conservation effort of China government

In order to protect TCM resources, State department of PRC enacted "Regulation for Wild Medicine Resource Protection" in 1987 and listed Saiga antelope as a highest-rank protected species. It was followed by the "Law of Wild Animal Protection of PRC" in 1988, in which Saiga is also a Class I protected species. In 1987, State Administration of Traditional Medicine of PRC and State Forestry Administration built a breeding center and launched a reintroduction project.

Conservation Challenge

The endangered status of the Saiga antelope is a challenge both for wildlife conservation and TCM. No one would like to see *Ling yang jiao* disappear following rhino horn from TCM. Meanwhile, sustainable use of wild resources is an important concept of both conservation and TCM. It is vital for conservationists and TCM scientists and practitioners to enhance communication at this critical period. Cooperation will be helpful to recover the wild population of Saiga antelope in its distribution area and develop substitute applications in TCM, undertake reintroduction as well as improve public awareness in China.

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