Background information and species management guidelines:

ELEPHANT

NAMIBIA'S VISION

To expand the elephant range and enhance the rôle of wildlife as a land use by promoting linkages and co-management between State Protected Areas and conservancies on communal and private land.

GOAL

To carry the maximum number of elephants in Namibia consistent with the conservation of biological diversity and the wishes of stakeholders with elephant on their land.

OBJECTIVES

SOCIAL	ECOLOGICAL	ECONOMIC
1. Reduce conflict between elephants and people	1. Increase range available to elephants	Achieve the full economic potential of elephants
2. Ensure that elephants are a benefit to people	2. Conserve biodiversity and ensure that elephant densities do not exceed carrying capacity	

STRATEGY

- Devolve rights to manage elephants to primary stakeholders
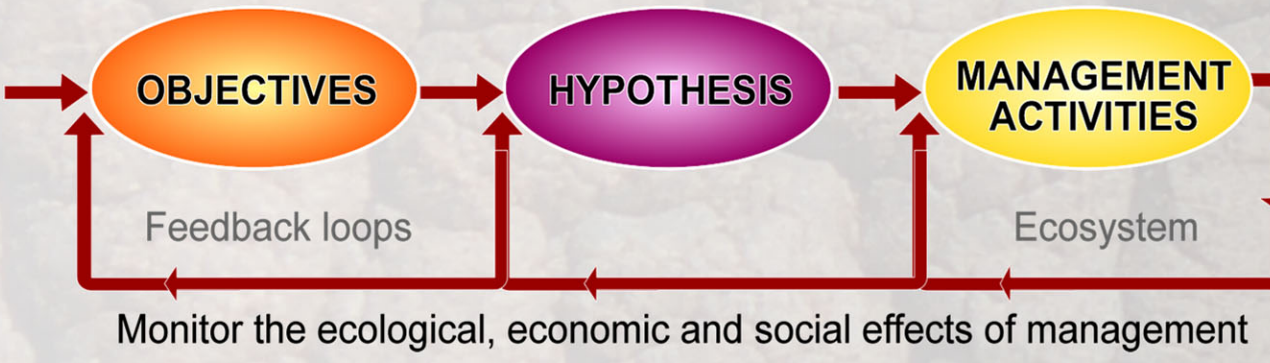- Address veterinary control fences
- Address CITES constraints on trade
- State and primary stakeholders form co-management institutions
- Monitor elephant numbers and woodland condition
- Implement co-management decisions using adaptive management
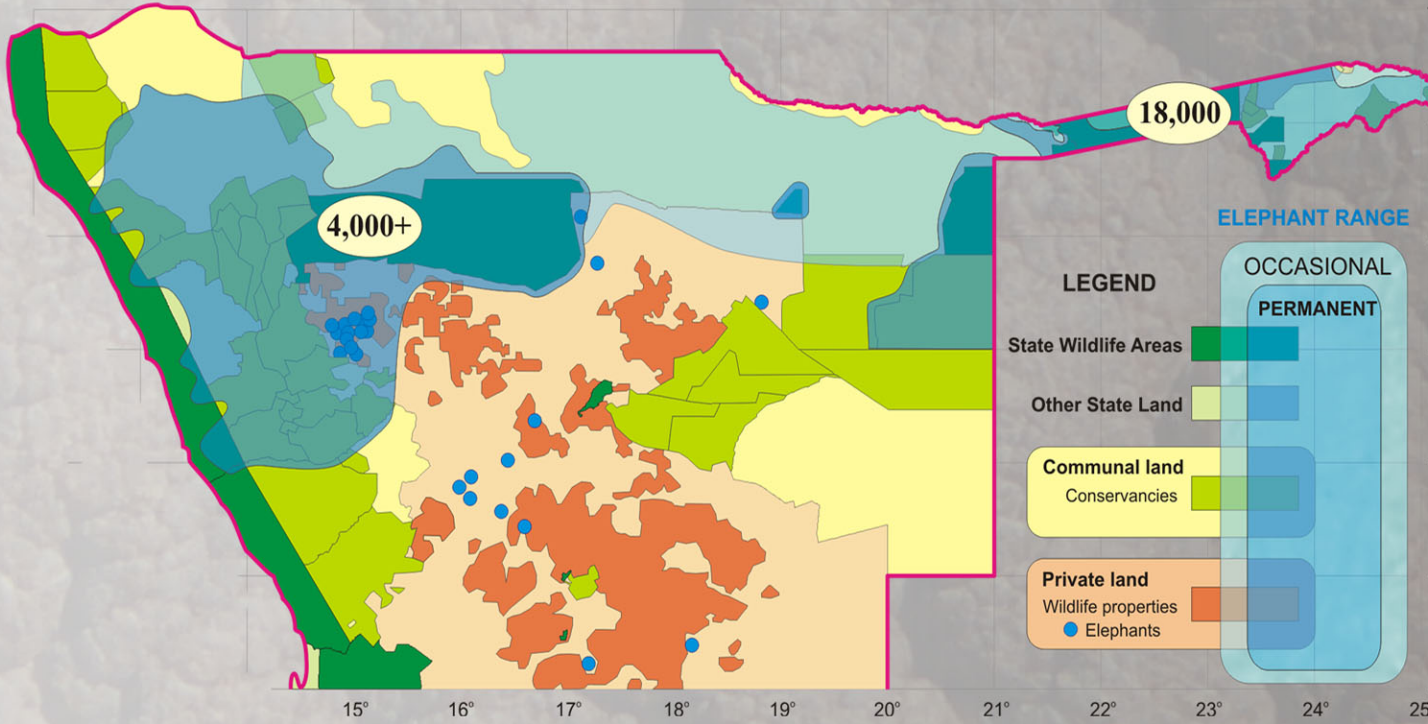
ADAPTIVE MANAGEMENT

OBJECTIVES → HYPOTHESIS → MANAGEMENT ACTIVITIES

Feedback loops — Ecosystem

Monitor the ecological, economic and social effects of management

The Imperial Mammoth (*Mammuthus imperator*)
Pleistocene – 1.8 million years ago to recent times

Trilophodon
24 - 1.8 million years

Platybelodon
12 - 5 million years

Savanna elephant

Moeritherium
34 - 15 million years

From: The New Encyclopedia of Mammals.
Ed. D. Macdonald, Oxford University Press 2001

Typical measurements	Males	Females
Maximum body weight (kg)	7,000	4,000
Average adult body weight (kg)	5,000	3,500
Age to reach full adult weight (years)	30	25
Shoulder height for adults (m)	3.3	2.7
Weight of a calf at birth (kg)	100	

Pointed forehead
Not as tall as adult male
Level back and belly
Slender tusks
Paler skin behind forelegs
MAMMARY GLANDS
Shape of vulva
♀

Sloping forehead
Greater height
Sloping back
Thicker tusks
Sloping belly
Shape of prepuce
♂

Longevity	Elephants are usually assumed to live to 60 years, but it is more likely that few survive beyond 50 years
Gestation period	22 months
Seasonal breeding	Most populations have a breeding peak during the rains but births may occur in any month of the year
Age at first conception	The median age is about 10 years but in good conditions some cows may conceive as early as 8 years old
Breeding lifetime	Cows continue breeding throughout their lives
Fecundity	Cows can be expected to produce a calf every 4 years
Age-specific mortality	Mortality is about 10% for juveniles, decreasing to about 0.5% at 3 years old and remaining at 0.5% up to 45 years. Mortality then increases progressively as animals approach old age. Mortality in 20-25 year old males is higher than in females.
Sex ratio	Close to 1:1 in an unexploited population
Density dependence	Under environmental stress, mortality increases affecting juveniles more than adults, age at first parturition may be delayed until as late as 19 years and fecundity may decrease to one calf every 6 years.

With these parameters and a stable age structure, populations will increase at 4.5% per year - doubling in about 16 years.
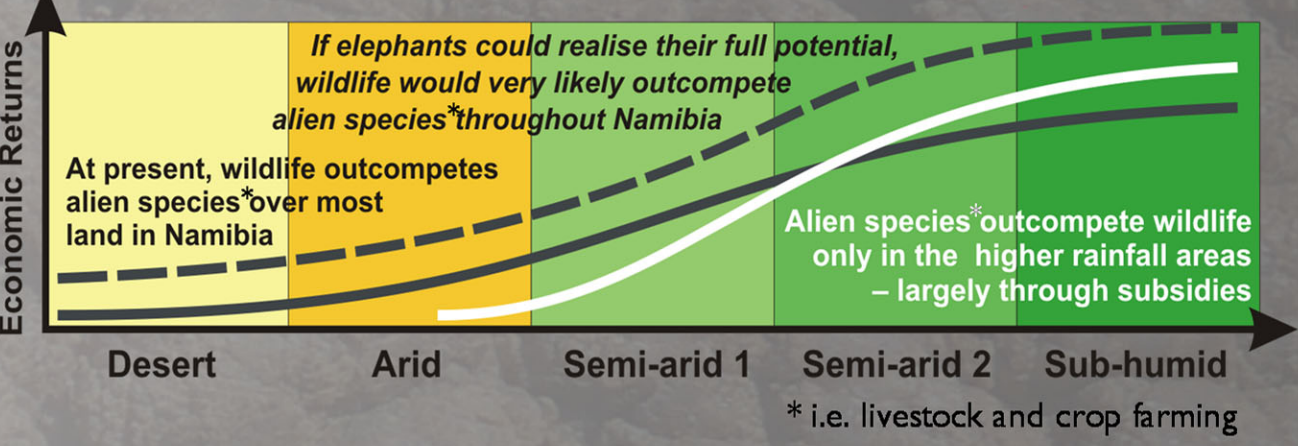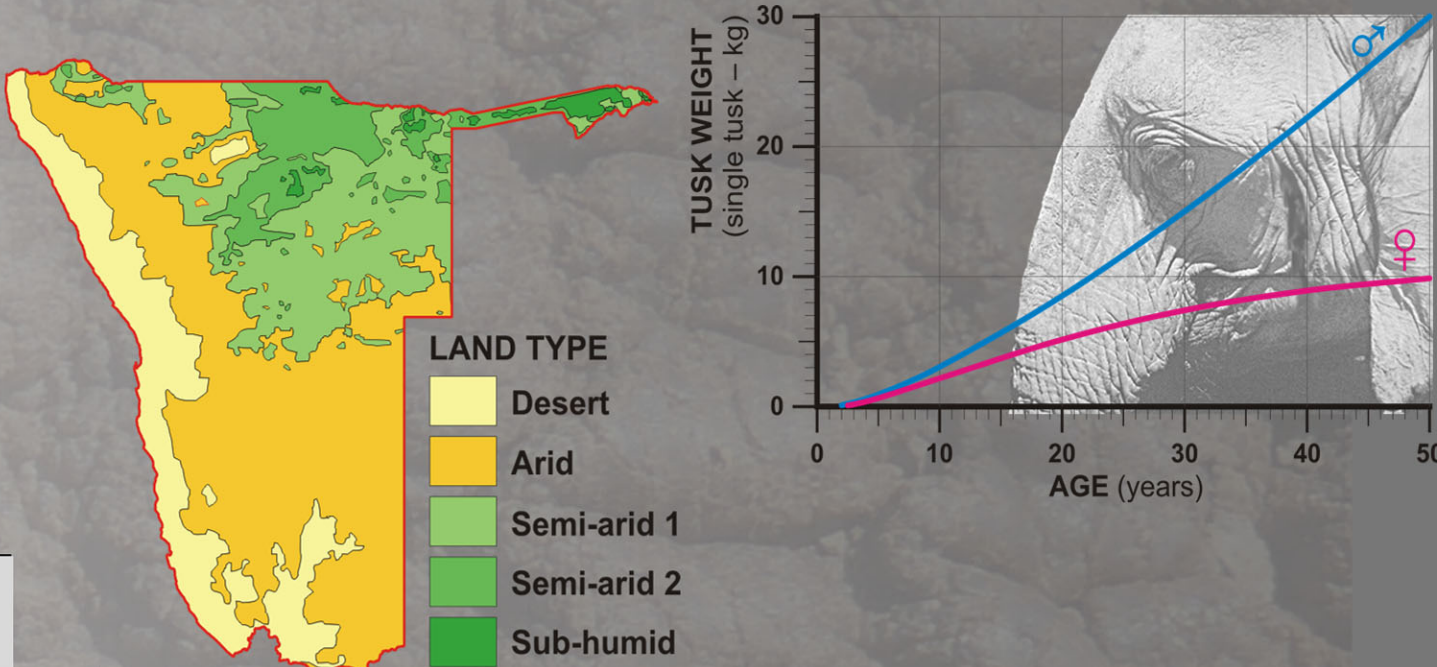
NUMBERS AND DISTRIBUTION

The Namibian elephant population suffered a massive decline in the late 19th century through extensive hunting for ivory. The last herd in the Etosha pan area was exterminated in 1881 and by 1934 elephants were limited to the Kaokoveld and the Caprivi. Elephants re-appeared in Etosha in the 1950s.

The north-western population is increasing at about 3.3% per year and is now over 4,000 animals. The elephants in Etosha (2,500) are part of this population and move in and out of the National Park. The north-eastern population now exceeds 18,000. The recent increases are caused by immigration from northern Botswana and north-western Zimbabwe.

LEGEND
State Wildlife Areas
Other State Land
Communal land Conservancies
Private land Wildlife properties ● Elephants
ELEPHANT RANGE
OCCASIONAL
PERMANENT

They are having a marked impact on habitats, particularly in the north-east. The relationship between elephants and their habitats is cyclical: elephant numbers increase causing trees to decline; elephant populations then crash, allowing tree numbers to recover. There is no simple recipe for management which will maintain biological diversity and, simultaneously, large elephant populations.

ECONOMIC SIGNIFICANCE

More than half the potential income from elephants in Namibia could come from ivory which, in theory, Namibia should be able to trade legally on international markets. However, the classification of the elephant as a Specially Protected Species in Namibia makes it unlikely that the real value can be realised.

The potential economic contribution of elephants to sustainable development in Namibia is high through ecotourism, trophy hunting, culling and comprehensive management.

LAND TYPE
Desert
Arid
Semi-arid 1
Semi-arid 2
Sub-humid

TUSK WEIGHT (single tusk – kg)
AGE (years)

If elephants could realise their full potential, wildlife would very likely outcompete alien species throughout Namibia

At present, wildlife outcompetes alien species over most land in Namibia

Alien species outcompete wildlife only in the higher rainfall areas – largely through subsidies

Economic Returns
Desert — Arid — Semi-arid 1 — Semi-arid 2 — Sub-humid
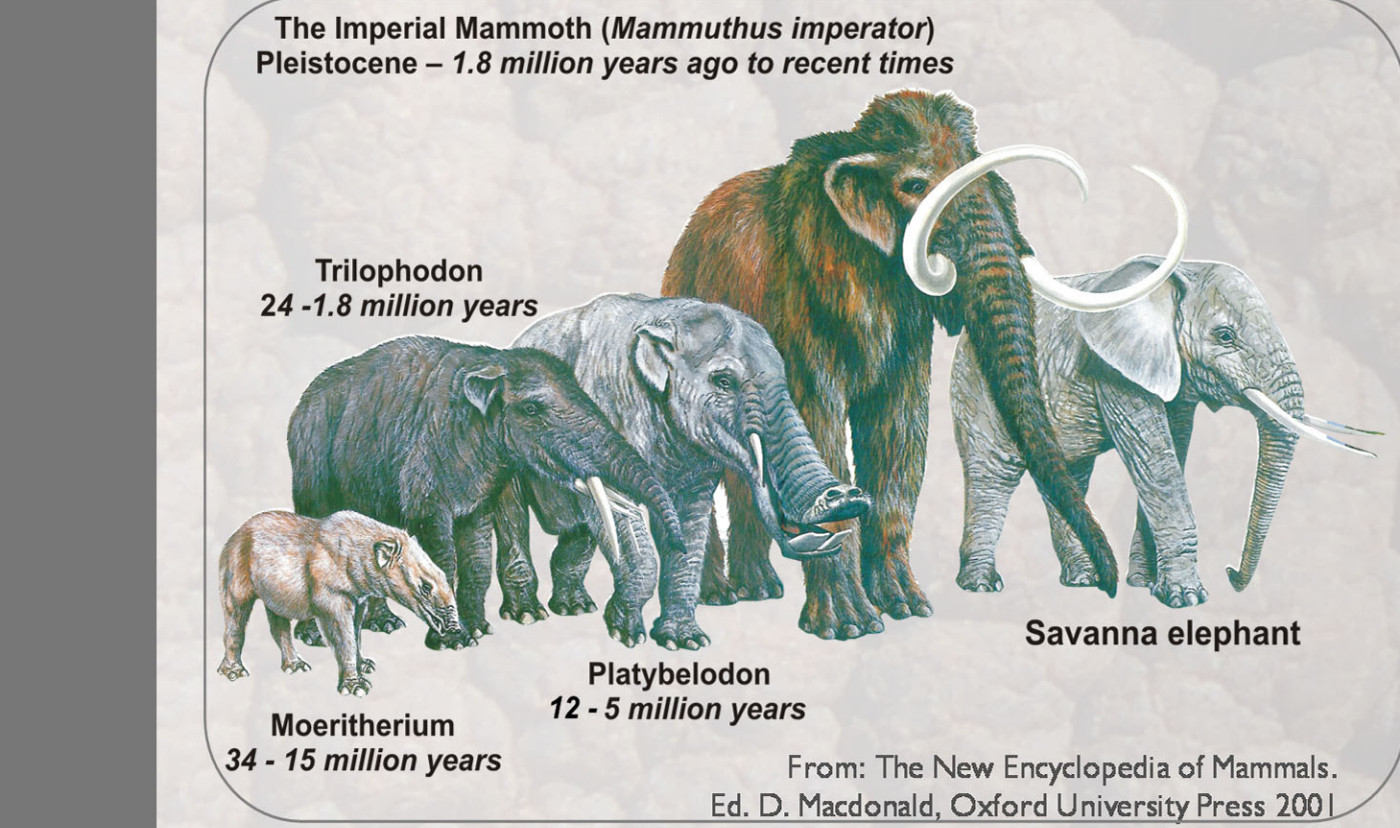* i.e. livestock and crop farming

The highest valued land uses over most of Namibia are those based on management of natural resources. However, policy constraints place wildlife at a disadvantage compared to farming systems based on exotic crop and livestock species. If subsidies were removed from the domestic livestock industry and elephants were able to play their full economic rôle in land use systems, large additional areas of land would probably be converted to wildlife management.
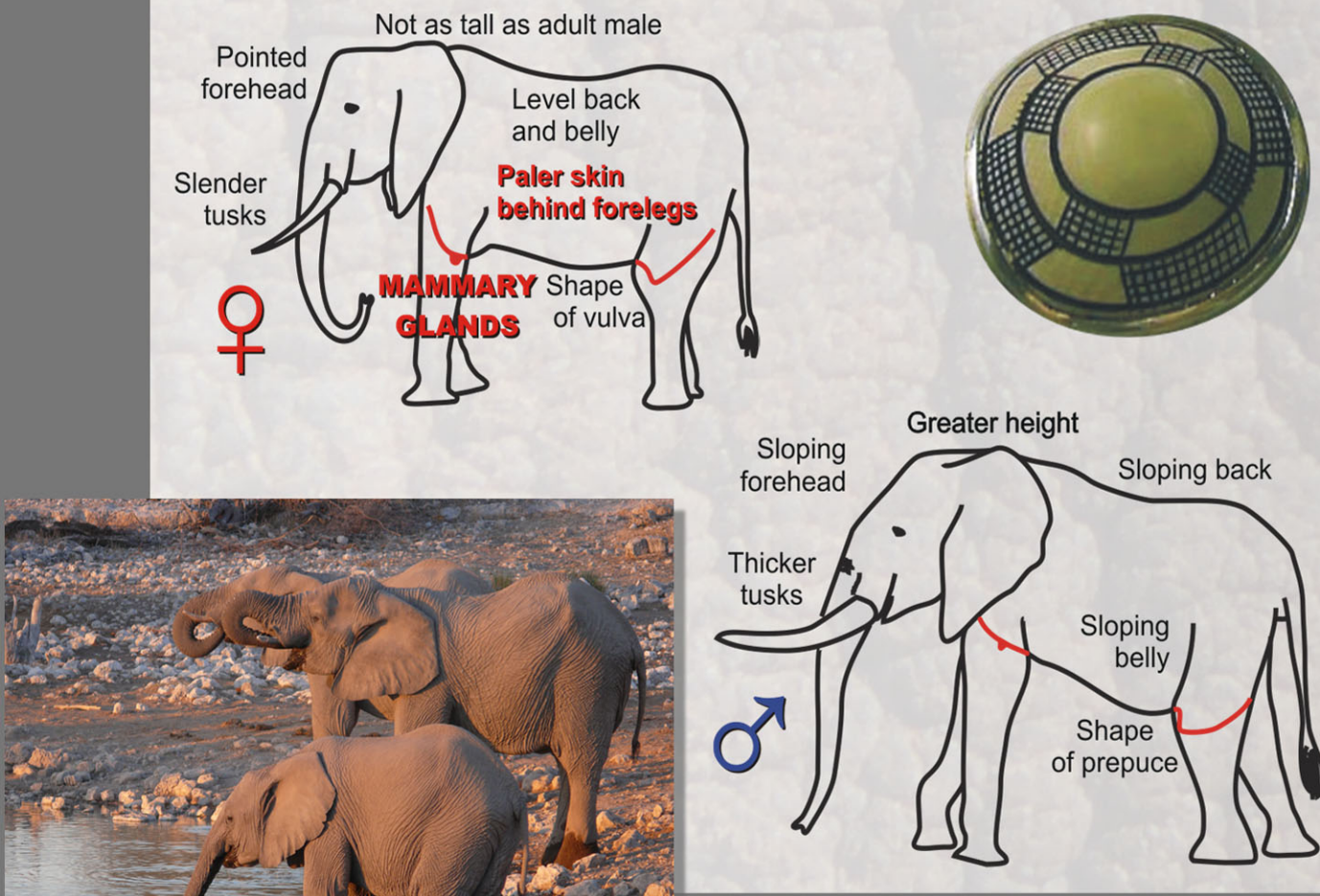
RECOMMENDED MANAGEMENT

- In the north-west, the elephant population can be allowed to continue expanding its present range and management can be limited to trophy hunting.
- In the north-east the density should not exceed 0.5/km².
- Management should be aimed at reducing problem animal control and illegal hunting.
- It would be highly desirable for the countries sharing the elephant range to develop a common management approach for elephants. Without such an agreement, Namibia must manage its elephants in the best interests of the Namibian people and its concerns for the conservation of biological diversity.