

Impacts of dehorning on black and white rhinoceros population dynamics across southern Africa

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Background



ANIMALIA - MAMMALIA

GLOBAL

Black Rhino

Diceros bicornis



Increasing



ANIMALIA - MAMMALIA

GLOBAL

White Rhino

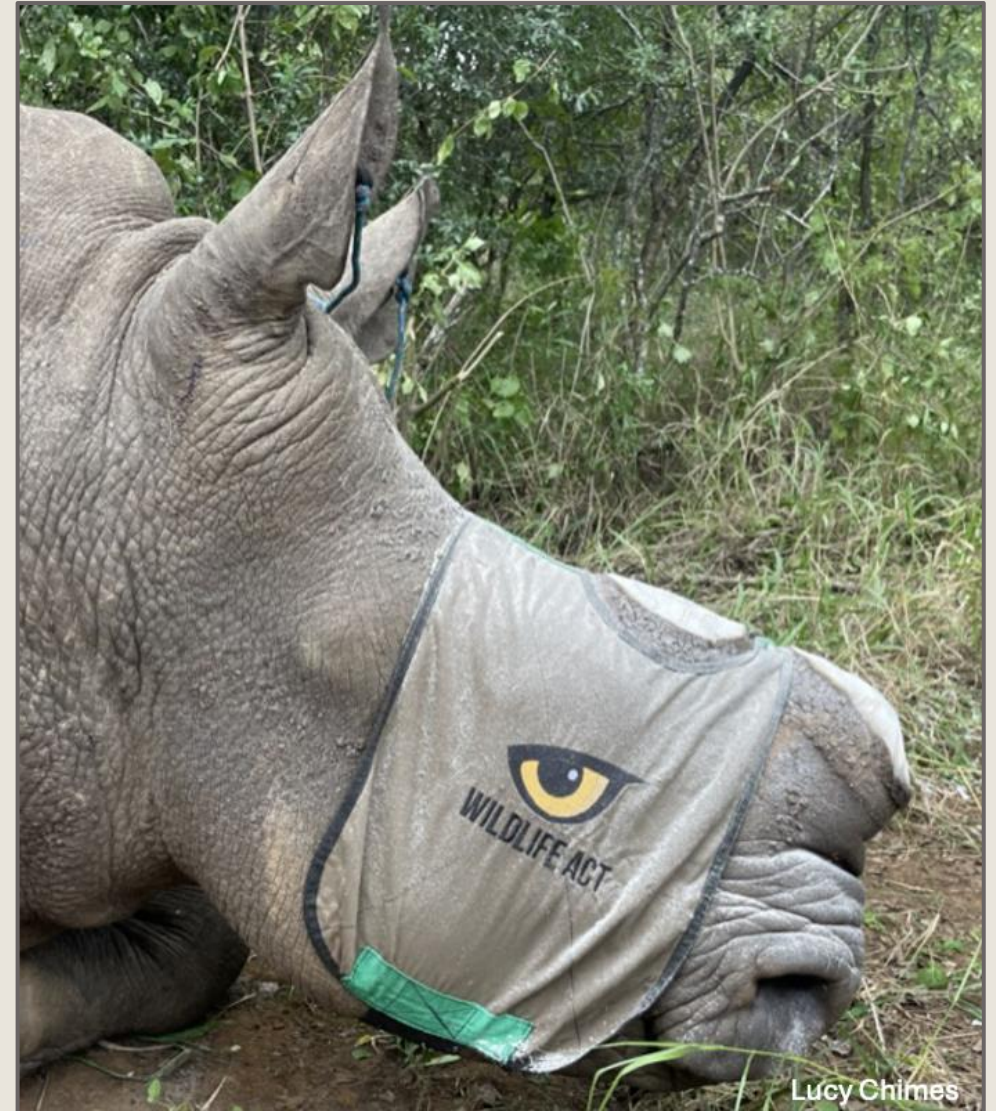
Ceratotherium simum



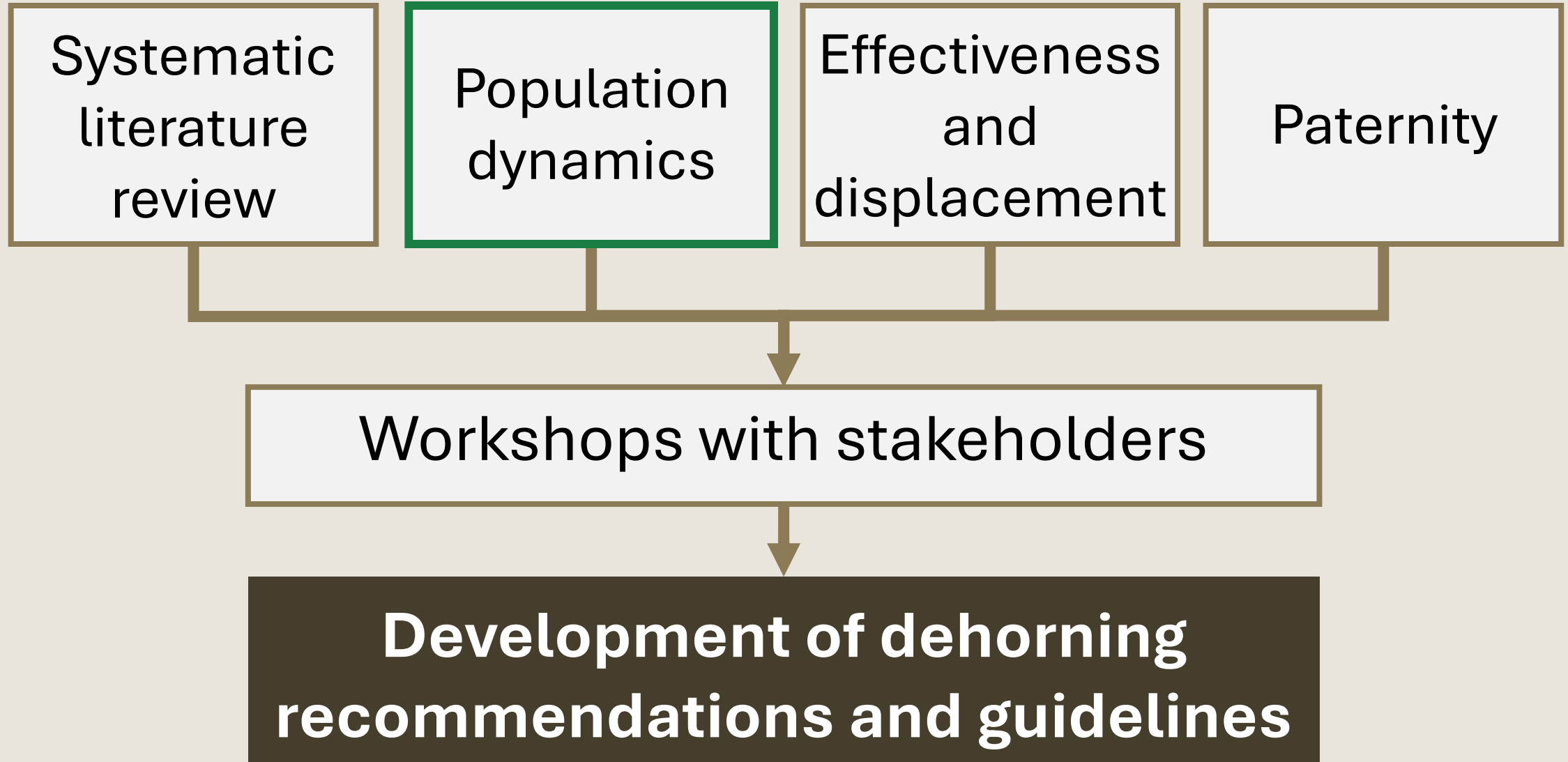
Decreasing



What is dehorning?

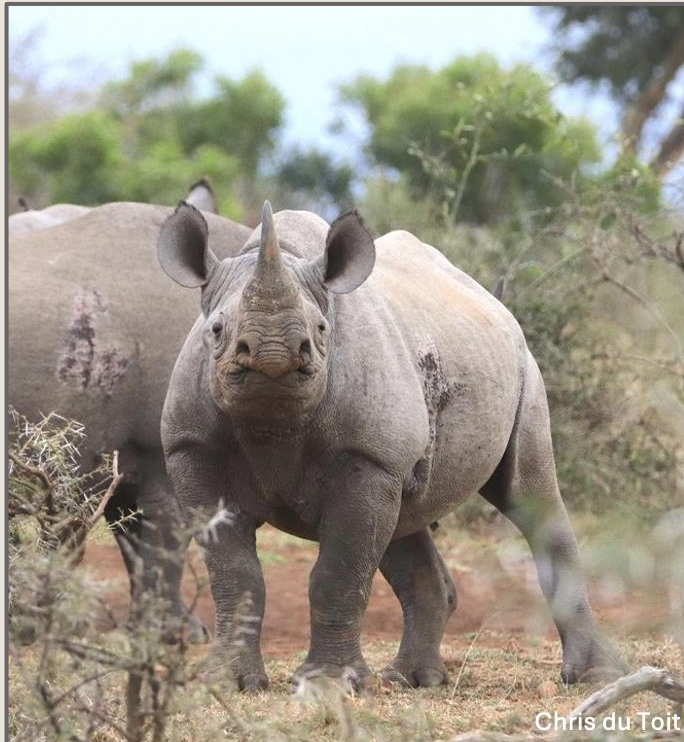


Project outline



Aim

Understand how dehorning impacts black and white rhino population dynamics across southern Africa



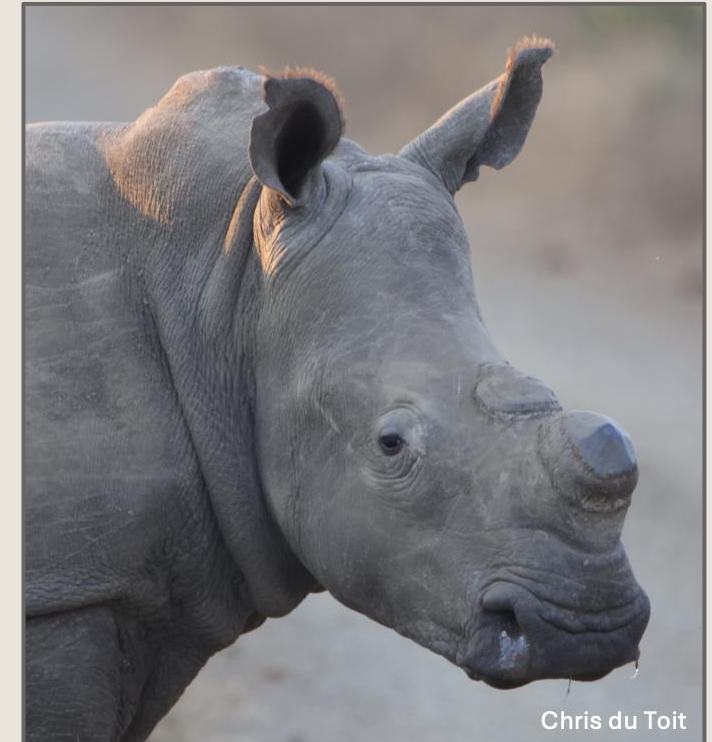
Age-at-first-reproduction

Calf survival

Birth sex ratios

Inter-calving interval

Population growth rate



Methods

Data collection



Data collation

1. Contact sites
2. Build relationships
3. Collate historical data
4. Data security



Analyses

- Individual-level
- Control – Intervention
- Before – After
- GLMMs

Considerations:

- Habitat type
- Rhino density
- Rainfall
- Predator presence/density
- Subspecies variation

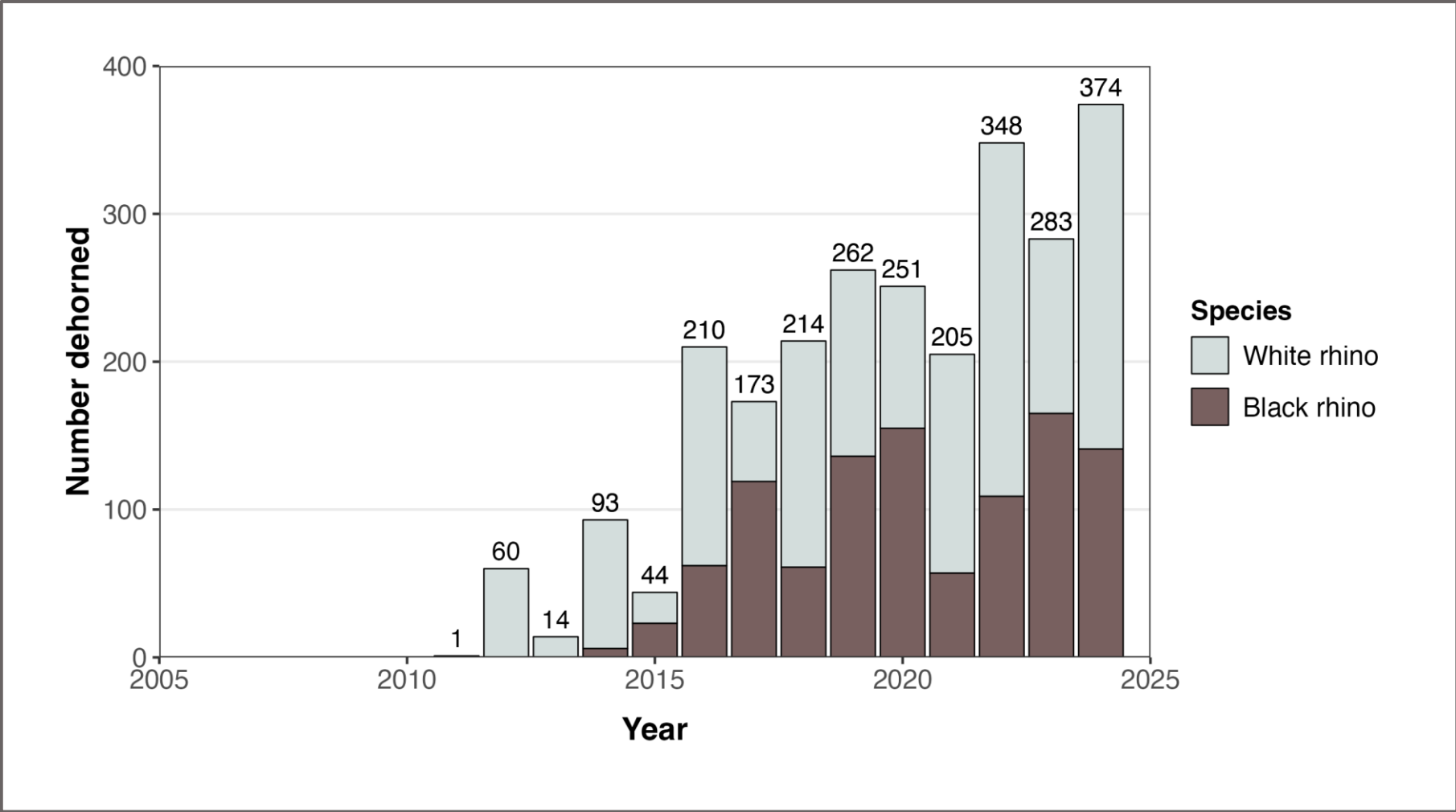
Results summary

- 2004 – 2024
- Dehorning started around 2014

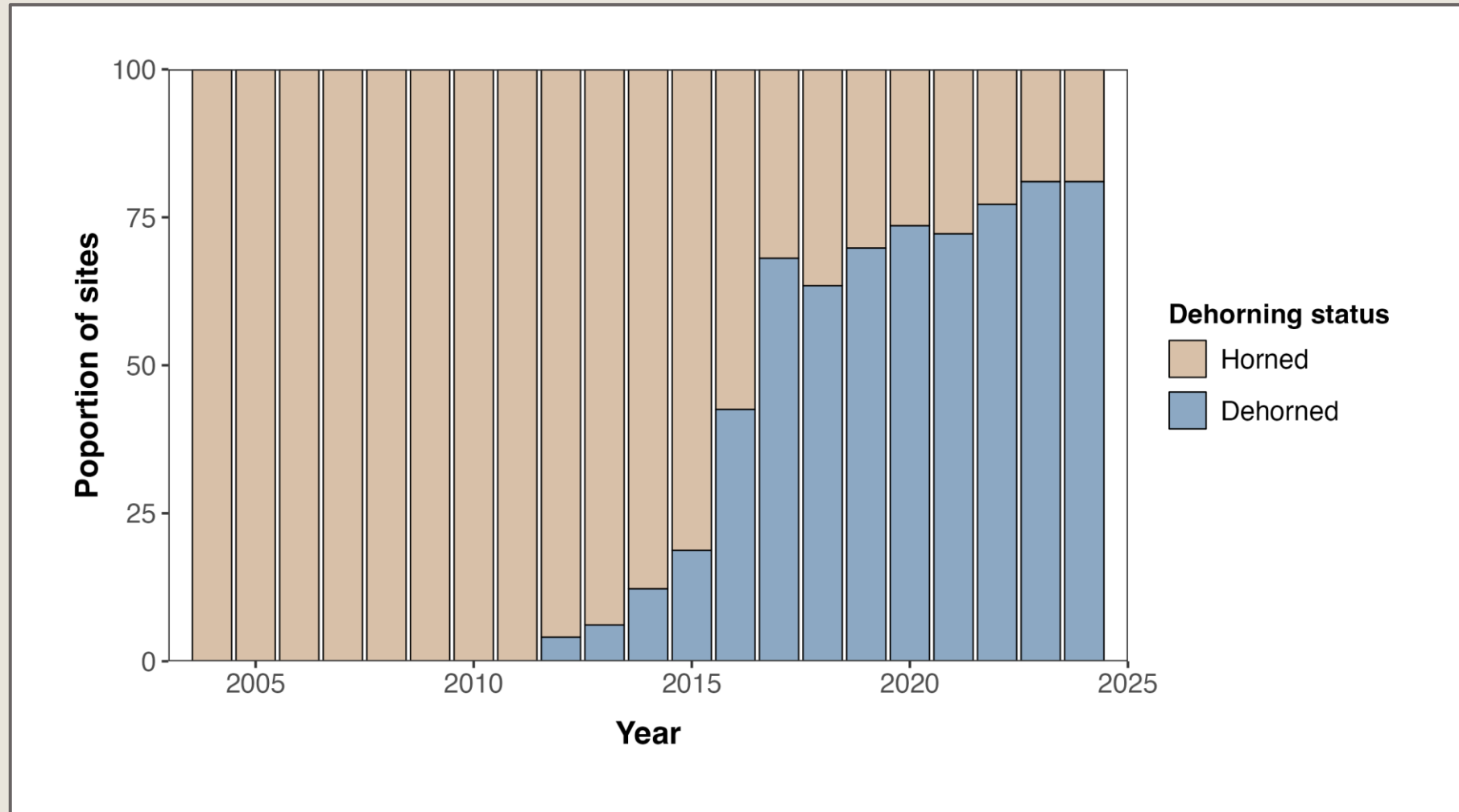
	Black Rhino	White Rhino
Number of sites	54	13
Number of countries	3	2
Number of rhinos	1911	1901
Number of dehornings	1034	1498

* Preliminary results

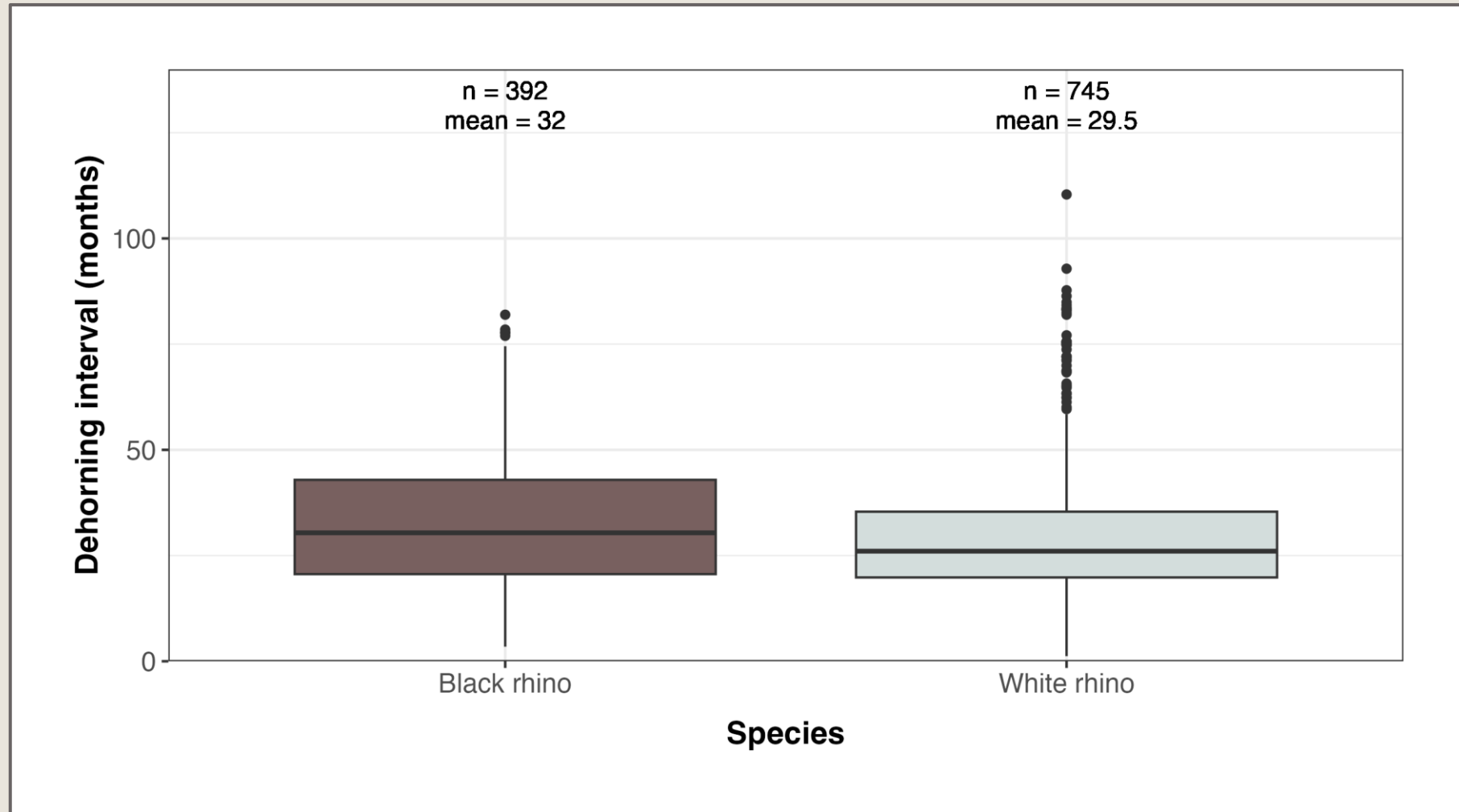
Results: dehorning implementation



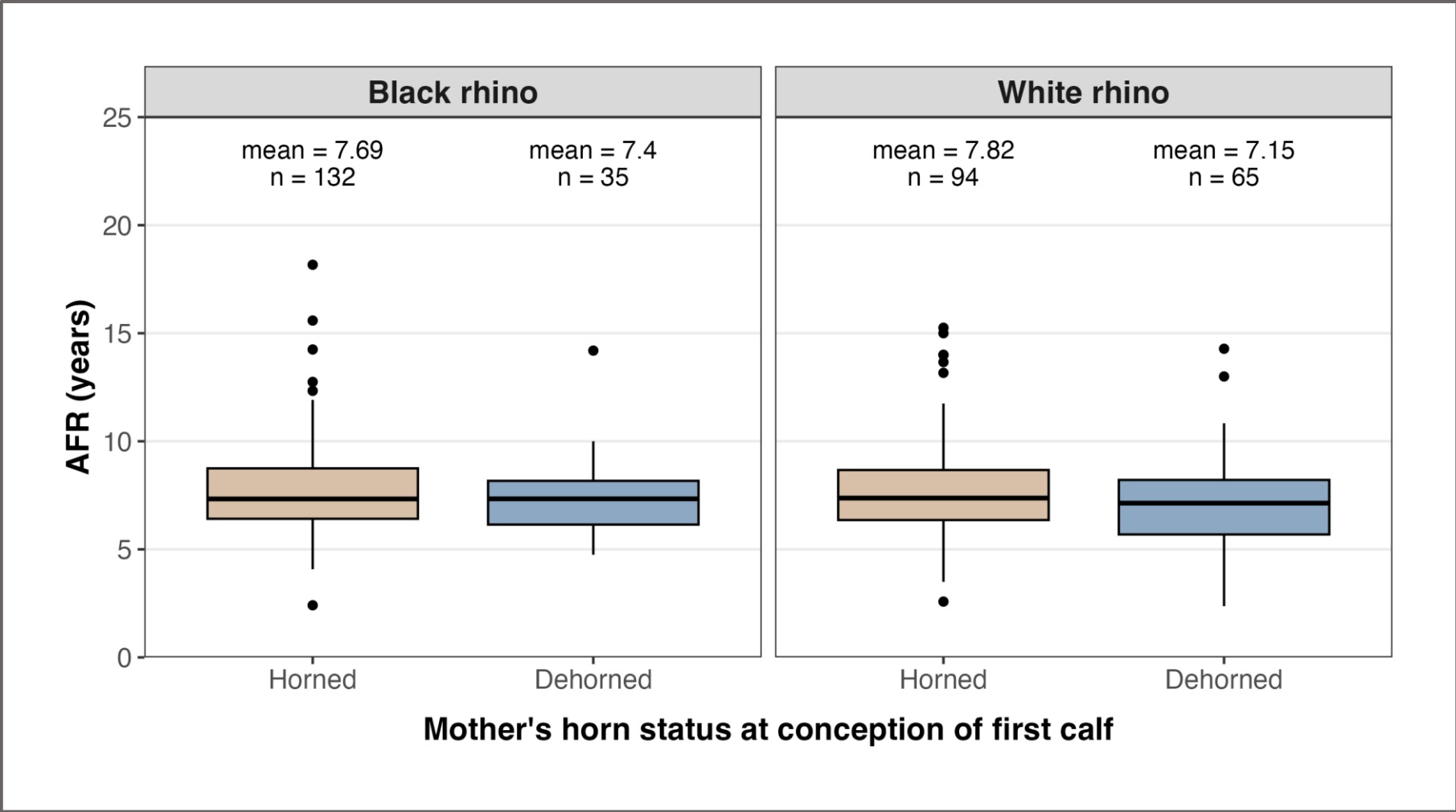
Results: dehorning implementation



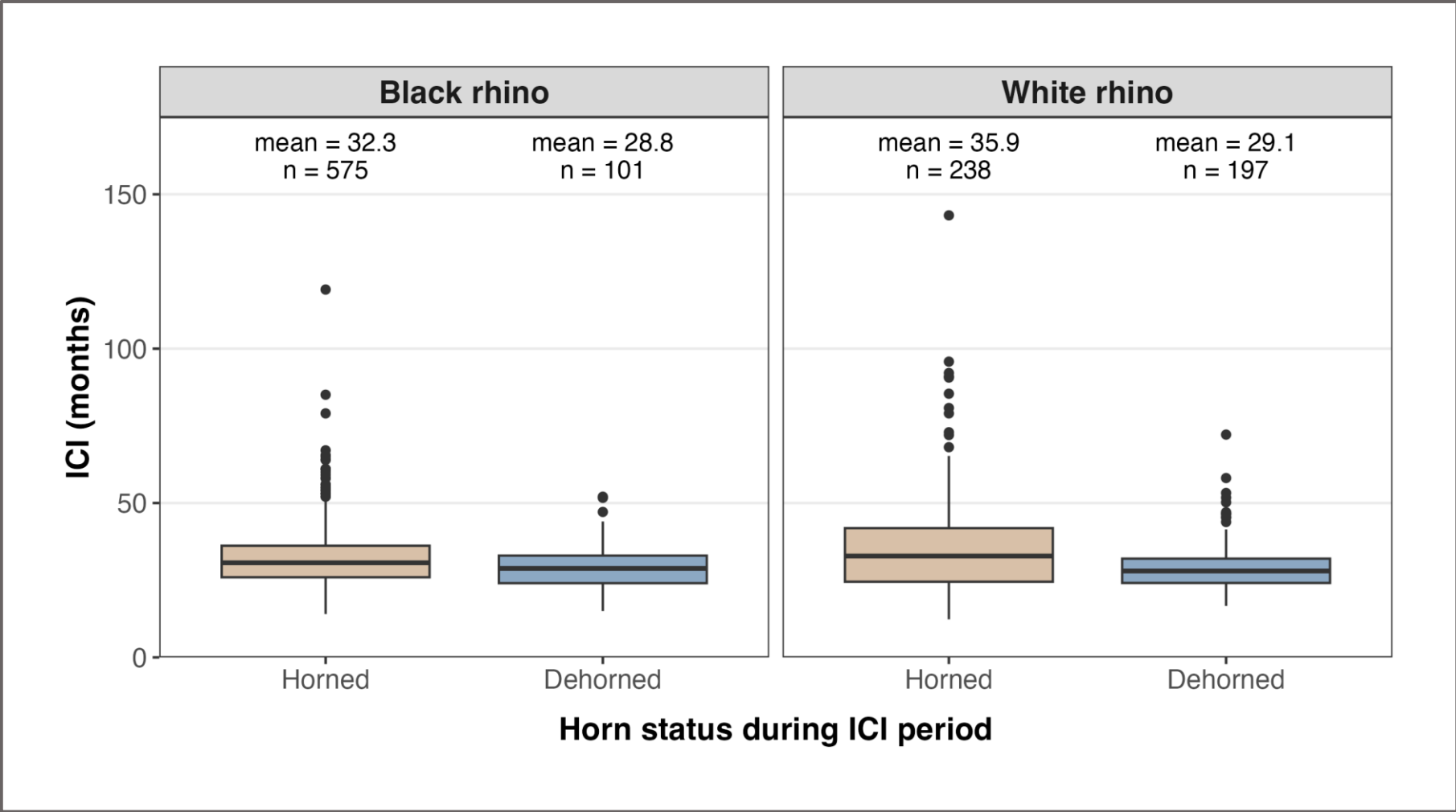
Results: dehorning implementation



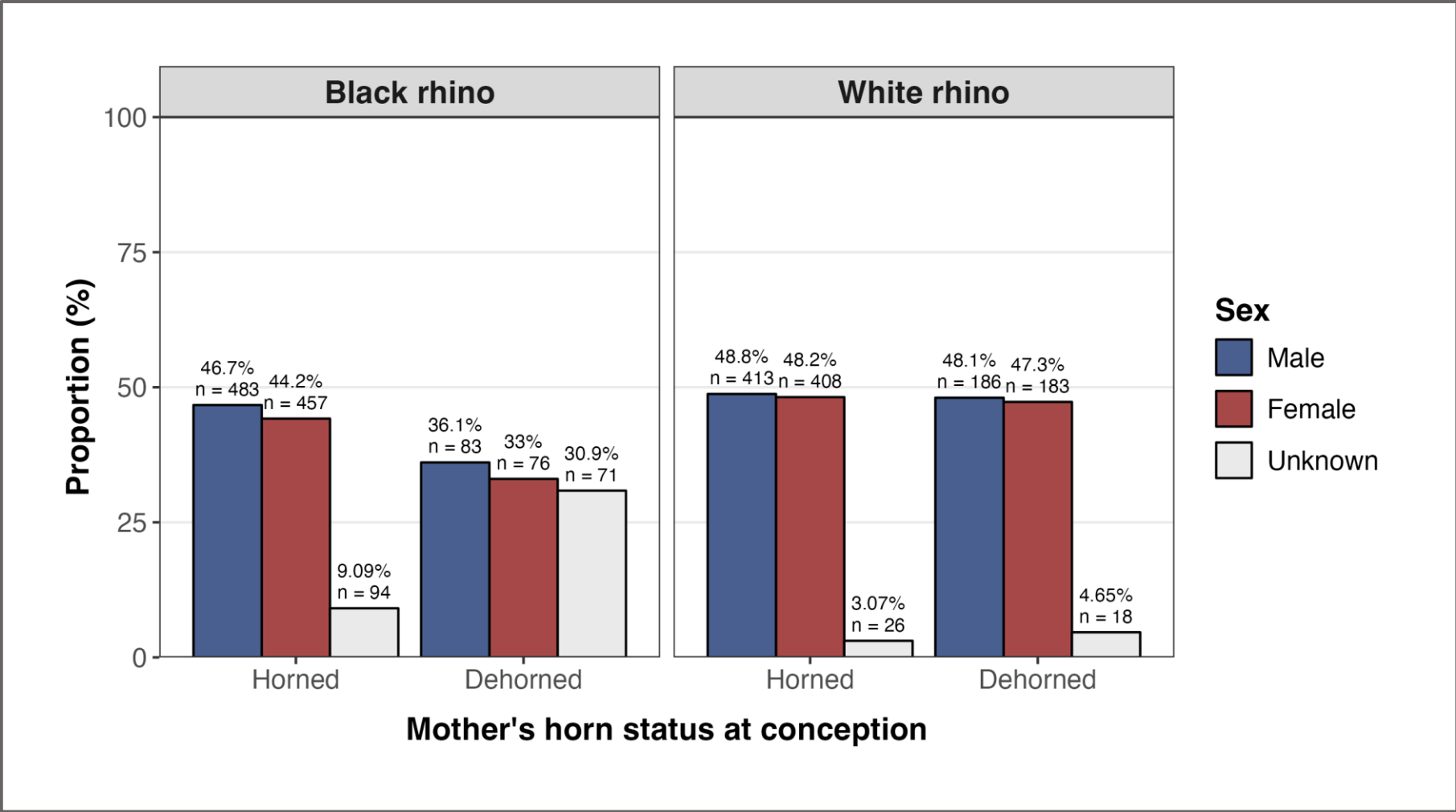
Results: age-at-first-reproduction (AFR)



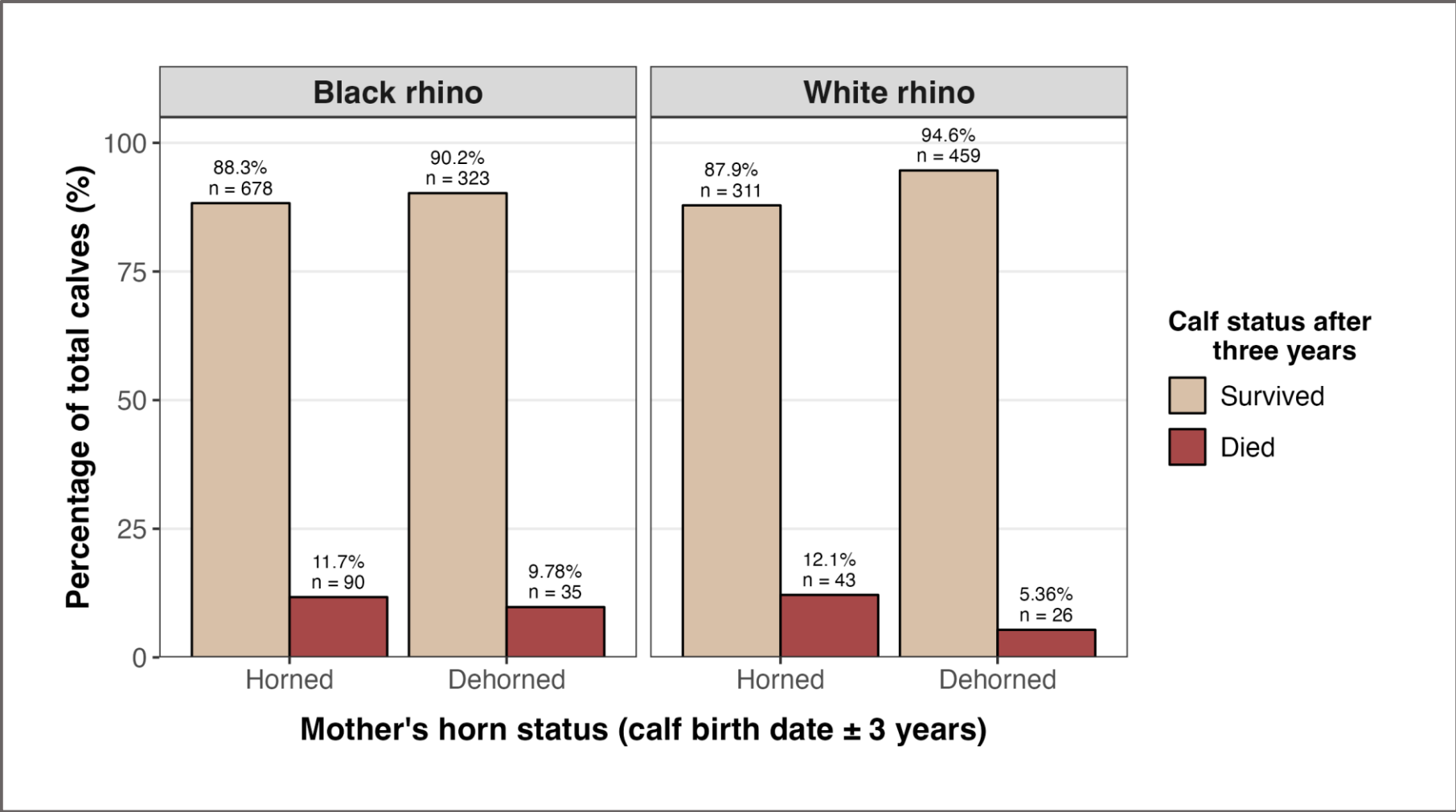
Results: inter-calving interval (ICI)



Results: birth sex ratio

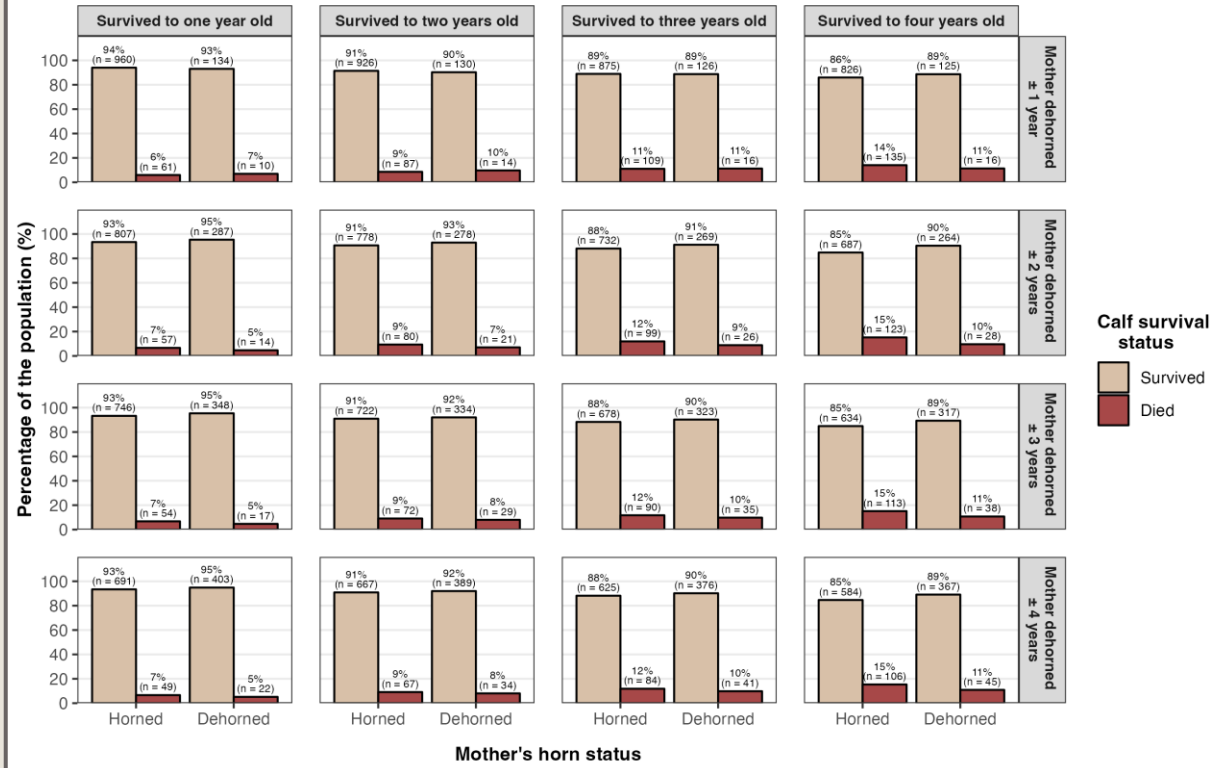


Results: calf survival

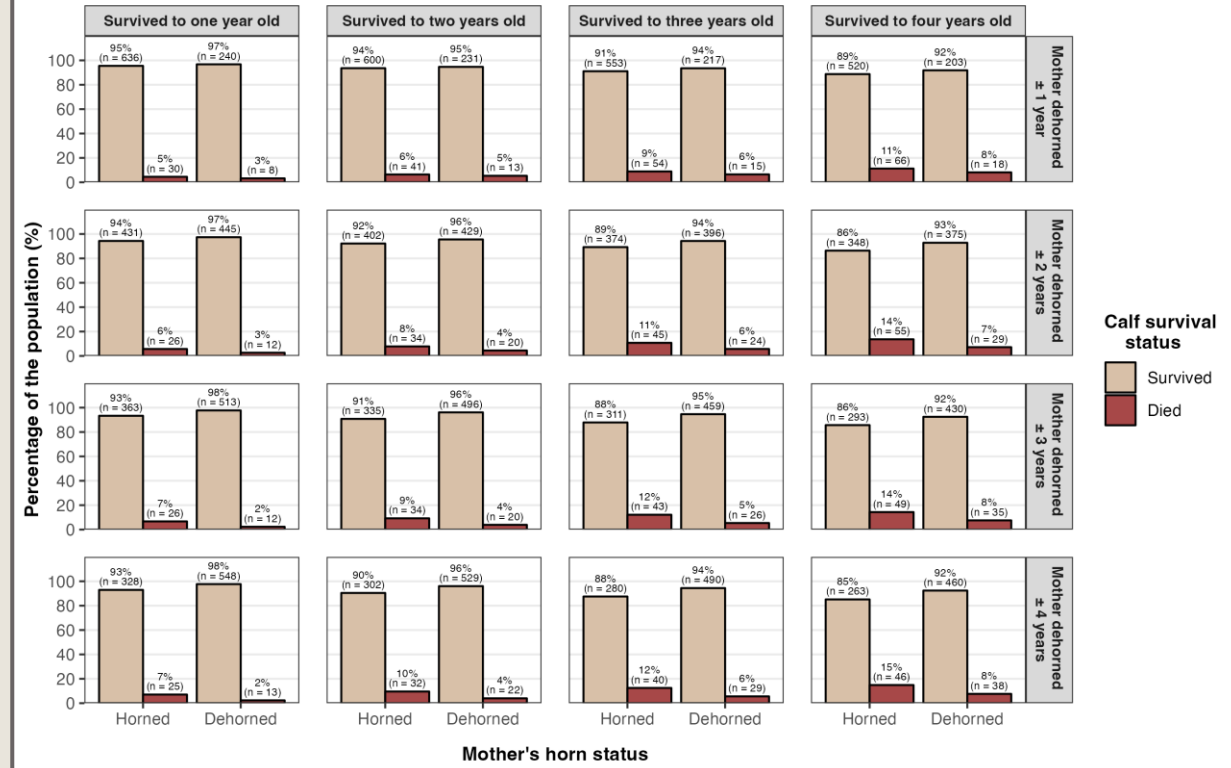


Results: calf survival

Black rhino



White rhino



Conclusions

- No evidence of substantial detrimental effects to population dynamics to date
- Potential positive impacts for calf survival
- Application to other sites



Remaining questions



- Population growth rates?
- Death rates?
- Cause of death?
- Lifespan?
- Subspecies differences?
- Behaviour?
- **Long-term plan?**

Thank you!

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