

The present status of  
hartebeest subspecies (*Alcelaphus buselaphus* ssp.) with special focus  
on north-east Africa and the Tora hartebeest (*Alcelaphus buselaphus tora*)

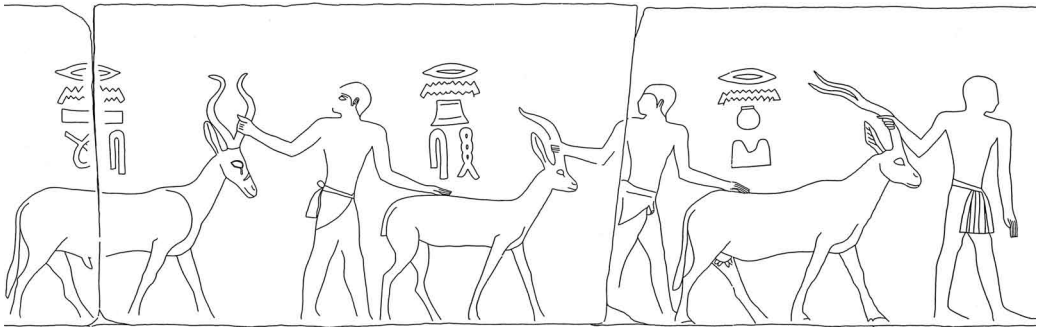
**Abstract**

The Tora hartebeest (*Alcelaphus buselaphus tora*) is one of four distinct hartebeest subspecies once occurring in north-eastern Africa. A survey to assess the status of this critical endangered subspecies carried out 16<sup>th</sup> April–1<sup>st</sup> May 2007 revealed no reliable indications of its existence in the surveyed areas of western and north-western Ethiopia. Due to restrictions of time, technical and financial means and inaccessibility of remote potential habitats of Tora hartebeest, these results remain preliminary. However, the lack of any direct signs or of recent, useable first hand observation reports on the current distribution range and status of Tora hartebeest in Ethiopia suggest that the species is extremely rare or extinct? in the country. An intensive governmental settlement and development program for the western regions in Ethiopia has resulted in excessive devastation. Moreover, exploitation of the natural habitat and high levels of unsustainable hunting pressure, contribute to a general alarming trend in the decline of all larger wildlife in western Ethiopia. Due to the intensity of the settlement program there is reason for concern that major parts of the still existing woodland and most of the wildlife in the region will be lost in less than 10 years. The recently established Alatish and Kafta-Humera national parks in north-western Ethiopia are of greatest importance with regard to the conservation of fauna and flora typical for the Sudan-Guinea biome.

**Keywords:** Antelope, Tora hartebeest, *Alcelaphus buselaphus*, conservation, national park, Ethiopia

**1. Introduction**

Ancient Egyptian sources, both pictorial and epigraphic, attest the hartebeest (*Alcelaphus buselaphus* Pallas, 1766) as having been hunted and caught in antiquity, although its economic importance in the Pharaonic era was apparently considerably lower than that of gazelles and some other desert species (cf. Osborn & Osbornová 1998: 171–173; Herb 2005: 26–28; Herb & Förster, this volume) (Figs. 1; 2). Likewise, hartebeest is identified by archaeozoology in bone records from excavations at various sites in Egypt, but seems to have declined greatly after prehistoric times. This is possibly a result of human population expansion in the Nile Valley and the Delta (cf. Linseele & Van Neer, this volume). Nowadays, hartebeest is extinct in Egypt (Osborn & Helmy 1980; Osborn & Osbornová 1998: 172). Some protected areas in regions of the Horn of Africa, remain as refuges where hartebeest can be studied in the wild; but even there the conservation status of the species can be classified as endangered.



**Fig. 1** Ancient Egyptian representation of caught and registered specimens of addax antelope, gazelle and, to the left, hartebeest. Offering chapel of Sekhem-ankh-Ptah, Saqqara, 5<sup>th</sup> dynasty, now in Boston, Museum of Fine Arts (Detail from Simpson 1976: pl. D)

Within the network of the IUCN/SSC/ Antelope Specialist Group, the north-east African Regional Subgroup<sup>1</sup> also assists with the assessment of the status of antelope species in the Horn of Africa (Sudan, Eritrea, Ethiopia, Djibouti, Somalia). The region is well known for its broad species diversity and the high level of endemism of its fauna and flora. Continuous political turmoil in several parts of the region, as well as limited financial and technical resources have made it difficult in past decades to attain a clear picture of the status and distribution of many antelope species or subspecies. This is also the case for the three north-east African subspecies of hartebeest that still exist today. However, all the populations, within their former subspecies range, have drastically declined. With regard to the current Red List reassessment of antelopes, a field survey was conducted by members of the Antelope Specialist Group, assisted by local conservationists, to collect preliminary information on the status of antelope species in north-western Ethiopia, with special focus on the critically endangered Tora hartebeest (*Alcelaphus buselaphus tora* Gray, 1873). The survey, which includes personal observations, as well as interviews with locals, took place April 18<sup>th</sup> to May 1<sup>st</sup> 2007 and covered areas within the subspecies historic distribution range in north-western Ethiopia, along the Sudanese-Ethiopian-Eritrean borders. Due to some limited access with a 4 x 4 vehicle, away from the main gravel roads to a more remote terrain, the survey includes interviews of local herdsman, hunters as well as community elders, for large parts of the survey area (Heckel et al. 2007).

1 The Antelope Specialist Group is a global network of specialists concerned with the study and conservation of antelopes. ASG is one of more than 120 Specialist Groups that are part of the Species Survival Commission (SSC) of the International Union for Conservation of Nature (IUCN).

< [www.iucn.org/about/work/programmes/species/about\\_ssc/specialist\\_groups/directory\\_specialist\\_groups/directory\\_sg\\_mammals/asghome/](http://www.iucn.org/about/work/programmes/species/about_ssc/specialist_groups/directory_specialist_groups/directory_sg_mammals/asghome/) > (30-08-2009).



**Fig. 2** The registration by an Egyptian scribe of a heap of killed desert mammals, on top of which lies a hartebeest. Tomb of Rekhmire at Thebes, 18<sup>th</sup> dynasty (Detail from Davies 1943: pl. XLIV).

## 2. General information on the Tora hartebeest and further hartebeest subspecies

The Tora hartebeest is one of eight currently distinct subspecies (Kingdon 1997: 428–431; Flagstad et al. 2001) (**Fig. 3**). The so-called Bubal (*A. b. buselaphus*) of northern Africa (Marocco to Egypt) was made extinct in 1925. The subspecies Tora (*A. b. tora*), which once had a distribution that embraced eastern Sudan, north-western Ethiopia and northern Eritrea, and the Korkay or Swayne's hartebeest (*A. b. swaynei*), formally occurring all along the northern Rift valley (northern Somalia, Djibouti and north-eastern to central Ethiopia) are both now considered critically endangered. The Swayne's hartebeest is extinct in Djibouti and Somalia where it was once present in vast herds (Blower 1969: 40; East 1996: 34–40; 1997: 23–48; 1998: 401; Kingdon 1997: 428–431). However, further subspecies such as the Kongoni (*A. b. cokii*) occurring in southern Kenya and northern Tanzania, the Khama (*A. b. caama*) present in the Cape provinces and Kalahari, the west African Kanki (*A. b. major*), and the Lelwel (*A. b. lelwel*) populating Lake Chad to Lake Turkana, as well as the central and south-east African Nkonzi (*A. b. lichtensteinii*) are currently not considered threatened according to IUCN criteria (East 1996: 34–40; 1997: 23–48; 1998: 401). Hybridization between subspecies is likely in overlapping areas, giving rise to a number of animals previously described as subspecies but now are rejected.

Hartebeests are characterized as large, high-shouldered, deep-chested antelopes with long legs, a short neck, and a very long, narrow face. The horns are carried on hollow bases or 'pedicels' and show considerable individual and regional length variation (45–83 cm).

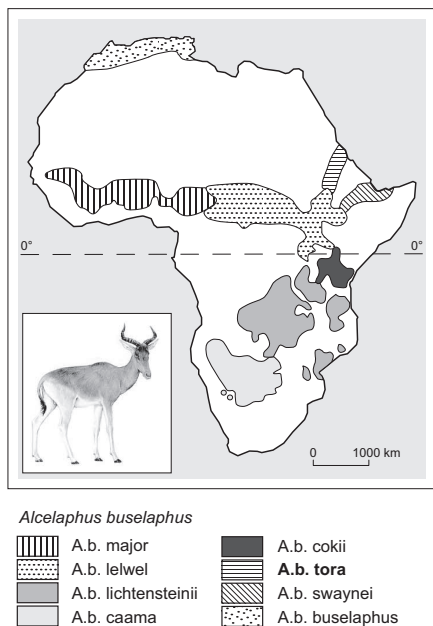


Fig. 3 Modern distribution of hartebeest (re-drawn after Kingdon 1997).



Fig. 4 Skull of *Alcelaphus buselaphus tora* at Prague National Museum (Photo: P. Luptak).

The horns of the Tora differ markedly from other hartebeest subspecies by being significantly thinner and spreading more widely and sideways from the top of the skull (Fig. 4). The coloration of hartebeests also shows considerable regional and individual variation, with the overall body color ranging in most subspecies from yellowish to red or dark brown. The blotches of black on the shoulders and knees of the Korkay and Khama vary in shape and extent. The Tora's appearance is generally pale red-brown over most of the head, neck, front, and upper parts of the rump and front legs. Hind legs and belly are whitish to yellowish, the tail tuft is black (Heusi 1975; Halthenorth & Diller 1977: 85–86; Kingdon 1997: 428–431).

Various authors mention substantial regional differences in habitat requirements. However, hartebeests everywhere are consistent in being non-selective grazers, occurring along boundaries between open grass plains or glades and mosaic like bush and woodland. They depend on regular access to open water, although they may go without drinking for quite long periods. In the dry season they follow drainage lines for water and foraging, while during the rains they shift to better drained, sparsely grassed woodlands. Certain grass species are avoided, in particular *Cynodon*, which is readily grazed by other herbivores. All studies revealed that broad-leaved foliage accounts for less than 5 % of the diet (Heusi 1975; Halthenorth & Diller 1977: 85–86; Kingdon 1997: 428–431).

With the exception of the Nkonzi, *A. b. lichtensteinii*, which could be regarded as an incipient species, all subspecies have been recorded in very large, dense herds at various times in the past, such as the Bubal in Souf, Algeria in the 1830s and 1840s (Halthenorth & Diller 1977: 85–86; Kingdon 1997: 428–431).

Populations may crash to very low levels during droughts, epidemic diseases or under sustained competitive pressure from cattle. However, they are usually able to recover quite rapidly when conditions improve. This capacity to build up their numbers locally is fuelled by a normally super-abundant resource, their social versatility enables them to find the best pastures at all density levels and to adjust the size and distribution of their territories accordingly (Kingdon 1997: 428–431).

None the less, the extinction of the Bubal should serve as a warning about the vulnerability of these species. Apart from the ease and desirability of hunting them, due to their tasty meat, these antelopes decline wherever there is competition from intensive cattle-keeping (East 1996: 34–40; 1997: 23–48; 1998: 401; Kingdon 1997: 428–431).

### 3. General information on the surveyed areas and expected ungulate species

The surveyed area was located in the Ethiopian zone of Gonder (Amhara and Tigray national regional states) north and west of the Lake Tana roughly within the geographic boundaries N 14°25' – N 12°10', and E 37°55' – E 35°35'. Areas visited include the recently established Alatish national park and the Sudanese Dinder national park, together forming a new trans-boundary conservation area, as well as the formerly known and now abandoned Shire wildlife reserve and the newly established conservation area Kafta Humera along the border with Eritrea. Travel routes, field observation points and campsites are shown in **Fig. 5** (Heckel et al. 2007). Acacia savannah and dry bush-land (**Fig. 6**), where not severely degraded, are the dominant habitat types of the survey area. Parts of the south-western and western survey areas show characteristics of woodland or open grassy plains. Cited literature reveals the possible occurrence of the following ungulate species in the surveyed area (Halthenorth & Diller 1977: 85–86; Kingdon 1997: 428–431):

- African elephant (*Loxodonta africana*)
- Savannah buffalo (*Syncerus caffer brachyceros*)
- Nubian giraffe (*Giraffa camelopardalis camelopardalis*)
- Tora hartebeest (*Alcelaphus buselaphus tora*)
- Roan antelope (*Hippotragus equinus*)
- Beisa oryx (*Oryx beisa*)
- Greater kudu (*Tragelaphus strepticrosus*)
- Bohor reedbuck (*Redunca redunca*)
- Bushbuck (*Tragelaphus scriptus*)
- Oribi (*Ourebia ourebi*)
- Common duiker (*Sylvicapra grimmia*)
- Wart hog (*Phacochoerus aethiopicus*)
- Aardvark (*Orycteropus afer*)

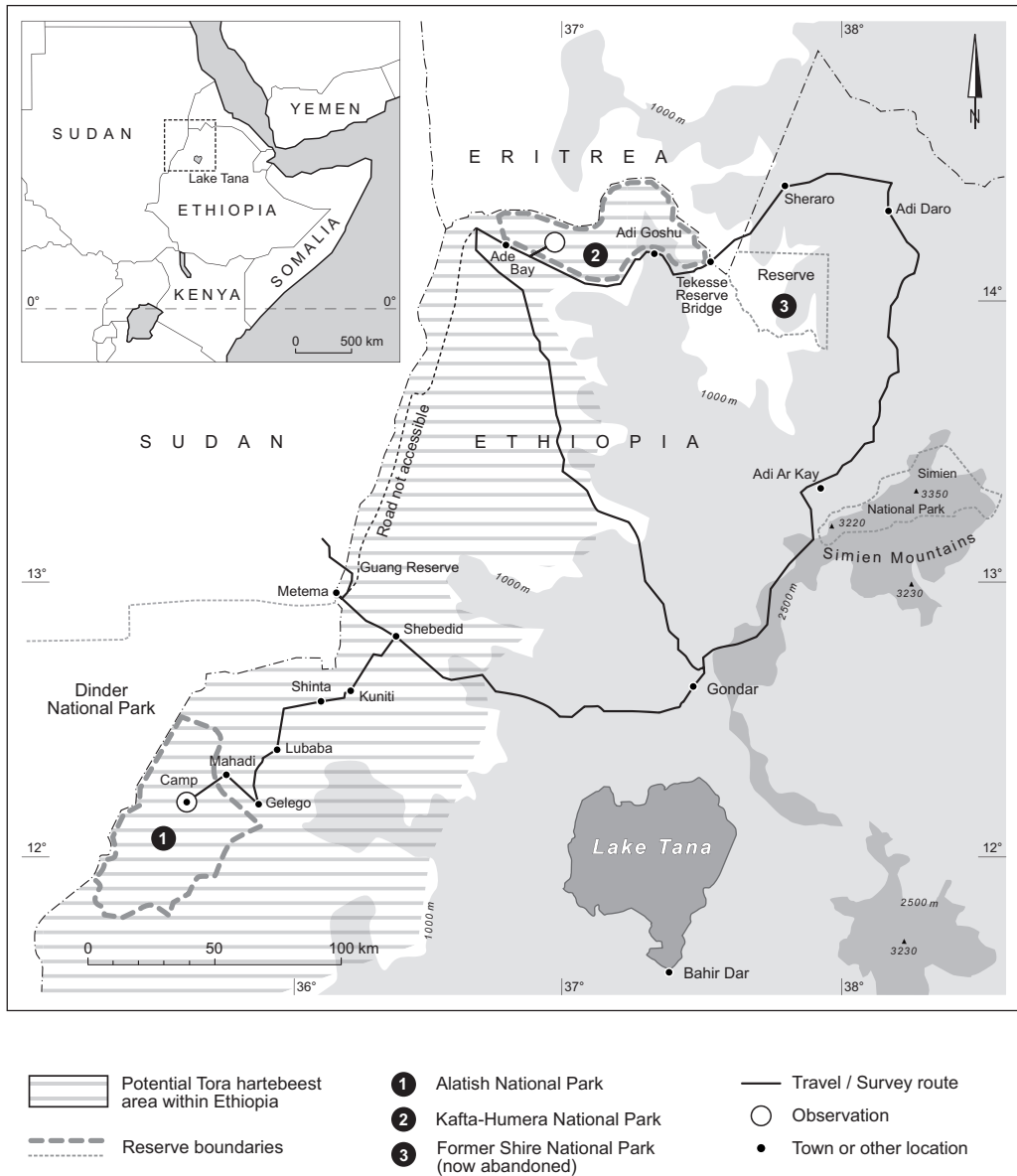


Fig. 5 Surveyed areas in western Ethiopia and potential area of tora hartebeest (after a map by F. Wilhelmi).





**Fig. 6** Acacia savannah, typical for the Sudan-Guinea biome (Photo: J.-O. Heckel).

#### **4. Survey of the Alatish national park**

After survey preparation and information gathering in Addis Ababa, the field survey started on April 19<sup>th</sup>, 2007 following the well-maintained gravel road westward from Gondar to the village of Shehedid (N 12°46' / E 36°24') heading towards the border of Sudan. Prior to the survey, only very limited information on the recently established Alatish National Park (Enawgaw et al. 2006) was available. In Shehedid several people were interviewed about wildlife species and their possible status in the region. However, their knowledge was generally very limited, because most inhabitants of the western regions are new settlers from central Ethiopia and are consequently unfamiliar with wildlife in the region. On the search for wildlife products, it was frequently stated that the requested items were not available for sale in Ethiopia, but were usually sold to Sudan. Hence, not a single trophy or skin was found or shown to the survey team. Traded wildlife also includes primates such as olive baboons (*Papio anubis*), patas monkeys (*Cercopithecus patas pyrrhonotus*) and grivet monkeys (*Cercopithecus aethiops aethiops*), of which juveniles are deliberately caught alive for the wildlife trade with Sudan, while mainly adult animals are hunted as crop pests.

The survey continued by traveling to the village of Gelego (N 12°13' / E 35°53') about 125 km south of Shehedid. On the way a Patas monkey, a common jackal (*Canis aureus*) and grivet monkeys were encountered. At the park's head quarters in Gelego, information on the park and wildlife could be obtained from the general manager and from a copy of "Development Assistance Project Proposal for Alatish National Park Management Planning" (PaDPA, ed., 2006). The survey team set off into the park. Since there was still no access road to the national park, a foot path had to be used to reach the proposed campsite close to the park's centre. No larger wildlife (apart from birds) was observed until the campsite on the banks of the dried out Alatish River (N 12°12' / E 35°38') was reached. Although no livestock, apart from donkeys, could be directly observed, signs of livestock occurrence, such as fresh tracks, dung piles, kraals and watering troughs were frequent. Fresh burned areas were also rather common along the track. The general manager emphasized that in the previous months most of the nomads and their livestock had been forced out of the park with military assistance and had headed towards the northern Dinder national park in Sudan. Others left the park during the current dry season due to water shortage. Collectors of wild honey enter the park to place woven bee-hives in large trees to attract the nesting of wild bees. The highly destructive collection practice of cutting or burning down old hollow trees to yield honey is still practiced. The extended dry conditions in the region and the shortage of surface water are additionally responsible for the absence of larger wildlife, which is said to seasonally cross the border to Dinder National Park where the availability of water and forage is supposed to be higher.

In the morning, noon and late afternoon, the research group split into two teams for wildlife observations; stalking and spot observations. One common duiker was observed and filmed foraging in the company of a large group of guinea fowl (*Numida meleagris*). Dung and tracks of common duikers as well as digging places and faeces of aardvarks were repeatedly encountered. Signs of warthogs were also frequent; however, this species seems to be still hunted within the park on a regular and large scale basis. In evidence were large numbers of small, eroded skulls found at the campsite and other spots in the close vicinity. The remains of an eastern hinge-back tortoise (*Kinixys belliana belliana*) tied-up in a plastic bag and placed on a tree branch were found close to a nomad camp. The local guide explained that the use of tortoises in this manner is supposed to create affluence. In addition, one living eastern hinge-back tortoise was observed, as well as a group of grivet monkeys. The dung pile and tracks of a greater kudu were also found and a large group of baboons sighted. A poacher's camp was detected with facilities for drying bush meat. Further to this, a functional snare suitable for duiker or wild fowl was found and destroyed. Older dung pellets of a striped hyena (*Hyaena hyaena*) were detected along the river bed. Due to a shortage of drinking water and a massive invasion of the campsite by wild bees, the survey team, decided to head back to Gelego and Shehedid respectively in search of water and later to continue to north of Metema (N 12°57' / E 36°09'), the border town to Sudan. On the way, still within the park area, one warthog was spot-



ted fleeing at some distance, but no other larger wildlife was seen. Later, a large group of about 30 patas monkeys was observed along the road to Shehedid (Heckel et al. 2007).

## 5. Survey north of Metema

The evening in Metema was used to gather information on accessibility and road conditions as well as on wildlife abundance in areas to the North. A former honey collector, familiar with the region north of Metema, was hired as guide. The survey team took a very rough dirt road heading about 30 km north of Metema along the Ethiopian-Sudanese border. Several kilometers after crossing the Guang River (N 12°59' / E 36°48'), a fleeing female Decula bushbuck (*Tragelaphus scriptus decula*) was spotted. Later, while stalking a seasonal river bed, a short video footage was taken of a female Bohor reedbuck (*Redunca redunca*).

Due to the extremely rough road conditions it was only possible to travel as far as a fairly new settlement called Delelo (about 30 km north-west of Metema). The settlers all originate from the central Ethiopian highlands and had moved to the place on the request of government authorities within the past three to five years. However, the survey team was able to gather good information about the types of wildlife and their occurrence in this region, by interviewing an active hunter. He stated that the abundance of larger wildlife was still satisfactory in the years before the settlement started. Prevailing ungulate species were kudu, bushbuck, reedbuck and duiker. Tora hartebeest was unknown, whereas eland antelopes (*Taurotragus oryx*) were reported to have occurred in the past. Unfortunately, it was not possible to find out whether this species might have been confused with other species such as roan antelope.

The hunter confirmed statements collected in Metema that members of the military forces have hunted a considerable number of antelope in the past. Hunting by hunters or armed militia still continues on a fairly large scale to this day. Automatic rifles and ammunition are easily available and imported rather cheaply from the Sudan. Hunting is mainly done individually rather than in organized groups for own consumption or to sell the meat in local markets. People are well aware that according to the law hunting is illegal, and thus trophies and skins are hardly to be found on Ethiopian markets. However, hunters interviewed stated that government authorities do not enforce hunting or wildlife preservation laws and in recent years awareness programs or surveys on wildlife have not been conducted. It was stressed that most wildlife will probably disappear from the region within the next few years. In order to subsist on hunting it would be necessary to move ahead of both the westward and northward orientated settlement program supported by the government. It was also recognized that the breathtaking speed of the bush and land devastation caused by woodcutting, burning and overgrazing (Fig. 7) has also contributed to the fast decline of wildlife (Heckel et al. 2007).



Fig. 7 Deforestation caused by settlements in western Ethiopia (Photo: J.-O. Heckel).

## 6. Survey to Kafta-Humera national park and former Shire wildlife reserve

Back in Gondar the survey team prepared for a further survey in the North. On the way to Shire Endeselassi, passing Adi Ar Kay people were interviewed. In Endeselassie the Agricultural Office was contacted in order to gain information on Shire Wildlife Reserve, which is mentioned in older reports and is still located on maps (**Fig. 3**). Information about this reserve was very limited but interrogations revealed that Shire WR was probably established during the time of Emperor Haile Selassie and served as a hunting ground for the imperial court. It may have been functional during the Derg regime, but it was obviously abandoned during the restructuring of the regional administration in the early 1990s.

Following the information from the regional office, a forest reserve east of Endeselassie was visited. It appeared as an almost tree-less area, now protected for reforestation and not suitable for considerable amounts of wildlife.

An area called Kafta-Humera was mentioned as a new wildlife conservation area about 170 km to the west. In a meeting with relevant staff at Humera Agricultural office, the survey team was told that the previous forest reserve of Kafta-Humera was in the process of being up-graded to a national park. Normally, the area could only be visited with the permission of the Tigray regional state headquarters in Mekele, some 300 km to

the West. To approach the Eritrean border, permission from the military and even an armed escort is mandatory. During the drive through the reserve and from an elevated observation point no wildlife could be spotted, but elephant dung, no older than a few months, was found. Elephants are said to move in the park during the rainy season and migrate back to Eritrea in the dry season. Other wildlife is supposed to be along the Tekesse River now, but it could not be approached due to security reasons.

In early April 2007 an assessment team of Ethiopian Wildlife Conservation Organization had visited the reserve and proposed the up grading to national park status. The total area encompasses about 5000 km<sup>2</sup>. The northern park boundary is represented by the Tekesse river, the border river to Eritrea. In the South, the park extends as far as the road between the towns of Humera, Adebay, Adi Goshu and the Tekesse river bridge. The district administration and park head quarters are situated in Humera in the Kafta-Shiraro district. A gravel access road of about 12 km length reaching into the park centre has recently been finished. The Tekesse River is used by wildlife as a permanent source of water during the dry season. During the rainy season, water points can be found as well. The whole area is also supposed to be accessible at the beginning and end of the rainy season. However, parts of the reserve close to the Eritrean border generally remain off-limits for intensified survey work. About 15 years ago the German Technical Assistance (GTZ) was actively engaged in a project concerned with the preservation of natural resources in the region. After it stopped, following the outbreak of the Ethiopian-Eritrean war, a considerable decline of wildlife population could be recognized. The region also faces an extensive re-settlement program with many people moving from the eastern highlands into this area. Besides the development of roads, the consequences of this are the massive transformation of woodlands into arable land and bush degradation by livestock. Similar to the Alatish area, the new settlers have no traditional relationship with the area and its natural resources and therefore, may exploit them in a devastating manner.

The current wildlife inventory of Kafta-Humera is listed as follows: elephant, greater kudu (supposed to be very common), common eland, roan antelope, beisa oryx, defassa waterbuck, bohor reedbuck, decula bushbuck, red-fronted gazelle, common duiker, oribi, warthog, olive baboon and patas monkey. The occurrence of Tora hartebeest was explicitly denied. Presence of roan, eland and oryx is questionable, since none of the cited literature mentions this area as having been within their distribution range for the last decades. Showing animal pictures revealed very confusing answers. Moreover, scouts mentioned species often in the Tigray language and it was not always possible to find out the corresponding Amharic or English term. For example, one species called "Tel Badhun" could not be allocated to any picture in the mammal field guide.

At the Humera office a brief inspection of the scouts' animal census was possible. Unfortunately, the figures do not give a clear picture of the abundance of wildlife species. They are a mere summation of all kind of records, separated by districts. Possible repeated sightings or misidentifications by local people are not accounted for.

The survey team returned to Gondar and from there to Bahir Dar. In Bahir Dar the regional Parks Development and Protection Authority office was contacted and the survey results discussed. The survey program was finished on May 1<sup>st</sup> 2007 and the team returned to Addis Ababa (Heckel et al. 2007).

## 7. Recommendations

The two newly established conservation areas, Alatish and Kafta-Humera, have to be regarded as a most overdue measure, which may, at the very least, protect fragments of potential habitats and also populations of the Tora hartebeest and many other species of wildlife and flora in drastic decline. Very substantial contributions are needed if this goal is to be reached in time. Recent information reveals no confirmed sightings of Tora hartebeest in the past 10 to 15 years in eastern Sudan or northern Eritrea (Van Hoven & Nimir 2004; Hagos, pers. comm. 2007). This further highlights the importance of future conservation of any potential habitats for this subspecies in western Ethiopia. Further extended surveys are needed in western Ethiopia, eastern Sudan and Eritrea to gather a full overview on the current status and on additional effective protection measures for the Tora hartebeest and other wildlife species in decline (Heckel et al. 2007).

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