DISEASES OF SPECIAL IMPORTANCE TO THE WILDLIFE INDUSTRY IN NAMIBIA

(Ulf Tubbesing)

WHO AM I TO GIVE THIS LECTURE?

Historically different attitudes towards managing disease in Livestock vs Wildlife

In 1950's *Tryp. brucei rhodesiense* was ID in one Bushbuck in Rhodesia

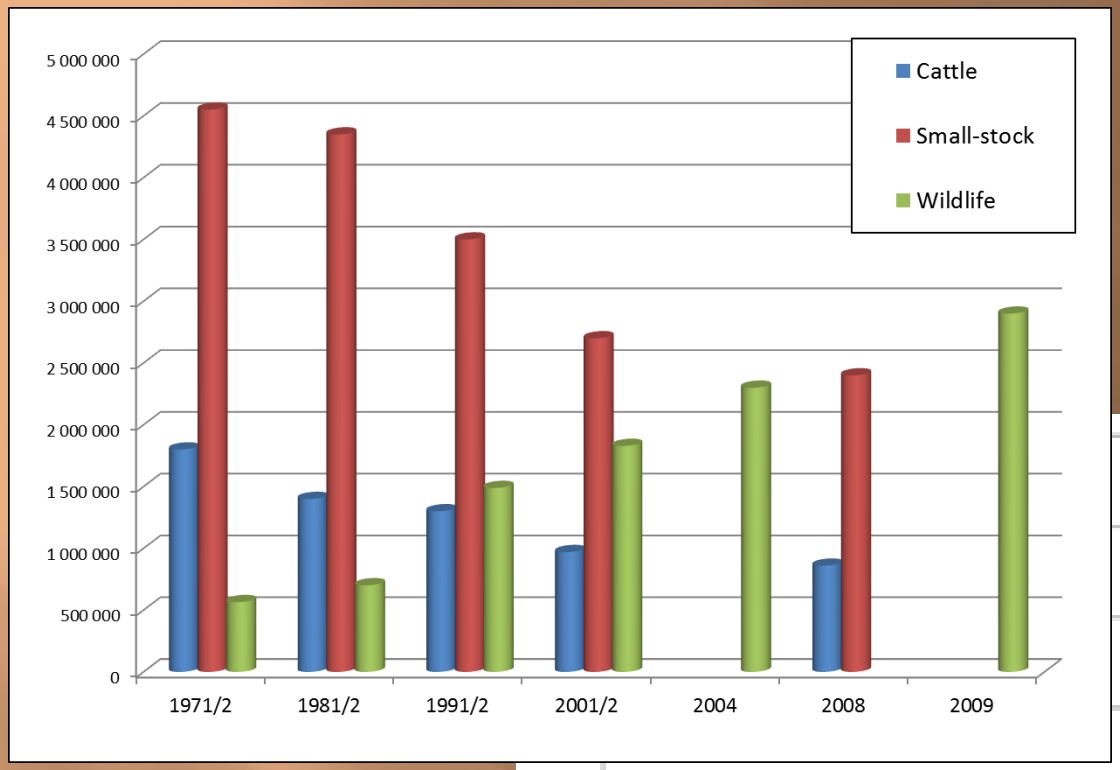
➔ assumed reservoir for human sleeping sickness

➔ Bushbuck culling operation

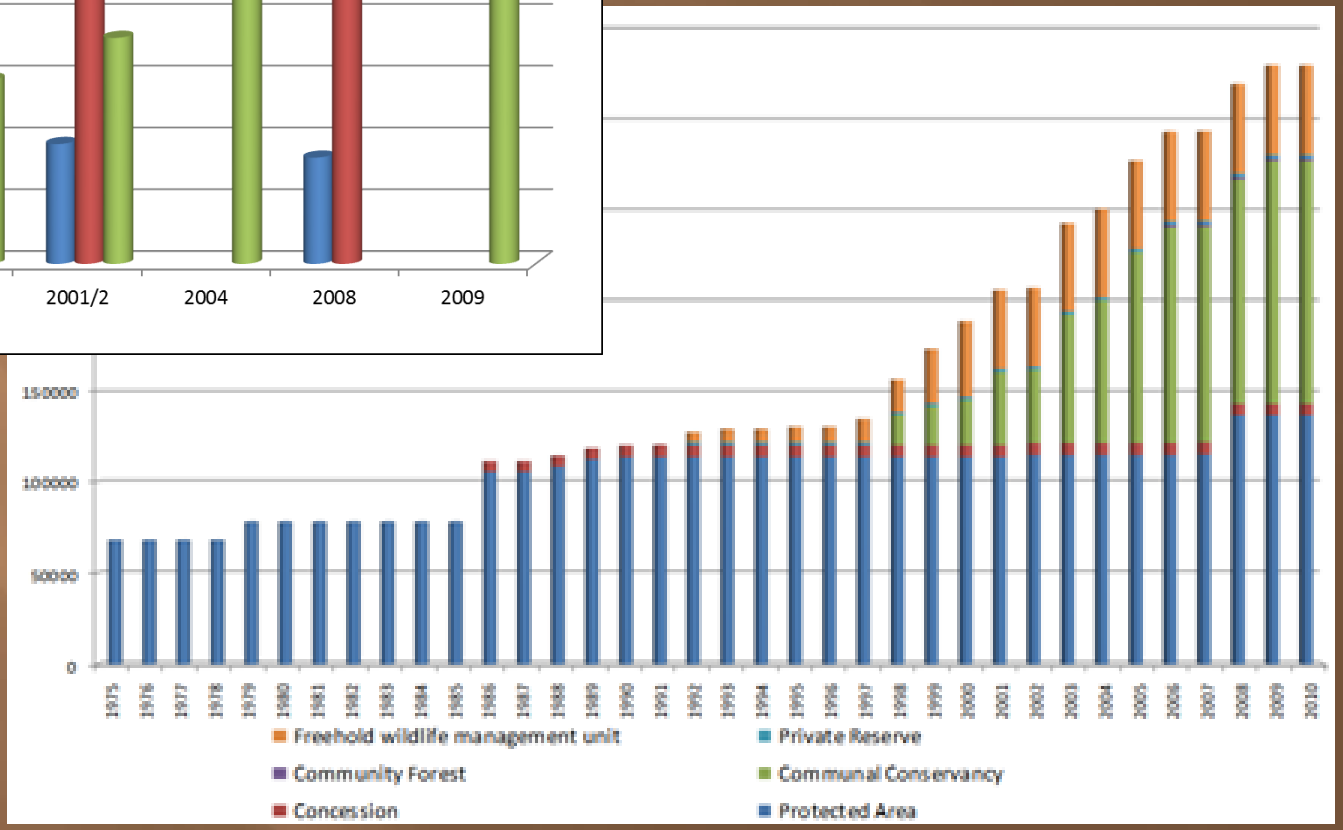
➔ In 1966 Cattle were finally ID as reservoir hosts!! Of course no culling!!

MUCH HAS CHANGED SINCE THE EARLY DAYS

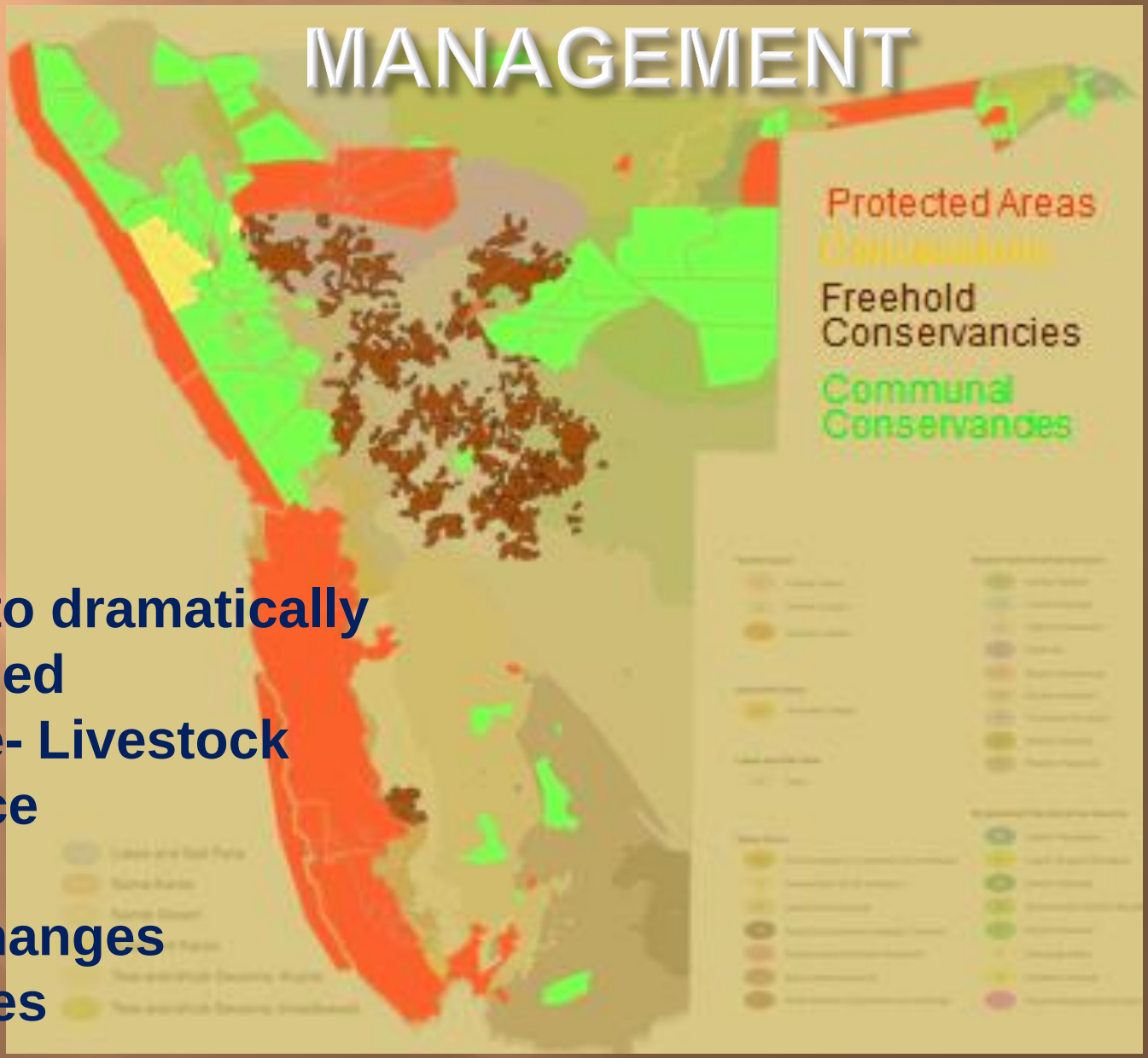
TRENDS IN LIVESTOCK AND WILDLIFE NUMBERS IN NAMIBIA



AREA IN KM^2 UNDER CONSERVATION IN NAMIBIA



AREAS OF WILDLIFE MANAGEMENT



Leads to dramatically increased Wildlife- Livestock Interface
BUT
Also changes Attitudes

THE IMPACT OF DISEASE & PARASITES ON GAME RANCHING

- COMPLICATE CONSERVATION GOALS
- REDUCE POTENTIAL HARVEST
- WILDLIFE-LIVESTOCK INTERFACE but INFECTION A TWO WAY ISSUE!!
- ZOONOTIC POTENTIAL

IMPORTANT FROM A GAME RANCHING PERSPECTIVE

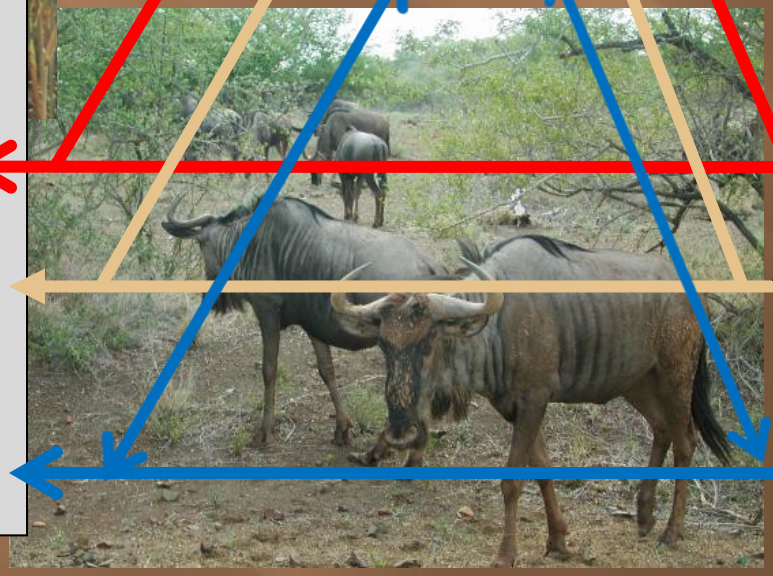
THE ECOLOGICAL TRIANGLE

HOST

Mammals

Cattle

Cattle, etc.



DISEASE

Rabies

Bov. Malignant Catarrh

Trypanosomiasis

VECTOR

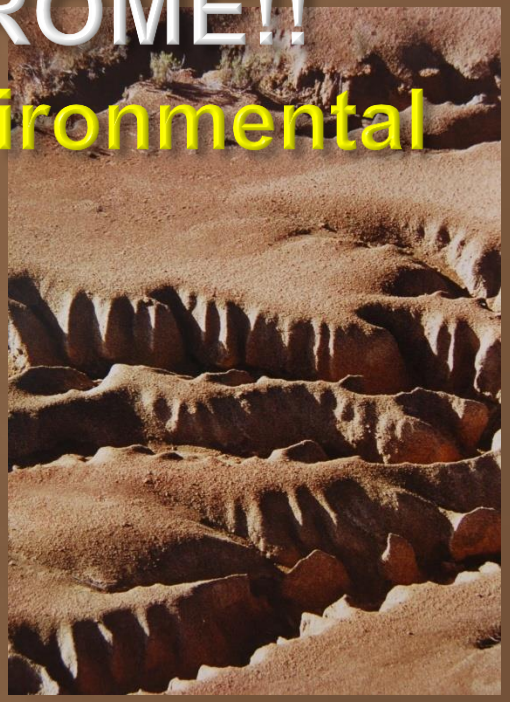
Jackal

Wildebeest & Insect??

Tsetse fly

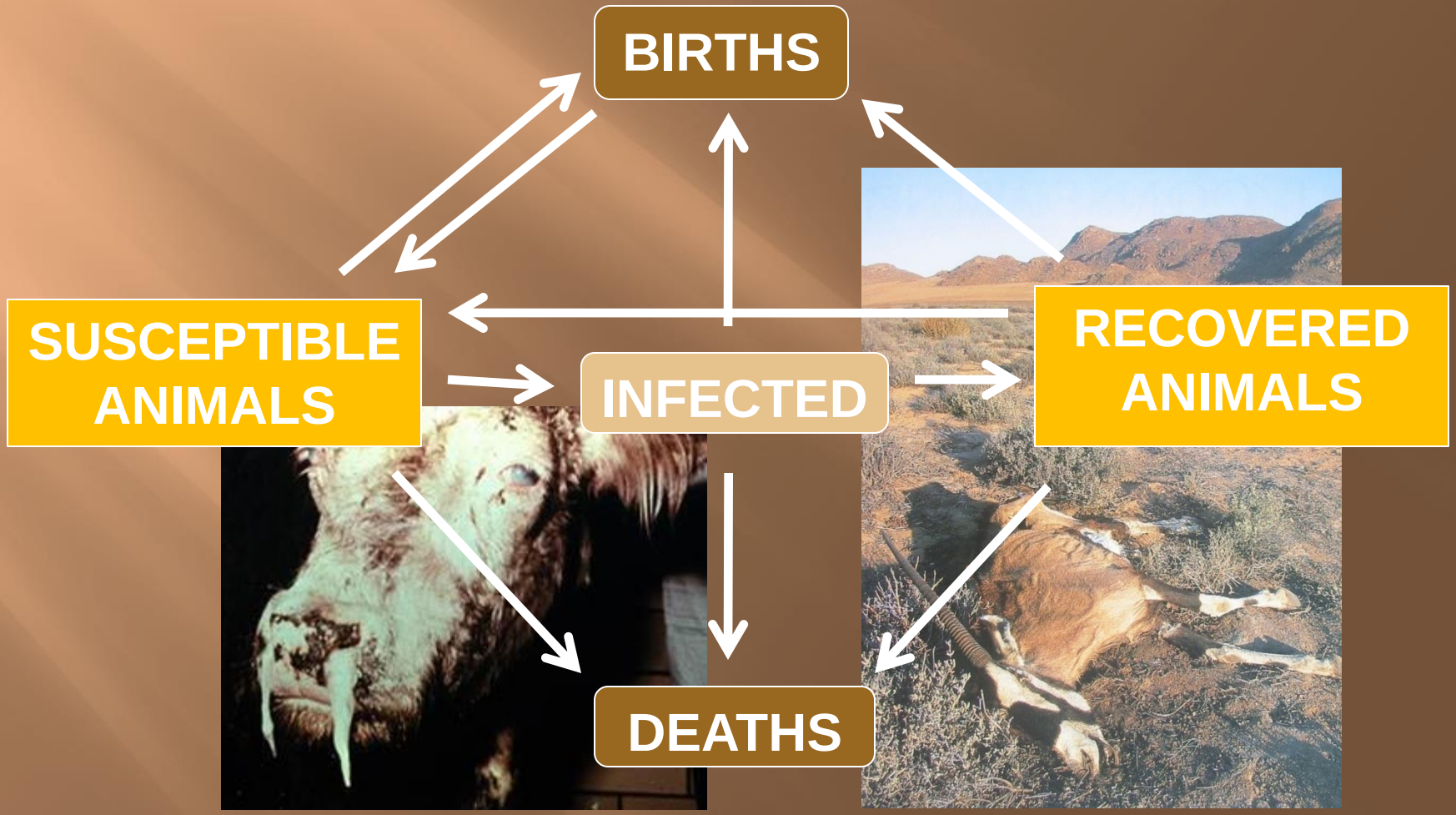
SICK HABITAT SYNDROME!!

Unnatural multi-factorial environmental health problems:

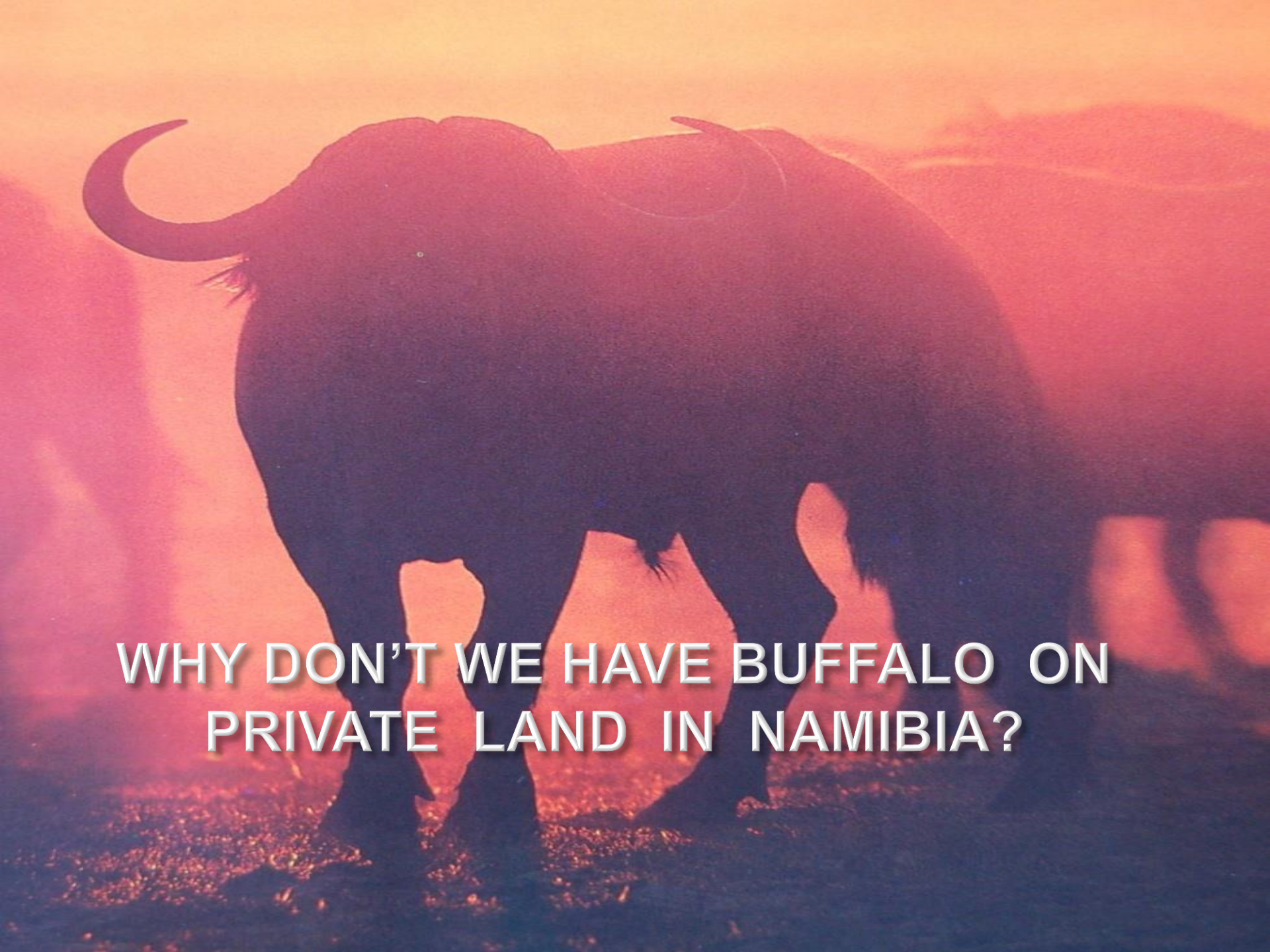


- FENCING –FRAGMENTED LAND
- OVERSTOCKING
- WATER POINTS – POOR PLANNING
- REDUCED RIVER FLOW..
- BAD BURNING PRACTICE
- EXCESSIVE DEBUSHING
- EXCAVATIONS, EROSION etc.

PARASITES & DISEASE ARE REGULATOR OF POPULATIONS



NOW TO THE DISEASES!


WHY DON'T WE HAVE BUFFALO ON
PRIVATE LAND IN NAMIBIA?

1 ST RESON FOR NOT HAVING BUFFALO ON PRIVATE LAND IN NAMIBIA!

FOOT- AND-MOUTH DISEASE

2 ND RESON FOR NOT HAVING BUFFALO ON PRIVATE LAND IN NAMIBIA!

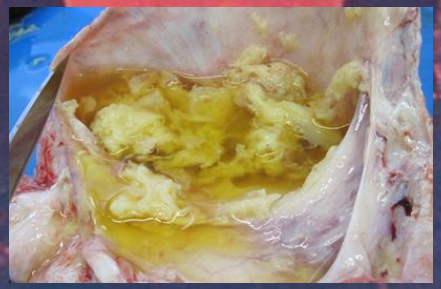
BOVINE TUBERCULOSIS

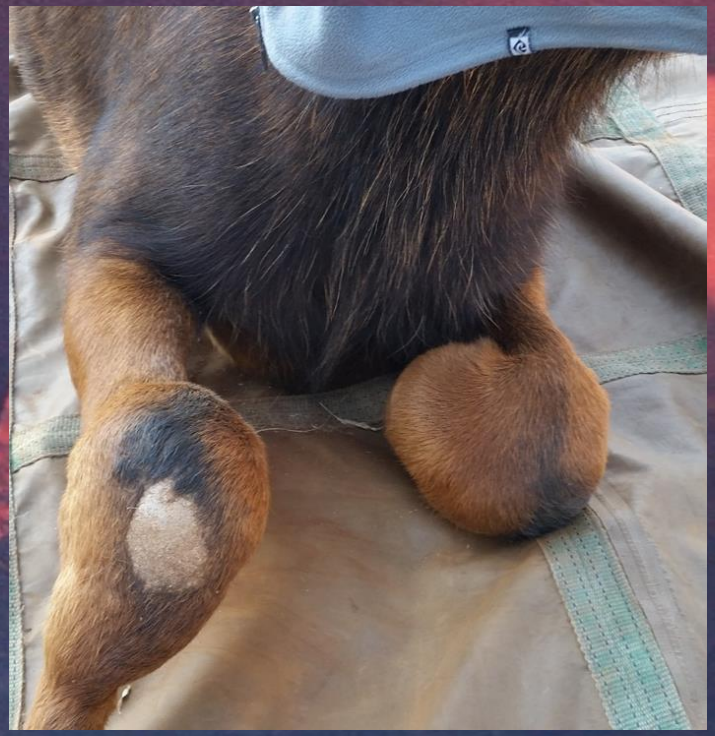
Last confirmed case in Namibia +/- 1995 in cattle, “never in wildlife?”

3RD RESON FOR NOT HAVING BUFFALO ON PRIVATE LAND IN NAMIBIA!

BRUCELLOSIS

In Namibia very low incidence of both *B. bovis* and *B. melitensis* in cattle and small stock.

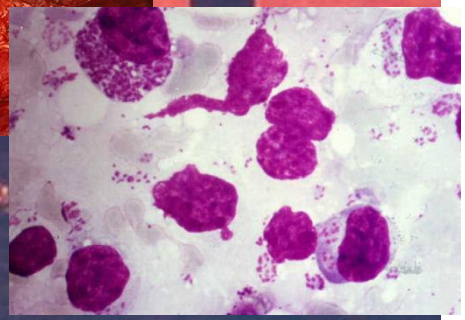


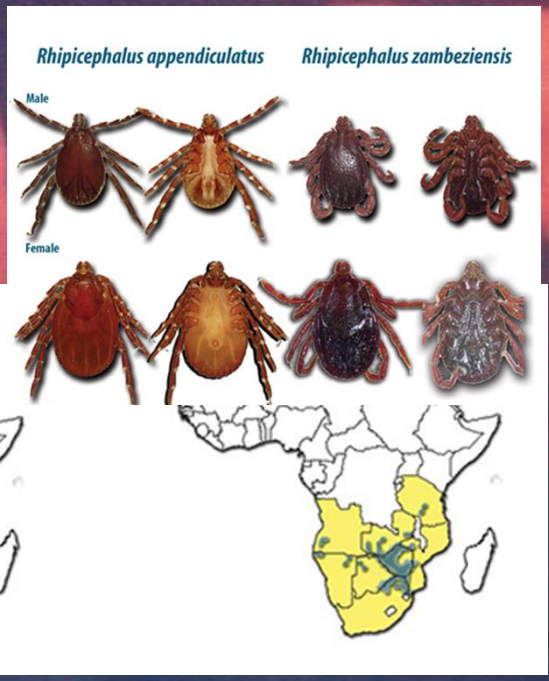


4 RESONS FOR NOT HAVING BUFFALO ON PRIVATE LAND IN NAMIBIA!

CORRIDOR DISEASE

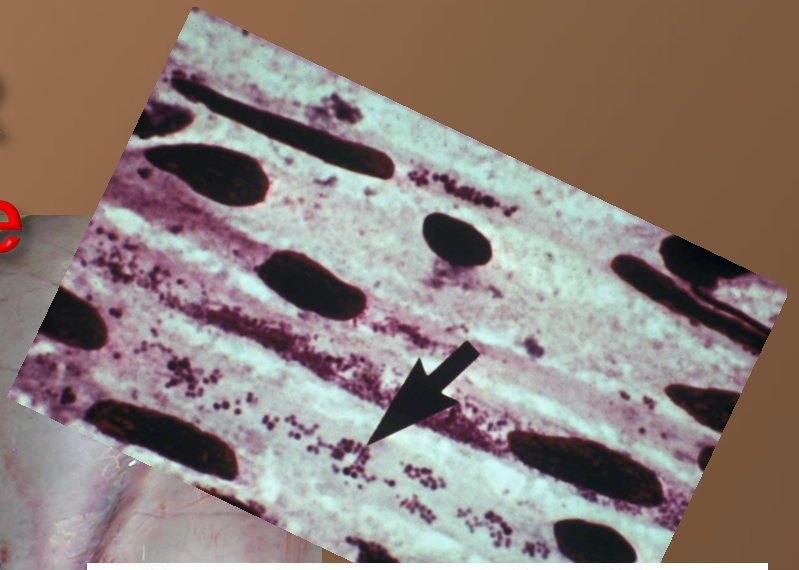
Not in Namibia

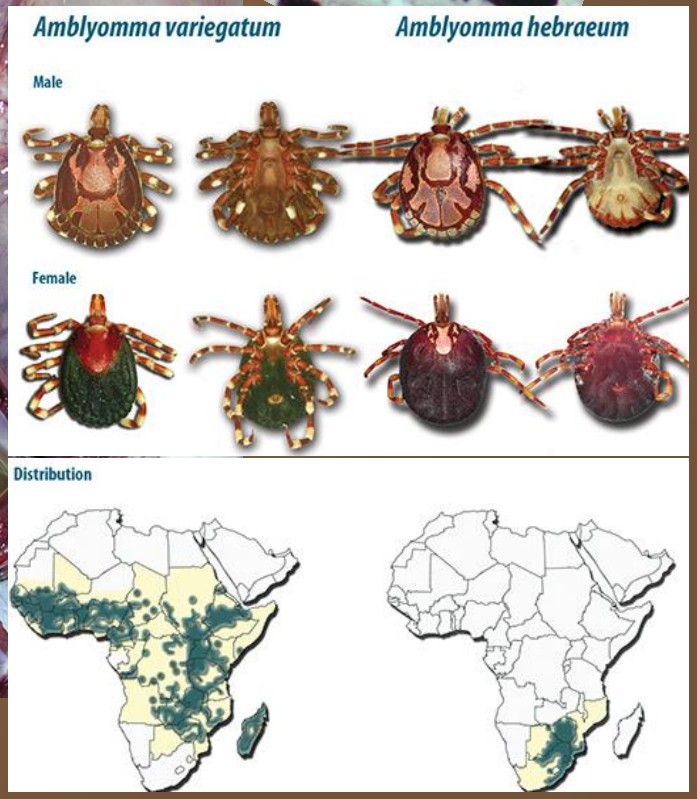




HEART WATER

Watch out, here it comes!





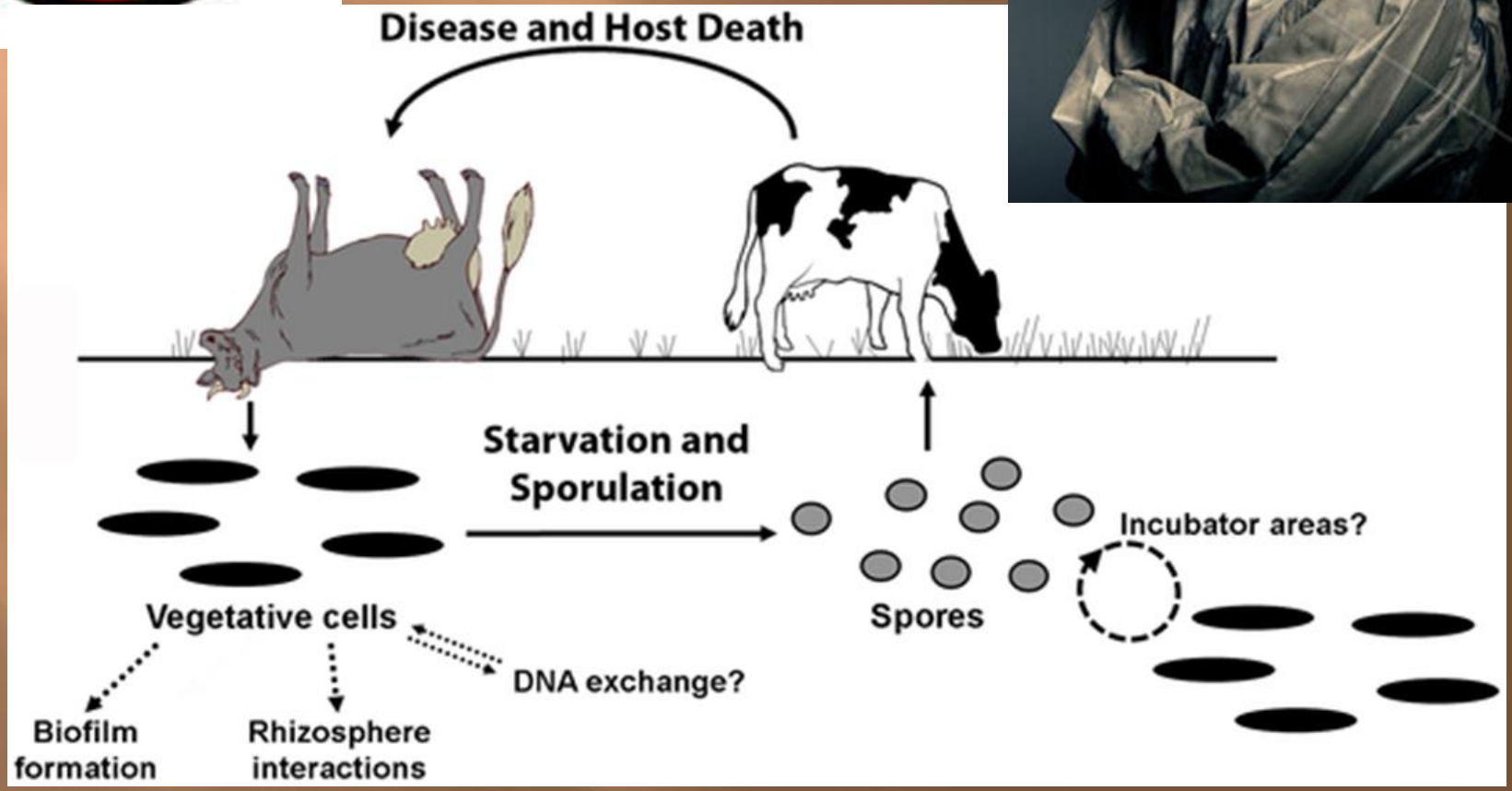
BOVINE MALIGNANT CATHARR FEVER

X

DOUBLE FENCE "REGULATION"

ANTHRAX

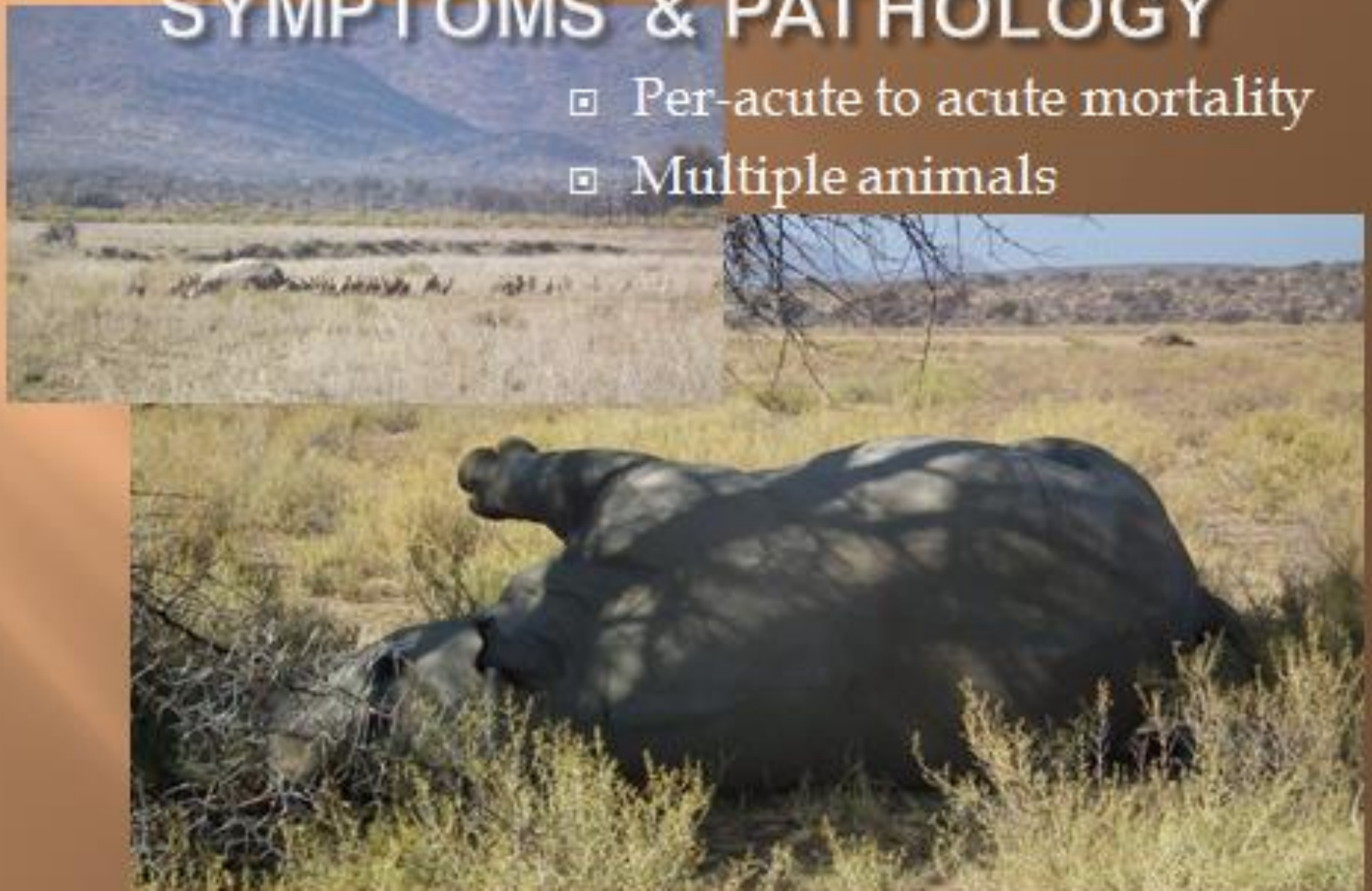
Bacillus anthracis



ANTHRAX EPIDEMIOLOGY

SYMPTOMS & PATHOLOGY

- Per-acute to acute mortality
- Multiple animals



BLEEDING & EARLY AUTOLYSIS POOR RIGOR

ANTHRAX IN CARNIVORES

DIAGNOSIS: BLOOD SMEAR!

- Mfayden/Giemsa
- Bact. count is spp dependent
- Esp. in older carcass often false neg.

RABIES esp in Kudu and Eland

AFRICAN SWINE FEVER

- IMPORTANCE - Economic
- EPIDEMIOLOGY – Wild Pig – Tick – Domestic pig
- SYMPTOMS – Bloody GE, Cyanosis, Death
- PM – Widespread hemorrhages
- DIAGNOSIS – Lab tests
- TREATMENT – None, Fatal
- PREVENTION – Cull
  - No Vaccine
  - Vector control/ Fencing

AFRICAN HORSE SICKNESS

- EPIDEMIOLOGY – *Culicoide*
  Seasonal, Meat may be infecti

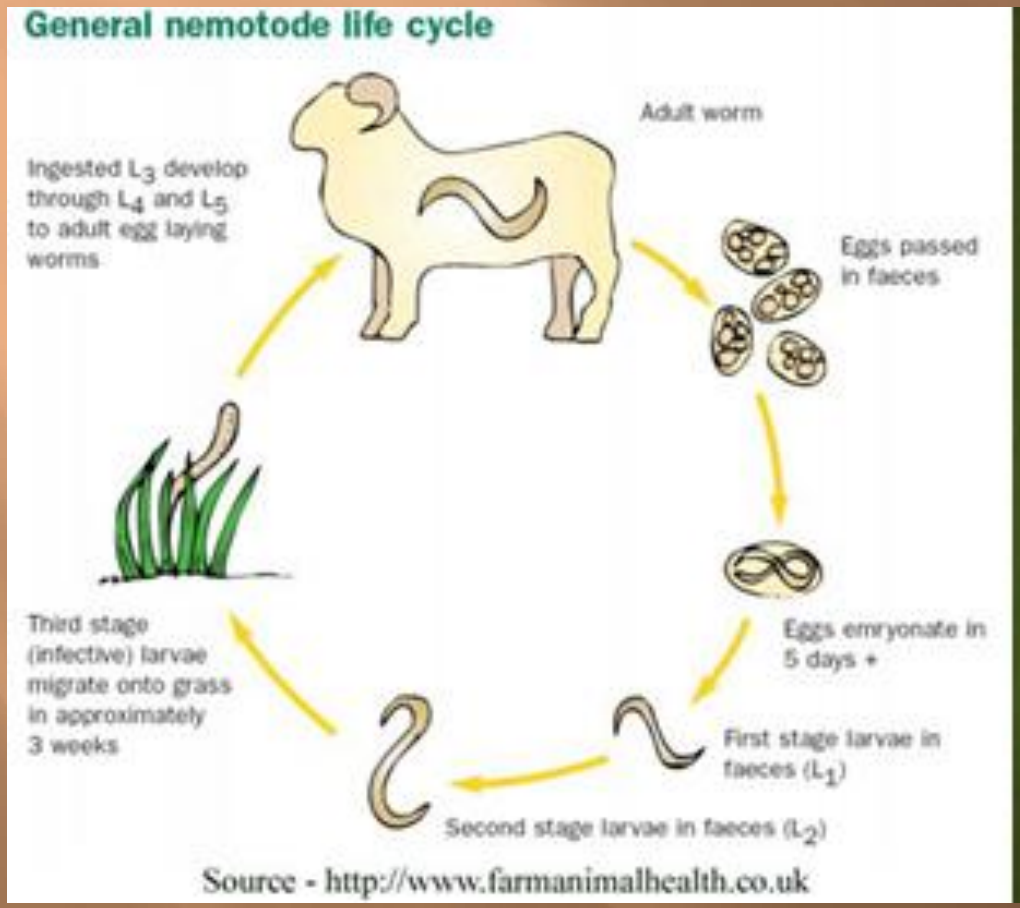
Importance of Zebra?

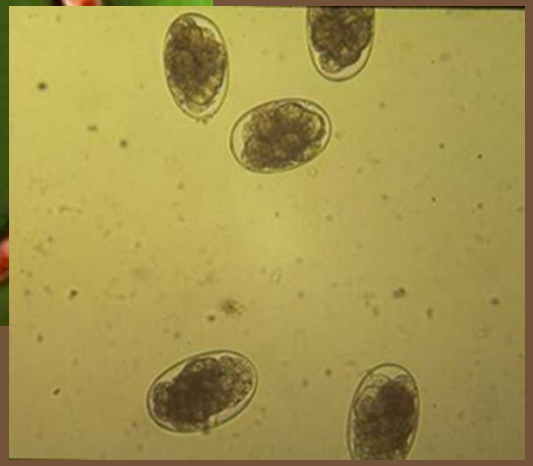
- SYMPTOMS – 3 Forms
- PM – Depending on Form
- DIAGNOSIS
- TREATMENT
- PREVENTION – Vaccinate

- Vector control

ENDO-PARASITES (WORMS)

A disease of intensification





BODY CONDITION SCORE IN GAME

MANAGING THE HOST

- Super spreaders (the 80:20 rule)
- Diligent testing & Records!
- Select for Physical traits & Resistance!!
- Genetics: Resistance vs Resilience
- Resistance/Immunity:
  - Takes time to develop
  - Wanes with debilitation (Sx, nutrition ..
  - Needs "booster" – REFUGIA!!

NUTRITIONAL MANAGEMENT

- Good quality food = good immunity
- Hygiene (food and water)
- Sufficient feeding space!!
- Not off the ground!
- Move feeding spots

MANAGING THE ENVIRONMENT

- Clean pastures??
- Pasture rest and rotation
- Multi-species grazing
- Alternative forage?
- Healthy soil!

MANAGING THE PARASITE

- ANTHELMINTIC RESISTANCE – GROWING GLOBAL PROBLEM
- CAUSE? INCORRECT USE – OVER USED, UNDER DOSED
- CROSS RESISTANCE BETWEEN GROUPS

PARASITE CONTROL POINTS

- Should be in consultation with veterinarian
- Test for Anthelmintic resistance
- Quarantine Rx to avoid new worm introductions
- Treat only when necessary (FEC; Sick; Season)
- Maintain Refugia!! TST vs SPT
- Ensure proper drug administration
  - Dosing technique
  - In food/ Water?
  - Drop out darts?

DOG AND CAT DISEASES

- CANINE DSTEMPER
- CANINE PARVO ENTERITIS
- FELINE PANLEUCOPENIA
- FELINE SNUFFLES COMPLEX
- FELINE INFECTIOUS PERITONITIS
- FELINE LEUKEMIA (FeLV)
- FELINE IMMUNODEFICIENCY VIRUS

INFECTIOUS DISEASE PREVENTION IN WILD CARNIVORES

- **Vaccines are developed and tested in Domestic species!!!**
- **Vaccines may Induce Disease!**
- **RECOMMENDATION:**

DISEASE MANAGEMENT PRACTICES

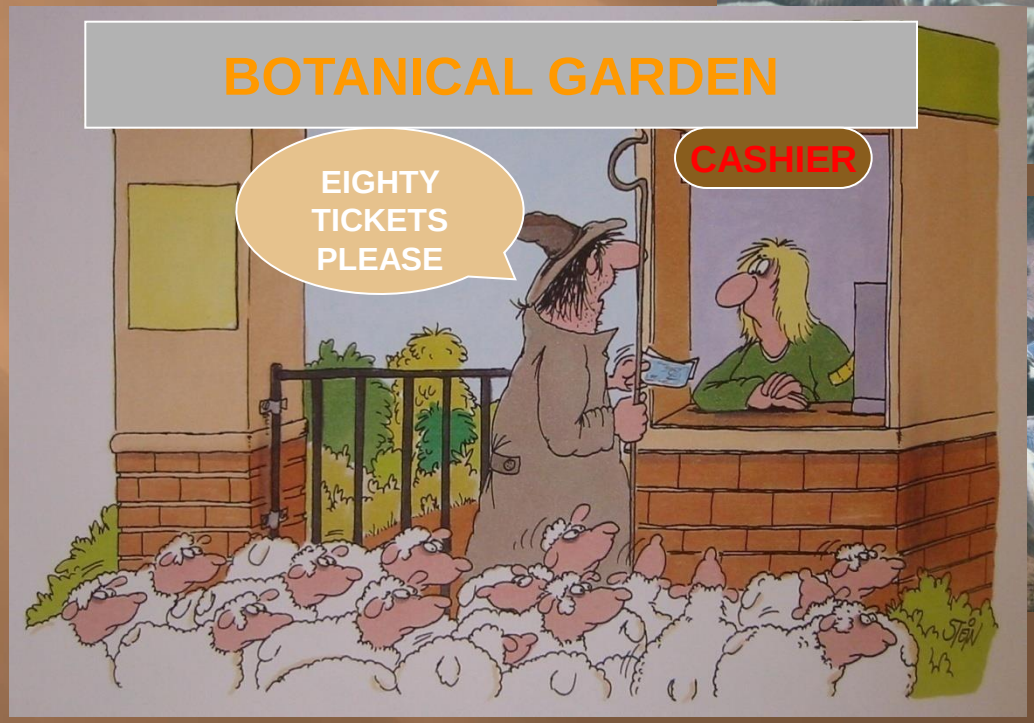
Difference: Domestic vs Wild Animals!

We need common goals!

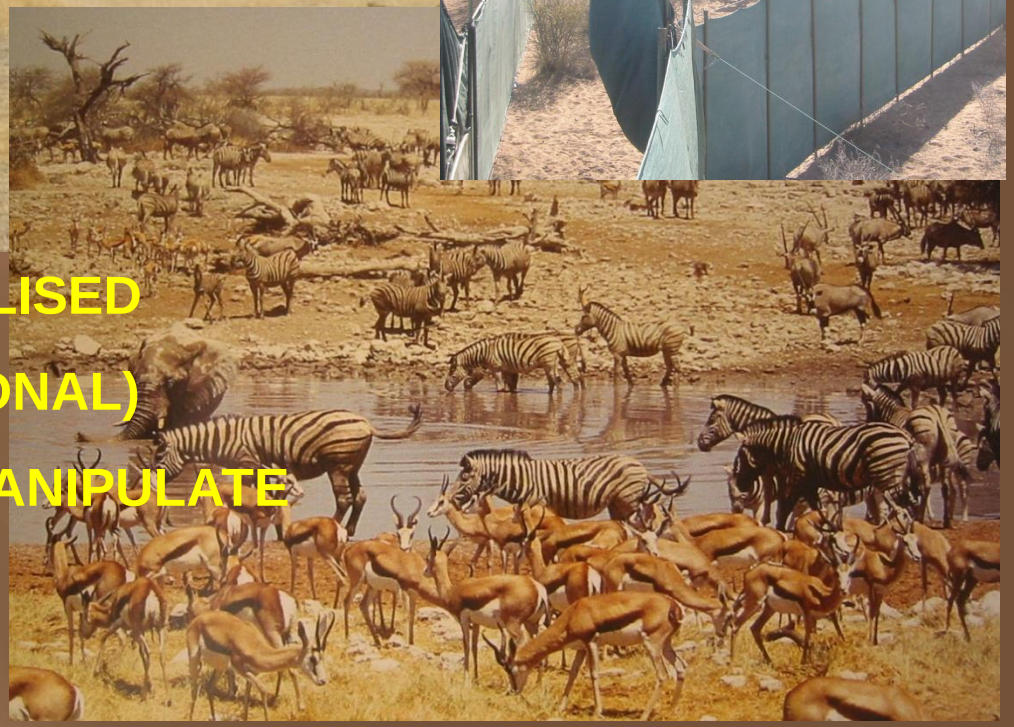
Prevention or Crisis management?

WHERE LIVESTOCK IS:

- MOSTLY ALIEN SPECIES
- EASILY MANIPULATED
- MONOCULTURE



WHEREAS GAME IS:



- HIGHLY DIVERSE AND SPECIALISED
- INDIGENOUS (AT LEAST REGIONAL)
- DIFFICULT & EXPENSIVE TO MANIPULATE

IN THE WILD GAME:

- High pressure – short duration gra
- Multi species grazing
- Harsh natural selection

INTENSIVE GAME FARMING:

- High pressure +/- permanent grazing (small camps)
- Often single species grazing
- Little/no natural selection
- Inbreeding depression!?
- Deworming with dart/in food

THE ECOLOGICAL TRIANGLE

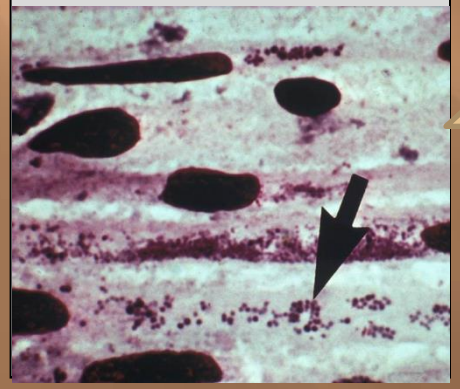
HOST

SPECIES SELECTION?

GEOGRAPHY
Translocations

MANAGEMENT
Intensification
Translocations
Altered immunity

DISEASE



ENVIRONMENT

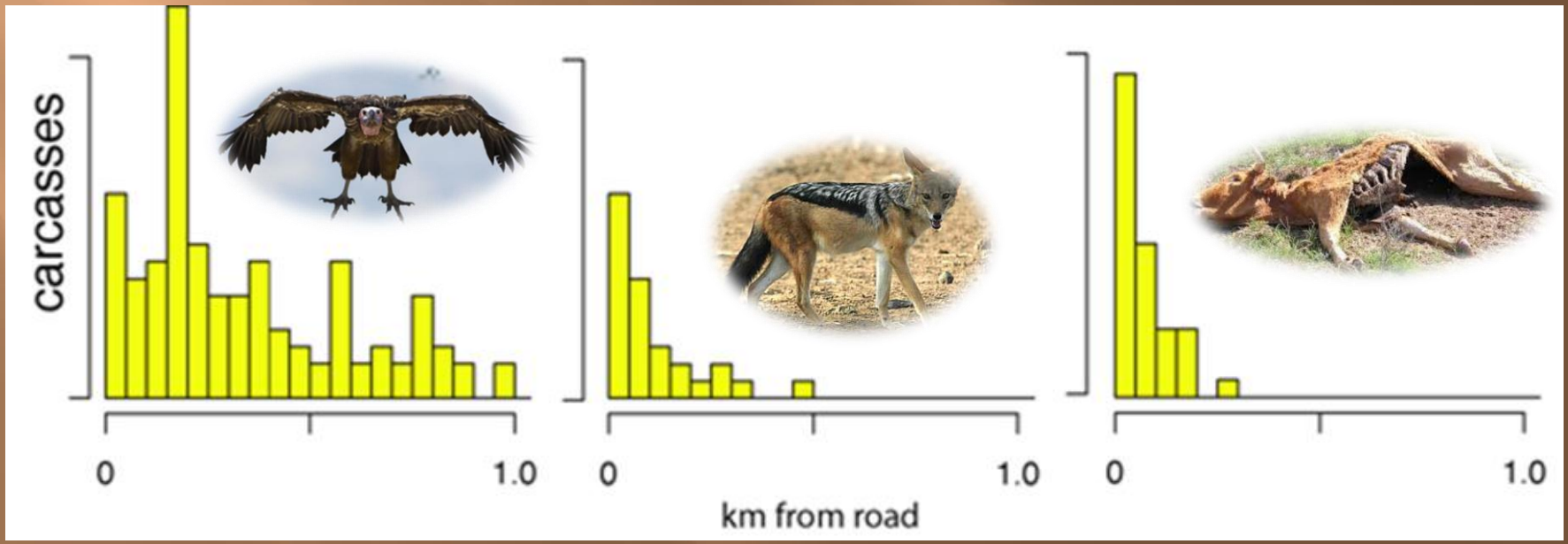
VECTOR

CLIMATE
Global warming
Rain

DISEASE SURVEILLANCE

- Essential component – mostly opportunistic
- Helps with management decisions

  - rare species!
- Location of carcass & time since death



DISEASE SURVEILLANCE

- Data collection from PM
- Hands on disease surveys
- Data collation

DISEASE MANAGEMENT

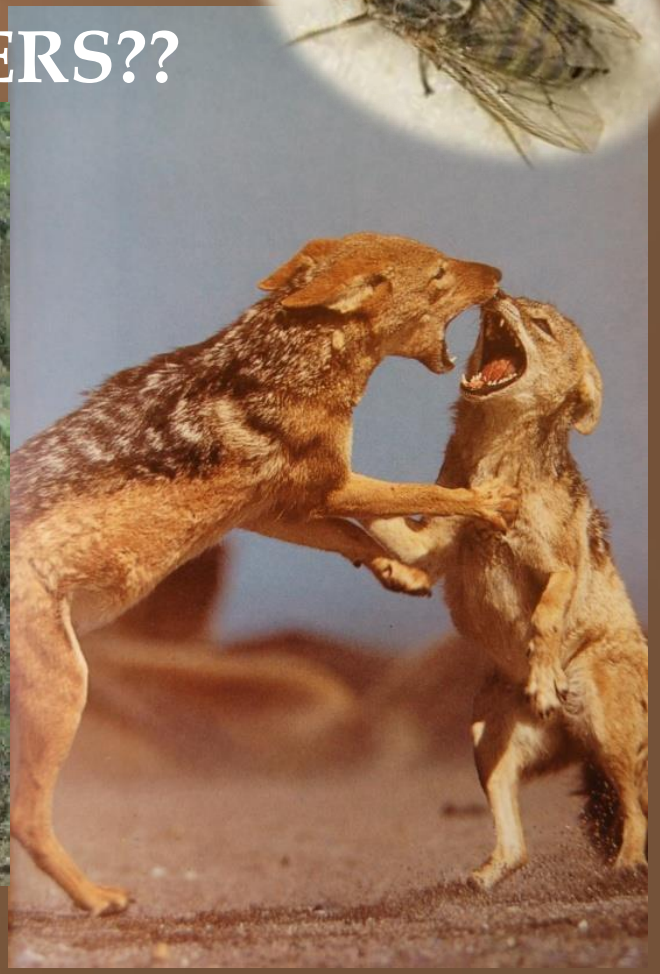
HABITAT MANAGEMENT
POPULATION MANAGEMENT NB!!
FIRE – PARASITE CONTROL?

DISEASE MANAGEMENT

- PREVENT - VACCINATION
- MEDICATING
- TEST AND REMOVE POSITIVE ANIMALS

DISEASE MANAGEMENT

- VECTOR CONTROL - POISONING?
- CULLING DISEASE CARRIERS??



DISEASE MANAGEMENT

Fences (+/- Game/Cordon)!?

Limitation with flying vectors

DISEASE MANAGEMENT

- INTRODUCTIONS (ALIENS??)/ TRANSLOCATIONS - VERY IMPORTANT!!!!
- BREEDING DISEASE FREE WILDLIFE e.g. BUFFALO
- QUARANTINE

THANK YOU FOR YOUR PATIENCE!