GNUSLETTER

Volume 32 Number 1

ANTELOPE SPECIALIST GROUP

October 2014

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ISSN 2304-0718

From the Gnusletter Editor...

Antelope aren't on the news forefront in this age of social media posts. A few memorable YouTube videos have come our way, including the piece showing an impala jumping into a car of shocked tourists to escape a wild dog attack, but by and large, antelopes aren't mainstream. Hopefully GNUSLETTER Vol 32 #1 will capture your interest and precious reading time, with reports by dedicated conservationists working to save antelopes, including the NRT Hirola Project, the Arabian gazelle report, and the recent Dama Gazelle Workshop. The Antelope Specialist Group chairs and members are particularly active, working on related antelope conservation projects in a variety of regions throughout Africa and Asia. We thank you for your commitment and efforts and encourage your reports for GNUSLETTER so that we can help keep antelopes and antelope issues in the public eye.

Reports and Projects

'Five minutes to midnight' for Arabian gazelles Gazella arabica in Harrat Uwayrid, north-western Saudi Arabia

Torsten Wronski & Thomas M. Butynski

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Historically, the Arabian gazelle *Gazella arabica* (Figure 1) occurred from the Arava Valley, in the Hejaz and Asir Mountains in western Saudi Arabia, through Yemen and Oman, into the United Arab Emirates (UAE). Until recently, the Arabian gazelle was considered synonymous with the mountain gazelle *Gazella gazella* of the Levant (Bärmann et al. 2012, Lerp et al. 2012). Since the middle of the 20th century, *G. arabica* numbers have declined dramatically throughout its geographic range.

Boug et al. (2012) summarise what is known about natural populations of the Arabian gazelle in Saudi Arabia. Most records are for the Asir Mountains and Tihama coastal plain in the south-west part of the country (Magin 1996). At least one population persists in the Asir Mountains in the Wadi Tarj Proposed Protected Area (Boug et al. 2012). In north-west Saudi Arabia, small populations of G. arabica may still occur in Al Khunfah Protected Area, Harrat al Harrah Protected Area (Green 1986, Seddon et al. 1997), and in the Hejaz Mountains at Jibal Kallab, Harrat Uwayrid, Ras Suwaihil and Jibal Dakhkhan (Thouless et al. 1991, 1997, Wacher 2001). The presence of Arabian gazelles has not been confirmed at any of the north-western sites since before 2002 and, for most sites, not since the mid-1990s.

Figure 1. Female (left) and male Arabian gazelles Gazella arabica from the Medina area of the Hejaz Mountains in north-western Saudi Arabia. These animals are part of the collection at King Khalid Wildlife Research Centre, Thumamah, Saudi Arabia. Photograph by Tom Butynski.

In 1990, Harrat Uwayrid (5165 km2) in north-western Saudi Arabia was proposed by the Saudi Wildlife Authority System Plan as a protected area, but formal protected area status has yet to be granted. The main objective of establishing this protected area is to conserve what are among the few native populations of Arabian gazelle and Nubian ibex *Capra nubiana* remaining in Saudi Arabia.

The proposed protected area is adjacent to the town of Al Ula and the famous archaeological site of Mada'in Salih. It is comprised of a rugged landscape of Cambrian and Ordovician sandstone mountains overlain by volcanic basalts from the Tertiary and Quaternary. Precambrian rocks are exposed on the floor of Wad Jizil in the southwest. The central plateau rises to 1831 m asl, while the western and eastern plains and wadis lie at ca. 650 m asl. The climate is typical of northern steppe desert, subtropical and arid, with mean annual rainfall of ca. 40 mm (1975–1984). Most of the plateau is bare ground, but some dwarf scrubs occur (e. g., *Retama raetam, Lycium shawii*; Figure 2). In the wadis, the main habitat of the Arabian gazelle, the predominant trees are *Acacia gerrardii var. najdensis* and *A. hamulosa* (Figure 3).

To determine the distribution and abundance of the Arabian gazelle in Harrat Uwayrid, and to assess the conservation status and main threats to this population, a team of eight men (with three vehicles) from the King Khalid Wildlife Research Centre and Saudi Wildlife Authority, together with local guides, conducted a survey from 26 November to 1 December 2012. The survey covered the southern and eastern parts of the proposed protected area, as well as the central plateau. A total of 353 km were surveyed by vehicle and 59.9 km were surveyed by foot (Figure 4). The numbers of animals (or their signs) encountered were related to the distance travelled. The

encounter rates provide an indirect measure of abundance and can be compared with results from future surveys.

Figure 2. Bare gravel plain ('harrat') comprised of volcanic discharge from the Tertiary on the Harrat Uwayrid Plateau. Photograph by Tom Butynski.

Figure 3.Wadis in Harrat Uwayrid are the main habitat of Arabian gazelles Gazella arabica. *Two of the predominant trees are* Acacia gerrardii var. najdensis *and* Acacia hamulosa, *both of which are eaten by Arabian gazelles. Photograph by Tom Butynski.*

No Arabian gazelles were observed along the 353 km of vehicle survey route. As a comparison, the number of Arabian gazelles cited per kilometre in the Ibex Reserve of central eastern Saudi Arabia is 0.017 (Wronski & Al Maliki 2012). Dung and/or tracks of Arabian gazelles were found at only three sites along the 353 km of vehicle survey route (0.008 sites/km; Figure 4). These findings indicate a very low, and probably highly fragmented, population of Arabian gazelles at Harrat Uwayrid.

Results from this survey are supported by reports from local guides who gave a mean of 15.8 months since seeing their last Arabian gazelle (N = 13; range 0.1–36.0 months). All interviewees believed that this, once abundant, species at Harrat Uwayrid had declined dramatically over the last decade. During a 2 day survey of Harrat Uwayrid in 2001, Wadi Munaqa and the adjacent plateau were identified as areas with Arabian gazelles (Wacher 2001). The 40.2 km route surveyed by vehicle in 2001 was resurveyed in 2012, and the 12 dung middens active in 2001 were revisited. No evidence for Arabian gazelle was found.

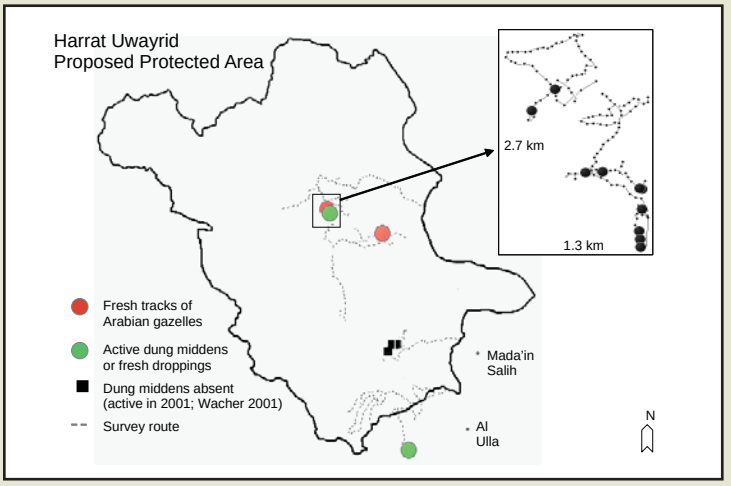

Figure 4.Map of the Harrat Uwayrid Proposed Protected Area showing the eight survey routes (dotted lines) and locations at which signs (tracks, dung) of Arabian gazelles Gazella arabica were encountered. Black squares indicate the position of dung middens encountered in 2001 (Wacher, 2001). The inset gives details of a walked dung midden survey at the head of Wadi Ramadah and the locations of 10 dung middens found.

One area (the head of Wadi Ramadah; 27°04'N, 37°34'E; inset in Figure 4) was identified as the core area of an Arabian gazelle group, since several dung middens and fresh tracks were found here. At this site, a dung midden survey was carried out by foot following methods described in Wronski & Plath (2010). The most likely relationship between the number of dung middens in the area sampled and the density of gazelles was estimated using the logarithmic model of Wronski et al. (2012):number of gazelles = e (No. of latrines/157.8 + 1.62)

Ten dung middens were found along 11.1 km of walked transect in an area of 3.51 km². This yields 0.90 dung middens/km, 2.58 dung middens/km2, and 1.06 gazelles/km². This is likely an underestimate of the number of gazelles in this area (i.e., one female with her most recent offspring and an occasionally visiting male). That several old and current dung middens were present in a 3.51 km² area suggests that Wadi Ramadah is permanently inhabited by a 'female group' (typically a female with her last two offspring; Wronski & Plath 2010) and that this wadi represents the core area for that group. This speculation is supported by the relatively high Acacia gerrardii density and good availability of food at this site. Adding to this the two other sites at which signs of gazelles were encountered (fresh tracks of two gazelles and fresh dung), the estimated population along the 353 km of vehicle surveyed transect is 4 to 6 animals.

Whatever the number of Arabian gazelles now present in the Harrat Uwayrid Proposed Protected Area, this number is certainly very low and this population must be perilously close to being lost. Without quick conservation action, it is predicted that this native population

of Arabian gazelles will be extirpated from Harrat Uwayrid within the coming year or two.

The primary cause of the decline of this population is heavy, unsustainable, hunting (i.e., poaching) by people with vehicles, guns, and spotlights. Local hunters, as well as those from as far away as Riyadh, are said to hunt in the Harrat Uwayrid area. One of Saudi Arabia's most iconic species has been lost from almost all of its former range in the Kingdom and now appears to be on the verge of being extirpated from yet another site. The good news is that there is now considerable local opposition to hunting in Harrat Uwayrid and much local support for the establishment of Harrat Uwayrid as a protected area.

The most important recommendations from this survey are as follows:
1. Establish the Harrat Uwayrid Proposed Protected Area as a protected area under the management of the Saudi Wildlife Authority;
2. Put into place a Saudi Wildlife Authority Protected Area Manager and a sufficient force of well-supported Rangers;
3. Close all six of the access roads to Harrat Uwayrid to unauthorized traffic;
4. Conduct a conservation education campaign among people living in the vicinity of Harrat Uwayrid;
5. Undertake additional, more detailed, ecological surveys of the Harrat Uwayrid region.

We thank His Highness Prince Bandar bin Saud bin Mohammed al Saud (The President, Saudi Wildlife Authority) for making this survey possible. We acknowledge, with thanks, the following people for their assistance on this survey: Mohammed Abu Saud, Khalid Al-Ageel, Naif Al-Hanoosh, Qais S. Al-Hazah, Othman Al-Othman, Mohammed Hassan Khairi, Salman Hamdan, Awad Aldlaim, Faleh Missed, Saleh Al-Hamud, Suleman Al-Mansry, and Sheikh Abd as Salam Hamdan. Tim Wacher kindly provided unpublished information from his 2001 survey at Harrat Uwayrid and reviewed the manuscript.

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Have Protected Areas Failed to Conserve Nilgai in Nepal?

Hem Sagar Baral

Introduction

Nilgai (or Blue bull) *Boselaphus tragocamelus* is endemic to the Peninsular Indian and Indus divisions of the Indian Subregion of the Indomalayan Region (Corbet and Hill 1992). Nilgai distribution includes the foothills of the Himalayas in Nepal (Dinerstein 1980), northeastern Pakistan (Mirza and Khan 1975), and most of India, except eastern Bengal, NE India east of the Bay of Bengal, and the Malabar coast (Blanford 1888; Prater 1980). It is believed to be extinct in Bangladesh (Srinivasulu and Srinivasulu 2012). The species has been introduced to the USA, Mexico, South Africa and Italy (Leslie 2008). Globally the species is considered to be Least Concern (Mallon 2008).

In Nepal, the Nilgai is distributed in the low lying terai plains, now confined to few patches each with a small population (Baral and Shah 2008). Nilgai prefer semi-natural habitats, open thin forests with scattered bushes, grasslands and cultivation. Because of its small and declining population and fragmented distribution, the species is considered Vulnerable on the national red list of mammals (Jnawali et al. 2011).

This study attempts to document population structure around Lumbini Area, south- central Nepal, where the population was observed regularly, and use observations from other parts of Nepal to update the population estimate for Nepal and discusses associated conservation problems.

Study area

The main study area includes farmlands and forest edges of the southernmost parts of Nawalparasi, Rupandehi and Kapilvastu Districts, collectively referred to here as Lumbini Area. The Lumbini Area starts west from the Banganga River (Kapilvastu District) and ends in the east near Parasi town (Nawalparasi District). The core area of the study was similar to the one described by Aryal (2007) with a centre within the Lumbini Master Plan area (27°28'59.64"N, 83°16'33.59"E) and with an average elevation of 100 m asl.

Lumbini Area is predominantly cultivated farmlands containing remnant scattered patches of old growth trees with concentrations of such vegetation along river courses. Aerial photos of the farmlands as well as a Google Earth image show thin green lines of vegetation along river courses. Where traditional cultivation is practiced, river courses are dotted with Silk-cotton trees Bombax ceiba with dense undergrowth of shrubs and herbs. Towards the northern edge of the study area lies a thin belt of climax Sal *Shorea robusta* forest, now mostly managed as community forests. Lumbini Forest Groves within the Lumbini Master Plan area and the riverine forests adjacent to Kothi River near the Indo-Nepal border are the largest patches of forests (approximately 150 ha) in the southern half of the Lumbini Area.

Besides Lumbini, Kailali forests (28°31'N, 81°31'E and 28°32'N, 81°10'E) adjoining Bardia NP (28°28'N/81°28'E) along the Karnali and Mohana rivers, Udaypur forest edges (26°41'N, 86°57'E), Forests of Bara (27°13'N/85°04'E) and Rautahat (27°08'N/85°18'E) districts east of Parsa Widlife Reserve were the main sites covered outside the protected area network.

Information collected from protected areas e.g. Sukla Phanta Wildlife Reserve (28°53'N/80°11'E), Bardia NP (28°28'N/81°28'E), Khairapur Blackbuck Conservation Area (28°14'N/81°41'E), Banke NP (28°06'N/81°59'E), Chitwan NP (27°28'N/84°20'E) and Parsa Wildlife Reserve (27°28'N 84°20'E) have been also incorporated. All these protected areas fall under the Terai Arc Landscape (TAL) program of the Ministry of Forests and Soil Conservation. In addition to these, Koshi Tappu Wildlife Reserve (26°35'N 87°05'E) in the east was also visited. Koshi Tappu is comprised of grasslands and riverine forests annually inundated by monsoon floods from the Koshi river.

Methods

Lumbini Area was visited several times in 2010–2011 to investigate the Nilgai population. Observations from Koshi Tappu, Parsa and Sukla Phanta Wildlife Reserves, Chitwan, Bardia and Banke NPs were collected in 2010 and 2011. Outside protected areas, Kailali, Bara and Rautahat Districts were visited in 2013.

Direct and indirect observations (signs such as droppings and footprints) were made to estimate numbers in the study area. These estimates were finalized after consulting guides working in the area, knowledgeable protected area staff, and staff working for research and monitoring centers such as the National Trust for Nature Conservation's offices in Bardia and Sukla Phanta, and Himalayan Nature's research station at Koshi. For information outside protected areas, community members in different parts of the country were consulted. Numbers obtained from community members were triangulated with other people in the local area. The numbers presented for each place are provisional but their reliability is considered to be enhanced by the cross-checks.

Results

Based on direct observation and reports from local people, the total Nepal population of Nilgai was calculated at 517 individuals. A total of 343 (two-thirds of the national total) was estimated to occur outside protected areas, with only 174 (one-third) inside them.

A total of 137 Nilgai was counted in Lumbini Area. The highest count (47) was from Lumbini Master Plan Area followed by counts from Tinau and Telar river habitats (Table 1).

Table 1. Lumbini Area with different sites and Nilgai populations (2010/2011)

Locality	Estimate	Status
Lumbini Master Plan area	47	Relatively safe within the Lumbini Master PLan area; unsafe while crop raiding in farmlands and around villages

Locality	Estimate	Status
Telar/Lumbini Buddha Garden Resort	28	Riverine habitat loss, persecution and injuries lead to death of animals
Khadara Phanta	15	Unsafe because of hunting and habitat loss, this phanta (relatively open, short grassland plain) borders India where its status is unknown
Gaidahawa	12	Unsafe, hunting may occur
Tinau on both sides of the river	35	Increasingly unsafe, larger human population, intensive agriculture and habitat loss
TOTAL	343	

Nilgai were also recorded from forests of Kailali, Bara, Rautahat and Udayapur Districts also.

Table 2. Total estimated Nilgai population recorded outside protected areas

Locality	Total estimate	Trend	Habitat
Kailali District, adjoining Bardia National Park	100	Declining	Mixed lowland forests, main populations along the Karnali and Mohana rivers
Lumbini Area	137	Possibly declining	
Forests of Bara and Rautahat	100	Possibly increasing	Sal and mixed lowland forests
Udaypur Forest edges	6	Declining	Sal forests in the low hills and cultivated terrain in lower plains
TOTAL	343		

Records of Nilgai from protected areas were usually from the fringe areas of the parks and reserves. These fringes were characterized by degraded, relatively open forest and often close to cultivated farms. Among the protected areas, Sukla Phanta and Bardia held largest populations. Populations in protected areas in Rapti Dun (Chitwan and Parsa) and Koshi River floodplains (Koshi Tappu) were very small.

Discussion

Although the Nepal Biodiversity Strategy places a high priority on the study of biodiversity (HMG/ Nepal 2002), surprisingly little is known about many species of mammals in Nepal (Baral and Shah 2008, Jnawali et al. 2011). Prior to this paper, only three studies have been conducted on Nilgai in Nepal. These include two studies in Bardia NP (Khatri 1993, Subedi 2001) and one in Lumbini (Aryal 2007). In 2010 the population of Nilgai in Nepal was estimated at 289-324 individuals and the animal was listed as threatened on a national level (Jnawali et al. 2013).

Its population in India is said to exceed 100,000 but, in contrast, the species has become extremely rare in Pakistan and extirpated from Bangladesh (Mallon 2008, Srinivasulu and Srinivasulu 2012). Considering its decline in other range states and perhaps also in India, it is recommended to re-assess its global Red List status.

Protected Area	Estimate	Trend	Place/Habitat
Koshi Tappu Wildlife Reserve	6	Declining	Mainly Udayapur & Saptari Districts, occasionally Sunsari District. Flooded grasslands and riverine forests
Parsa Wildlife Reserve	50	Declining	Riverine floodplains and grasslands
Chitwan NP	6	Declining?	Western end of park
Banke NP	12	Declining?	Area bordering Bardia NP and in the Churia foothills
Bardia NP	50	Declining	Declining, mostly on the fringes in the south, also occasionally in the northwestern end of the park
Sukla Phanta Wildlife Reserve	50	Declining	Southern end and northeastern extension e. g. Lalpani, Sal and mixed riverine forests as well as grasslands
TOTAL	174		

Table 3. Estimated population of Nilgai in Protected Areas

Our current survey puts the Nepal population at a maximum of 517 animals, of which 67% is found outside protected areas (Table 4). The Nilgai population in Lumbini is more than one quarter of Nepal's population, which makes Lumbini a special place for its conservation at national level. A comparison of Nilgai data within Lumbini Master Plan area in 2007 (41 Nilgai, Aryal 2007) and in 2011 (47 Nilgai – this paper) shows a rather stable population. However, it is noteworthy that up to 200 Nilgais were counted in 1999 (Aryal 2007) most of which perished in the following year possibly due to foot-and-mouth disease and retaliatory killing by local people, as Nilgai are notorious for raiding crops (Aryal 2007). Similarly within Lumbini Area, sites like Khadara Phanta have witnessed a decline because of shrinking habitat and increased hunting in retaliation against crop raiding and for food. In 2007, as many as 28 Nilgai were counted here regularly but since 2010 less than 15 individuals have been counted (Dinesh Giri pers. comm. 2012). Nilgai is the largest wild animal in lowland Nepal that is dependent on marginal habitats and cultivated lands outside protected areas. Overall, the Nilgai population in Lumbini is said to be declining. Among protected areas, only Sukla Phanta and Bardia may have viable populations. In other PAs the populations have fallen so low that they are considered unlikely to recover without further interventions. The larger populations outside PAs suggest that the species's future in Nepal depends on appropriate management outside the PA system, including in farmland landscapes. The animals require relatively open woodlands and flourish where medium to larger predators are absent. In addition to this, the animals also depend on some human-modified agricultural landscapes that lie along the forested margins.

Table 4. Nilgai population Protected Areas vs outside Protected Areas

Protected Areas	174
Outside Protected Areas	343
TOTAL	517

Threats

The main threats to Nilgai in Nepal are habitat loss, persecution and retaliatory killing. Habitat loss and degradation are mainly due to increased economic activities and intensive agriculture. Because of higher demand on land for intensive agriculture and for infrastructure development, remaining habitats are disappearing fast. The thin strip of green lines along the river courses are becoming thinner and in many places have been totally destroyed.

In all places, the species is well-known as a crop raider therefore conflict with farmers has resulted in conflict (Jnawali 1989, Shekhar 1998). Although reportedly protected by Hindus because of its resemblance to the holy cow (Mallon 2008), because of the fast deteriorating religious faith in this materialistically driven world, animals are killed regularly, even by Hindus. Existing populations outside protected areas constantly face persecution when they raid farmers' crops. A compensation scheme should be started by the government as soon as possible.

Disease is a possible threat as this is an animal lives in national park fringes and near human settlements, interacting with both domestic and wild animals. It is known to be affected by babesiosis, a tick-borne infectious disease (Baviskar et al. 2009), but its extent is not known.

Conservation

The conservation movement, notably the setting up of the protected area network, which started in the early 1970s in Nepal, has been very useful for the conservation of many species. The management regimes currently practiced in the existing protected area network clearly do not favor Nilgai. Although Nilgai is recorded in most protected areas of lowland Nepal, the species is declining at a national scale (Jnawali et al. 2011). A protected landscape with total area of 3446 km² in the lowlands has not been able to provide a safe home for Nilgai in Nepal. Most Nilgai populations lie outside protected areas and some animals occur well beyond any protected areas, e.g. Lumbini. Does this mean that the PAs in Nepal have failed to conserve Nilgai? Because of a policy of strict protection and a tendency to leave the landscape undisturbed within the protected areas, there are several factors that do not favor Nilgai. There is increased vulnerability due to larger predators which flourish in strictly protected areas. Moreover, due to a general lack of herbivores in most protected areas of Nepal, vegetation becomes denser and ultimately unsuitable for this species. There is a medium-level hunting threat to Nilgai outside the protected areas, mainly for meat.

Several other species in Nepal show a similar predominance of occurrence outside PAs: Blackbuck Antilope cervicapra, Bengal Fox Vulpes bengalensis, Sarus Crane Grus antigone, Lesser Adjutant Leptoptilos javanincus, vultures and Golden Monitor Varanus flavescens. These are all non-forest species and all face similar problems in that their continued survival requires effective conservation management outside the PA system, an expansion of the PA system, or a mix of both.

There is a need for periodic and systematic monitoring of the Nilgai population on a nationwide scale. Conservation of this species is possible by working with communities in human-dominated landscapes, maintenance of semi-natural areas as their habitat in a landscape at least at the district level, compensation for crop damage to farmers, active habitat management practices in selected sites, and reduction in hunting and disturbance.

As Koshi Tappu still holds some of the habitats the species prefers, restoration of its habitat to boost the existing small number would be fruitful. Prior to any action for restoring its populations here, threats pertaining to this species should be nullified. This work should include behavior change among local people so they accept such animals in their farmscape. Recent assessment and evaluation of wildlife conservation in this Reserve have indicated that Koshi Tappu Wildlife Reserve needs to be expanded to see a meaningful conservation outcome especially in terms of the increase of some ungulate species as well as birds (Megh Bahadur Pandey verbally 2013).

Nilgai is said to be versatile and highly adaptable, and considered to have broader habitat niches compared to other wild herbivores (Solanki and Naik 1998). Its food habits have been also studied outside its native range in the US (Sheffield 1983). These animals are generalists in terms of food habits, so with proper manipulation of habitat and application of some stringent management regimes, the populations can be significantly increased. Study results, the versatile and generalist character of the species indicate that it is possible to maintain larger meta-populations. The habitat requirements of Nilgai is not difficult to manage. Although the total population of Nepal is larger than the last assessment in 2010 (Jnawali 2011), Nilgai remain very vulnerable in the country.

I would like to thank Dr Naresh Subedi, Dr Chiranjibi Pokheral, Top Khatri, Dinesh Giri, Achyut Aryal and Will Duckworth for sharing information and providing comments.

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Large mammals back to Gilé National Reserve, Mozambique

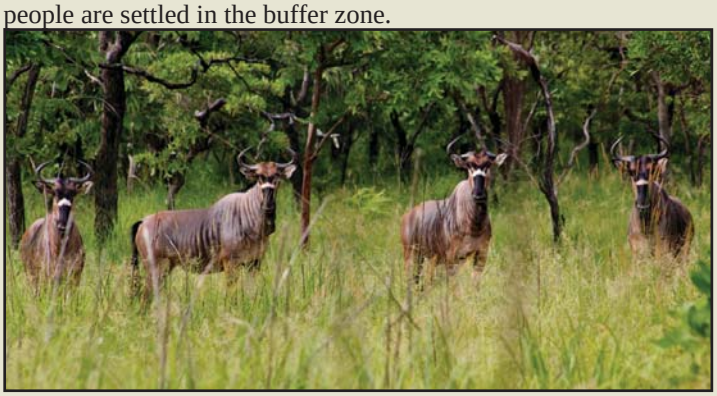
By Alessandro Fusari, José Dias, Carlos Lopes Pereira, Hubert Boulet, Eric Bedin & Philippe Chardonnet

As many other protected areas in Mozambique, the Gilé National Reserve (GNR) has badly suffered during war times, end of last century. During this period, the GNR wildlife, especially large mammals, was heavily exploited for meat by troops of all parties. Some species were completely eradicated, such as buffalo, eland, wildebeest, zebra and black rhinoceros.

In 2006, the International Foundation for the Wildlife Management (IGF Foundation) and the Ministry of Tourism (MITUR) of Mozambique passed an agreement for co-managing the GNR with the objective of rehabilitating the reserve and its buffer zone, notably restoring the wildlife community. Two wildlife reintroduction operations were conducted in 2012 and 2013, with the financial support of the French Development Agency (AFD) and the French Global Environment Facility (FFEM), in close collaboration with the National Directorate of Conservation Areas of Mozambique (DNAC)[1], the National Veterinary Directorate (NDV) and all provincial and district authorities. A comprehensive study had been conducted in 2010 to evaluate the feasibility of the operations, analyse the risks and plan a detailed working program.

The sink area

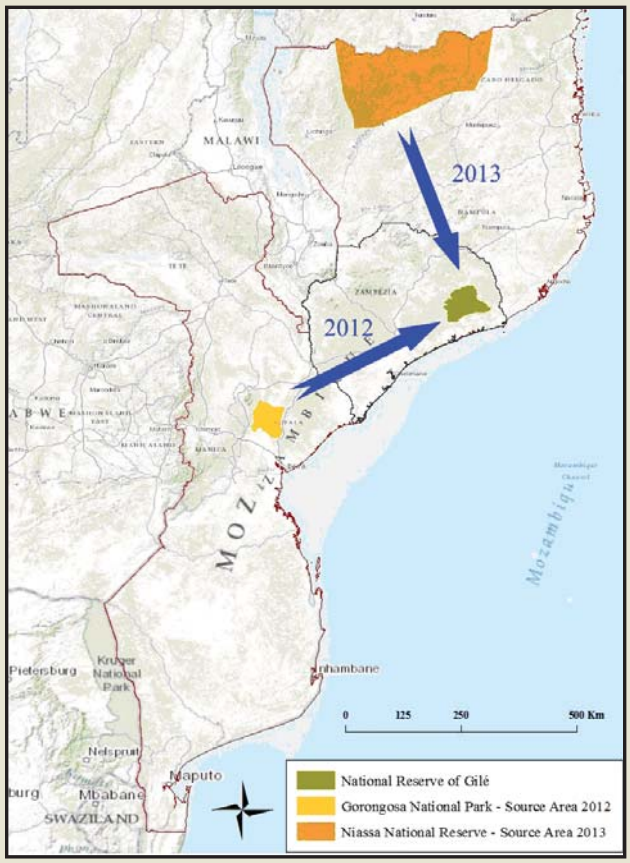
The GNR is covering a surface of nearly 5000 km² including a buffer zone of 2000 km². The landscape is made of a continuous miombo forest with dambos (wetlands), inselbergs and riverine forests along a network of permanent rivers and seasonal creeks. The residual large mammal community comprises notably elephant, hippopotamus, greater kudu, sable, hartebeest, waterbuck, reedbuck, bushbuck, warthog, bushpig, lion and leopard. There are no human settlements inside the core area of the reserve, while about 40,000 people are settled in the buffer zone.



Picture 1. Wildebeest in the GNR 4 months after release.

2012 Operation

Source area: Gorongosa National Park (GNP), Sofala Province, central Mozambique (see map 1);
Source population: Buffaloes in the GNP are of the same subspecies, the Cape buffalo (*Syncerus caffer caffer*), than the one formerly occurring in the GNR;
Founders: 20 buffaloes (16 females, 4 males);
Period: June 2012. Without mentioning the long period of preparation, six days were needed for conducting the operation between the day of capture in the GNP and the day of release in the GNR. The distance travelled between the capture and release site was of 886 km. One single trip was enough;
Institutions & partners: DNAC, NDV, GNP, GNR, Provincial directorates of tourism of Sofala and Zambézia provinces, Wildlife-Vets;
Monitoring: Ear tags were put on both ears of all the animals. Out of the twenty individuals released, three adult cows were equipped with GPS collars to monitor their movements in order to (i) analyse movement patterns and distribution in the new environment & (ii) provide precise positions for facilitating surveillance and protection;
Preliminary result: No casualty during the translocation operation. In February 2014, i.e. 20 months after release, all the animals seem to be fine in the GNR. Despite difficult observations, at least three calves, born in the GNR, have been noticed so far.



Map 1. Location of the source areas (GNP and NNR) and the sink area (GNR).

2013 Operation

Source area: Niassa National Reserve (NNR), Niassa Province, north of Mozambique (see map 1);
Source populations: The three mammals from the NNR are of the same subspecies than the ones formerly occurring in the GNR: the Cape buffalo (*Syncerus caffer caffer*), the Nyassa wildebeest (*Connochaetes taurinus johnstoni*) (Picture 1) and the Crawshay zebra (*Equus quagga crawshayi*);

Founders: 47 buffaloes (31 females, 16 males); 20 wildebeests (15 females, 5 males); 19 zebras captured in NNR (12 females; 7 males), but only 15 individuals released (13 females, 5 males);
Period: September - October 2013. Without mentioning the long period of preparation, ten days were needed for conducting the operation, between the first day of capture in the NNR (25th of September) and the last day of release in the GNR (5th of October). The distance between the capture and release site was of 840 km. Four return trips were needed to transport all the captured animals between the NNR and the GNR;
Institutions & partners: ANAC, NDV, NNR, GNR, Provincial directorates of tourism of Niassa and Zambézia provinces, Wildlife-Vets;
Monitoring: Ear tags were put on both ears of all buffaloes and wildebeests, not zebras. Out of the eighty two individuals released, three adult buffalo cows, two adult wildebeest cows and one male zebra were equipped with GPS collars (Picture 2) for the same purpose as in 2012;
Preliminary result: One buffalo was found dead in the GNR one month after release, most probably from myopathy. One buffalo was poached while moving out of the reserve. All other buffaloes are doing fine in February 2014 i.e. five months after release. No casualty in wildebeests was registered during translocation and after release until February 2014. At least three wildebeest calves already were born in the GNR. Two zebras died during capture and two more during the translocation, while the 15 released are doing fine five months after release

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[1]*Presently, the National Authority for Conservation Areas (ANAC)*

Preliminary conclusion of both operations
Both operations allowed reintroducing the three species into the GNR. So far (February 2014) mortality rates are of 3% for buffalo, 0% for wildebeest and 21% for zebra. Two of the three species are already breeding. It is too early yet to draw a definite conclusion on the success of the reintroduction programme. A careful monitoring and evaluation activity is carried out for securing the animals and assessing the programme.

NORTHERN RANGELANDS TRUST ISHAQBINI HIROLA COMMUNITY CONSERVANCY
May 2014

Status of Hirola in Ishaqbini Community Conservancy

J. King, I. Craig, M. Golicha, M.I. Sheikh, S. Lesowapir, D.Letoiye, D. Lesmirdana & J. Worden

Summary
This report provides an update on the status of Hirola (*Beatragus hunteri*) in Ishaqbini Hirola Community Conservancy, both within the predator-proof sanctuary and the wider conservancy, as of April 2014. Results are based on data collected by Conservancy Rangers who have been trained in data collection methods using NRT's CoMMS (Conservancy Management Monitoring System www.nrt-kenya-comms.org). They collect data on hirola herds on a daily basis, including demographic status (age and sex of individuals), location, and records of any new births and deaths. Rangers also individually recognize tagged hirola in the sanctuary and record this information with their sightings.
The predator-proof sanctuary covers 23km^2 and was established with a founder population of approximately 48 hirola in August 2012, 23 of which were fitted with ear tags and are individually recognizable with unique ID codes. The sanctuary contains numerous other wildlife species including Reticulated giraffe, topi, common zebra, two Beisa oryx, gerenuk, lesser kudu, dik dik and warthog among others. Rationale for the establishment of the sanctuary and a description of the hirola capture and monitoring of hirola up to 4 months post-release are provided in previous reports (Kock et al. 20101; King et al. 20132).

The sanctuary population has grown to an estimated 64 individuals as of the end of April 2014, representing a 33% population increase equivalent to 20% increase per annum. There have been 24 calves born in the sanctuary and 8 hirola deaths. Peak birthing months are between October and January which coincides with the peak in births in the wider conservancy. Sanctuary hirola have settled into approximately 8 fairly stable herds ranging from 3 to 19 individuals, although mixing of herds and switching of individuals does occur to some extent. Average herd size in the sanctuary is 8 individuals. Hirola are predominantly found in the south and south-western part of the sanctuary where there is more open or mixed grassland/bush habitat.

The hirola in the wider conservancy, outside the sanctuary, have declined since 2011. This is shown by both a decrease in sightings as well as reduced average herd size from 10 in 2008 when monitoring began, to 5 in 2013. Maximum herd sizes have also declined over this period, from 42 in 2008 – 2011 to 17 in 2013. This data supports anecdotal evidence and general observations by rangers of a decline in numbers of hirola in the conservancy and smaller herds with fewer calves and sub-adults. Reasons for the decline are likely to be continued predation and competition with livestock; poaching has been almost eliminated in the immediate vicinity of the conservancy. Uncontrolled grazing by livestock in key hirola habitats in the conservancy is a significant problem that has resulted in loss of grasses and forbs over the past few years.

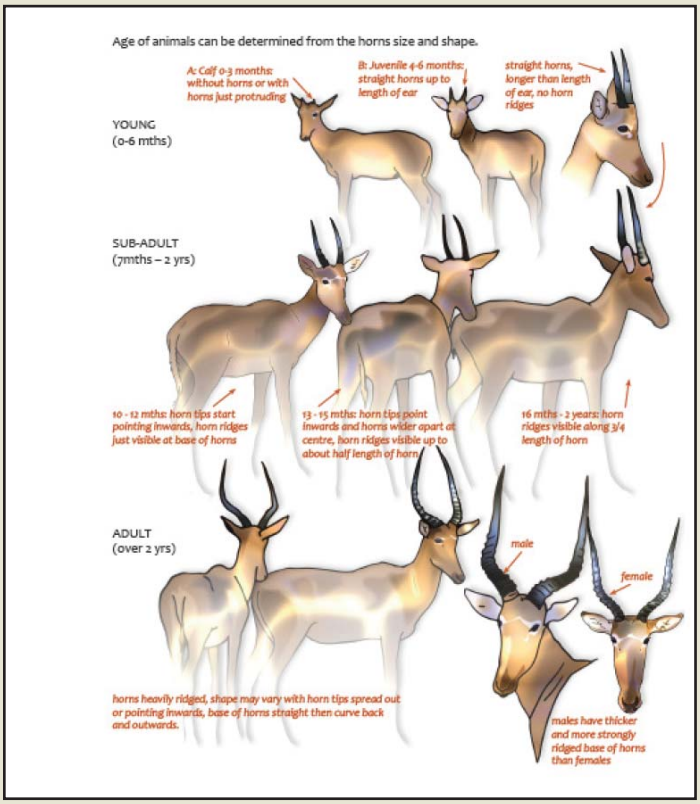
Almost two years since its establishment the sanctuary is proving to be a successful management strategy for securing and rapidly increasing hirola numbers. Should this continue we will be in a position to remove excess animals from the sanctuary within the next 3-5 years.

Future plans for hirola monitoring include:

- Establishing a disease monitoring system;
- Improving capacity of Ishaqbini conservancy to manage the monitoring programme and database;
- Planning future removal of excess hirola from the sanctuary including identifying carrying capacity indicators, potential release sites for either free-release or additional sanctuaries, and selection of herds or individuals for release.

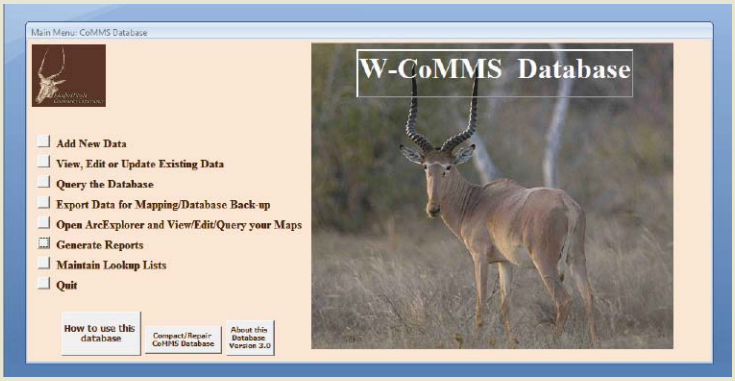
Methods

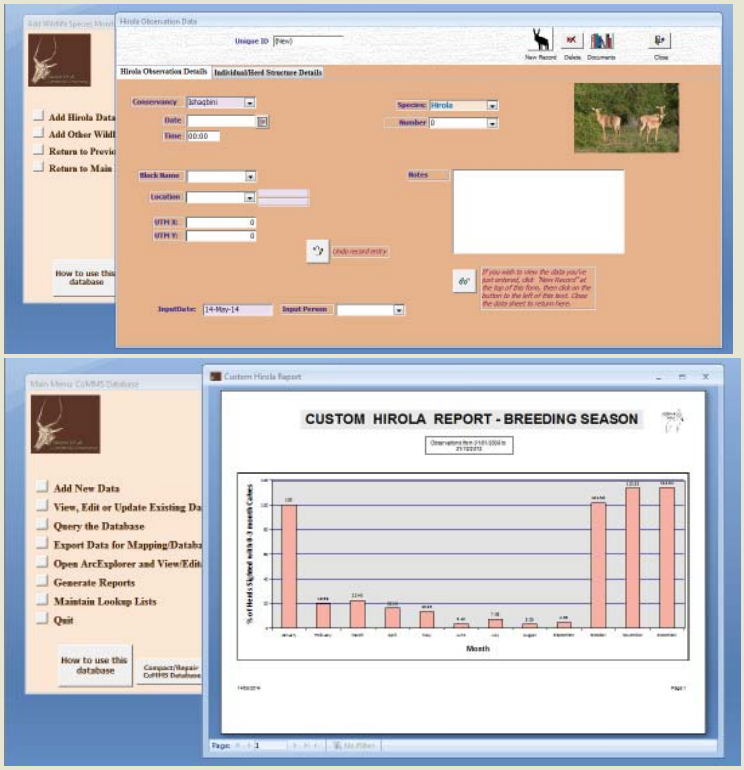
Since 2008 selected conservancy rangers have been gathering data on demography (age and sex) of hirola as part of their daily patrols. Four rangers are dedicated to hirola monitoring in the sanctuary on a daily basis and two rangers carry out hirola monitoring in the wider conservancy, however monitoring in the wider conservancy has been less consistent in 2013 due to changes in personnel. Conservancy rangers in the sanctuary patrol in two teams and collect data on any herds sighted on a daily basis. The sanctuary is divided into five locations and patrol teams focus on different areas each day. Once a month a team of up to 12 rangers are deployed in the sanctuary to thoroughly search the area for any carcasses or spoor of predators. Total ground counts of the sanctuary have not yet been carried out; however, a total aerial and combined ground count is planned for July 2014.



NRT's guide for training rangers in ageing and sexing hirola

Data is collected on paper datasheets and entered into the CoMMS database in situ. Data is collected on the majority of wildlife species (excluding dik dik and warthog which were deemed too common by rangers and recording data on these species would detract from their primary objective of anti-poaching patrols). Data on wildlife, human-wildlife conflict, wildlife carcasses, illegal incidents and hirola demography are collected by rangers during routine patrols or when incidents occur. Data is then entered into the CoMMS database which provides the ability to create simple reports and maps on distribution, abundance, births and deaths in the sanctuary, breeding season and demographic status. Two Ishaqbini conservancy rangers have been trained in database management and conservancy rangers and management will be provided with continual training by NRT to enhance their capacity to manage the system.



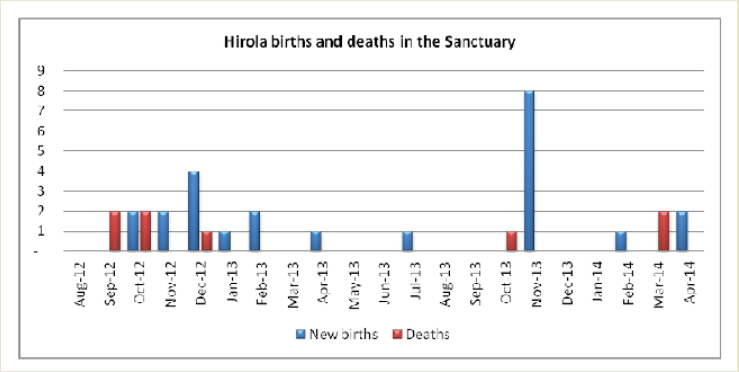


CoMMS database managed by conservancy rangers which allows for in-situ data entry and automated reporting at a conservancy level

Status of Hirola in the Sanctuary

In the period between August 2012 and April 2014 a total of 24 hirola calves were born inside the sanctuary, however one died immediately after birth. Calves born in late 2012 and early 2013 were to females that were pregnant when the founder population in the sanctuary was established; calves born in the second half of 2013 and early 2014 were conceived in the sanctuary. This is a good indication that the population in the fenced sanctuary has acclimated well. Interestingly 8 calves were born within a period of 3 days in November 2013, showing a highly synchronized breeding. The estimated population size in the sanctuary is 64 hirola, representing a population increase of 33% since the sanctuary was established. This is equivalent to a 20% annual population increase which is slightly higher than the predicted population increase and equal to that seen in other captive antelope species (e.g. Fringe-eared oryx and Arabian oryx).

Estimated Founder population size	Number of births (Aug 2012- Apr 2014)	Number of deaths (Aug 2012 - Apr 2014)	Estimated sanctuary size Apr 2014	Population increase (%)	Annual population increase % p.a.
48	24	8	64	33%	20%



Data from sanctuary hirola supports the observation of a peak breeding season between October – January as has been observed over the years in the wider conservancy population. One tagged female (CF07) has given birth to two calves in the sanctuary, one on 2 December 2012 and the second on 7th November 2013, giving an inter-calving interval of 11 months.

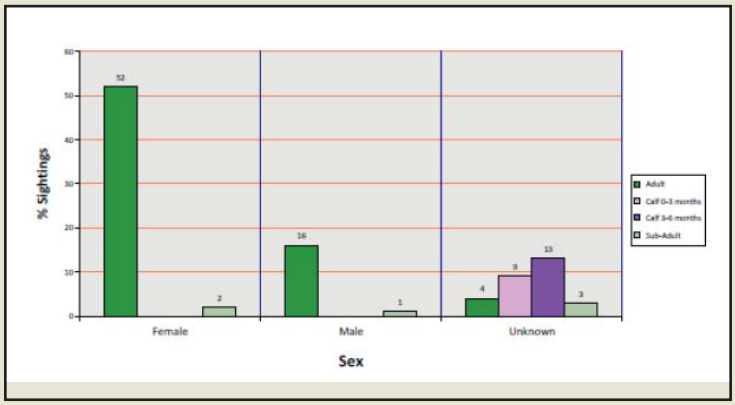
The individually recognizable (tagged) females will enable us to track inter-calving intervals over time. This has previously not been possible since it is very difficult to distinguish individual animals using natural markings. Survivorship of calves of tagged females, up until the time that they leave their mother's herd, will also be possible.

Deaths: 8

Hirola ID	Date of Death	Age	Sex	Cause of Death	Means of Death
HM21	12-Sep-12	Juvenile	Male	Natural	Predation
HF23	13-Sep-12	Juvenile	Female	Natural	Predation
FF14	23-Oct-12	Sub-Adult	Female	Natural	Other
EF11	31-Oct-12	Adult	Female	Natural	Drought
Unknown	09-Dec-12	Juvenile	Male	Natural	Other
Unknown	28-Oct-13	Adult	Male	Unknown	Other
Unknown	06-Mar-14	Adult	Male	Natural	Accident
Unknown	09-Mar-14	Adult	Male	Natural	Accident

Table showing details of hirola deaths in the sanctuary between August 2012 and April 2014.

There have been 8 hirola deaths in the sanctuary since it was established. Four of these were in the first two months, 2 due to drought and 2 due to predation by a cheetah that was still inside the sanctuary (the cheetah has since been removed). Since January 2013 there have been three deaths recorded, all adult males two in March 2014 through territorial fighting which resulted in both males dying within days of each other.



The majority of sightings of hirola in the sanctuary have been of adult females (52% of all sightings), followed by calves under 6 months (0-3 months and 3-6 months: 22% of all sightings). Adult males accounted for 16% of sightings with sub-adults making up only 6% of sightings. Adults that were not sexed made up 3% of total sightings. We expect to see increases in sightings of sub-adults with high survivorship of calves born in the sanctuary.

The hirola in the sanctuary have settled into approximately 8 relatively stable herds ranging in size from 3 – 19 individuals (Ishaqbini rangers pers comm.), although there is occasional mixing of herds and splitting of individuals from herds. The herds are found mainly in the southern and south-western parts of the sanctuary where there is more open and mixed grassland/bush habitat. In 2013 the average herd size in the sanctuary was 8 individuals with a maximum herd size of 30 seen on one occasion in October 2013.

Status of Hirola in the Conservancy

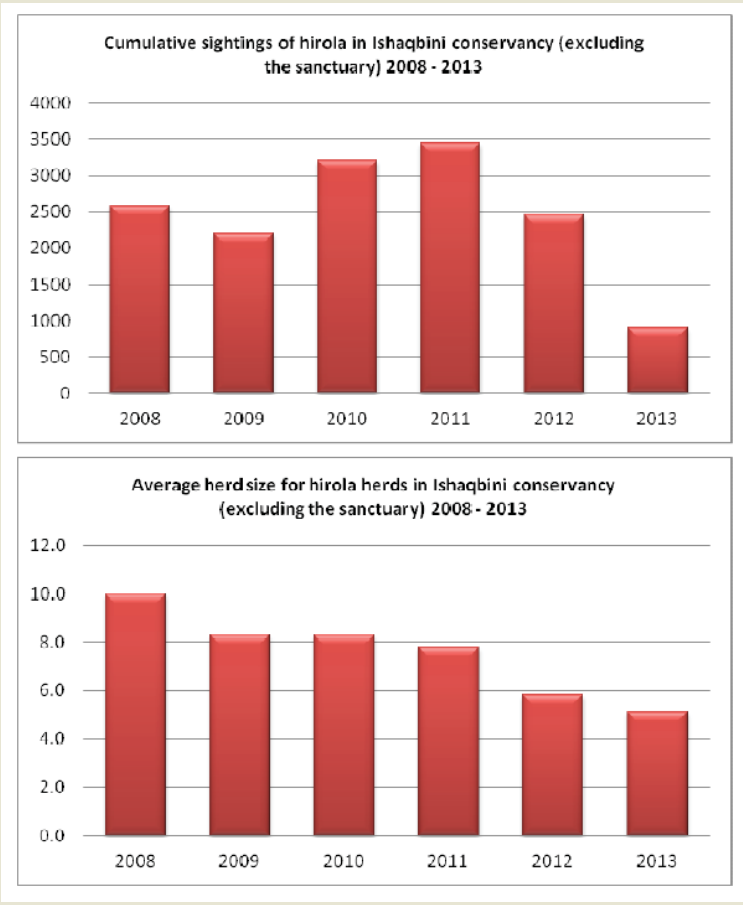
Hirola in the wider conservancy have declined over the past three years. Sightings of hirola in 2010 and 2011 were stable and higher than 2008 and 2009, however, there has been a significant decline in 2012 and particularly 2013[3].

Currently, the estimated number of hirola in the core area outside the sanctuary is between 35 and 70 individuals (Ishaqbini rangers & A. Kibara pers comm.) and varies depending on season.

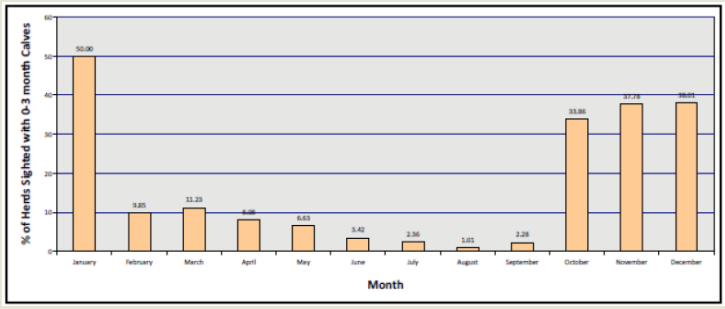
Even with the acknowledgement that 24 of the hirola in the sanctuary came out of the core area, the population prior to the start of the sanctuary was already in decline.

[3] Note that patrol effort has not been controlled for and from discussion with Ishaqbini rangers it appears that hirola monitoring in the wider conservancy in 2013 was poor due to changes in personnel.

Average herd size in the wider conservancy (excluding the sanctuary) has also declined since 2008 from 10 individuals to 5 in 2013. Maximum herd sizes have also declined from occasional sightings of herds up to 42 individuals in 2008 – 2011, down to 23 and 17 in 2012 and 2013 respectively.



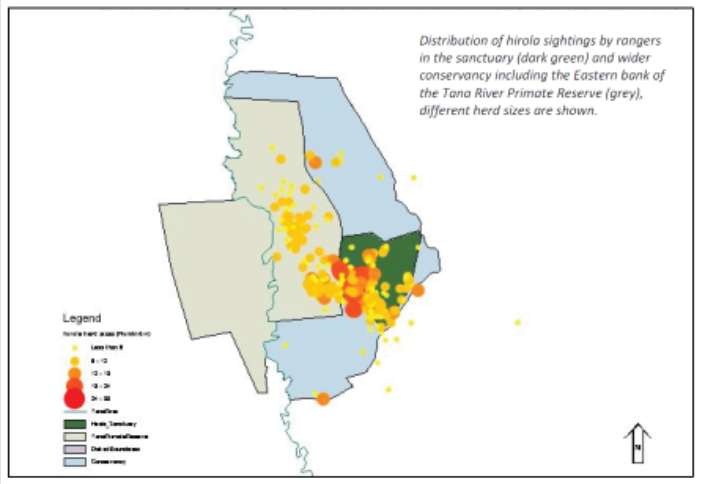
Data gathered on demography of hirola herds between 2011 – 2013 shows a peak in births (% sightings herds with of 0-3 mth calves) between October – January with a few births also occurring throughout the year.



Graph showing peak breeding season based on observation of all hirola herds from January 2011 - December 2013

Distribution of hirola sightings in 2013 is shown in the map below. Most hirola sightings are in the area overlapping with the eastern bank of the Tana River Primate Reserve which has open grassland and mixed bush/grassland habitat which is preferred by hirola. The map also clearly shows that larger herd sizes were observed in the sanctuary compared with the wider conservancy. Patrol effort by rangers is generally higher in areas preferred by hirola.

Distribution of hirola sightings by rangers in the sanctuary (dark green) and wider conservancy including the Eastern bank of the Tana River Primate Reserve (grey), different herd sizes are shown.



Sanctuary Management & Next Steps

Management of the sanctuary is well entrenched within Ishaqbini Conservancy; sanctuary personnel are employed from the local community and have been trained by NRT. NRT and NRT-Coast continue to provide oversight and support to the conservancy. Good management of the sanctuary is essential in order to mitigate threats to the hirola; major threats have been identified as:

1. PREDATORS GETTING INTO THE SANCTUARY THROUGH/OVER THE FENCE

Fence maintenance teams check the entire fence on a daily basis and immediately repair any broken sections, this is vital to ensuring no predators are able to enter the sanctuary and no hirola can leave. In 2013, NRT constructed a 2-strand high electric wire from tree to tree on the outside of the sanctuary to prevent giraffe reaching the main fence and entangling themselves as they tried to step over it. This has significantly reduced giraffe mortality and only very occasional fence mortality of other species is now reported.

2. LACK OF WATER FOR HIROLA IN THE SANCTUARY

Provision of water to the three water-pans in the sanctuary is essential to maintain; water is pumped from the Tana River as needed and water pipes are maintained by conservancy personnel. The conservancy also has a tractor with a trailer and water tank which can provide water to the sanctuary in case the pump breaks down.

3. INSUFFICIENT FOOD/GRAZING FOR HIROLA IN THE SANCTUARY

With no livestock in the sanctuary, recovery of grasses has been noticeable and with sufficient rain there is plenty of grazing and browsing for the wildlife. Vegetation transects have been set up in the sanctuary and outside and will be monitored on an annual basis to measure changes in rangeland health. Monitoring vegetation will enable us to identify if there is overgrazing in the sanctuary or encroachment of invasive and unpalatable plants. Stocking densities of hirola and other wildlife can then be examined and if necessary removal of excess wildlife will take place.

4. FIRE

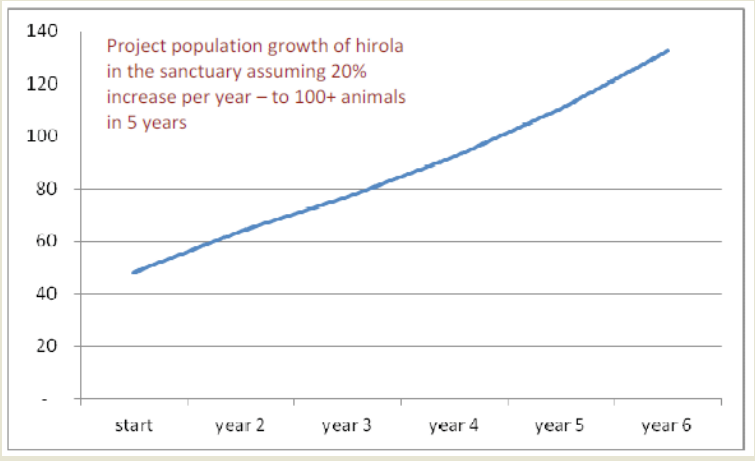
The sanctuary is surrounded by a fire-break that is kept clear of vegetation; within the sanctuary there are also several tracks that can serve as fire-breaks in the event of a fire breaking out. Rangers patrol inside the sanctuary on a daily basis and together with the fencing teams they will be able to quickly respond in the event that a fire does break out.

5. DISEASE

Although the most important disease threat, rinderpest, has been eradicated from the region since about 2003, disease remains a potential threat that needs to be addressed and an early-warning system for disease outbreaks established. NRT is in the process of drafting a disease surveillance strategy which in collaboration with KWS and other wildlife disease experts. The draft strategy will be circulated in June 2014 with a view to implementing the strategy by the end of this year. The strategy will be integrated to existing livestock disease surveillance in the region and is likely to include:

- Carrying out a disease risk analysis based on current and historical endemic diseases affecting wildlife and livestock in the region;
- Non-invasive monitoring of wildlife health; wildlife carcasses, and parasite/vectors that carry disease (ticks and Tsetse flies) and by conservancy personnel within the sanctuary and wider conservancy;
- Establishing a disease reporting protocol linked to community animal health workers, the District Veterinary Officer, District Livestock Officer, and KWS;
- Establishing a disease response strategy in the case of disease outbreaks (e.g. vaccinations of livestock and possibly hirola to highly pathogenic diseases) in collaboration with KWS and DVO.

RELEASE OF HIROLA FROM THE SANCTUARY



The sanctuary is envisaged as a medium to long-term strategy for a secure breeding population of hirola. Release of hirola to other sites within their natural range is likely to occur within 3-5 years (assuming the population continues to grow at the current rate of 20% per annum). The timing for release will depend on various

factors that will be used to determine whether optimal carrying capacity has been achieved in the sanctuary such as:

- reduced breeding rates
- reduced calf survival;
- increased inter-calving intervals
- increased male-male competition leading to high adult male mortality;
- decreased condition of sanctuary animals and increased adult mortality

Decline in vegetation and availability of preferred food species for hirola, and herd dynamics will also be a determinant in deciding when to start de-stocking the sanctuary. Release of hirola from the sanctuary may include removal of individual adult males, removal of groups of sub-adult males or removal of entire family herds. Release sites are yet to be determined and could include free release back into the Ishaqbini core area once grazing management by the conservancy improves, or free release to other sites within the hirola range where conditions are deemed acceptable for reintroduction. Additional fenced sanctuaries within the hirola range are also a possibility. It is important to note that the Ishaqbini community is not in support of removal of any of the sanctuary hirola to sites outside of the hirola's natural range.

Work by PhD student Ali Hussein is expected to help inform decisions on next steps for release of hirola from the sanctuary including carrying capacity and potential release sites. His PhD is likely to be finalized by early 2015. NRT will begin discussions with the Ishaqbini community and other communities and stakeholders on options for release in order to direct any further research, community mobilization or management actions that may be required over the next two years.

Acknowledgements
This report is based upon data collected by Ishaqbini conservancy rangers. In particular Mohamed Ismail Sheikh (Conservancy Warden), Yussuf Hussein Muhumed (Assistant Warden), Duale Mahat Bashir (Sanctuary Ranger), Mohamed Hassan Ibrahim (Sanctuary Ranger) and Abdi Muhumed Salat (Sanctuary Ranger) have been responsible for all data collection and their knowledge of the individual hirola in the sanctuary as well as the whereabouts of hirola herds in the wider conservancy is remarkable. Former Ishaqbini Conservancy Manager, Benson Ojwang is acknowledged for his support to this programme in the field. NRT's research and monitoring department Mohamed Golicha, Sinyati Lesowapir, Dominic Lesimirdana and Daniel Letoiye have continued to provide support and training for conservancy rangers particularly on data collection and database management. Field Assistant Amos Kibara has worked closely with the Ishaqbini rangers and supported their data collection and verification. PhD student Ali Hussein has provided occasional updates on hirola status which has also served to verify the rangers' data.
The Ishaqbini Wildlife CoMMS database has been designed by Fran Mitchelmore-Root and is in the process of being finalized, this database has enabled us to devolve the monitoring to a conservancy level by providing tailored report and map outputs that are easily carried out and understood by conservancy staff.

Meetings and Updates

Dama gazelle Conservation Review Update

In November 2013 a technical workshop was held to review and openly discuss key issues for dama gazelle conservation and identify priority actions. The workshop was organised by the Royal Zoological Society of Scotland in association with the IUCN/SSC ASG and took place between 19th and 21st November at the RZSS headquarters in Edinburgh, UK. The workshop aimed to review the status of dama gazelles in all four of their current environments (wild, zoo, reintroduced/repatriated, Texas ranches) and so was aligned with a 'One Plan' approach.

Intended outputs were: (1) a conservation review with proposed priority actions and draft recommendations; (2) an updated status review; and (3) a road map for developing the plan through further stakeholder input, especially from range states.

A report in French and English is now available from the meeting for download at: https://sites.google.com/site/damagazellenetwork/home

This site will also act as a wider repository for information on the dama gazelle. Please visit it and feel free to contact us with comments and content.

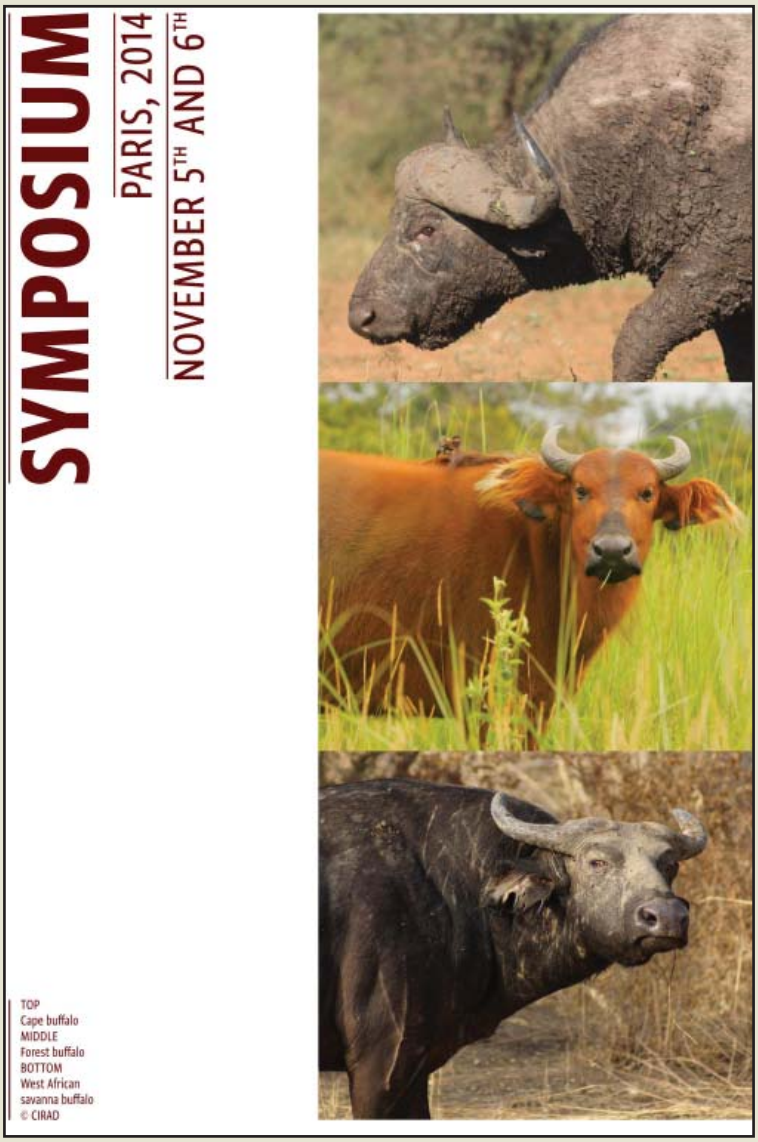
Key items within the review document are:

1. A review of the biology, ecology, taxonomy and history of dama gazelle.
2. A comparative assessment of wild dama gazelle populations and the threats that they face.
3. A history and assessment of captive populations worldwide, both in zoos and on Texas ranches, and of the released populations.
4. A recommendation that, for conservation purposes, it is most appropriate to view the dama gazelle as a species without subspecies division, which may exhibit local adaptation of pelage coloration along a broad cline.
5. A recommendation to conduct experimental breeding between captive ruficollis and mhorr to assess the risks and benefits of merging stock in captivity.
6. A list of eight possible principal conservation actions that could be conducted in support of dama gazelle and their associated risks and benefits.
7. A road map for moving conservation actions forward.

The intention is for the review to kick-start a wider process of consultation with all stakeholders. Over the next few month the report will be circulated widely. If you would like to be on a mailing list to receive updates and news on dama gazelle conservation and research, would like to receive paper copies of the report or have any other question or comments please contact hsenn@rzss.org.uk.

Helen Senn, Research Scientist, Royal Zoological Society of Scotland

Figure 1: Participants at the dama gazelle workshop in Edinburgh.



Recent Publications

Historical incidence of springbok (*Antidorcas marsupialis*) in the northeastern Eastern Cape: further evidence

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Received 19 August 2013. Accepted 30 October 2013

Two historical records of the springbok (Antidorcas marsupialis) made by Thomas Baines, the well-known English artist,naturalist and traveller,in April 1848 in part of the northeastern Eastern Cape, have escaped attention. These records, together with two archeological records from the same area, provide additional insights into the occurrence of this ungulate in the region during earlier times.
Key words: springbok, historical distribution, Eastern Cape.

Introduction

Understanding the historical distribution of species is critical to their current management, as well as for detecting responses due to global change. The historical distributions of the large and medium-sized mammals in the broader Eastern Cape Prov¬ince, South Africa, have been comprehensively covered by Skead (2007). Here I present newly discovered records of the presence of the spring¬bok (Antidorcas marsupialis) in the northeastern Eastern Cape. These comprise two sightings by Thomas Baines, the well-known English artist, naturalist and traveller, in April 1848 in part of the north-eastern Eastern Cape Province, that have escaped attention.They, together with two archae¬ological records from the same area, provide addi¬tional insights into the occurrence of this ungulate in the region during earlier times.

Previously Records of the Springbok in the Region

Skead (2007) showed that southward of the Orange River, the springbok occurred historically as far east as an undetermined locality between Ugie and Elliot in the Eastern Cape (Fig. 1). This refers to the report by D.B. Hook of hunting spring¬bok towards 'the Katberg, near the Drakensberg' in 1862. Skead (2007) considered that this was probably the Gatberg, a distinctive mountain situated close to the eastern sources of the Xuka River in the southern Drakensberg. It is about 22 km southwestward of where Skead (2007) shows it near present Ugie. The area a little to the south of the mountain, around present Xuka Drift on the road between Ugie and Elliot (R56), is the more likely place for springbok than the mountain itself (Fig. 1). To approach it from Dutywa, where Hook was stationed as a British army officer, the easiest route over the escarpment between the coastal and interior plateau in Transkei (locally known by white people as Suurberg, and as Zuurberg by Thomas Baines (Kennedy 1961)) follows the valley of the main Xuka River and its eastern upper branch. He would probably have travelled past the mission stations at Clarkebury and All Saints, but not the mission at Ugie that was established only in 1863. District roads today follow this route.

Westward of this locality, Skead (2007) gave the nearest historical record, as being from the journal entry by Thomas Baines for 13 April 1848 (Fig. 1), although the animal's identity is considered uncer-tain (Skead 2007). On this date Baines recorded that he hunted on foot alone from his camp on the Indwe River, and not on horseback as on the previous day (Kennedy 1961).He and his compan¬ion, William Liddle, camped there until 17 April (Kennedy 1961). Thus, his hunt was probably along the southeastern foot slopes of the mountain range now known as Ntabalongo, which is consis¬tent with his journal account.He saw springbok but failed to shoot one. His sketch on 13 April of 'a tree with two kinds of branches' (Carruthers 1990: plate 57, common cabbage tree, Cussonia spicata),

South African Journal of Wildlife Research 44(1): 71–75 (April 2014)

View article online: http://www.bioone.org/doi/abs/10.3957/056.044.0101

A Retrospective Evaluation of the Global Decline of Carnivores and Ungulates

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Abstract

Assessing temporal changes in species extinction risk is necessary for measuring conservation success or failure and for directing conservation resources toward species or regions that would benefit most. Yet, there is no long-term picture of genuine change that allows one to associate species extinction risk trends with drivers of change or conservation actions. Through a review of 40 years of IUCN-related literature sources on species conservation status (e.g., action plans, red-data books), we assigned retrospective red-list categories to the world's carnivores and ungulates (2 groups with relatively long generation times) to examine how their extinction risk has changed since the 1970s. We then aggregated species' categories to calculate a global trend in their extinction risk over time. A decline in the conservation status of carnivores and ungulates was underway 40 years ago and has since accelerated. One quarter of all species (n = 498) moved one or more categories closer to extinction globally, while almost half of the species moved closer to extinction in Southeast Asia. The conservation status of some species improved (toward less threatened categories), but for each species that improved in status 8 deteriorated. The status of large-bodied species, particularly those above 100 kg (including many iconic taxa), deteriorated significantly more than small-bodied species (below 10 kg). The trends we found are likely related to geopolitical events (such as the collapse of Soviet Union), international regulations (such as CITES), shifting cultural values, and natural resource exploitation (e.g., in Southeast Asia). Retrospective assessments of global species extinction risk reduce the risk of a shifting baseline syndrome, which can affect decisions on the desirable conservation

status of species. Such assessments can help conservationists identify which conservation policies and strategies are or are not helping safeguard biodiversity and thus can improve future strategies.

Keywords
biodiversity indicators, extinction risk, IUCN Red List, mammals, red list index, threats to biodiversity

Una Evaluaci´on Retrospectiva de la Declinaci´on Global de Carn´ıvoros y Ungulados

View article online: http://onlinelibrary.wiley.com/doi/10.1111/cobi.12249/abstract;jsessionid=63EFED024FF43179C584314EA341D013.f03t02?deniedAccessCustomisedMessage=&userIsAuthenticated=false

Just another island dwarf? Phenotypic distinctiveness in the poorly known Soemmerring's Gazelle, *Nanger soemmerringii* (Cetartiodactyla: Bovidae), of Dahlak Kebir Island

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Received 13 October 2013; revised 28 November 2013; accepted for publication 28 November 2013

Abstract
The gazelles of Dahlak Kebir are the only population of Nanger soemmerringii Cretzschmar, 1828 living on an island. Little is known on the biology of these animals, except that they are evidently smaller than their conspecifics living on the continent. We took advantage of a recently acquired collection of crania, probably the largest available study sample of the Dahlak Kebir population worldwide, to explore the phenotypic variation of this island endemism. To this aim, we employed state of the art geometric morphometrics techniques and multivariate statistics to compare the insular population with samples of two out of three subspecies of *N. soemmerringii* from continental Africa.

We found that not only is the size of the animal remarkably smaller in Dahlak Kebir gazelles, but their cranial shape is also highly distinctive, and this might be only partly explained by allometry. We also showed that phenotypic variance might have been reduced in the island population, likely as a consequence of genetic bottlenecks. This unique population is part of a species vulnerable to extinction. Our results suggest that the Dahlak Kebir Island gazelles might represent a significant component of its variation and potential for adaptive change and evolution. More information, including molecular data, and an accurate assessment of its taxonomic relevance and conservation status, is urgently needed.

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Additional Keywords
continental Africa – cranium – Eritrea – geometric morphometrics – insular dwarf – island rule – sexual dimorphism.

View article online: http://onlinelibrary.wiley.com/doi/10.1111/bij.12239/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false

Why one Century of Phenetics is Enough: Response to 'Are there Really Twice as many Bovid Species as we Thought?'

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Abstract
The real diversity of the Bovidae is not only underestimated, but holds many surprises in its richness of diversity, especially overlooked and misclassified cryptic species. Our argument refutes the recent paper (Heller et al. 2013) condemning Groves & Grubb's (2011) revised taxonomy of the Bovidae as "taxonomic inflation" that is bad for conservation. The recent collective condemnation of this bovid revision misunderstands taxonomic theory and concept, and disregards how the unprecedented revision of material evidence informs the new bovid taxonomy. Unfortunately, the criticisms are likely to mislead conservation efforts. Contrary to taxonomic

conservatives' denigrations of the Phylogenetic Species Concept (PSC), we explain how evolutionary species - ontological realities - can be discovered and characterized using the PSC, with a minimum of taxonomic error. Taxonomic conservatism weakens conservation policy because it throws a great deal out of biology. It is best understood as a political reaction to taxonomic revisions replacing non-historical characterizations of biodiversity (reliant on the polytypic Biological Species Concept and/or the morphological species concept) with historical ones based on the PSC. Further, accelerating discoveries of cryptic species unnerve conservative traditions in taxonomy and conservation biology. Taxonomic conservatism has no place in modern biology, let alone phylogenetic systematics, because its deficiencies undermine the consilience of comparative biology. Most seriously, taxonomic conservatism ignores the fundamental role of the Individuality Thesis in fostering robust understanding of biodiversity. We argue that rejections of G&G defend an obsolete taxonomy of large mammals, which testifies to the remarkable persistence of a folk taxonomy weakening 21st century science. Our consolidated argument underscores the challenges of improving scientific knowledge of cryptic biodiversity, exemplified in the extant (and historically extinct) Bovidae.

Keywords
Evolutionary species concept, cryptic diversity, conservation, Indivduality Thesis

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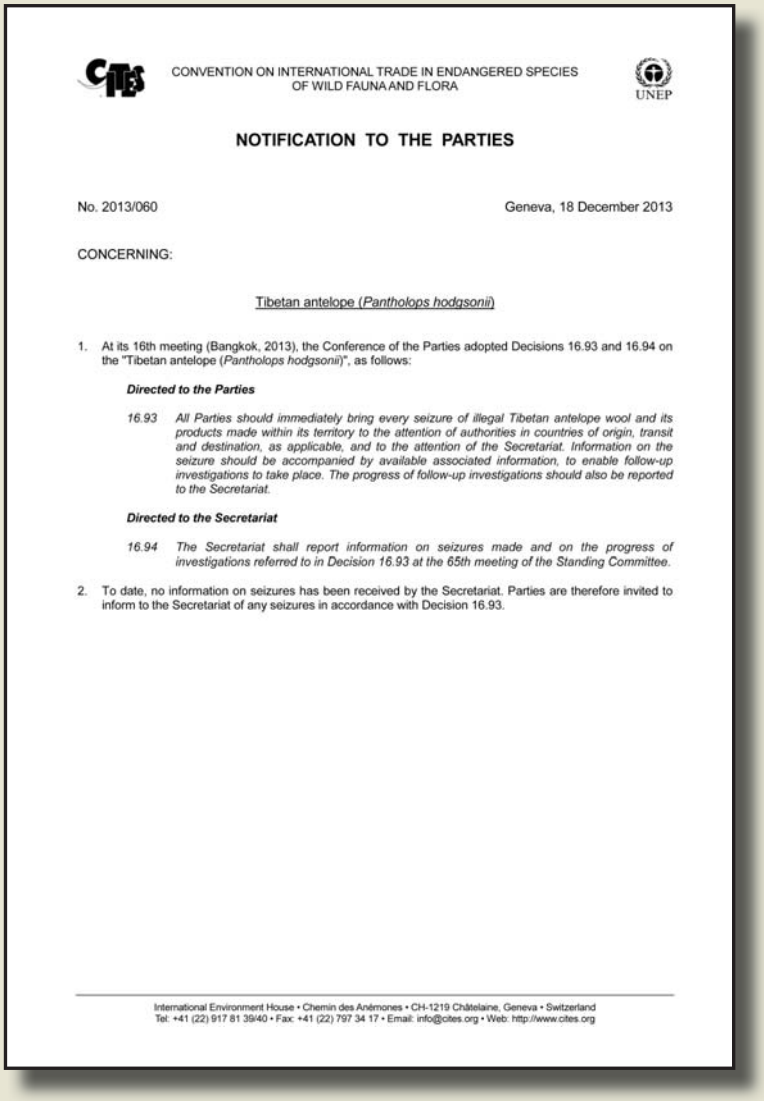

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

UNEP

NOTIFICATION TO THE PARTIES

No. 2013/060 Geneva, 18 December 2013

CONCERNING:

Tibetan antelope (*Pantholops hodgsonii*)

1. At its 16th meeting (Bangkok, 2013), the Conference of the Parties adopted Decisions 16.93 and 16.94 on the "Tibetan antelope (*Pantholops hodgsonii*)", as follows:

Directed to the Parties

16.93 All Parties should immediately bring every seizure of illegal Tibetan antelope wool and its products made within its territory to the attention of authorities in countries of origin, transit and destination, as applicable, and to the attention of the Secretariat. Information on the seizure should be accompanied by available associated information, to enable follow-up investigations to take place. The progress of follow-up investigations should also be reported to the Secretariat.

Directed to the Secretariat

16.94 The Secretariat shall report information on seizures made and on the progress of investigations referred to in Decision 16.93 at the 65th meeting of the Standing Committee.

2. To date, no information on seizures has been received by the Secretariat. Parties are therefore invited to inform to the Secretariat of any seizures in accordance with Decision 16.93.

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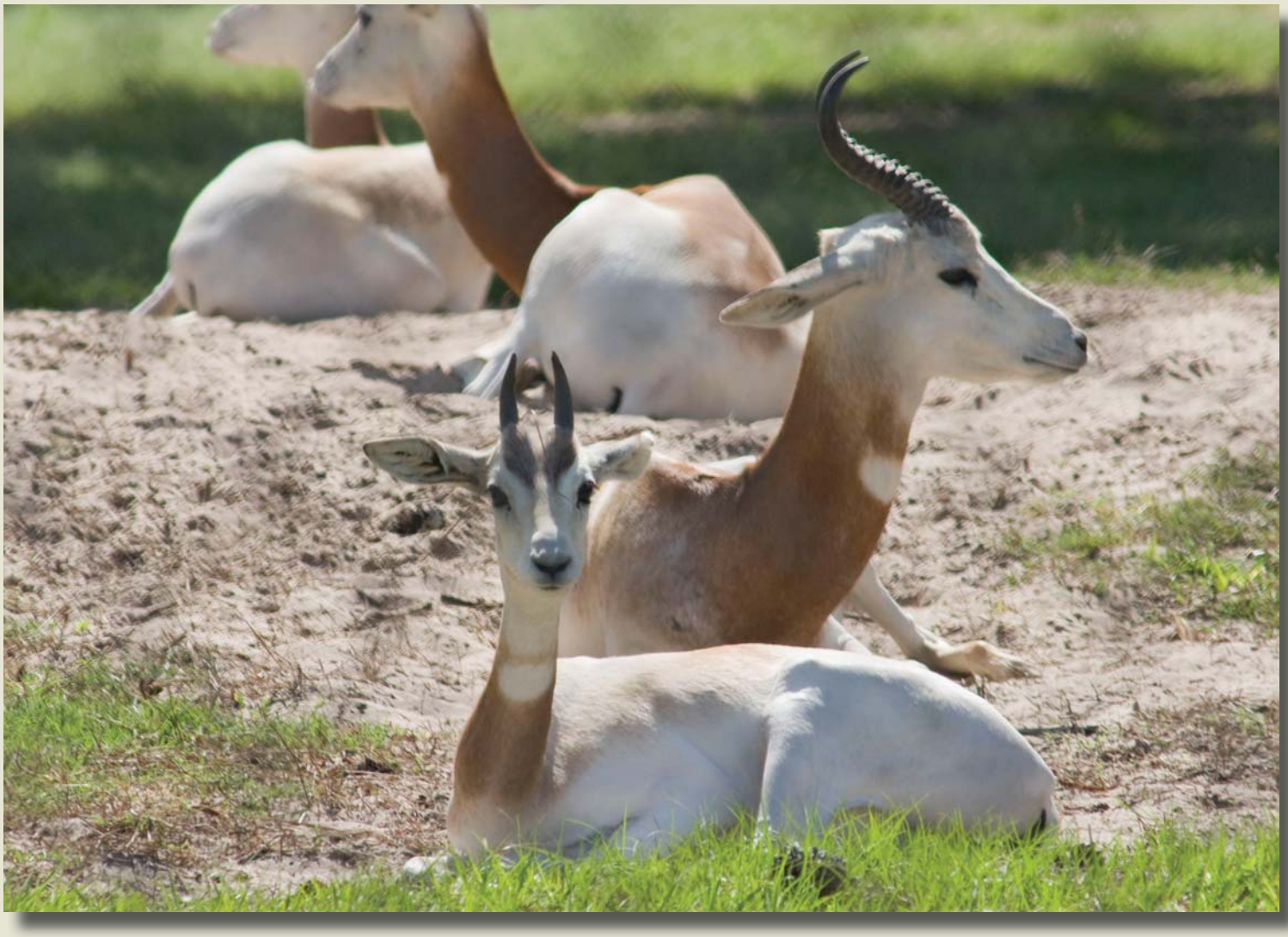

Dama gazelle at White Oak in Yulee, FL

GNUSLETTER

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