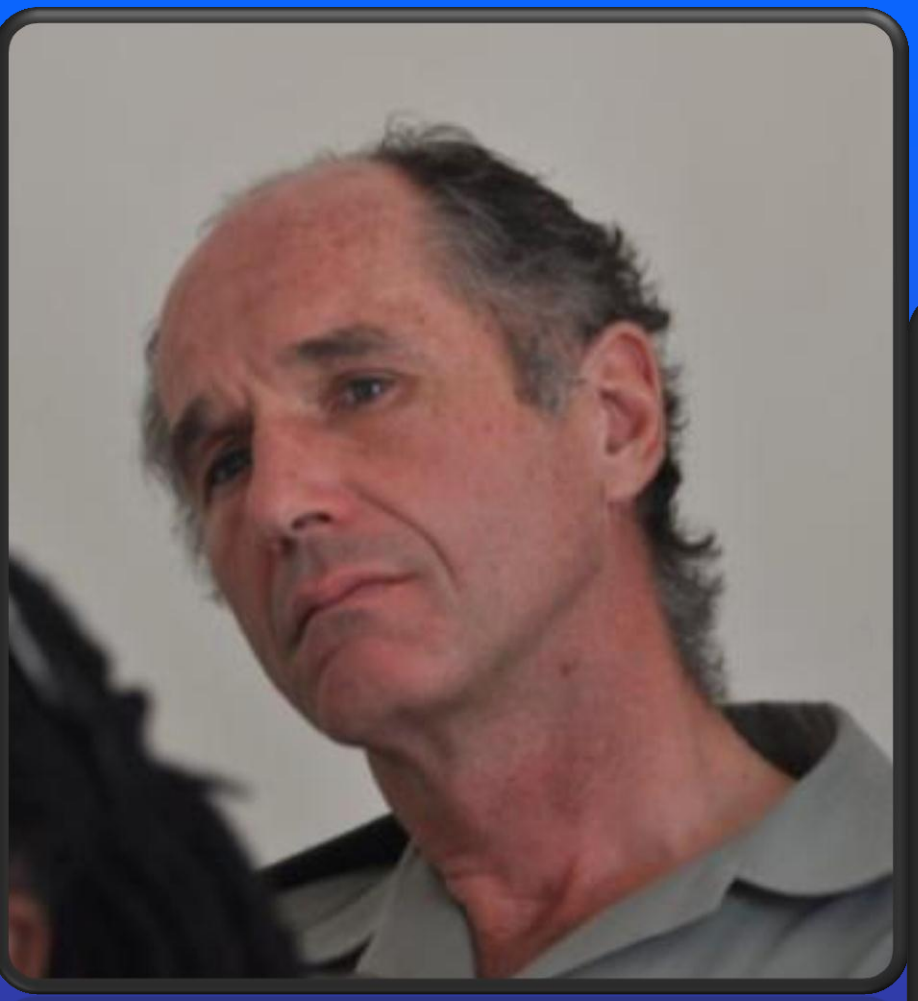
VETERINARY ISSUES - BLACK & WHITE RHINO

MARKUS HOFMEYR – VWS SANParks



BE HAPPY

Don't worry

Capture related issues:

- No major advances in immobilization drugs for both species (M99 still the main immobilization drug) except for the use of butorphanol as partial agonist & antagonist (replacing nalorphine, which is no longer available)

- A30-80 used routinely as part of the drug cocktail in black rhino by private vets in SA: circumstantial evidence of faster knockdown times (hyalase at higher doses (5000IU) can also achieve this – M Dittberner work)

- Butorphanol drug of choice for partial reversal of both black and white rhino in SA (Namibia nalbuphine is also used)

- Butorphanol can be included in the dart for white rhino - better physiological parameters throughout immobilization

- Butorphanol given immediately IV after animal becomes immobilised results in very similar physiological improvements to adding it to the dart within 10 minutes – choice of use depending on terrain and logistics

- 20mg butorphanol per mg M99 effective results in improved physiological parameters

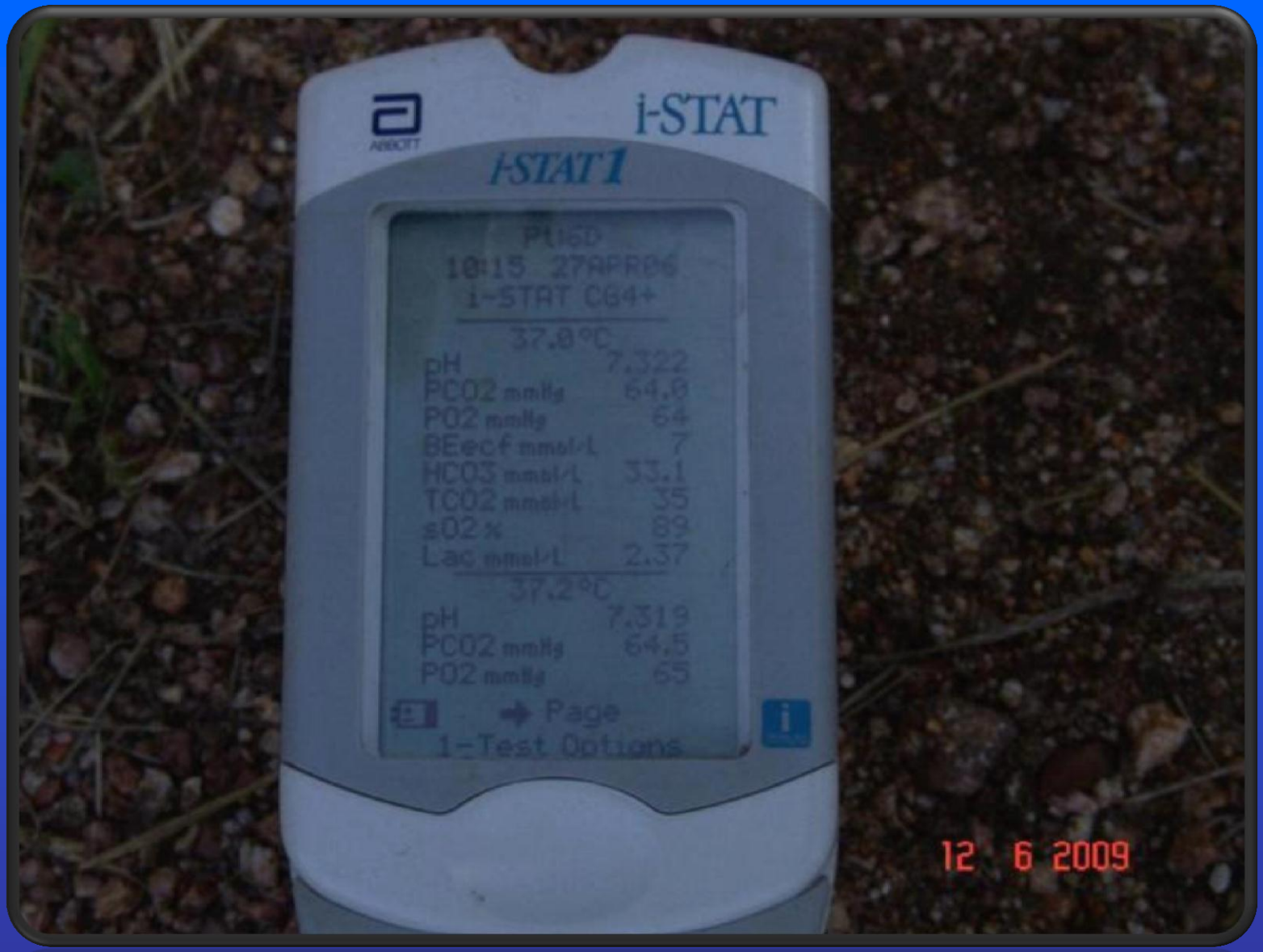
5mg of Nalorphine – could be butorphanol!!

- Butorphanol cannot be included in dart for black rhino (not necessary)
- Butorphanol must be used carefully for partial reversal for walking (5mg increments)
- Reversal at loading – recommended dose is 20mg of butorphanol per mg of M99, can add maximum of 0.5mg diprenorphine
- 7 animals done to date and tranquilised with acuphase needed no additional tranquilisation for transport of 15-27 hours

Tranquilization:

- During transport partial antagonism achieved by administering a small dose of diprenorphine and large dose of butorphanol
- Cloxipol acuphase works extremely well on b rhino (100 -200mg)
- Azaperone used at high doses (100-150mg)
- Some animals may need very low doses of etorphine to keep them calm
- Valium/Midazolam IV just before loading has a very calming effect and probably under utilized for transport tranquilization
- Positive role of alpha 2 agonists under certain circumstances

Conclusive work showing definite improvements in physiological parameters (work in Namibia & SA)
- worst lateral recumbency
- better sternal
- best in standing position



Blood gas values being monitored in various projects to improve physiological parameters during rhino immobilization

Respiratory hypertension is the biggest factor in decreasing oxygen exchange during opioid immobilization – oxygen supplementation is most important supplementation to counter this

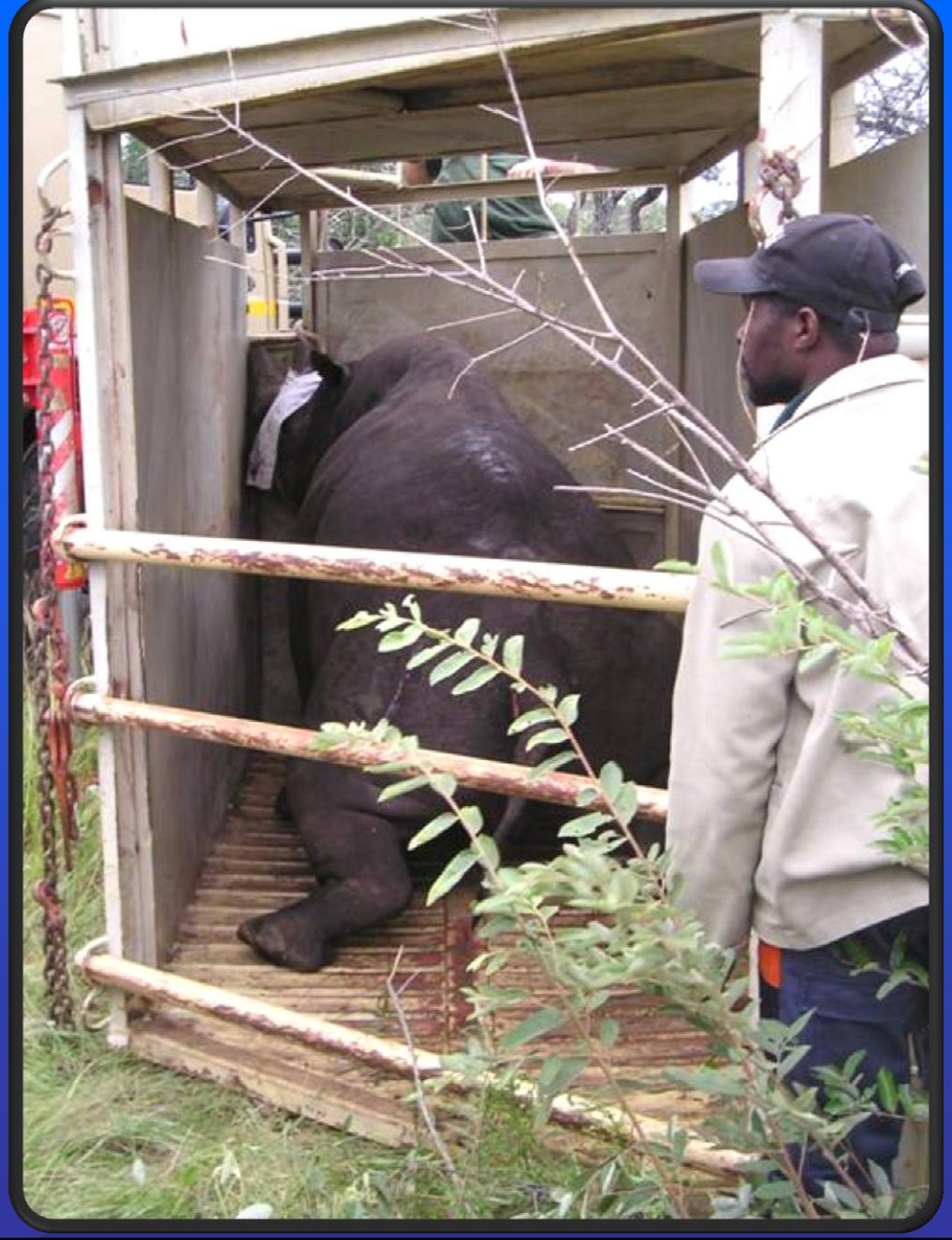
Lifting rhino by legs for transport possible without any injury to legs

BLACK RHINO AIRLIFT

Using a sled for longer aerial transport

- Can be labour intensive

Airlifting by feet successfully applied by Namibia, very practical method for difficult terrain – shorter distances



Beware of leg problems – use of anti-inflammatory drugs are very important

Field Release Techniques

- Requires minimum disturbance
- Often results in trauma to:

Rhino
And
Vehicles

200mg Azaperone
15min before release

Transportation under anesthesia successfully applied for up to 5 hours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Wake up with IM Naltrexone

Normally wake up slowly and start eating!

Knock down at offloading – recommended release technique

Cow & calf captures and releases need to be managed very carefully

Complete knockdown and then IM reversal without any disturbance

Suckling after 15 minutes!

Low dose m99 with azaperone – when well affected give im naltrexone and open door


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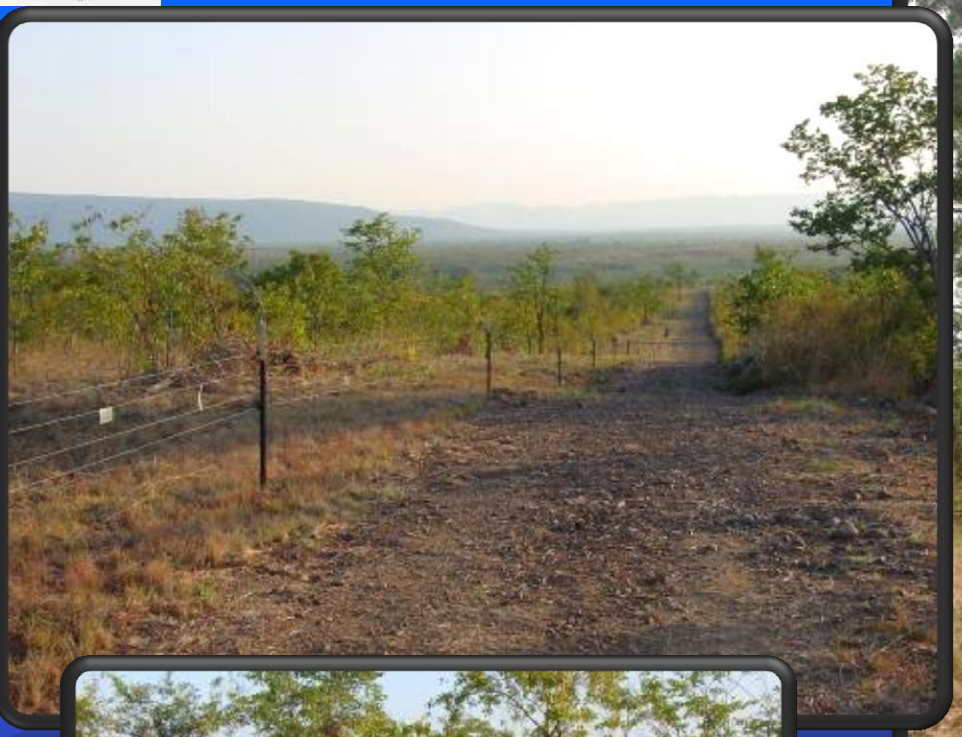
Boma care of black rhino is necessary for international or complex translocations but is very labor intensive and requires intense monitoring – often resulting in unacceptably high risks for rhino

Fence design & re-introduction technique



North Luangwa National Park - Black Rhino re-establishment project - Zambia

Veterinary issues:

•Both rhino are actually very robust – 100 's (BR) – 1000's (WR) translocated annually with minimal mortalities but badly planned and poorly executed capture and release actions as well as improper post release activities/monitoring has resulted in mortalities in rhino

•Poaching (including unethical & criminal behaviour by some veterinarians – selling of drugs to poachers or directly involved)

•Direct and indirect snaring poses a significant risk, particularly in countries with a well established bush meat trade

•Diseases:

•Shuni virus in white rhino, buffalo and warthog (possibly scavengers)

•Sudden death Ol Jogi Kenya – clostridia/salmonella enteritis possibly triggered by toxic plant ingestion – probably multifactorial

- Anthrax remains a threat in areas where outbreaks occur

- Botulism has been circumstantially diagnosed in KNP (2 cases)

- Multifactorial factors affecting post release success and vet issues in established populations:

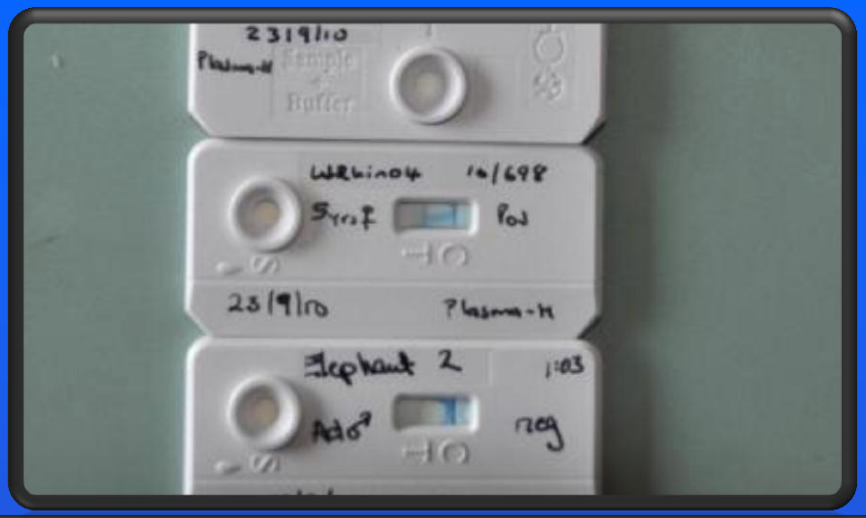
    1. Fighting and social related trauma
    2. Nutritional stress (both direct and indirect macro/micro minerals)
    3. Vector born parasites (babesia/theileria/trypanosomiasis)
    4. Intestinal parasites

- Rhino are their own worst enemies

North Luangwa National Park - Black Rhino being its own worst enemy

Health issues: White rhino struggle to adapt to boma confinement - no new techniques to improve this

TB diagnostic work in KNP in white rhino



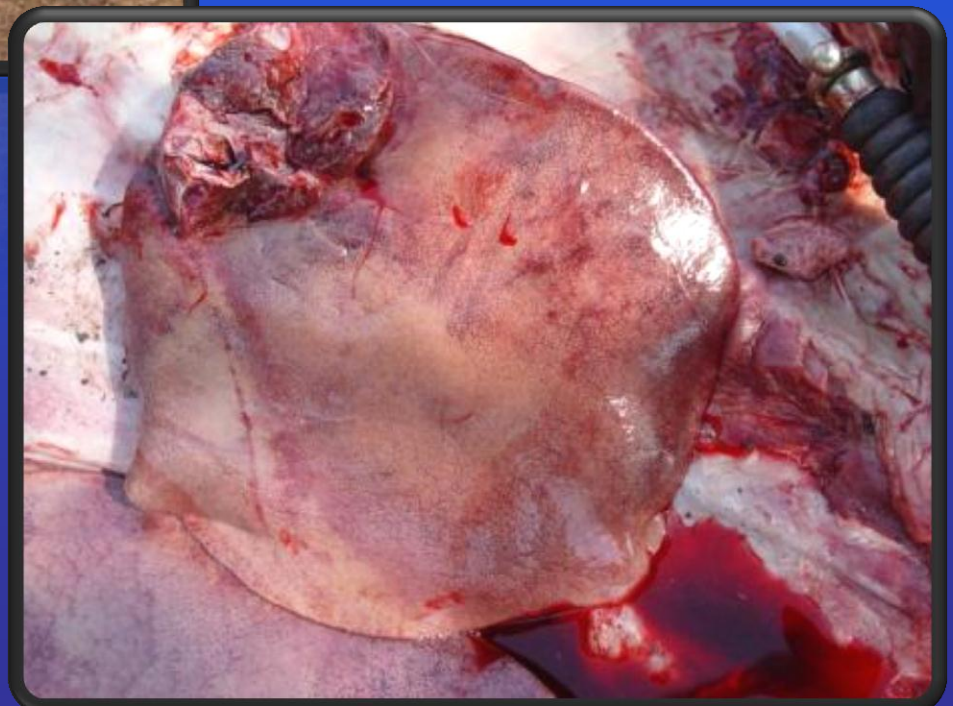
- TB testing in Stat pack positive rhino - negative (atypical mycobacteria & corynebacteria

- One Bovine TB positive black rhino from NZG – incidental diagnosis and unrelated to known BTB strains in SA

Pulmonary flushing & as many incidental post-mortems on rhino in Kruger

•Fire damage and subsequent death

•Cyanotoxin poisoning in KNP



Thank you!