



WELGEVONDEN
Game Reserve

Shifting dynamics: Herbivore-driven management at Welgevonden Game Reserve

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Reserve history

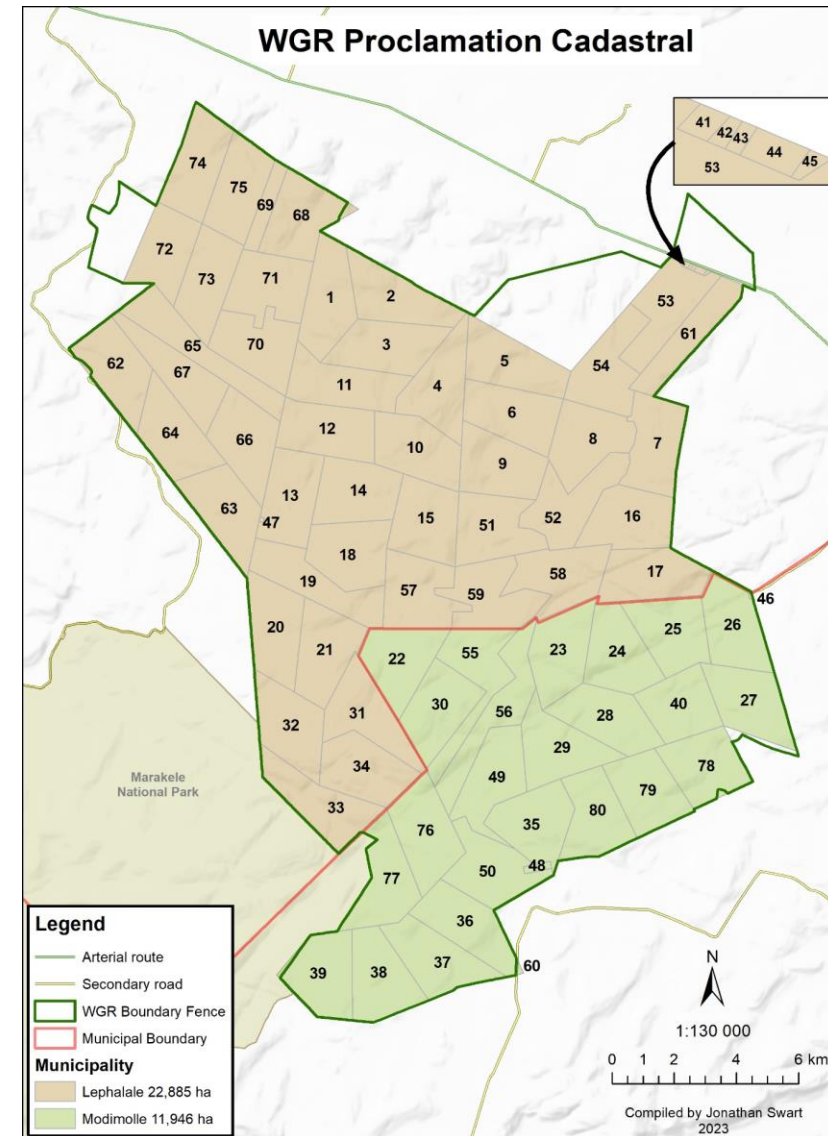
- 36,000 ha in Waterberg, Limpopo
- Formed in 1993 – consolidation of game, cattle & agricultural farms
- Commercial & subsistence crop production
- Some small areas used as cattle enclosures





Reserve history

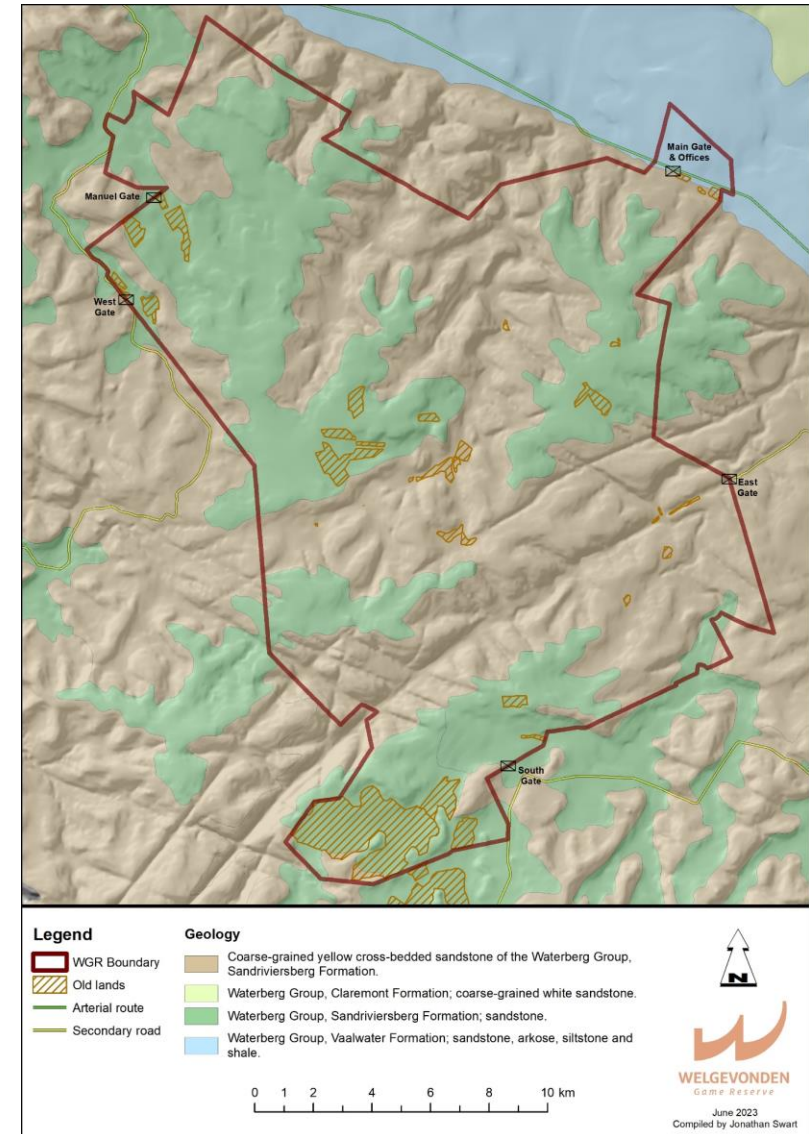
- Developed on basis of freehold title – Reserve divided into 500ha blocks
- Sold to private individuals, syndicates & corporates
- Initial focus on private & corporate ecotourism
- Commercial ecotourism developed strongly over last 10 years





Geological background

- Ancient sandstone
- Formed 2,000-1,700 million years ago
- 2 geological faults separated – 250km wide basin
- Filled with lakes – alluvial deposits 5km deep
- Sunk into earth's crust – pressure forced deposits upwards forming Waterberg mountain plateau
- Nutrient & micronutrient poor





Fire history

- Large occurrence of lightning strikes
- Recent years – underground power cables





Fire history

- Old lands with tall, unpalatable grass
- Grass biomass consumed predominantly by fire
- Nutrients go up in smoke



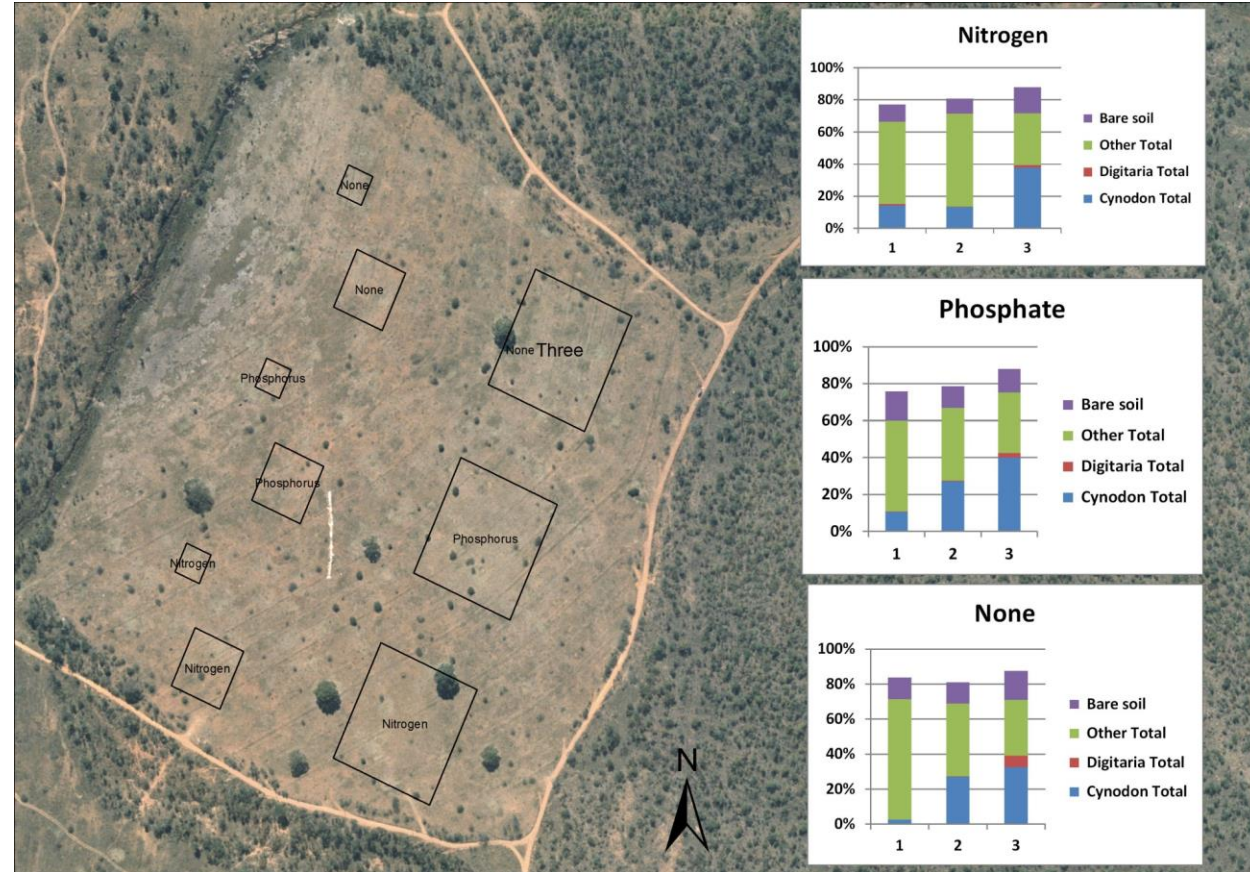


Switch to herbivore- driven system

- Management decision
- 3 step process:
 - Plains/grazing lawns
 - Stepping-stones
 - Increasing herbivore density

Plains

- Project initiated in 2008
- Aim: Convert tall, unpalatable grass to short, highly nutritious self-sustaining grazing lawns
- Method: 3 mowing treatments & fertilized with N & P separately
- Results: Min Area = 1 ha, mow 3 times/year & N is best



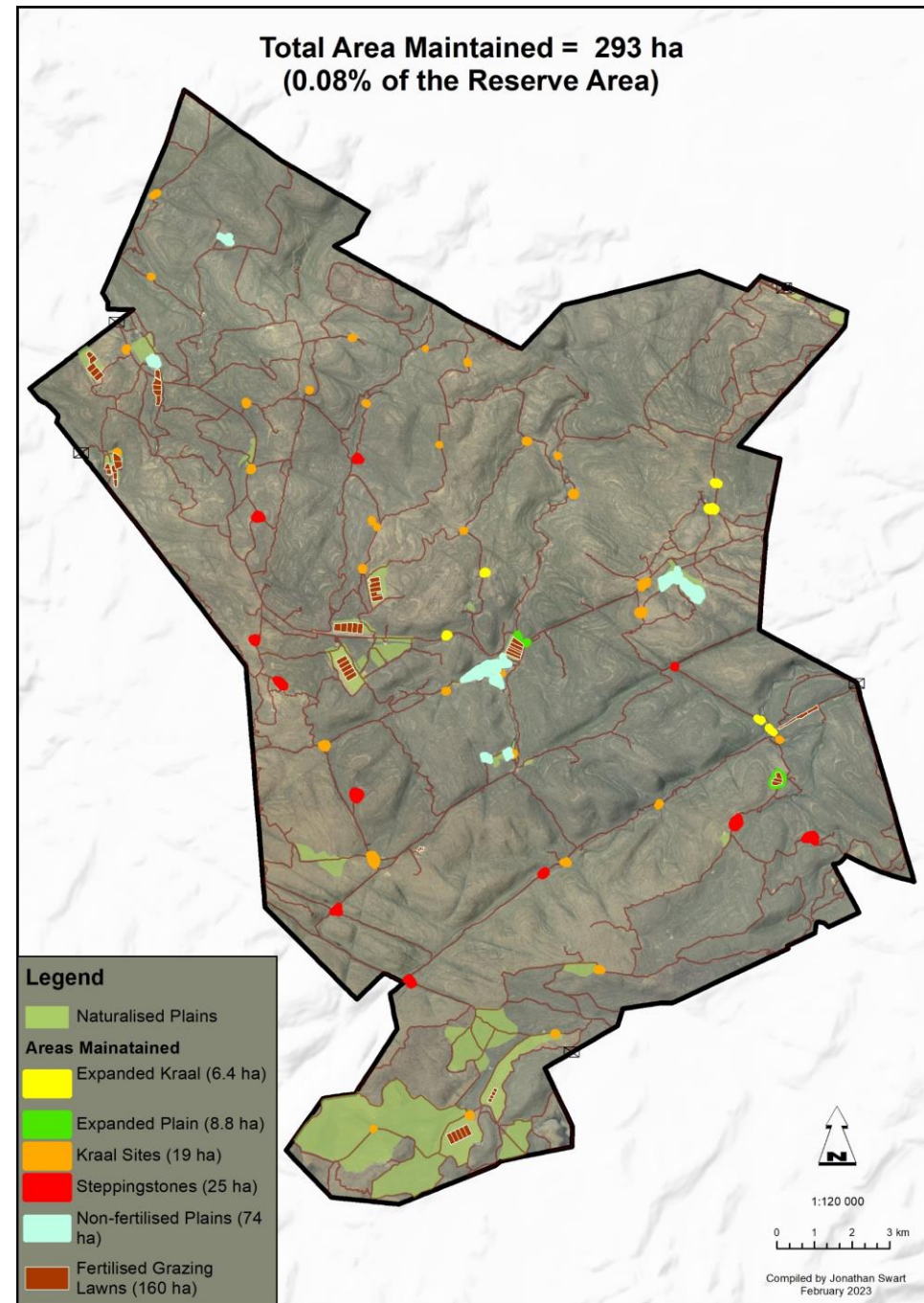
Plains

- 2014 & 2016 - new treatments added
- Manipulated lawns expanded
 - 41ha (2013) to 197ha (2018)
- Expansion assisted by:
 - Management - mowing & burning
 - Increasing grazing densities
 - Increasing white rhino density
- Grazing lawns (manipulated + natural) cover < 1% but a valuable resource



Stepping-stones

- Link grazing lawns
- Food & safety
- Used existing old kraal sites
- Creation of other small stepping stones
- Methods:
 - Reducing shrub density
 - Burning
 - Mowing



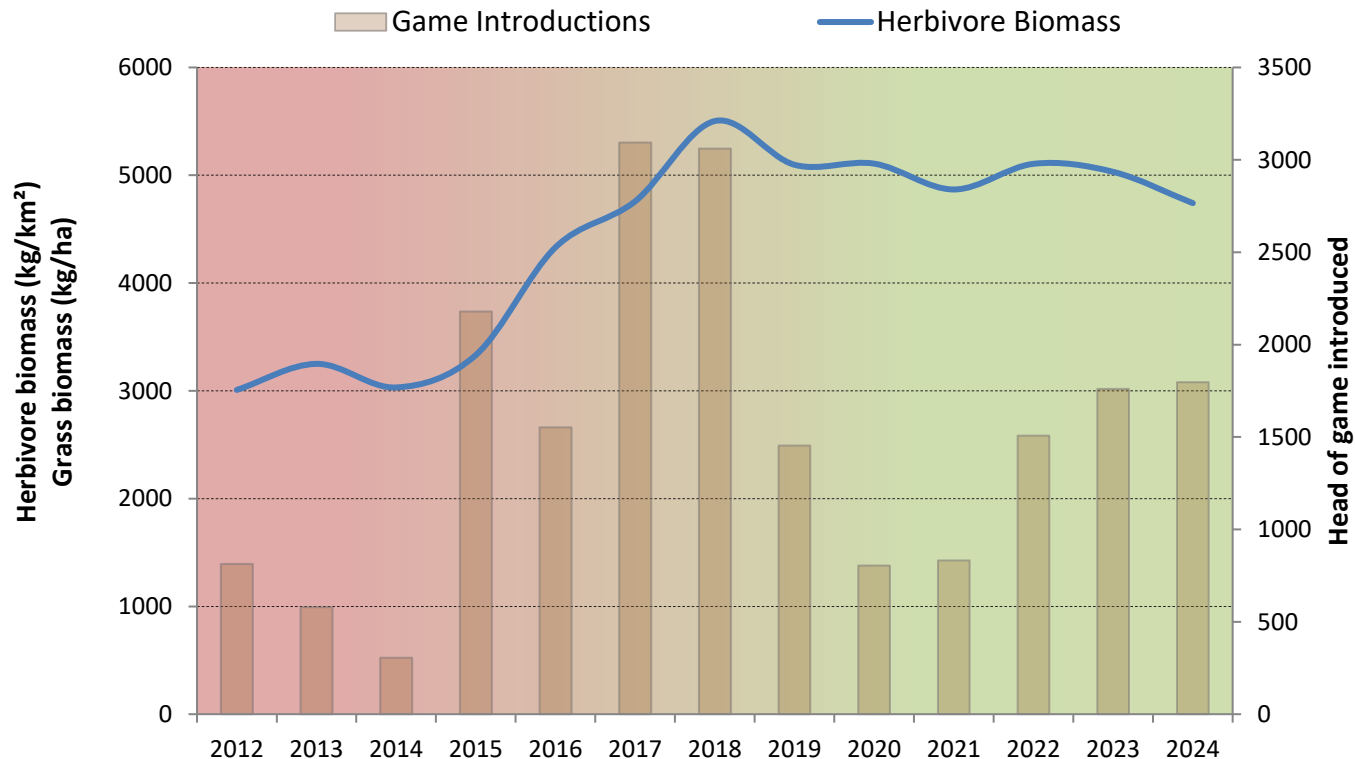
Increasing herbivore density

- Tourism benefits:
 - Animals widely distributed
 - Game visible
 - Potentially more predators
 - Limited no. vehicles per sighting
- Conservation benefits:
 - Rehabilitation & conversion of old lands
 - Lower fire risk
 - Cheetah metapopulation contribution
 - Rhino conservation

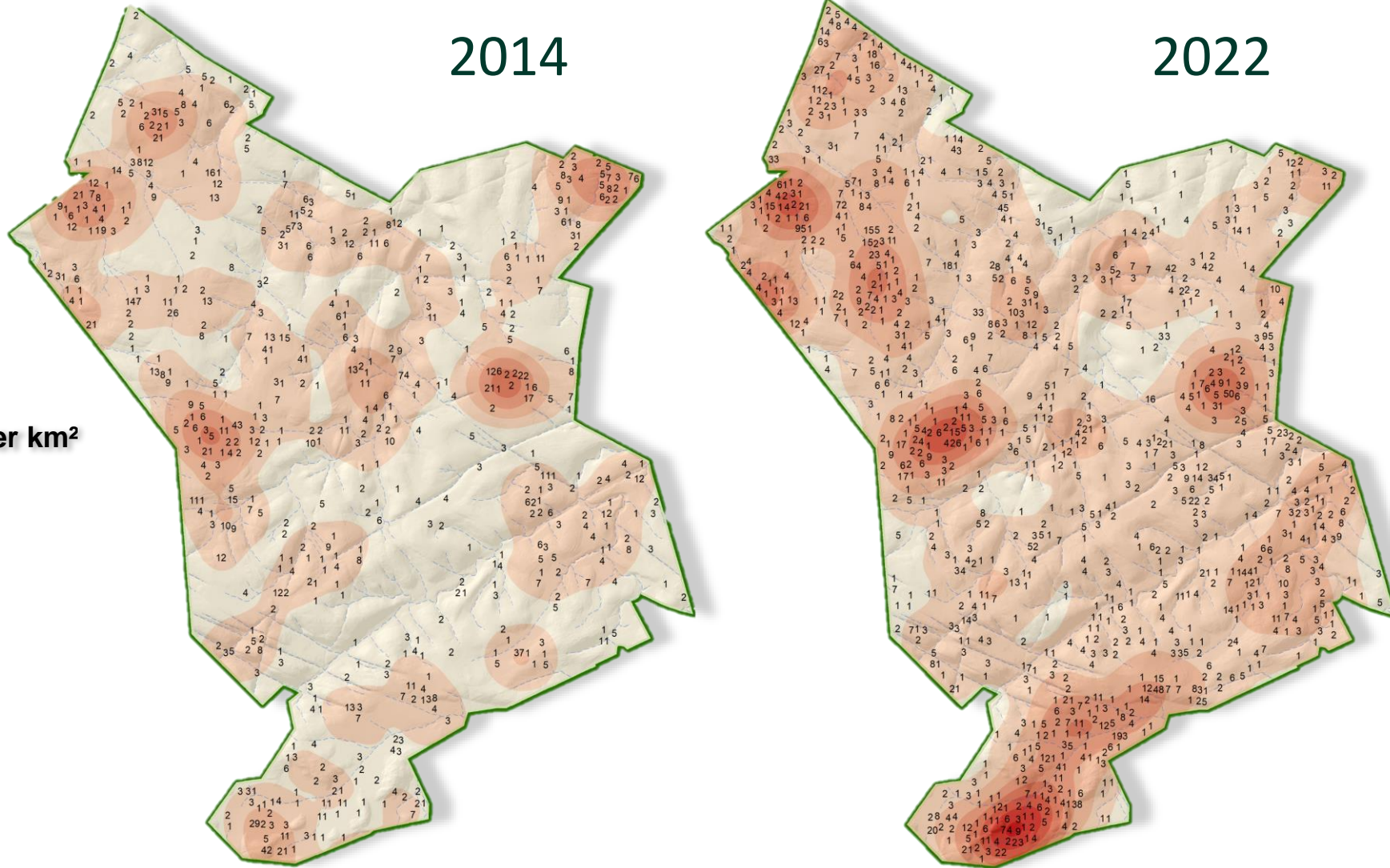


Increasing herbivore density

- Methods:
 - Rapid introduction
 - Assists certain species in escaping the predator pit

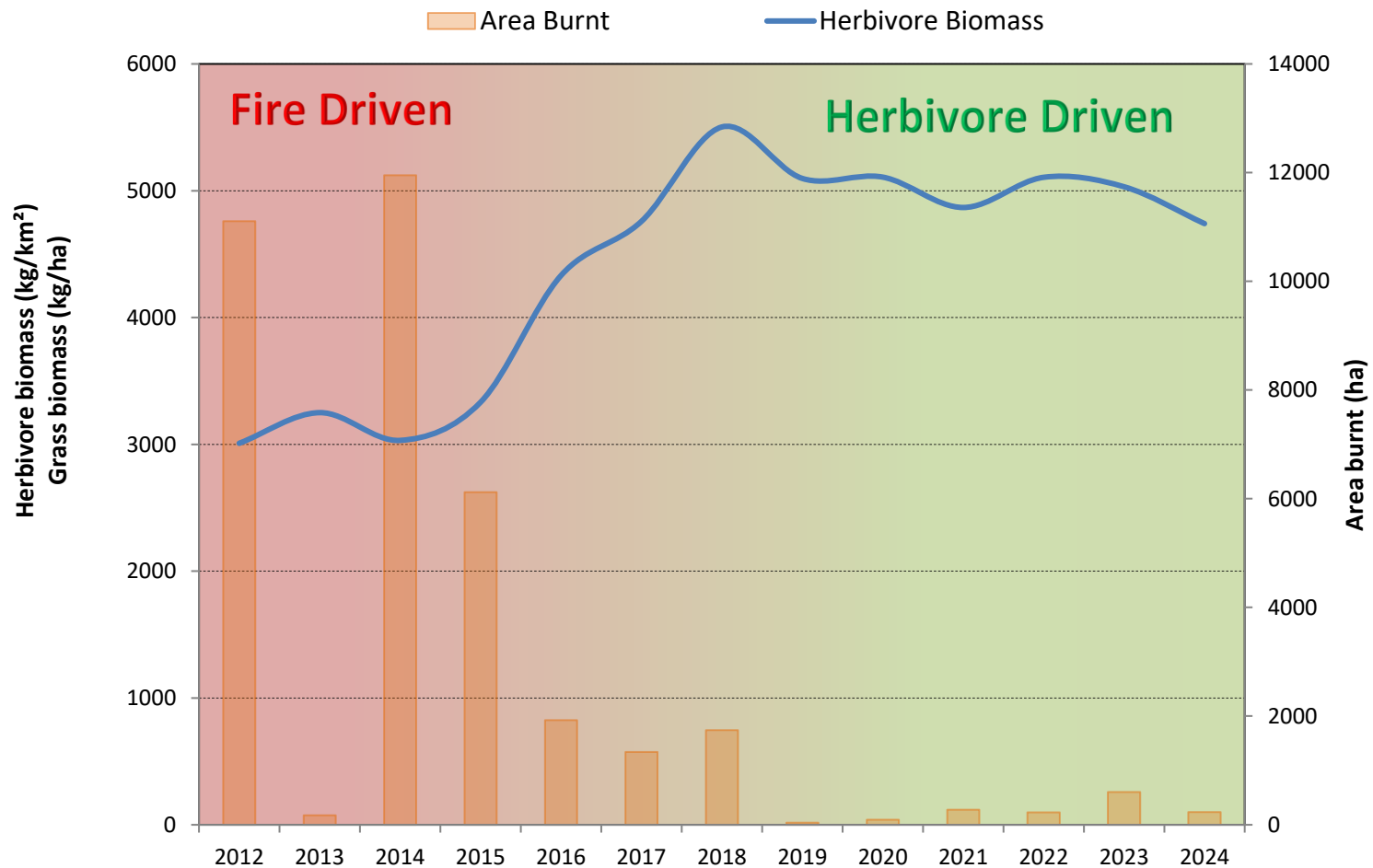


Increasing herbivore density



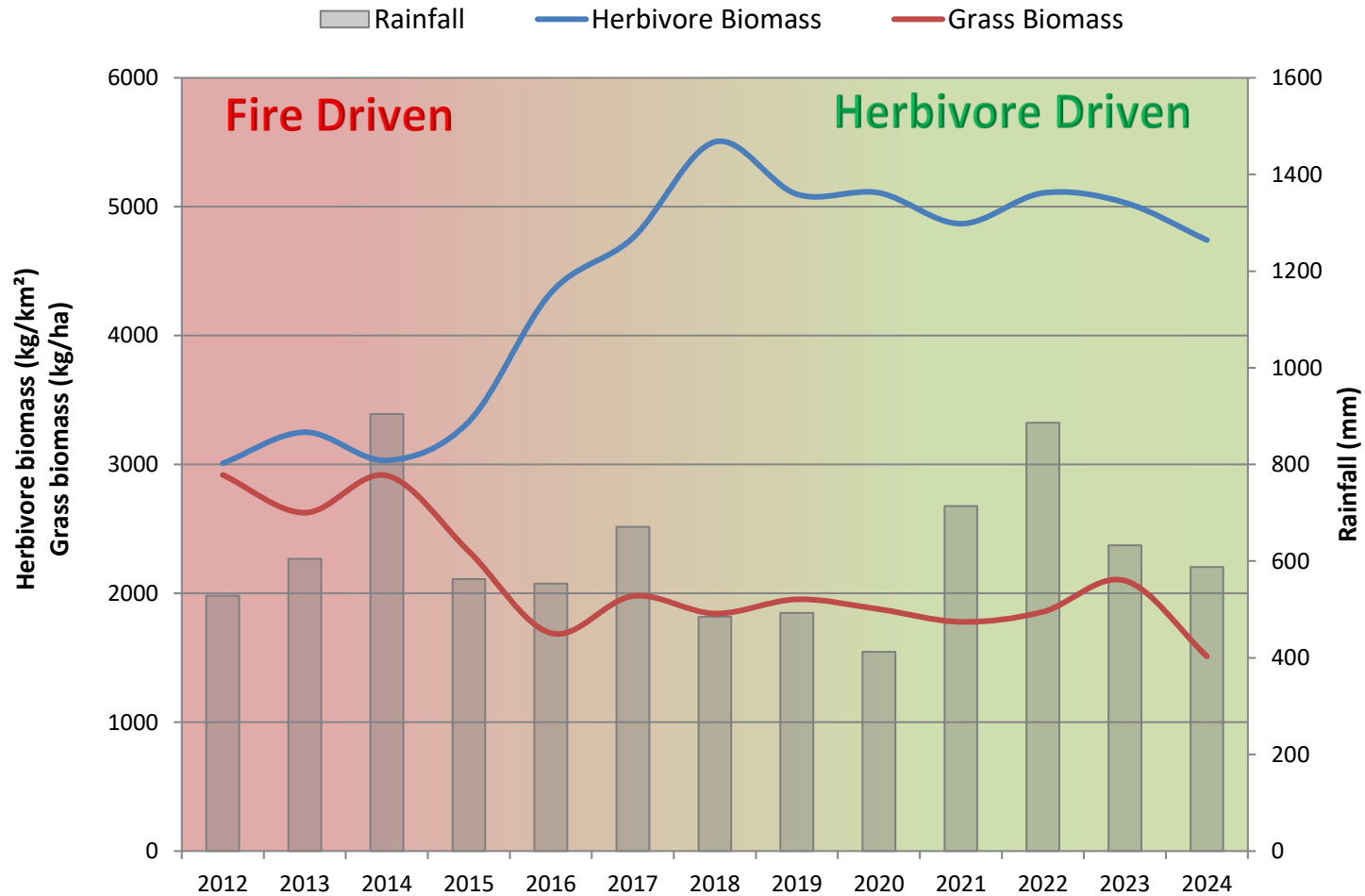
System driver outcome

- Switch achieved



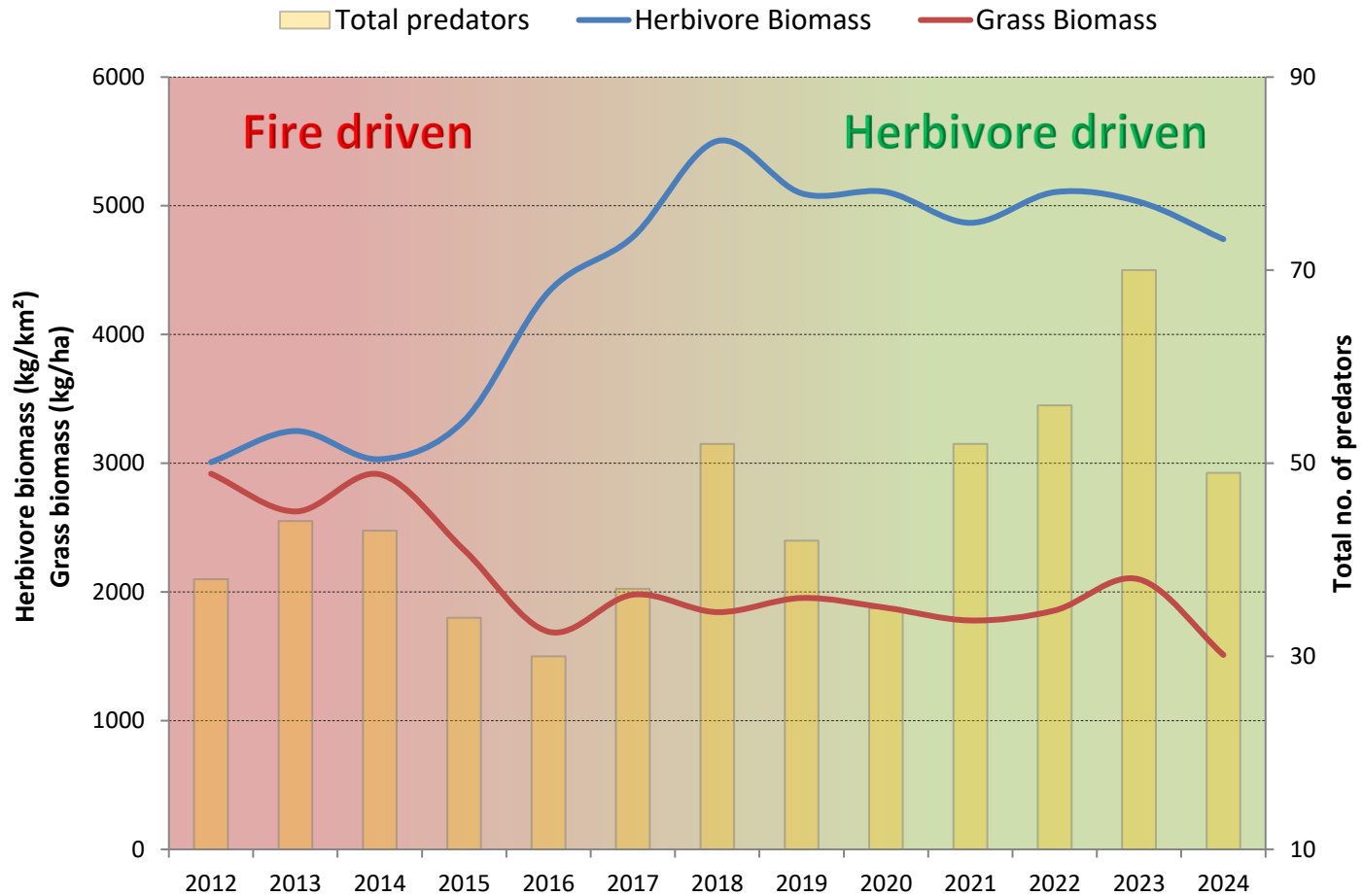
System driver outcome

- Rainfall effects



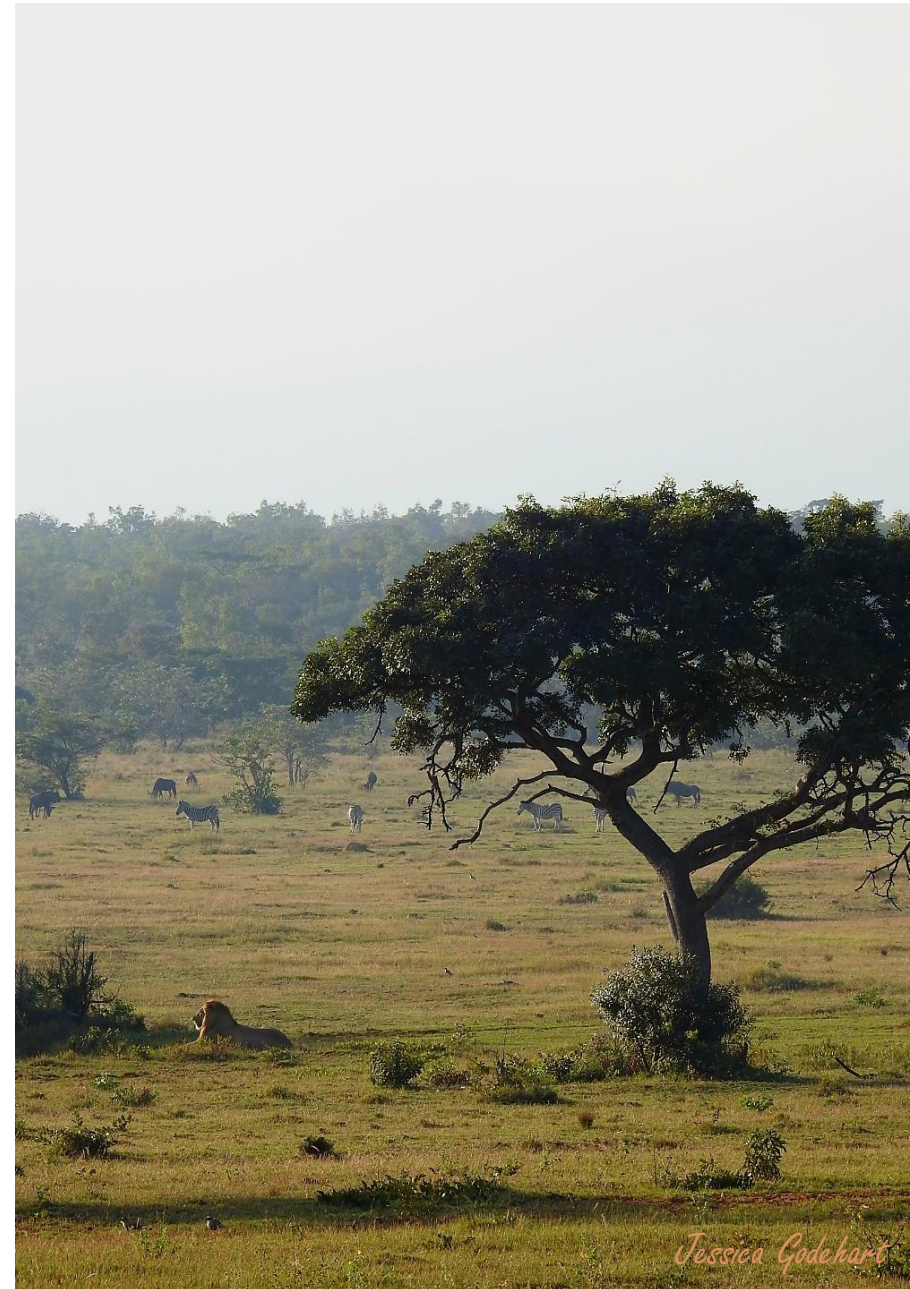
System driver outcome

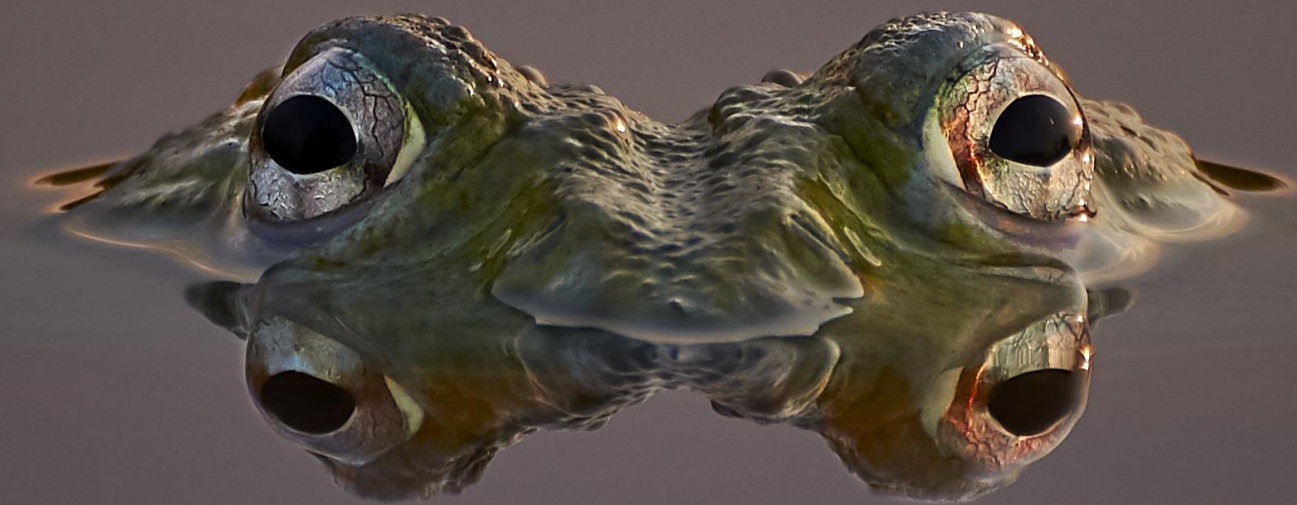
- Predator effects



Way forward

- Introduce new technology & innovations
- Chemical analysis of vegetation quality
- Continued:
 - Fertilisation of plains
 - Management of predators
 - Monitoring herbivore condition
 - Monitoring graze availability
 - Alien plant & weed management
- Expansion opportunities:
 - Larger area
 - High quality habitats
- Continued research into system drivers





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Thank You!