DEER SPECIALIST GROUP NEWS

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Editorial

Our main goals for the quadrienium (2008-2012) were to stimulate research in: a) the "hotspot deer diversity regions" Asia and Latino America to obtain scientific knowledge, b) to evaluate the species status and propose conservation guidelines and, c) to obtain funds to support the small grants to qualified young field biologist proposals. We did succeed in activating a Small Grant Programs and five field projects in these regions were funded through the generous support of the Mohamed bin Zayed Species Conservation Fund.

The DSG (us and/or members) were actively participating and organizing several workshop, symposium, meetings with the aim to disseminate conservation and management strategies for the deer species. Several publications, scientific articles, books and general dissemination material were edited by most of our membership.

We have recently attended the Species Survival Commission (SSC) Congress in Abu Dhabi, in which all the Specialist Group (SG) chairs reviewed the quadrienium activities and planned the future. One of our main tasks for the next period will be to assess all deer species as part of the Global Mammal Assessment starting in 2013.

With the conclusion of the quadrienium, the membership of each SG will be examined and recrafted to maximize effectiveness. As part of this process we will ask each DSG member to submit a brief report by the end of year with their main contributions (i.e. publications, projects and dissemination activities) related to deer and your participation in the DSG specific activities and tasks.

Our main goals for the next quadrienium will be to continue encouraging our membership to be more active and participative in deer conservation. We decided the best way to increase efficiency and participatory activity is to reorganize the DSG around regions of interest and identify leaders for each sub-group. These 6 regions will be: European Temperate and Arctic, South Asia (India/Nepal), SE Asia, Tropical Asia Island, Asia Temperate, and Americas. We will be approaching members who have been active conservationists in each region to assume a leadership role and to coordinate activities by their sub-group. We will assign species to each sub-group and each group will complete the red list reviews for their species. We will discuss with the chairpersons of the 2 current sub-groups (Elds Deer and Huemul) the best role for them in the new reorganization.

We want to highlight the excellence contributions of our Red List Authorities: Dr. Patricia Black de Decima (New World Deer Species) and Dr. Will Duckworth (Old World Deer Species). Their roles will be important in the next quadrienium as we strive to complete the reassessments and deal with the issues of species taxonomy.

We want to acknowledge to all who contribute in this edition. In this issue we are including one interesting original article: "*Status, distribution and aspects of ecology of Alpine Musk Deer (Moschus chrysogaster) in Uttrakhand Himalayas, India* submitted by: Zarreen Syed and Orus Ilyas. The remaining contributions are the Small DSG program report submitted by: Chen Min and two Symposium performed in Mexico and Argentina, and a brief report of the Huemul Task Force. We included a dissertation abstract submitted by Sven Rannow that studied the effect of climate change in conservation management. We also have a special section in memoriam to our dearest member Joaquin Bello Gutierrez.

Finally we want to thank to all of you for being part of the DSG and we invite to submit articles to the next issue.

Susana González and Bill McShea
Co-Chairs, Deer Specialist Group

Status, distribution and aspects of ecology of Alpine Musk Deer (*Moschus chrysogaster*) in Uttrakhand Himalayas, India

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Abstract:

Out of seven species of Musk deer found in Asia, five are present in India. One of these species, the Alpine musk deer *(Moschus chrysogaster)*, is found in Uttrakhand Himalayas, is endangered (IUCN 2011) and listed in Appendix I of CITES. This species is also listed in Schedule I of Indian Wildlife (Protection) Act 1972. The species has been exploited for its 'Musk' for centuries and due to large scale poaching and extensive habitat destruction, it is restricted to a few isolated pockets in the Himalayas. To understand the current status and distribution of the species, intensive surveys were conducted in 14 different high altitude sites of Uttrakhand. The survey found indirect evidence from all 14 sites, but direct sightings of the species was recorded only from eight sites, and most of the detected sites were within Kedarnath Wildlife Sanctuary (KWLS) and its surrounding areas. During the pre-monsoon period of 2011, the survey was conducted in Saukhark, Tungnath and Chandrashila, and we recorded 7 encounters of musk deer. All the sightings were from the Saukhark area, which is dominated by alpine meadows. Intensive studies were carried out in KWLS to understand the food and feeding habits of musk deer. We recorded 5 tree, 16 shrub, 47 herb and 7 grass species in our vegetation sampling. We prepared 130 slides of pellet groups and plant fragments in 5 fields of view from each slide were examined and compared to a reference collection. A total of 36 plant species were identified from the musk deer pellet group (2 shrub, 31 herb and 3 grass species). The results shows that musk deer are predominantly a browser and the preferred species are *Anemone obtusiloba, Polygonum amplexicaula* and *Potentilla sp.*

Key Words*:* Alpine musk deer *(Moschus chrysogaster)*, Kedarnath Wildlife Sanctuary, Alpine meadows, Feeding ecology.

Introduction

There are seven species of musk deer and five species (i.e. Kashmiri musk deer (*Moschus cupreus)*, Alpine musk deer *(Moschus chrysogaster),* Himalayan musk deer *(Moschus leucogaster),* Black musk deer *(Moschus fuscus),* and Forest musk deer *(Moschus berezovskii)*) are found in the Indian portions of the Himalayas (Grubb 2005). These all musk deer species are classified as endangered (IUCN 2011) and are listed in Appendix I of CITES (UNEP-CITES 2011). These species are also listed in Schedule I of Indian Wildlife (Protection) Act 1972.

The Alpine musk deer *Moschus chrysogaster* is a small, solitary, cryptic, deer distributed in western Himalayas. The species has been exploited for its 'Musk' for centuries (Green 1985). It occurs in the forested areas of the subalpine and upper temperate zones of the Himalaya. Today, due to large scale poaching and extensive habitat destruction, it is restricted to a few isolated pockets in the Himalaya (Green 1986a; Sathyakumar 1991, 1992; Sathyakumar *et al.* 1993a, Ilyas 2007).

A few studies has been conducted on the status, distribution and abundance of these species throughout the Indian Himalayas, but there are two studies on Himalayan musk deer by Green (1985) and Ilyas (2007) in Kedarnath Wildlife Sanctuary i.e. Western Himalayas. There is a need to understand the current status and ecology of the alpine musk deer across its distributional range. A study was initiated to understand the conservation status, biology and ecology of the alpine musk deer in October 2003 in Uttrakhand Himalayas under the India Ministry of Science and Technology that continued through 2007, with further data collected under the Major Research Project of University Grants Commission- Govt. of India in Kedarnath Wildlife Sanctuary from 2011 onwards to understand the distribution and ecological aspect of musk deer in KWLS, therefore the paper is giving emphasis on the conservation staus, distribution and feeding habit of musk deer in KWLS

Study Area

Intensive surveys were conducted in 14 different high altitude sites of Uttrakhand to access the species status and an intensive ecological study was conducted in the Kedarnath Wildlife Sanctuary (KWLS). The KWLS is one of the largest protected areas in the Himalaya, situated in the Chamoli district of Garhwal region of Uttrakhand. It covers an area of 975 km² and is

positioned at 30°25'-30°45'N & 78°55'-79°22'E. The altitude with KWLS varies from 1,500-4,800m.

The vegetation within KWLS is represented by three zones *viz.*, temperate, subalpine and alpine. The lower temperate zone has chir pine (*Pinus roxburghii*) forests (700-2,000m) which cover 1.7% of KWLS. The temperate and subalpine zones have oak (*Quercus* spp.), fir (*Abies pindrow*) and associated species (1,000-3,500m) covering 43.5% of the KWLS. In the alpine zone, the alpine pastures and scrub (>3,100m) cover 7.7%, the exposed rocks (>3,000m) and permanent snow (>4,000m) cover 31.8% and 10.3% respectively of KWLS. Miscellaneous category, which includes barren ground and village forest lands, covers 5.1% (Negi 1982, Sathyakumar and Malik 2006).

Methodology

The study was initiated in October 2003, and first three years included a status survey of the species in 14 different high altitude sites of Uttrakhand, covering different Sanctuaries, National Parks and reserve forests. During this survey period, KWLS was found to be the most suitable site to initiate an intensive ecological study. The three mountain peaks were selected within KWLS: Saukhark, Tungnath and Chandrashila. Since direct sightings of musk deer were difficult due to rugged terrain, indirect evidence were also collected. Pellet groups from musk deer were found to be the most rational evidence to show the presence of the animal. Intensive samplings were carried out in all the three sites and several transects and trails were laid and monitored for the sampling. On each trail transects the sampling plots were laid at every 50 m interval. So, a total of 164 plots of 10m radius were sampled for vegetation as well as musk deer pellet groups. The tree species and their total number of individuals were counted in 10 m radius circular plot while the shrub species, seedling and sapling were counted and recorded from the concentric 5m radius plot. For the Herbs and grasses 4 quadrats of 0.5*0.5m were laid at 4 directions of this 10m plot, and all the herbs and grass individuals were recorded.

Apart from the vegetation sampling, all the available plant samples of the area were collected for reference slide preparation as well as the pellet groups were also collected from the same 10m radius circular plot for further microhistology technique to understand the food and feeding habits of musk deer The reference slides of all the sampled plants were prepared following Sparks and Malechek (1968) and Holechek *et al*. (1982). And pellet groups were

analyzed following Satkopan (1972). Total 130 slides of pellet groups were prepared and 5 fields of Views from each slide were sampled for the plant fragment identification.

Result and Discussion

The survey of 14 sites revealed indirect evidences at all the sites, and direct sightings of the animal at eight sites only (Table 1). Most direct sightings were from within or near KWLS (Table 1). During the pre-monsoon period of 2011, we surveyed the Saukhark, Tungnath and Chandrashila region of KWLS. . Seven direct sightings of musk deer were made within the Saukhark area, all near the alpine meadows. No direct sightings were recorded from Tungnath and Chandrashila. We also located fecal pellet groups from musk deer within the Saukhark area, but not within the Tungnath and Chandrashila regions.

The intensive studies were carried out in KWLS to understand the food and feeding habits of musk deer. During the vegetation sampling 5 trees, 16 shrubs, 47 herbs and 7 grass species were recorded and a total of 36 plant species were identified from the musk deer fecal samples (2 shrub, 31 herb and 3 grass species) following microhistology (Fig 1).

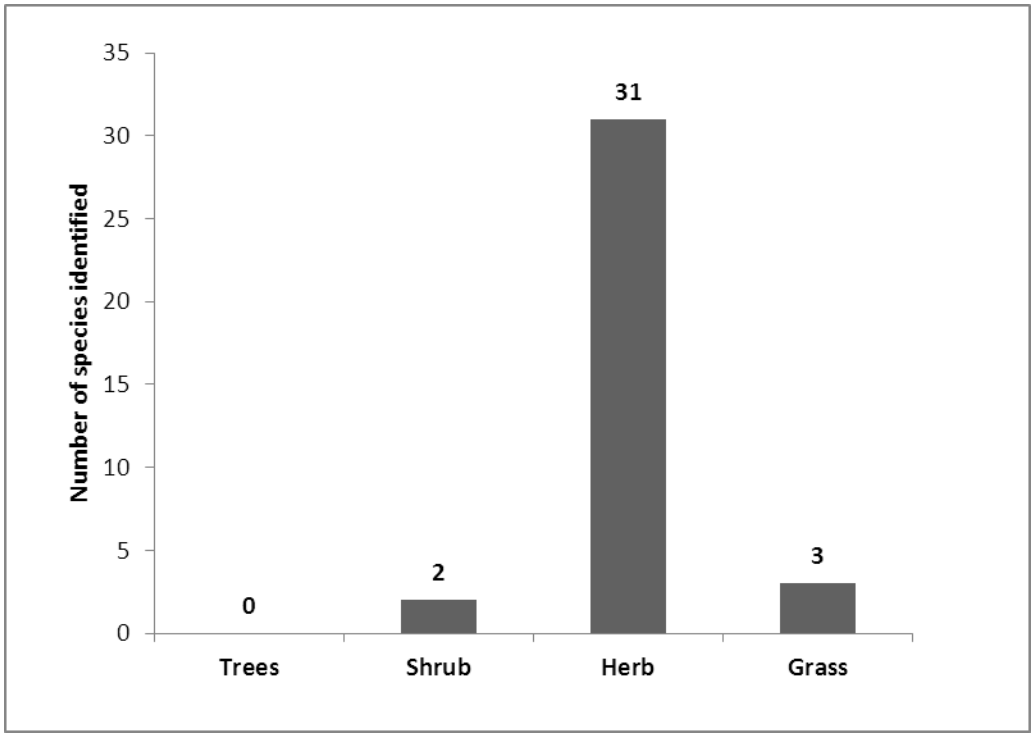

Fig. 1. Vegetation composition in musk deer diet during pre-monsoon 2011

Fig 1 shows that during pre-monsoon season musk deer prefer the herb species over the grass as most of the plant fragments identified from musk deer diet were dominated by the herb species. No plant fragments of trees were recorded from musk deer diet while very few shrub species fragment were recorded. The most preferred herb species by the musk deer were *Anemone obtusiloba, Polygonum amplexicaula* and *Potentilla sp.* For the conservation and protection of the species the forest has to be the mosaic of close and open canopy forest dominated by *Rhododendron campanulatum* in alpine meadows so that along with the food they can get the shelter as *Rhododendron campanulatum* provides the best shelter as well as escape from the predator species. This is an ongoing project and still we are collecting the data of feeding ecology to study the food and feeding habit during post monsoon season.

Table 1: Direct and Indirect evidences of the Alpine Musk deer at 14 different sites in Uttrakhand Himalayas.

S.No.	Site name	District	Status*	GPS locations	Direct	Indirect
1	Tungnath	Chamoli	KWLS	30º49'219" E 79º22'07" N	0	+
2	Saukhark	Chamoli	KWLS	30º47'801" E 79º21'817" N	+	+
3	Madhmaheshwar	Chamoli	KWLS	30º63'171" E 79º22'187" N	+	+
4	Chandrashila	Chamoli	KWLS	30°29'.182"E 79°13'.281"N	0	+
5	Hitoli	Chamoli	NDBR	30º50'821" E 79º75'779" N	+	+
6	Bansinarayan	Chamoli	VAN-PANCHAYAT	30º53'894" E 79º41'638" N	0	+
7	Mulakhark	Chamoli	VAN-PANCHAYAT	30º53'844" E 79º44'07" N	+	+
8	Dwali	Bageshwar	NDBR	30º17'599" E 80º00'079" N	+	+
9	Kafni	Bageshwar	NDBR	30º18'236" E 80º03'367" N	0	+
10	Dungiyadong	Bageshwar	NDBR	30º17'737" E 79º02'458" N	0	+
11	Latakhark	Chamoli	NDBR	30º29'814" E 79º45'005" N	+	+
12	Belta	Chamoli	NDBR	30º29'936" E 79º44'397" N	0	+
13	Liwari	Uttarkashi	GPVWLS	31º10'473" E 78º11'919" N	+	+
14	Her Ki dun	Uttarkashi	GPVNP	31º05'847" E 78º26'113" N	+	+

+ Present; 0 Absent *Status: KWLS= Kedarnath Wildlife Sanctuary; NDBR= Nandadevi Biosphere Reserve; GPVWLS= Govind pashu Vihar Wildlife Sanctuary, GPVNP= Govind Pashu Vihar National Park

Conservation problem: The intensive survey in Uttrakhand reveals that musk deer has disappeared from many patches and their existence is jeopardized by habitat degradation, poaching and many other threats. Due to excessive dependency of the locals of the surrounding villages for tree cutting, lopping for fuel wood and fodder, the musk deer habitat are getting degraded and shrunken in size (Green 1987). Moreover the area is dominated by the medicinal plants, which is again a major attraction for the local people to collect them. The threatened status of Himalayan musk deer is internationally recognized by the IUCN (2011) which lists the species as endangered in "Red Data Book". If urgent attention will not be paid for the over exploitation, extensive destruction and other environmental factor disturbance, the taxa is liable to become extinct in this region.

Instead of recommending more areas be declared as protected areas, or for inclusion in a current protected area, we recommend first to strengthen the protection of the species in the existing National Parks, Sanctuary and Biosphere Reserves. According to the Green's (1985) finding 25 % of the area (around 2000 km²) of Himalayan national parks and sanctuaries is suitable habitat for musk deer. Though since 1987 some more areas have been included in different PAs of Uttrakhand region but whatever PAs we are having in the region do not seems to have sufficient manpower and equipment to provide extensive and scientific management, which involve the proactive role of the state government.

We need to improve the legal protection for musk deer in range countries, which requires diplomatic measures to evolve co-operation among the neighboring countries to prevent poaching of musk deer and trade in musk pod. During 1978, Hong Kong exported a meagre 3 kg of musk to Japan, but by 1983 it traded 133 kg and the possibility of the origin of the musk from the Himalaya cannot be ruled out (Oza, 1988). Hence we strongly believe that a close co-operation with the neighboring countries are highly desirable (Yijun ZHOU *et al*. 2004).

Raising awareness among local communities about conservation values by quoting such values and ethos enshrined in sacred texts, which is part of our cultural life and this may be an effective tool to safeguard survival of the musk deer and several other mammal species. It is indeed a difficult task but perhaps is the only option.

Acknowledgement

We thank to the Chairman Dept of Wildlife Sciences, for providing us the facilities in the dept. We also grateful to Shri Shrikant Chandola, the former Chief Wildlife warden Uttrakhand and his forest staff for the encouragement and all the possible support in the field. We thanks to the funding agencies, The Dept of Sciences and Technology Govt. of India and University Grants Commission, Govt. of India for the financial support to carry out our dream project. Last but not the least we would like to thank our Field assistants specially Satyendra Singh Negi.

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Report to: Deer Specialist Group Small Grants

Funded by: The Mohamed bin Zayed Species Conservation Fund

Preliminary survey on distribution of Chinese water deer in Hanshan and Chuzhou area, Anhui province, China

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Chinese water deer, *Hydropotes inermis*, was listed in the second class of protected animals in China and classed as VU in IUCN red list. It has distributed widely in China, but now concentrated in the Zhoushan Islands of Zhejiang, Yancheng coastal area of Jiangsu, Poyang Lake area of Jiangxi and eastern regions of Anhui in China. Chinese water deer has existed all over of the Anhui province in the history, there were estimated over 300 individuals hunted every year in the 70s and 80s of last century, but the deer difficult to be found in 90s in most areas in Anhui and it was in dull on the wild Chinese water deer in Anhui for nearly 30 years.

Anhui Province totally covers 139,600 km^2 area. If we want to clear the distribution in Anhui with a small field work, it will face to get nothing by random job. We had such experience of that conducted a survey based on some records and news reports and no deer trace found. Some villagers told us they haven't found Chinese water deer for 10-20 years around in this unsuccessful survey. And in some place, the local people could not distinguish the Chinese water deer from muntjac. We got yellow muntjac followed the information from locals. So we must collect enough information to centralize the survey range in our field work this time. We have visited the famous deer expert, the director of Anhui Wildlife conservation station and some owners of deer farm in Zhoushan, and interviewed the local forest bureaus. At last, we had a field survey focus in Hanshan and Chuzhou of Anhui Province. We visited and interview local forestry bureau, forest public security and villagers. Taked the Chinese water deer photos and check the characters when we interview villagers in case they confused with other cervid species. Then select the areas they have found Chinese water deer in five years as the target areas we explored (Fig.1).

Fig. 1 Habitat in Hanshan county of Anhui Province.

Results

We confirmed that the Chinese water deer still existed in Hanshan and Chuzhou. The detail findings listed in Table 1.

Table 1 Field survey results

Survey arears		location	Results			
			Anhui forestry Bureau	Local Forestry Bureau	Villagers	Field Survey
Hanshan County	Mei Mountain	31°41'06", 118°07'17"	-	*	+	-
	Taihu Moutain	31°31' 02" , 118°02′48"	-	+	+	+
	Longwang Village, Taochang Town	31°37' 29" , 118°05' 48"	-	+	+	+
	Cangnan Village, Qingxi Town	31°37' 08" , 118°01' 46"	-	+	+	+
Chu Zhou	Huanglishu forest farm, Quanjiao County	32°11'07" , 118°05′45"	*	+	+	+
	Dashan forest farm, Quanjiao County	32°07' 12" , 118°06' 07"	*	+	+	+
	Huangfu Mountain forest farm, Nanqiao district	32°20′15" , 118°00′40"	*	+	+	-
	Shiji Town, Nanqiao district	32°15′29" , 118°13′26"	*	*	*	-
	Shimenshan Town, Fengyang County	32°51′31" , 117°54 01"	*	+	+	-
	Laojiashan forest farm, Mingguang	32°38′43", 118°13′13"	*	*	+	-

+: the Chinese water deer exist, found deer, remains or traces.
-: haven't found the deer or trace
*: in dull

The distribution of Chinese water deer in Hanshan:

We surveyed Mei Mountain, Taihu Mountain and Cang Mountain in Hanshan County. We found the traces of the deer (feces and tracks) in National Forest Park of Taihu Mountain and Cang Mountain. We interviewed the villagers we met. Some of them have met Chinese water deer in the Cangshan mountains, where located between the Taocang Town and Qingxi Town. In this area we found abundance footprints near steam and pool. The poaching is extremely serious in the region especially in winter. We found four fur remains and one head near a village restaurant. Rampant poaching conveyed us information ma from two aspects: the illegal poaching is increased; or the deer population increased in this region (Fig 2 and 3).

Fig. 2. Poaching in Anhui Province

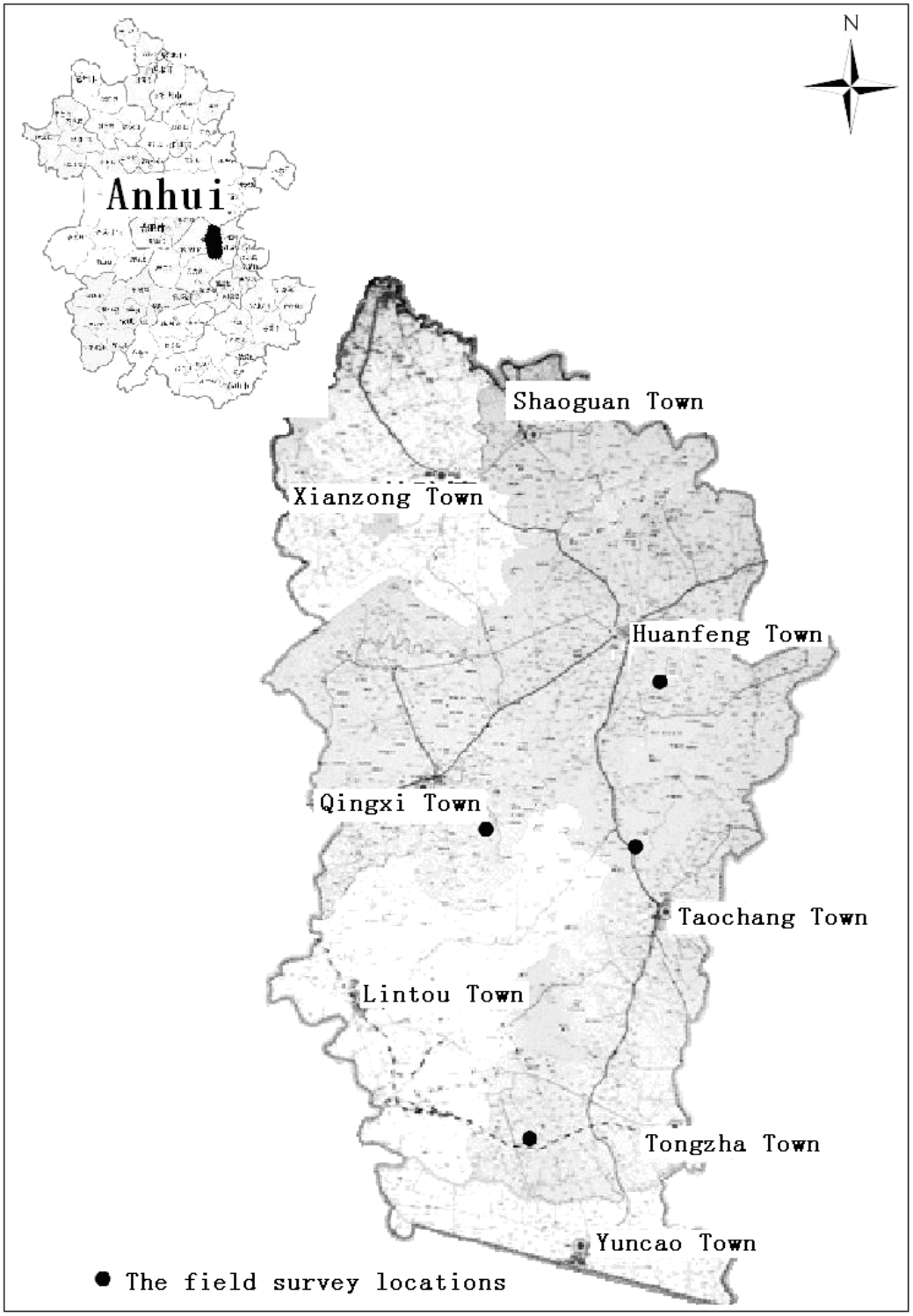

Fig 3. Survey locations in Hanshan

The distribution of Chinese water deer in ChuZhou:

We surveyed Huangfu Mountain Provincial Nature Reserve in NanQiao District, the Huanglishu forest farm and Dashan forest farm in Quanjiao County, Shiji Town, Shimenshan Town of Fengyang County, Laijiashan forest farm in Mingguang (Fig.4).

There were two small deer farms, one is in Huangfushan forest farm, and the other is in Shiji Town. We found the Chinese water deer tracks in Huanglishu forest farm and Dashan forest farm. We also got the information that the villagers had found the deer in Dai Mountain. We haven't reached the Dai Mountain due to the Dai Mountain is a part of Huangfu Mountain and we had surveyed Huangfu Mountain forest farm.

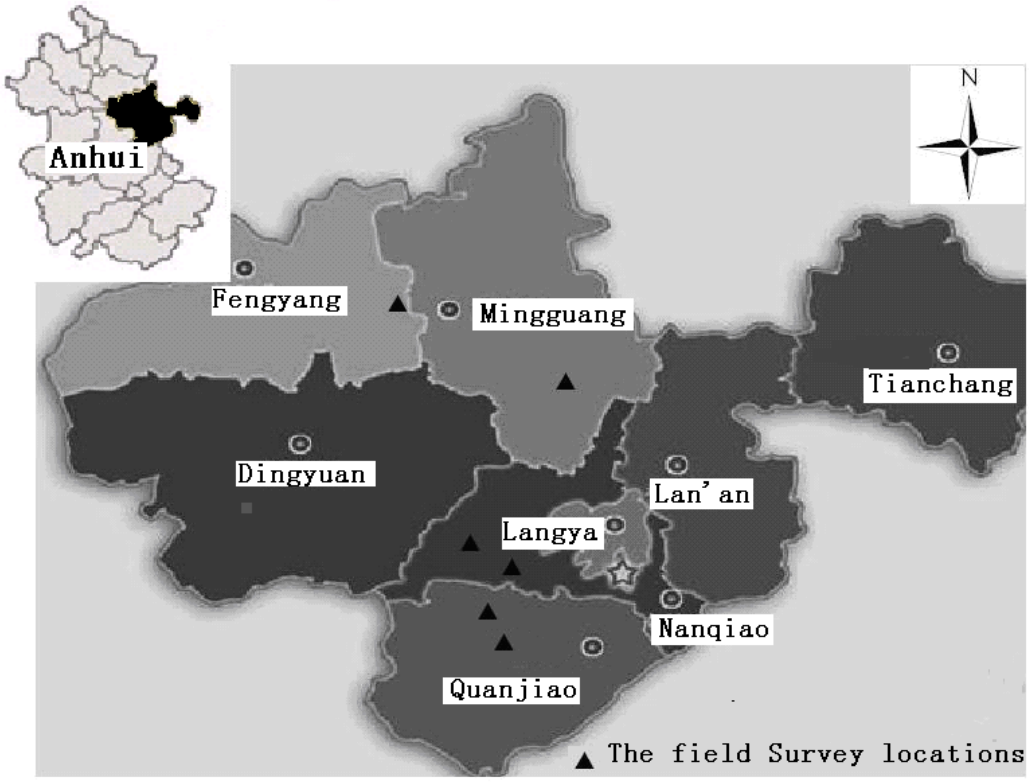

Fig 4 Survey locations in Chuzhou

Discussion

We were happy getting the evidence of the Chinese water deer existence in the wild in Hanshan and Chuzhou, Anhui Province, but we didn't feel optimistic found on the situations of Chinese water deer. The most land was exploited by human for economic purpose, such as mining, logging, etc. We also felt that the local bureaus in Chuzhou knew much on the deer situation than which in Hanshan. We met a case in Quanjiao County, Chuzhou. Some one arrested for poached three Chinese water deer. It seemed the Chuzhou did more efforts on wild life conservation.

We have concerned about that local people may confused the Chinese water deer, yellow muntjac and black muntjac, so we take the photos and explain the difference of these deer. Most locals we have interviewed can tell the Chinese water deer from others clearly, the information from them could be reference. We selected Hanshan and Chuzhou because we onsidered carefully all aspects information we gathered. But we haven't found traces in all location, because the deer is not abundance, another reason is that no raining for more than one month in Chuzhou and Hanshan when we conducted the survey, some stream were dried, so we only could find some traces near water recourse. We also got more distribution of Chinese water deer from villagers, but we haven't reached all locations due to the small budget. We-have great interesting to clarify the situation of Chinese water deer in Anhui province. We have planned to do a bigger survey base on this work.

Conservation management in times of climate change – Problems and solutions exemplified for the Hardangervidda National Park

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Species unable to move or adapt in response to climate change will face local or global extinction. Conservation management in the face of such extensive transformation is a challenging task. To tackle this problem a procedure for the climate proofing of conservation management was developed. It was applied for the Hardangervidda National Park in southern Norway. This alpine arctic plateau harbors Europe's largest population of wild barren ground reindeer (*Rangifer tarandus tarandus*) and is of particular importance for its conservation.

In a past to present analysis several driving forces for the population could be identified. Different scenarios for climatic development until 2050 were used to project the most likely effects on the driving forces. Even though there is a wealth of information about the biology of barren ground reindeer, its reaction to climate changes is still an open question. Hence, conservation management for future climate impacts faces major uncertainties. A risk management approach was used to join the scenario based impact assessment and the past to present analysis. The classification of future changes into types of risks allowed the identification of suitable measures and no-regret strategies. The rules of Adaptive Management helped to make the measures specific, measurable, attainable, realistic and timely.

SIMPOSIUM ON CONSERVATION OF CERVIDS IN MÉXICO

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This simposium was one of the important events held during the XI National Congress of Mammalogy organizad by the Mexican Association of Mammalogy A.C. (AMMAC) and the First Latin American Congress of Mammalogy by the Latin American Network of Mammalogy (RELAM) conducted in Guanajuato City, Mexico, on September 22 th, 2010. The goal was to bring together different researchers and students interested on deer species, in order to discuss needs of management, conservation and future studies. Forteen papers were presented with the following themes: genetic analysis of subspecies of White-tailed deer (*Odocoileus virginianus*) and mule deer (*O. hemionus*), white-tailed deer abundance using different techniques such as camera traps, population studies on brocket deer (*Mazama temama*), mule deer and white-tailed deer in different states, and on modeling the distribution of species of the genus *Mazama*, and white-tailed deer. The total co-authors who participated in these studies were 43 researchers and students from many different universities and research institute of the country. Some of these studies have been published in the journal THERYA of which can be found on the next page: www.mastozoologiamexicana.com

In other events such as the 5th and 6th SYMPOSIUM ON WILDLIFE HUNTING IN MEXICO (April 2010 and April 2011) also were presented lectures related to the following topics: "The models as tools to define strategies for conservation of the deer" ; " The Chihuahuan Desert Mule Deer "," Feasibility of establishing an extensive UMA deer in San Gabriel Casa Blanca, Oaxaca, Mexico ".

Another important activity was the training course for Yaqui Indian Tribe, held in Sonora, Northwestern Mexico (April 2011) where they were taught on methods to estimate deer population and habitat characterization, in order that they can carry out the monitoring of its populations for management and conservation purposes.

Skull of White-tailed deer hunted by Yaqui Tribe, Sonora, Northwestern Mexico.

IN MEMORIAM
JOAQUIN BELLO GUTIERREZ

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A cozy and cheerful man and good friend, passionate about the ecology of mammals and recognized "cervidologist" not only nationally but internationally very Active Member of the Specialist Deer Group (DSG) of the IUCN, who died on May 20th, 2011, in the city of Villahermosa, Tabasco, Mexico, at the age of 43, after a long and painful illness from kidney failure, which endured incredible mood and endurance.

Joaquin was born in the State of Veracruz, Mexico, did his undergraduate studies at the Faculty of Biology, Universidad Veracruzana, and from his thesis he was interested on deer biology and conservation, to whom he dedicated the rest of his short life. He continued his doctoral studies

at the Institute of Ecology in the city of Xalapa, Veracruz, in 1994, being the first generation from the Institute of Ecology, A.C. INECOL Graduated in 2001, doing his doctoral thesis with the white-tailed deer in northeastern Mexico, under the co-direction of Sonia Gallina and Miguel Equihua, and as a result of It published several articles, book chapters and presented his work in many international and national conferences and symposia. He belonged to the National System of Researcher at Mexico.

Always eager to overcome was a brilliant student, colleague and exigent but a friendly teacher, the latter for nine years when he joined the staff of the *Universidad Juarez Autónoma de Tabasco* in Villahermosa, directing countless undergraduate student most of them focused on deer biology. From there, he organized the Wildlife Network, of which he was president and very enthusiastic to promote the collaboration of institutions and universities in the center and southeast country..

All who were lucky enough to go through our lives Joaquin, we must consider very honest and he always had a smile and good humor for all, a person always in a positive and collaborative. He loved going out to conduct fieldwork, as well as tequila and football, the latter liked so much that when he had the opportunity in Rio de Janeiro, Brazil, attended a game at Maracana Stadium, it was the best for him, since he was a fan of Brazilians.

Among his last published work are chapters on red brocket deer published in the book Neotropical Cervidology edited by Susana Gonzalez, co- chair of the DSG (from Uruguay) and Mauricio Barbanti (Brazil), with whom he had an endearing friendship several years. Until his last moments was still thinking about the pending research.

Joaquín participated in two international conferences on Deer Biology one at Quebec and the other one Prague. He also was an active participant in the Deer Specialist Group Workshops at the Wildlife Management in Amazonia and Latin America conferences in Mexico, Colombia, Peru and Brazil.

Undoubtedly, everyone will always remember for the kindness, friendship, happiness and the commitment with deer research and management in Mexico, and for his enormous courage to face their plight, without lose their mood. Rest in peace our beloved Joaquin.

Symposium Advances in Information and Conservation of Argentine Deer

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This symposium took place at the XXIVth Annual Meeting of Argentine Mammalogy in November of 2011 and was coordinated by Belén Semeñiuk and Mariano L. Merino, of the La Plata Museum. It consisted of 8 talks by investigators who are currently working on different populations of Argentine deer. In the last 10 years, there has been a considerable advance in research projects and the number of publications on Argentine deer. There have also been new areas of research, such as the impact of habitat modification by human activities, information about population parameters and other biological aspects of the species. The specific talks were the following:

What do we know about Argentine deer? (Merino M.L. and M.B Semeñiuk)

The current state of knowledge and conservation of the 8 native species of Argentine deer was reviewed along with the increase in information available during the last 20 years.

The current state of conservation of the pampas deer in Corrientes, Argentina. (Jiménez Pérez I. y A. Delgado)

There are currently 2 populations of pampas deer in Corrientes, a nucleus in Auguapey of between 470 and 1900 individuals and an introduced population of 9 animals in the Iberá Natural Reserve. Census data on the nucleus population was presented as well as conservation activities and difficulties.

Evaluation of the conservation status of the population of pampas deer in San Luis, Argentina (Semeñiuk M.B. y M.L Merino)

The population of pampas deer in "El Centenario", San Luis, Argentina, is the largest of this subspecies in Argentina, consisting of 731±121 animals. The diet, habitat selection, population parameters and behavior have been studied for the past 5 years, and the current data in all these areas was presented.

Advances in genetics for the conservation of pampas deer (*Ozotoceros bezoarticus*) in Argentina. (Raimondi V., Pautasso A., Beade M., Merino M.L., Li Puma M.C., Maruyama-Mori G. and Mirol P.)

The pampas deer in Argentina is divided into 2 subspecies and 4 populations: *O. b. leucogaster* in Santa Fe and Corrientes and *O. b. celer* in San Luis and Buenos Aires. It is classified as in danger of extinction in the country. Noninvasive genetic studies showed that the 2 subspecies do not share haplotypes. Phylogenetic tree analysis showed 2 monophyletic groups corresponding to the 2 subspecies.

Marsh deer (*Blastocerus dichotomus*) populations in Argentina and their conservation. (Lartigau B., D'Alessio S. y G. Aprile.)

The marsh deer in Argentina consists of several populations: well known and recovering populations in the Esteros of Ibará and the Paraná Delta, and little known populations in Formosa, Chaco and Santa Fe. The species is little known or appreciated considering that it is one of the largest mammals in Argentina with a population close to Buenos Aires. Current conservation activities were described and future needs and problems discussed.

Ecology and conservation of the genus *Mazama* in the Atlantic Forest of Misiones, Argentina. (Varela D.M.).

Little is known about the conservation state of the 2 species in Misiones: the red brocket deer (*M. americana*) and the Brazilian dwarf brocket deer (*M. nana*); both are classified as DD (Data Deficient). Using digital camera traps, we found *M. americana* to be more sensitive to human activities while *M. nana* was more tolerant. The impact of different types of threats was evaluated and conservation actions proposed.

Conservation of the huemul (*Hippocamelus bisulcus*) in the National Parks of Argentina. (Pastore H.)

The huemul is one of the most threatened mammals in South America, classified as EN (Endangered) by the IUCN and is on Cites Appendix I. The Administration of National Parks (APN) created the Program Conservation of the Huemul (PCH) in 1992, which consists in mapping the populations in the 6 national parks where the huemul occurs and in organizing all the data on sightings and identification and solution of conservation problems. The PCH has been and continues to be very useful.

Advances in the elaboration of a Management and Conservation Plan for the taruca (*Hippocamelus antisensis*). (Li Puma M.C.)

The taruca is classified as Endangered at the Argentine national level and Vulnerable by the IUCN. The Wild Animal Management Service (DFS) and Administration of National Parks (APN) have tried to develop a national management plan by organizing workshops for investigators, taking polls of local people to determine distribution and finally beginning field work on distribution, abundance, diet, habitat selection and genetics in various parts of the species distribution in Northwest Argentina. This will be amplified in the future to cover the whole distribution area.

In summary, it can be seen that the pampas deer (*Ozotoceros bezoarticus)* has the greatest number of projects devoted to its biology and conservation, while nothing is being done on the pudu (*Pudu puda*).

Jo Anne Smith-Flueck,

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The Huemul Task Force has assessed the morphology and historical distribution of huemul as factors playing in conservation efforts. To assist with conservation of endangered Patagonian huemul deer (*Hippocamelus bisulcus*), the Huemul Task Force (HTF) assessed information on appendicular morphology, paleobiogeography, and historical distribution as potential factors in recovery efforts. Traditional claims of being a mountain specialist of the Andes were not supported by empirical evidence showing huemul morphology to coincide with that of other cervids rather than the commonly implied homology to rock-climbing ungulates. This finding supports historical evidence of huemul in treeless habitats and reaching the Atlantic coast, which do not appear to be erroneous observations. Instead, pre- and post-Columbian anthropogenic impacts may have resulted in huemul being displaced from productive sites to survive mainly in remote and marginal refuge areas. The process of range contraction was facilitated by easy hunting of huemul, incentives to hunt for seasonal meat which coincided with seasonal huemul aggregations, the change from hunting-gathering to a mobile equestrian economy, and colonization of huemul range by livestock. Furthermore, areas used presently by huemul, are also used by various exotic wild and domestic ungulates, which are not considered mountain specialists. Moreover, the other species of *Hippocamelus* successfully uses areas homologous to tree-less Patagonia. Conclusions reached by the HTF, that rigid application of modern habitat usage to infer past habitat use and ignoring historic accounts is unwarranted, indicate new opportunities for recovery efforts outside of its current range. For instance, reintroductions to more productive portions of the landscape used formerly by huemul would present a promising avenue.

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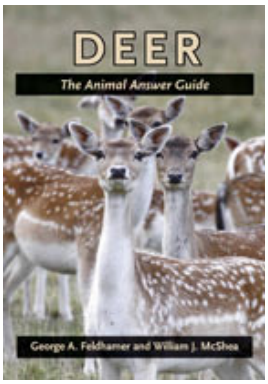

Deer

The Animal Answer Guide

George A. Feldhamer and William J. McShea

Think of deer and the image that pops into most American's minds is that of a white-tailed deer, the most common large mammal in North America. Most Europeans are more familiar with red deer. It may surprise many people to know that there are actually about 50 species of deer found throughout the world. Here, readers will find nontechnical, expert information about the wide range of diverse deer species.

Did you know that elk and caribou are deer? Or that the earliest fossils of deer are 15 to 20 million years old? Have you ever wondered whether deer swim, play, or see color? How do deer avoid predators and survive the winter? Do deer make good pets or carry contagious diseases? George A. Feldhamer and William J. McShea answer these and other intriguing questions about members of the deer family Cervidae.

From the diminutive pudu of South America that weighs 17 pounds to male moose that weigh close to 2,000 pounds, Feldhamer and McShea explore the biology, evolution, ecology, feeding habits, reproduction, and behavior of deer. They chronicle the relationships between humans and deer—both positive and negative—and discuss the challenges of deer conservation and management.

With vivid color photographs and an accessible and engaging question-and-answer format, this easy-to-read book is the go-to resource on deer. Nature lovers, hunters, and anyone curious about deer will find this fact-filled book both fascinating and full of surprises.

George A. Feldhamer is a professor of zoology at Southern Illinois University. He is coeditor of *Mammalogy: Adaptation, Diversity, Ecology* and *Wild Mammals of North America: Biology, Management, and Conservation;* and coauthor of *Mammals of the National Parks,* all published by Johns Hopkins. **William J. McShea** is a research scientist at the Smithsonian National Zoological Park and senior editor of *The Science of Overabundance: Deer Ecology and Population Management* and *Oak Forest Ecosystems: Ecology and Management for Wildlife*, the latter also published by Johns Hopkins.

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