Background information and species management guidelines:

ROAN SABLE TSESSEBE

Roan, sable and tsessebe are considered to be 'Lower Risk (Conservation Dependent)' under IUCN's classification system, meaning that they are not threatened at the global, continental or regional levels. However, in Namibia they are of conservation concern because within their natural habitat their numbers are low and declining and many sub-populations are isolated from one another. Focussed conservation action is needed to rebuild populations of these high value antelope.

MANAGEMENT

Ecological objective

To increase the population of these three antelopes in areas which are ecologically suitable by enhancing existing populations and establishing new populations. The following approaches have been identified:

- Relocate animals which are in unsuitable habitat, in terms of rainfall and vegetation;
- Strengthen, build and support joint management institutions between State, conservancies and private sector where conservancies and private sector border national parks, to the mutual benefit of all parties;
- Develop a network of permanent game watering points;
- Use populations which have already reached the maximum environmental carrying capacity to establish populations in other areas; and
- Implement an annual review process.

Economic objective

To realise the full potential of roan, sable and tsessebe as components of wildlife-based land use for the benefit of rural landholders and the State in keeping with the provisions for sustainable use in Namibia's Constitution. The following steps are recommended:

- Set sustainable hunting quotas;
- Sell safari hunting concessions to maximum advantage;
- Support live capture and sale;
- Develop workable transboundary institutions; and
- Set up annual monitoring procedures to assess income and progress towards achieving the economic objective.

Auction prices (May 2008)

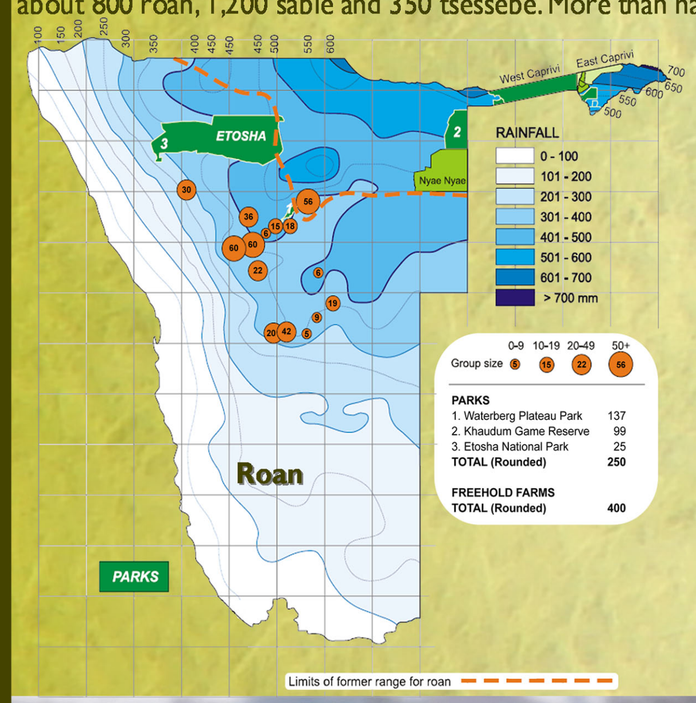
Roan	N$120,000
Sable	N$160,000
Tsessebe	N$21,000

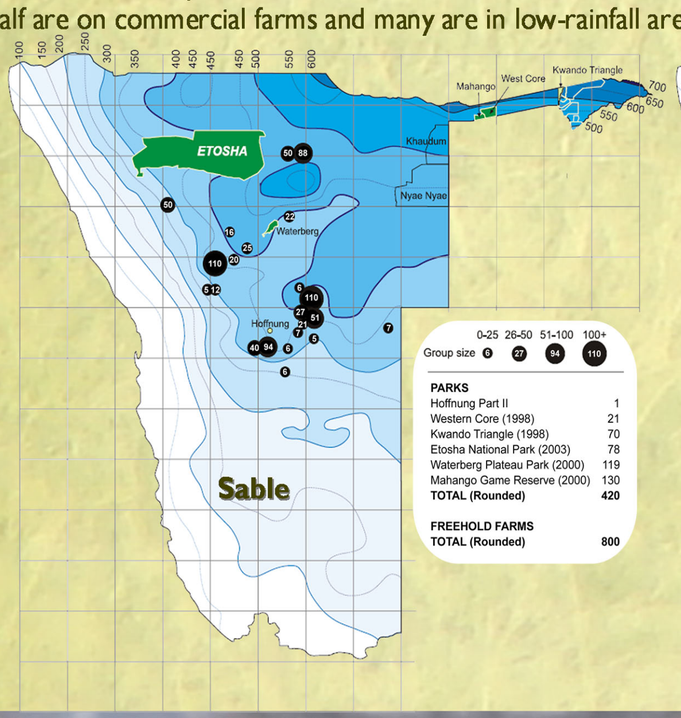
Price per animal in mixed breeding groups

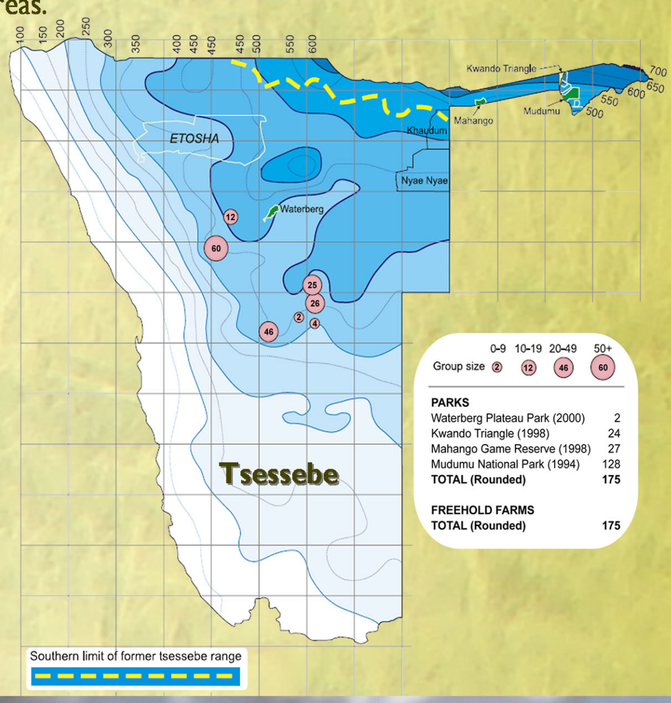
Roan	Sable	Tsessebe
All are predominantly grazers		
Include a small amount of browse in their dry season diet		Not known to browse
All are water dependent		
Usually found < 5 km of water.	Usually found < 3 km of water.	Usually found < 1 km of water.
All occur primarily in savanna woodlands		
Open areas of medium to tall grasses. Tolerant of low bush growth up to 1.5 m provided it is open and patchy. Well adapted to grass heights up to 1.5 m.	Dependent on cover. Prefer open woodlands adjacent to vleis or grassland with medium to high stands of grass.	Optimum habitats are open stands of healthy grasslands with easily accessible shelter in form of trees or shrubs either as an ecotone or scattered amongst the grassland.
Avoid closed canopy woodland, thick stands of bush 1.5 - 4 m high and short grass areas.	Avoid dense woodland and short grasslands especially when overused by other species.	Avoid habitats where plant height exceeds 2 m.
Spend little time on burns even when a green flush occurs; prefer taller grass stands.	Not particularly attracted to burns.	Prefer burnt to unburnt areas. Readily concentrate on burned areas when a green flush appears.
All are highly selective feeders. Characterised by narrow muzzles with which they select particular clusters of leaves from grass swards.		
Select climax green grass species with high nutrient content or high leaf : stem ratio. Delicate feeders, selecting grass parts above 8 cm. At any given locality, 2 - 3 grass species make up the bulk of the diet.	Prefer medium height green grasses and have a narrow range of acceptable grass species.	Strong predilection for young green grass shoots up to 60 cm tall. Appear to select for stage of grass growth rather than species *per se*.
All are sensitive to habitat changes and have critical habitat requirements. Physiognomic changes to vegetation structure can have a major impact on all three species. Loss of canopy trees - resulting in changes to species composition and structure of grass swards - and trampling effects of elephants are potentially negative influences. Overutilisation, inter-specific competition and trampling of grass by cattle and other large mammals also renders habitats less favourable for roan, sable and tsessebe.		
Sensitive to any increase in the density of woody plants or reduction in grass cover.	Unable to cope with superabundant grass in good rainfall years: under-utilised grass swards result in favourable conditions for ticks.	Structural changes to habitats which obstruct movement, affect access to water, visibility and cover all have a major impact on tsessebe.
Due to these factors, the distribution of all three species is patchy and discontinuous across their range.		

NUMBERS AND DISTRIBUTION

At the turn of the century roan, sable and tsessebe were relatively abundant and widely distributed in areas of Namibia with mean annual rainfall over 400 mm. Today the population sizes of all three species are a matter for concern. At best there are about 800 roan, 1,200 sable and 350 tsessebe. More than half are on commercial farms and many are in low-rainfall areas.







POPULATION DYNAMICS

Under average conditions populations can increase at about 14% per annum if the population is below carrying capacity. Rainfall affects adult and juvenile mortality; rain in the late dry season appears to be critical, affecting the animals' condition, survival rate, late pregnancy and early lactation.

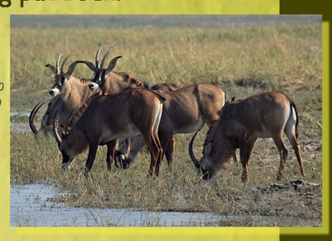
Seasonal breeding	Roan breed throughout the year; sable give birth to calves January – March; tsessebe October – November
Gestation	All 8 – 9 months
Age at first conception	Almost all females conceive after about two years
Age at first parturition	Almost all females produce calves in their third year of life
Fecundity (adults)	All adult females are capable of producing a calf every year; fecundity of roan may be slightly >1 in favourable conditions
Longevity	Few animals survive beyond 12 years of age in the wild
Breeding longevity	Females are probably capable of breeding throughout their adult life although fecundity may be reduced in the last few years
Mortality (juveniles)	About 25% in average years
Mortality (yearlings)	Females about 5%; males generally higher
Mortality (adult males)	Around 10%, increasing in the last few years of life
Mortality (adult females)	Less than 5% except in the last few years of life
Adult sex ratio (F : M)	About 2:1 depending on hunting regimes and predation

Factors which play a major role in limiting populations include reliability of perennial water, grass sward and cover conditions, excessive elephant populations, human encroachment on range, veterinary fences and annual fires.

TRANSBOUNDARY CO-OPERATION

Namibia's primary aim is to increase the numbers of these three species and avoid fragmentation of the populations. Maintaining spatial linkages with Botswana will be important in achieving this. Other potential areas of collaboration are:

- Ensuring compatible forms of land use on either side of the international boundary;
- Expanding the available range for populations of roan, sable and tsessebe;
- Mitigating veterinary disease control measures for wildlife viability;
- Co-operating on law enforcement directed at illegal hunting;
- Managing the interaction between roan, sable, tsessebe and other species, particularly elephants;
- Controlling fire;
- Collaborating on aerial surveys;
- Collaborating in setting hunting quotas and monitoring the sustainability of hunting;
- Maintaining liaison between wildlife departments and communities managing wildlife on either side of the international border; and
- Initiating a 'seed bank' for rare species production by identifying a 'safe and secure' holding paddock.



Poster designed by Annie Symonds and Alice Jarvis.

Photos: S. Linder, K. Landen, A. Symonds, IRDNC, treknature.com

Information in this poster is based on a background study and management plan by Rowan Martin for the Ministry of Environment and Tourism, facilitated by the Namibia Nature Foundation.

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