Persistence of lesser known sub-populations of Grevy’s zebra *Equus grevyi* in the far north of Kenya

A survey report

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ABSTRACT

Formal surveys suggest that Grevy’s zebra Equus grevyi is declining rapidly in range and numbers. However, there is a lack of contemporary data on the most northerly and potentially most vulnerable sub-populations within Kenya. Hence this study investigates the distribution of Grevy’s zebra and threats to their survival through interviews with local communities, supported by the collection of direct and indirect evidence from the field. The results suggest that Grevy’s zebra persist throughout the Samburu eco-unit, around Sibiloi National Park and in the eastern Chalbi Desert. However, these populations are poorly understood and appear vulnerable to localised extinction.

Key Words: Grevy’s zebra, northern Kenya, status.
INTRODUCTION

The historic distribution of Grevy’s zebra included large parts of northern Kenya, western Somalia, central Ethiopia, northern Djibouti and southern Eritrea (Kingdon, 1997). Today Grevy’s are found only in northern Kenya and central and southern Ethiopia. Numbers have declined rapidly from around 15,000 in the late 1970s to an estimated national population of 2,571 (± 136) in 2000 (Nelson & Williams 2003). A core area of the northern rangelands of Kenya holds the largest remaining contiguous population and is accordingly the focus of conservation measures for this species. This includes the Lewa Wildlife Conservancy, the Laikipia Plateau, the Samburu, Buffalo Springs and Shaba National Reserves, and throughout the Ngutuk Ongiron / Wamba area. Remnant, fragmented populations are believed occur further to the north in Kenya, and it is these populations which are the focus of this study.

At a workshop in 2004, information contributed by various stakeholders suggested that Grevy’s zebra numbers had decreased to between 1,567 and 1,976 (Williams & Low 2004) which, if substantiated, represents a decline of a third in just four years. However, this latest assessment was hampered by lack of contemporary knowledge on the lesser known and potentially most vulnerable sub-populations of Grevy’s zebra occurring in the northerly parts of their Kenyan range. Hence, this study aimed to produce information on the persistence of Grevy’s zebra in target areas, review threats to the species and to assess the merits of more comprehensive survey work as prerequisites for the development of a national Grevy’s zebra conservation strategy.

METHODS

An expedition was undertaken through central northern Kenya in July 2005, during the dry season when Grevy’s zebra populations were assumed to concentrate around available water resources. The route through northern Kenya comprised three ecologically distinct areas based on FAO classification of Kenyan rangelands (FAO, 2002): first, Samburu eco-unit including focal points around the Lodongokwe Centre (1), Barsaloi (2), Baragoi and the El Barta Plains (3), and South Horr (4); second, Sibiloi National Park (5) and Derate (6) within the Illeret eco-unit; and, third, the eastern Chalbi Desert including North Horr (7), Kalacha (8), Kargi (9) and the vicinity of Mount Baio (10) in the adjoining Kaisut Desert (Figure 1).

Interviews were conducted with local people at each focal point to determine the presence and the likely location of Grevy’s zebra. Responses were documented together with information on water and grazing resources, and any perceived threats to the species. Reports were followed up by a ground team who searched for evidence of Grevy’s zebra. Observations on habitat suitability, including vegetation quality and water availability, were noted together with records of livestock and conspicuous wildlife. References to plant communities follow the FAO / GZT Vegetation Map of Northern Kenya (FAO, 2002).
Figure 1: Focal points for the assessment of Grevy’s zebra status in the far north of Kenya categorised by ecological units of Samburu (1 = Lodongokwe; 2 = Barsaloi; 3 = Baragoi / El Barta Plains; 4 = South Horr); Sibiloi (5 = Sibiloi National Park; 6 = Derate); and Eastern Chalbe (7 = North Horr; 8 = Kalacha; 9 = Karole; 10 = Mount Baio).

Fig.2 : Grevy’s zebra east of Baragoi

Fig.3 : Grevy’s zebra mare and foal seen north of South Horr
RESULTS

Grevy’s zebra were present at all focal points in the Samburu eco-unit (Appendix I, Table 1), but were most numerous to the south, representing a natural extension of the well-studied Wamba population. While some herds were thought to be sedentary, the majority of Grevy’s zebra were reported to migrate seasonally following localised depletion of water or grazing resources. Grazing opportunities were limited around Baragoi and South Horr (Fig.2 & 3); areas dominated by deciduous bush grassland and evergreen bushland respectively. In contrast, good quality grazing resources were found in the vicinity of the Lodongokwe Centre (Aristida-Sporobolus-Impomoea-Acacia tortilis deciduous bush grassland) (Fig.4 & 5) and to the east of Barsaloi (Sporobolus-Duosperma-Acacia tortilis deciduous bush grassland and Leptothrium-Duosperma deciduous dwarf shrub grassland) (Fig.1 and Fig.6).

![Grevy’s zebra at Lodongokwe](image1)

FIG. 4: Grevy’s zebra at Lodongokwe

FIG. 5: Tracts of Pennisetum grassland close to the Lodongokwe centre

Threats to Grevy’s zebra in Samburu arise from competition with large numbers of domestic livestock (Fig.7), which may also lead to modification of behaviour through displacement. Otherwise, Samburu pastoralists appear to take a benign attitude to the presence of Grevy’s zebra, except to the north of Barsaloi where the Turkana people are believed to hunt them.

![Largely wooded vegetation communities around Barsaloi](image2)

FIG. 6: Largely wooded vegetation communities around Barsaloi

FIG. 7: Large numbers of cattle visiting the dam east of Baragoi

A small population of Grevy’s zebra persists in and around Sibiloi National Park (Fig.1), moving out of the park to the north and east when grazing is available in the surrounding hills. There were consistent
reports that wildlife was generally absent to the north and south of Sibiloi National Park because of uncontrolled illegal hunting. Nomadic pastoralists were aware of Grevy’s zebra occurring around Chew Bahir in Ethiopia (see Williams, 2003) and suggested that individuals very occasionally moved south, across the border. Otherwise, the consensus was that a group of four Grevy’s zebra (Table 1) at Derate (Figure 1) were the northernmost group in Kenya (Fig. 8).

Pasture and water are readily available in Sibiloi National Park next to Lake Turkana, but are dominated by other ungulates. Grazing in the hills to the east and south east of the Park are important seasonal resources for less water dependent species such as beisa oryx *Oryx beisa* (Fig.9) and Grant’s gazelles, but Grevy’s zebra appear to be constrained in distribution either because of hunting to the north and south or by limited availability of water to the east. As a result, the small population of Grevy’s zebra within Sibiloi appears to be particularly isolated and vulnerable.

There were consistent reports of Grevy’s zebra occurring in the eastern Chalbi Desert and in the Kaisut Desert, with the species becoming scarcer to the north. According to Elders in the northern Chalbi Desert (Fig.10), Grevy’s zebra graze in the Huri Hills (up to 30km away) during the drier parts of the year, returning to drink from perennial springs every two to five days. Further south, Grevy’s zebra drink from hot springs at the edge of a salt pan near Kargi. However, localised grazing resources were available to the east in an area that was rarely visited by pastoralists because it lies in a conflict zone between communities.
Large numbers of Grevy’s zebra were reported to be present in the Kaisut Desert, but moving south to Laisamis when water became depleted. Tracts of excellent quality pasture (mixed Aristida dwarf shrub grasslands) were found at two locations approximately 20km from a dam adjacent to Mount Baio and apparently inaccessible to domestic livestock for at least part of the year because of the distance from water.

There was no direct evidence of Grevy’s zebra occurring in the far north of the Chalbi Desert. However, tracks of Grevy’s zebra were found on the salt pan and adjacent lava fields near Kalacha. A single young stallion was seen together with fresh tracks of at least a dozen other Grevy’s zebra around hot springs near Kargi (Fig. 11). The springs appear to be an important resource for wildlife, with tracks of small and large carnivores noted alongside Grant’s gazelles and ostrich. While only 10 Grevy’s zebra were seen in the area of Mount Baio (Fig. 12 & 13) in the Kaisut Desert, there were numerous studpiles created by stallions around the dam and use of Aristida grasslands to the north and east by Grevy’s zebra was clear because of a series of regularly used paths leading to and from these pastures.

Fig. 12: Mount Baio viewed from the north  
Fig. 13: Grevy’s zebra stallion near the dam close to Mount Baio

Grevy’s zebra of the eastern Chalbi Desert are threatened by competition with domestic livestock (Table 1), exacerbated by large distances travelled between grazing and water resources. There is an additional threat from hunting for food or medicine, to which Grevy’s zebra are particularly vulnerable because of their reliance on single point water sources.

**DISCUSSION**

This review confirms the persistence of Grevy’s zebra in the north of Kenya. While Grevy’s zebra appear widely distributed to the south, a pattern of gradual decline in numbers emerges towards the north. But despite their general decline, Grevy’s zebra still persist in and around Sibiloi National Park and throughout the Eastern Chalbi Desert. Based on local knowledge, the most northerly part of Kenya appears to be largely inhospitable to Grevy’s zebra and other wildlife; however, there may still be occasional movement between Ethiopian and Kenyan populations via the Huri Hills, which warrants further investigation.
Presence of large and numerous herds of cattle or camels at water holes during the day, combined with Grevy’s zebra tracks by the water and observations of night time drinking made the competition between domestic livestock and Grevy’s zebra apparent in all locations to varying degrees, and was compounded in the far north by the species being hunted for food or medicine. Moreover, the reliance of Grevy’s zebra on single point water sources along the eastern edge of the Chalbi Desert and outside Sibiloi National Park makes them particularly vulnerable to hunting. In contrast, animals occurring south of the Chalbi Desert not only co-exist with a more benign human presence, but are also able to use a more extensive network of water resources. Hence, differences in the ecology of Grevy’s zebra and in human attitudes to wildlife and consumptive use of this species appear to be critical factors in their survival, as does the positioning of, and access to, water sources.

The Grevy’s zebra of Sibiloi National Park and the eastern Chalbi Desert proved to be the most elusive. These populations appear to be more vulnerable to hunting than their more southerly counterparts and are highly mobile. It is likely that the Grevy’s zebra of Sibiloi National Park, which are reported to move in and out of the protected area, are otherwise isolated and urgent action is needed to assess the status of the population and review options for their conservation. Similarly, further work is needed to establish the status and viability of Grevy’s zebra in the eastern Chalbi Desert and Huri Hills.

Contiguous populations are more likely to remain linking Grevy’s zebra from the El Barta Plains and South Horr through Ilaut to the Kaisut Desert. This land is inhabited by communities that do not utilise the species and is in close proximity to the better understood core population of Grevy’s zebra to the south. As a result, the area appears to offer genuine opportunities for Grevy’s zebra conservation through community initiatives. Moreover, given that other species of conspicuous wildlife tended to be found where Grevy’s zebra occur, conservation action for this flagship species may accrue additional benefits for biodiversity.

Local knowledge proved to be reliable and was intrinsic to the success of this initiative. Indeed, reports about the presence and habits of Grevy’s zebra from pastoralists were consistent with field observations within each of the areas visited, and information about the locations of Grevy’s zebra proved to be accurate where the species was present. A detailed account of the findings are available in a report prepared for the Kenya Wildlife Service (KWS) (Woodfine et al 2005). The information gained from this work contributed to the development of a national Grevy’s zebra conservation strategy.
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REFERENCES


Table 1: Presence of Grevy’s zebra, other conspicuous species of wildlife and types of livestock encountered. Numbers of Grevy’s zebra seen are recorded. ✓ = sightings of other wildlife; † = indirect evidence (tracks or faeces); # = anecdotal reports of continued presence.