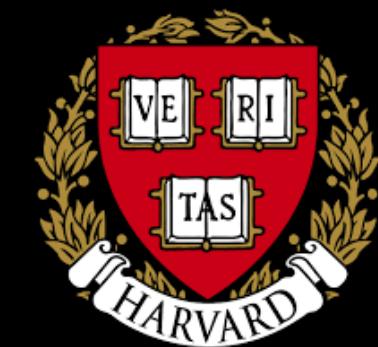


# ANIMAL-LANDSCAPE INTERACTIONS ON A CHANGING PLANET

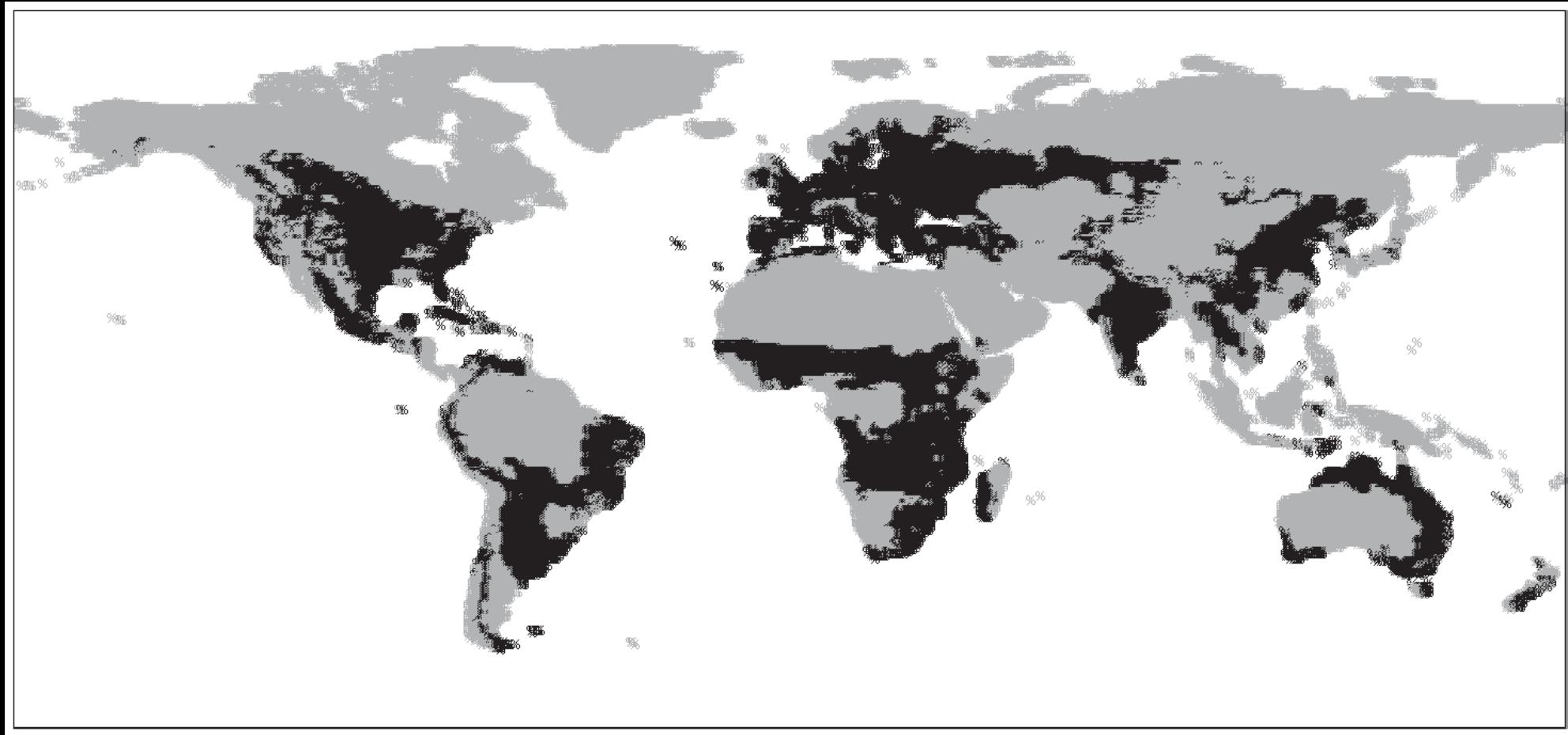


Andrew B. Davies  
Organismic and Evolutionary Biology, Harvard University



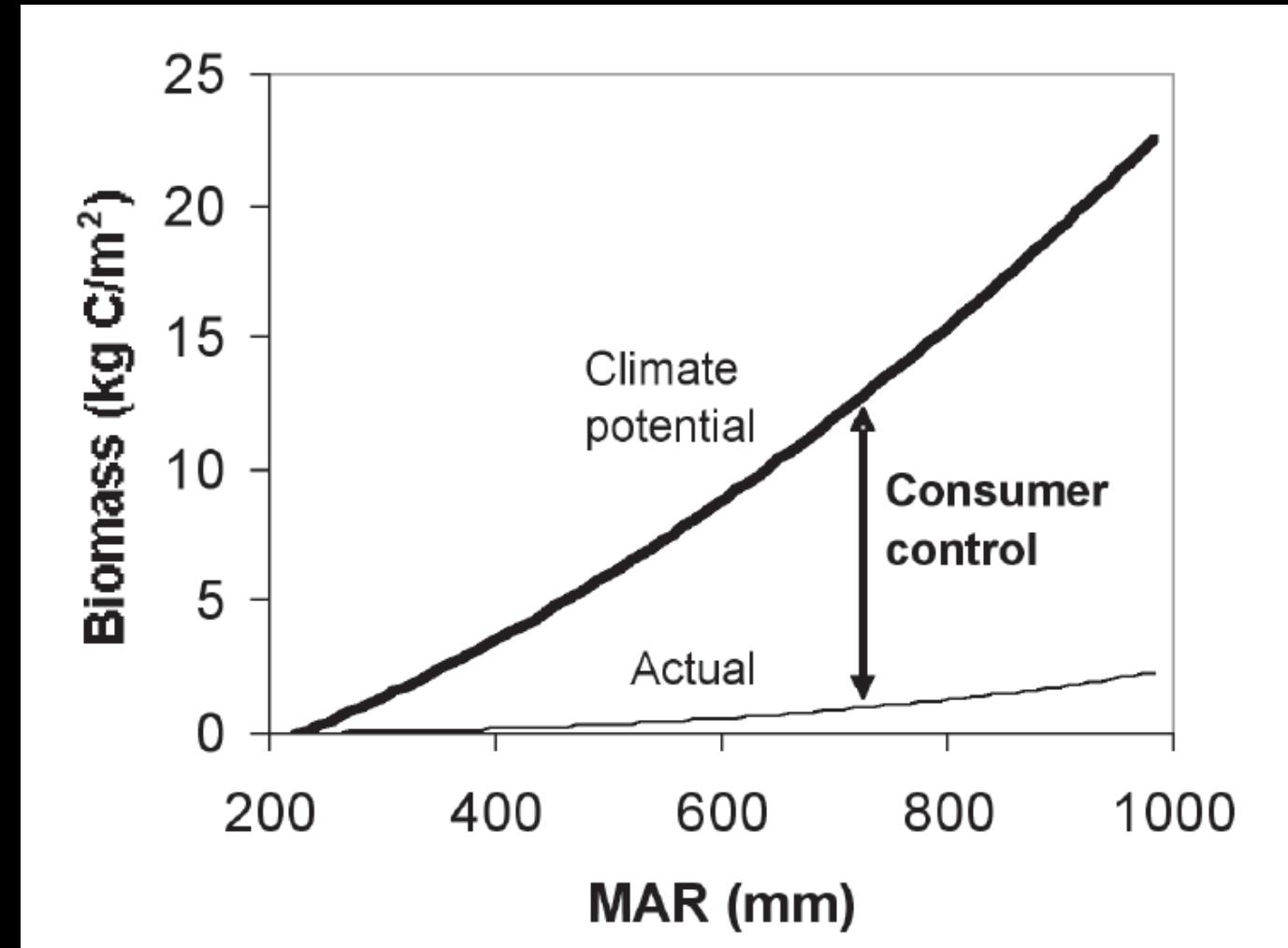
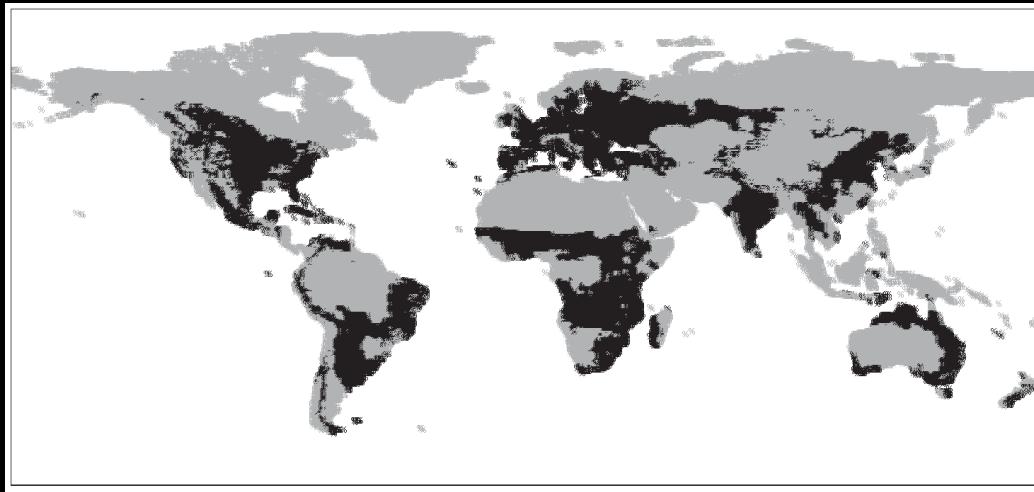


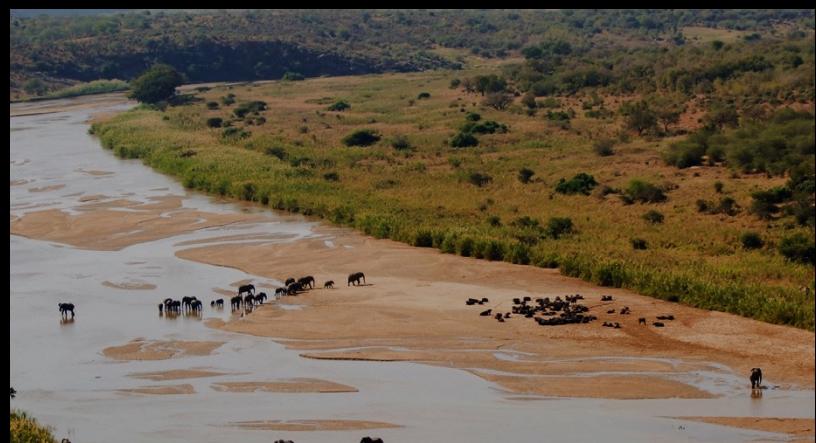
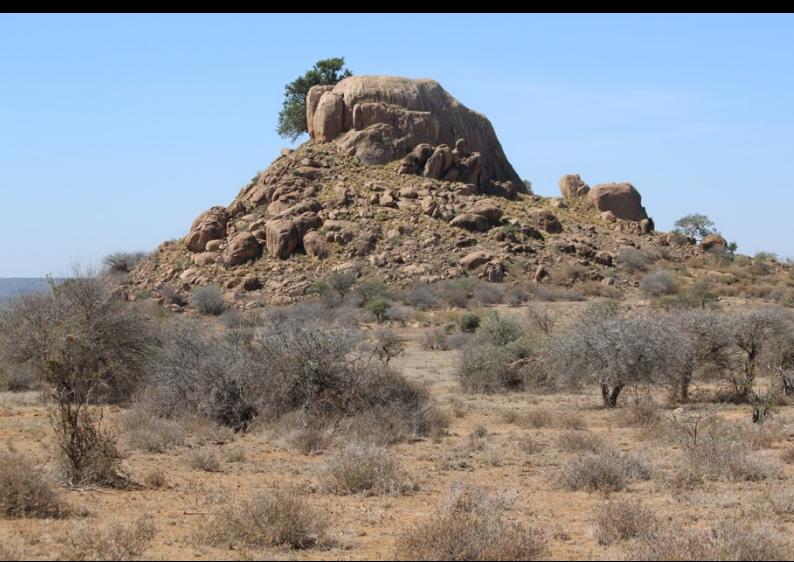
# Ecosystems uncertain



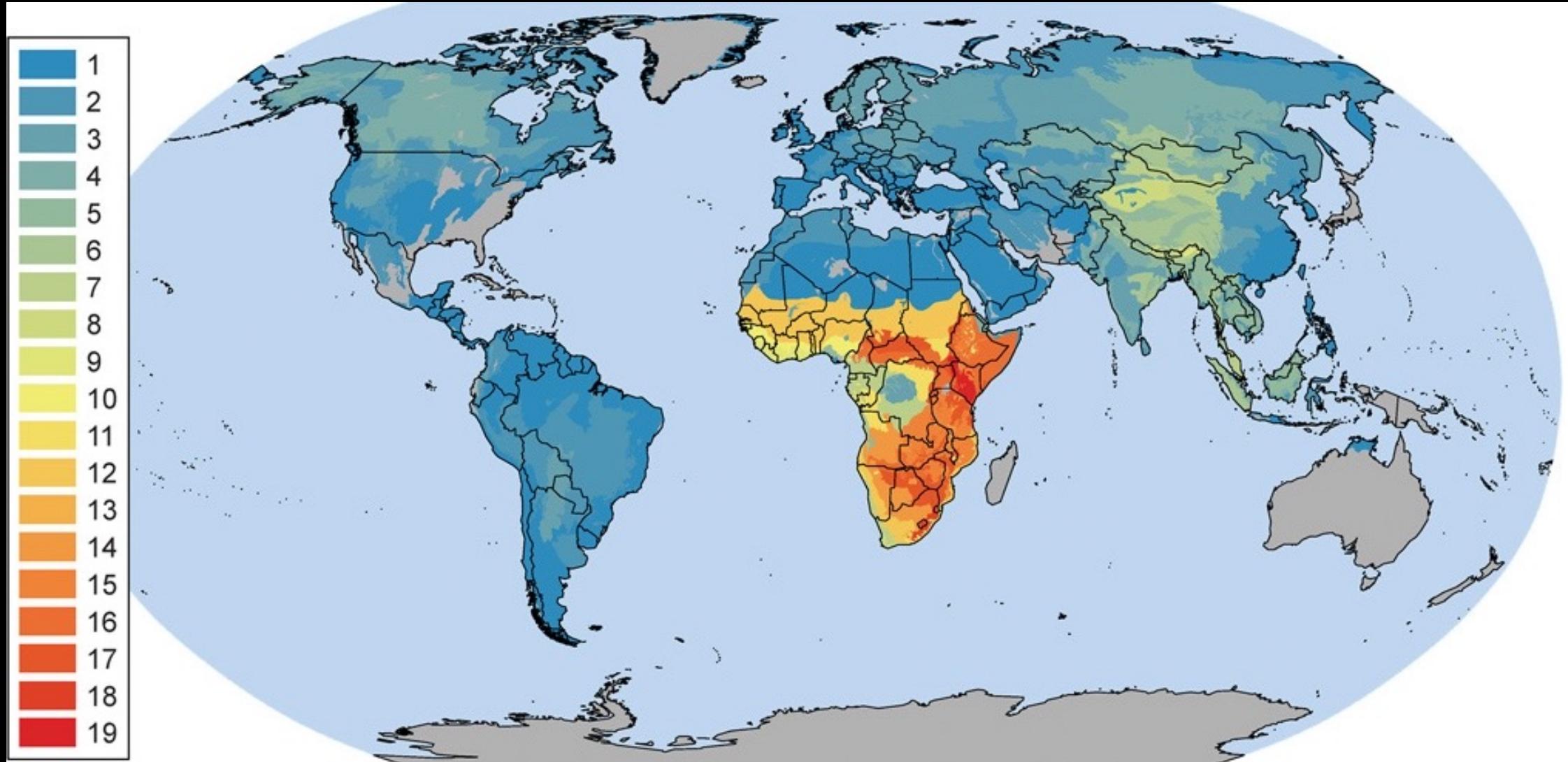
Bond 2005 J. Vegetation Science

# Ecosystems uncertain



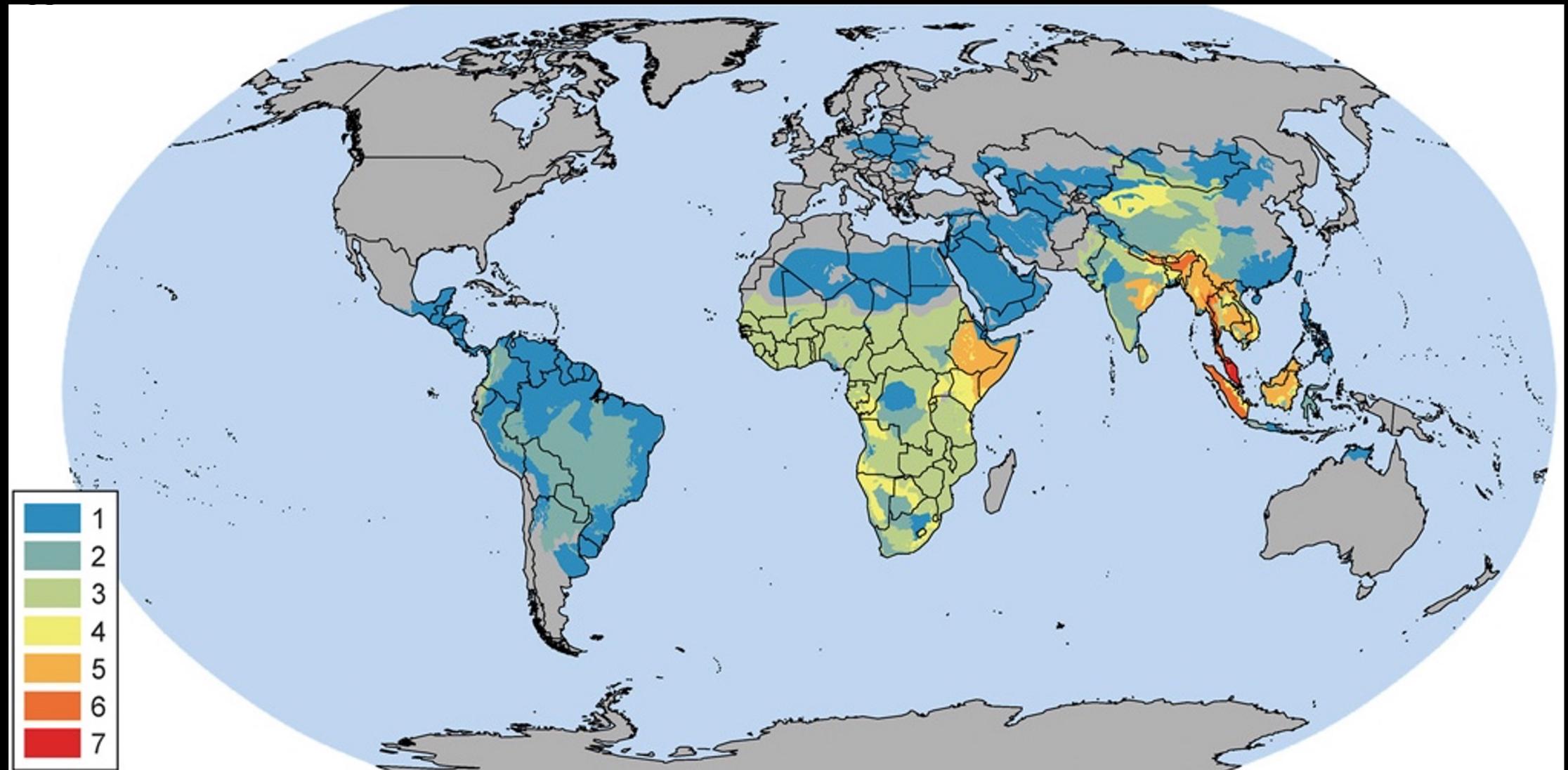


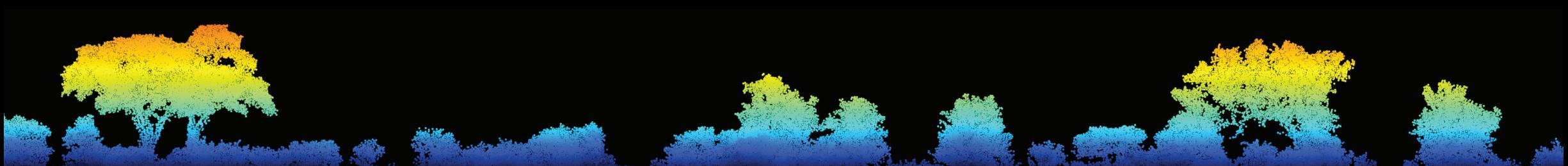
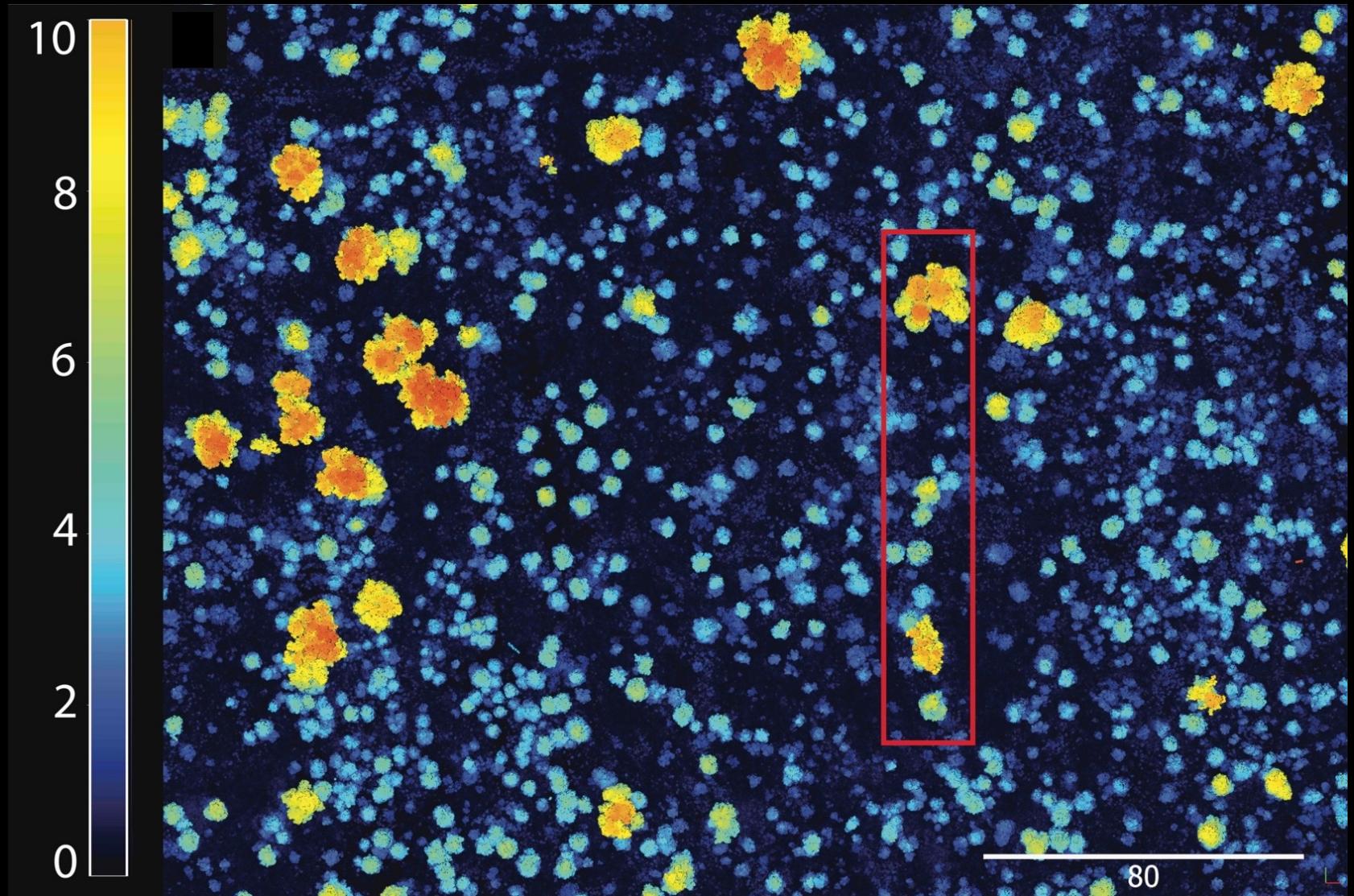
# Number of large herbivore species



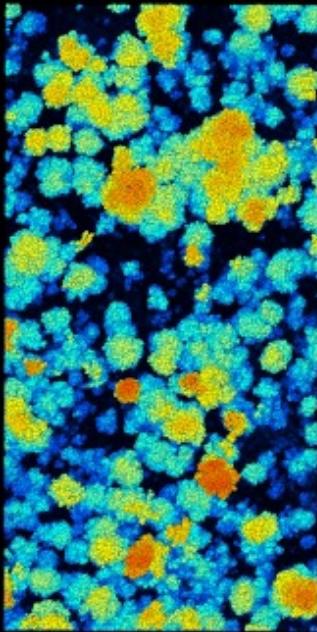
Ripple et al. 2015 Science

# Number of *threatened* large herbivore species

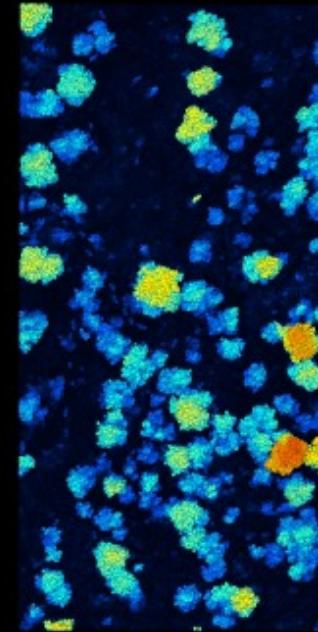




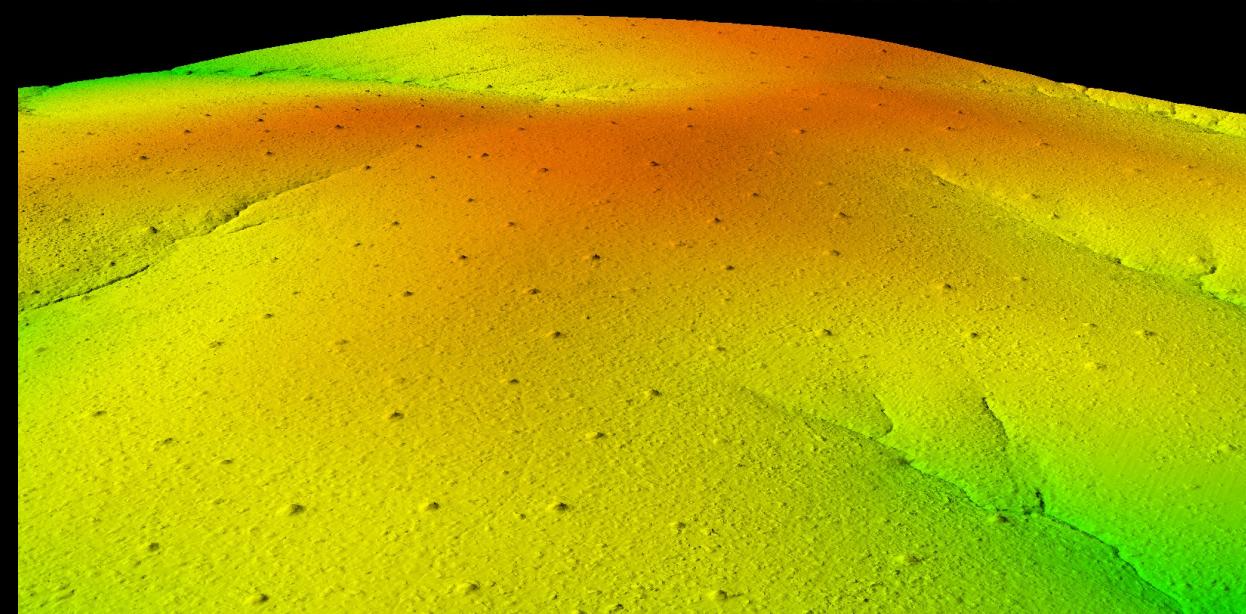
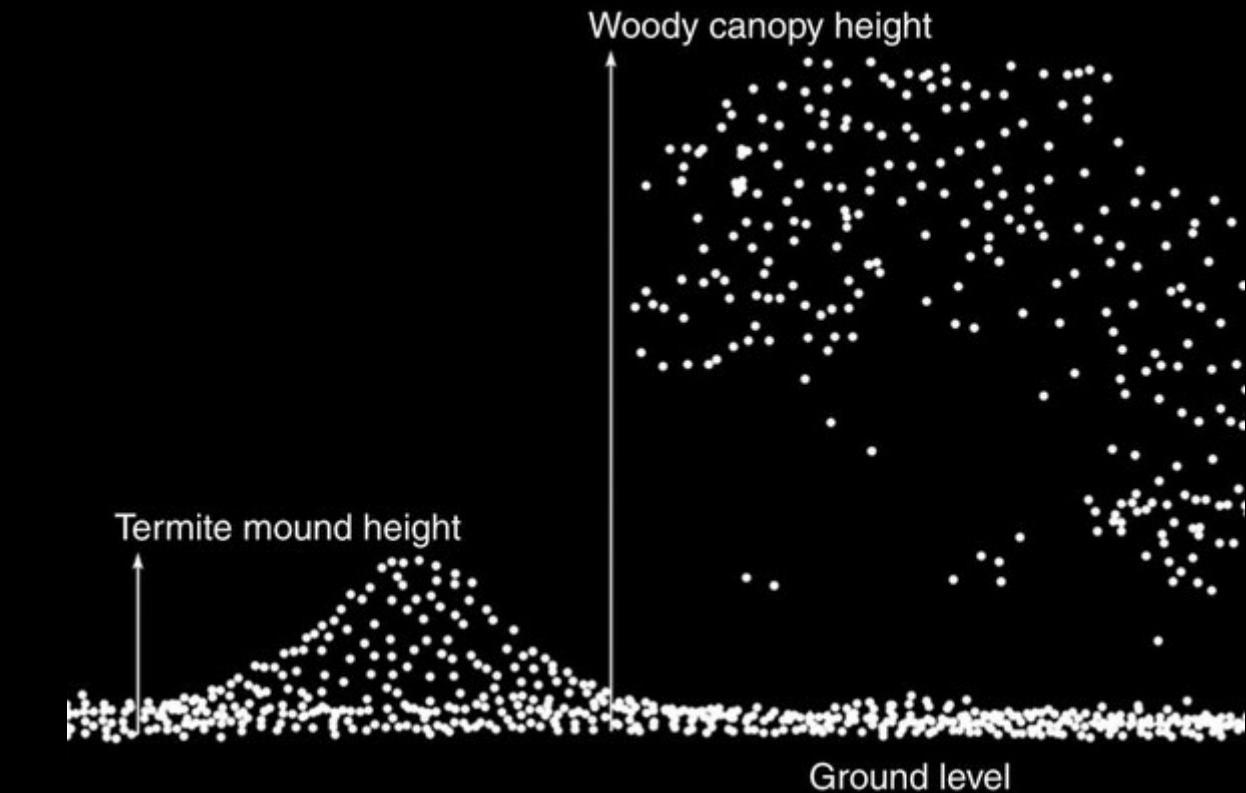
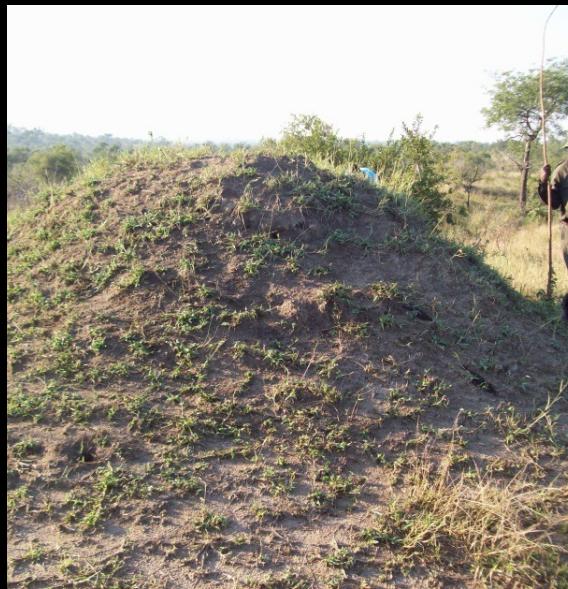
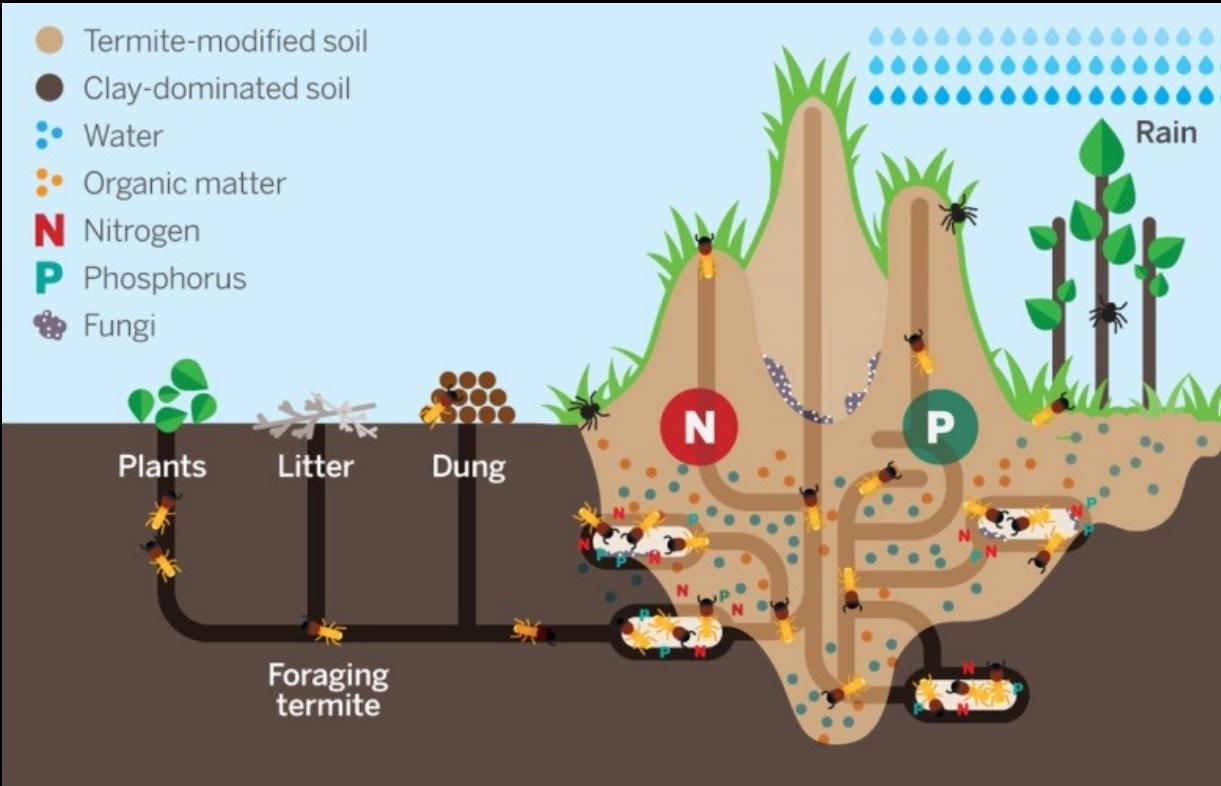
Within Exclosure

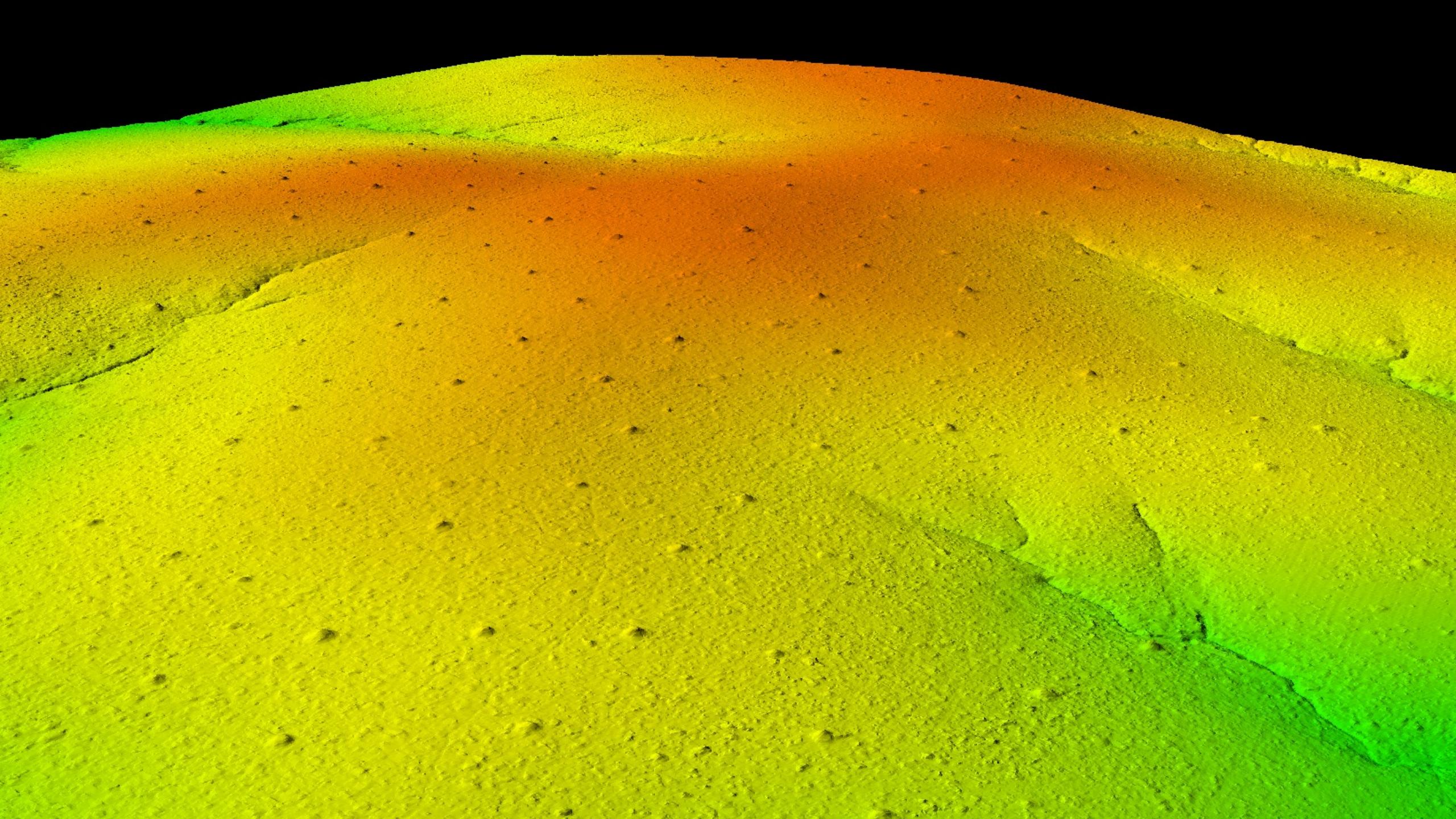


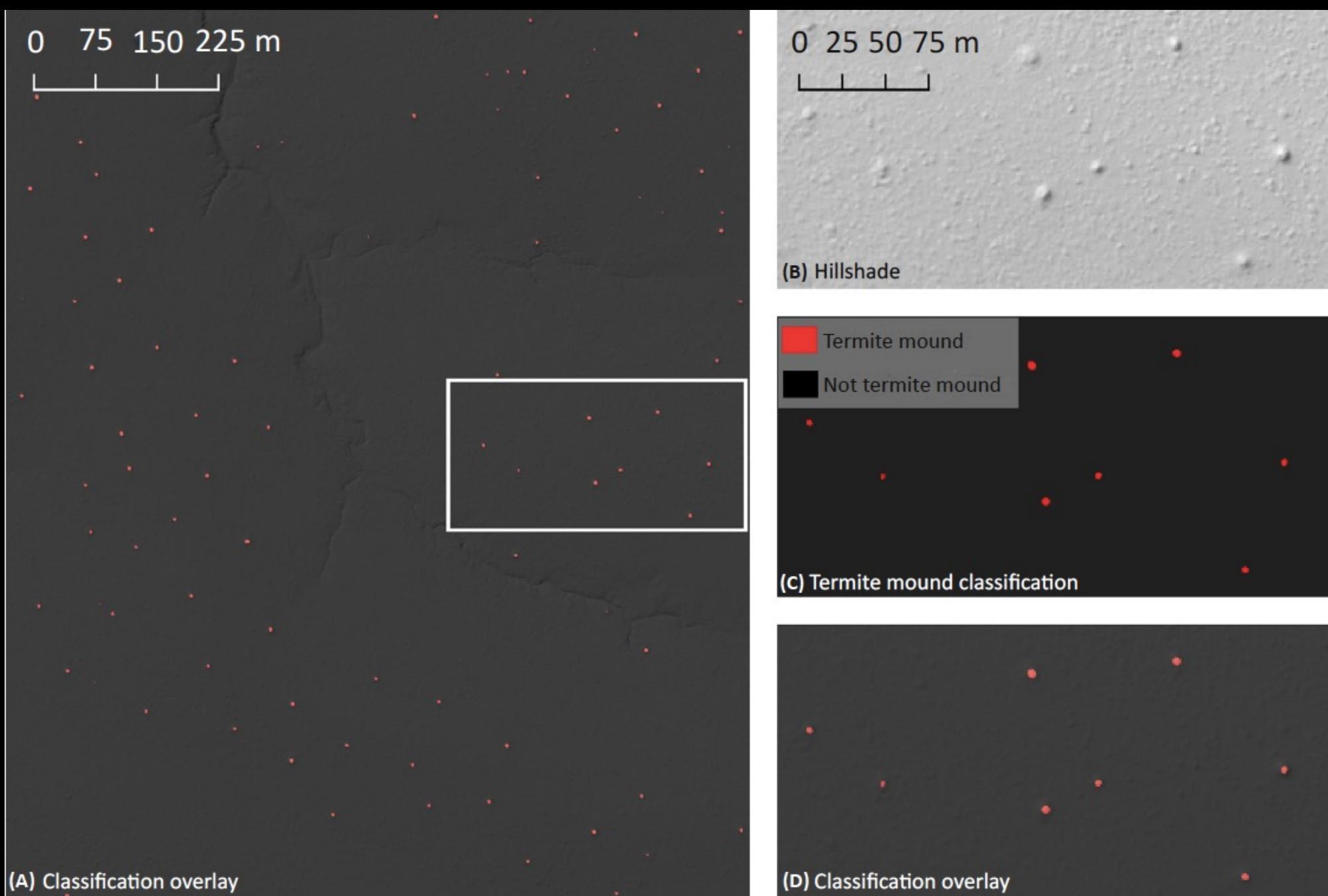
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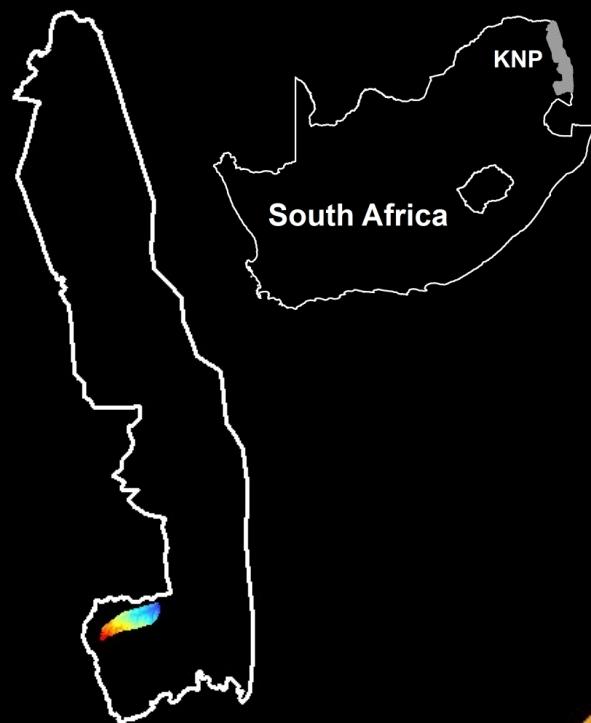
- Termite-modified soil
- Clay-dominated soil
- Water
- Organic matter
- N Nitrogen
- P Phosphorus
- Fungi









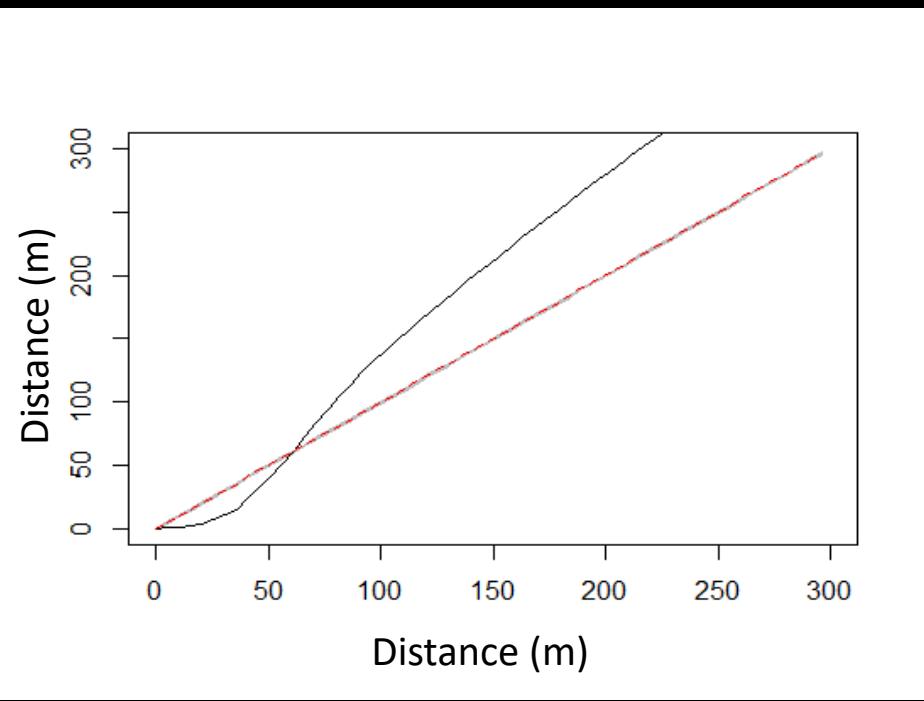


South Africa

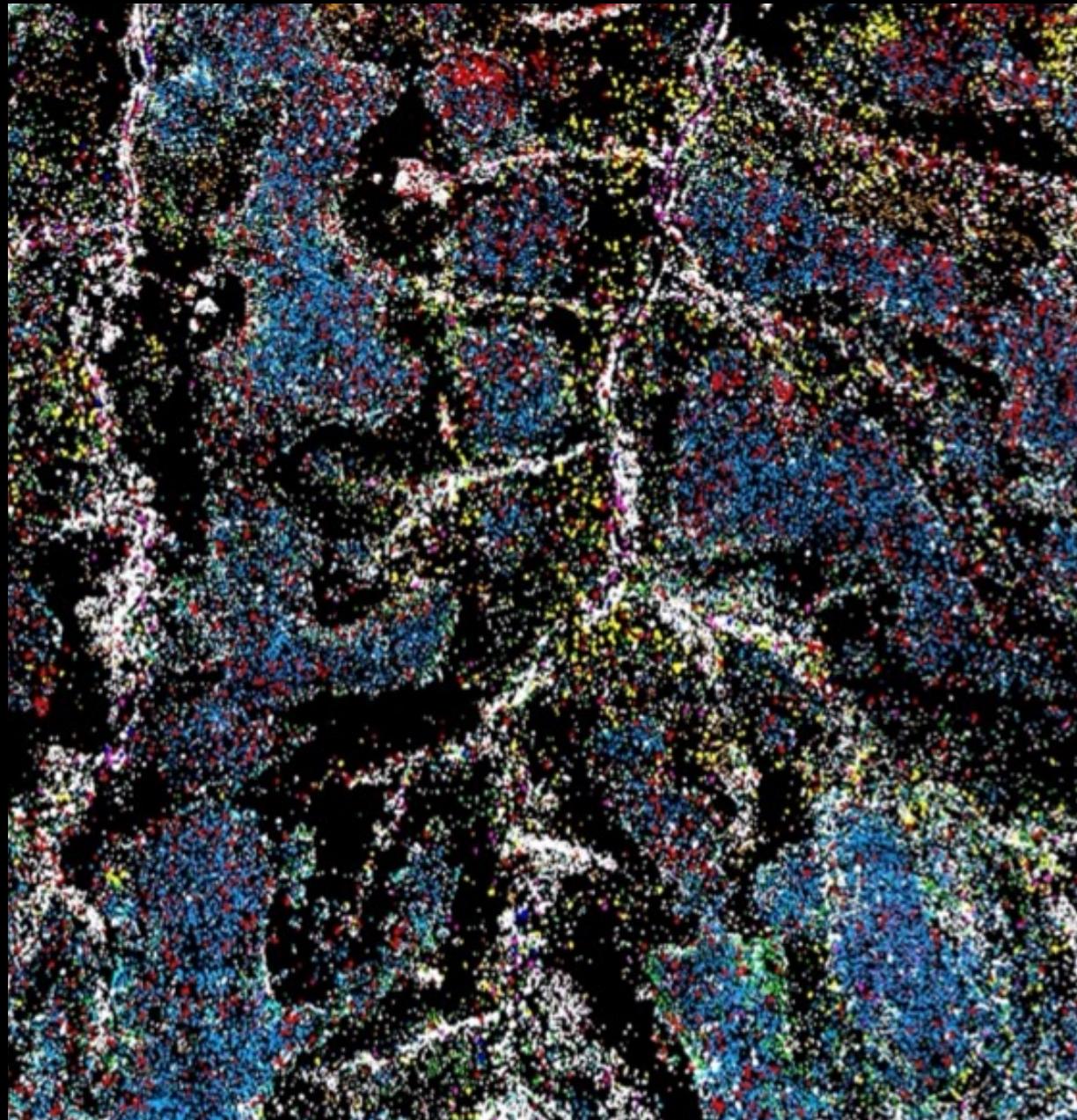
KNP



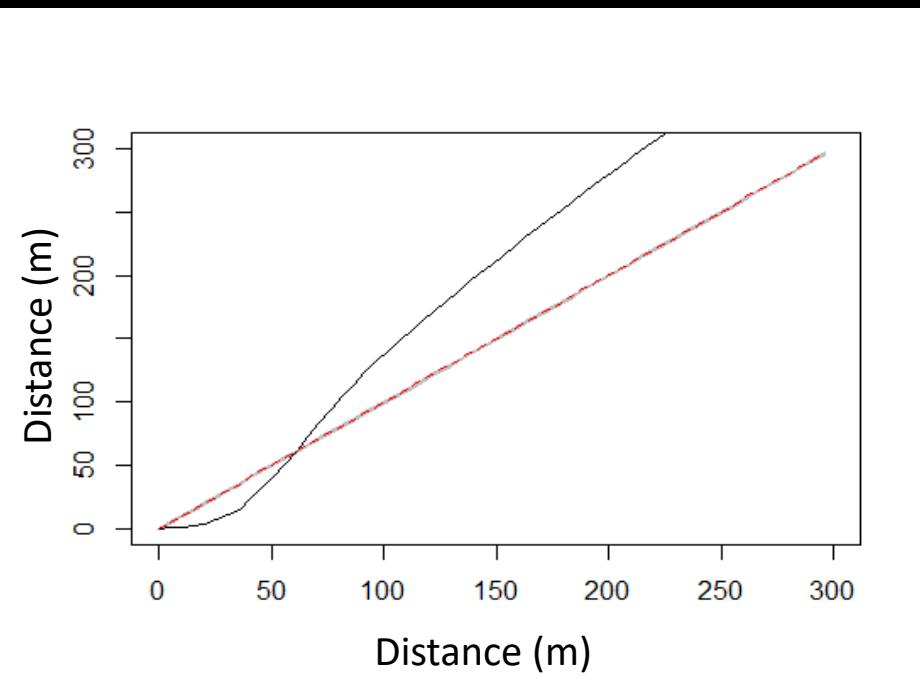
5 km



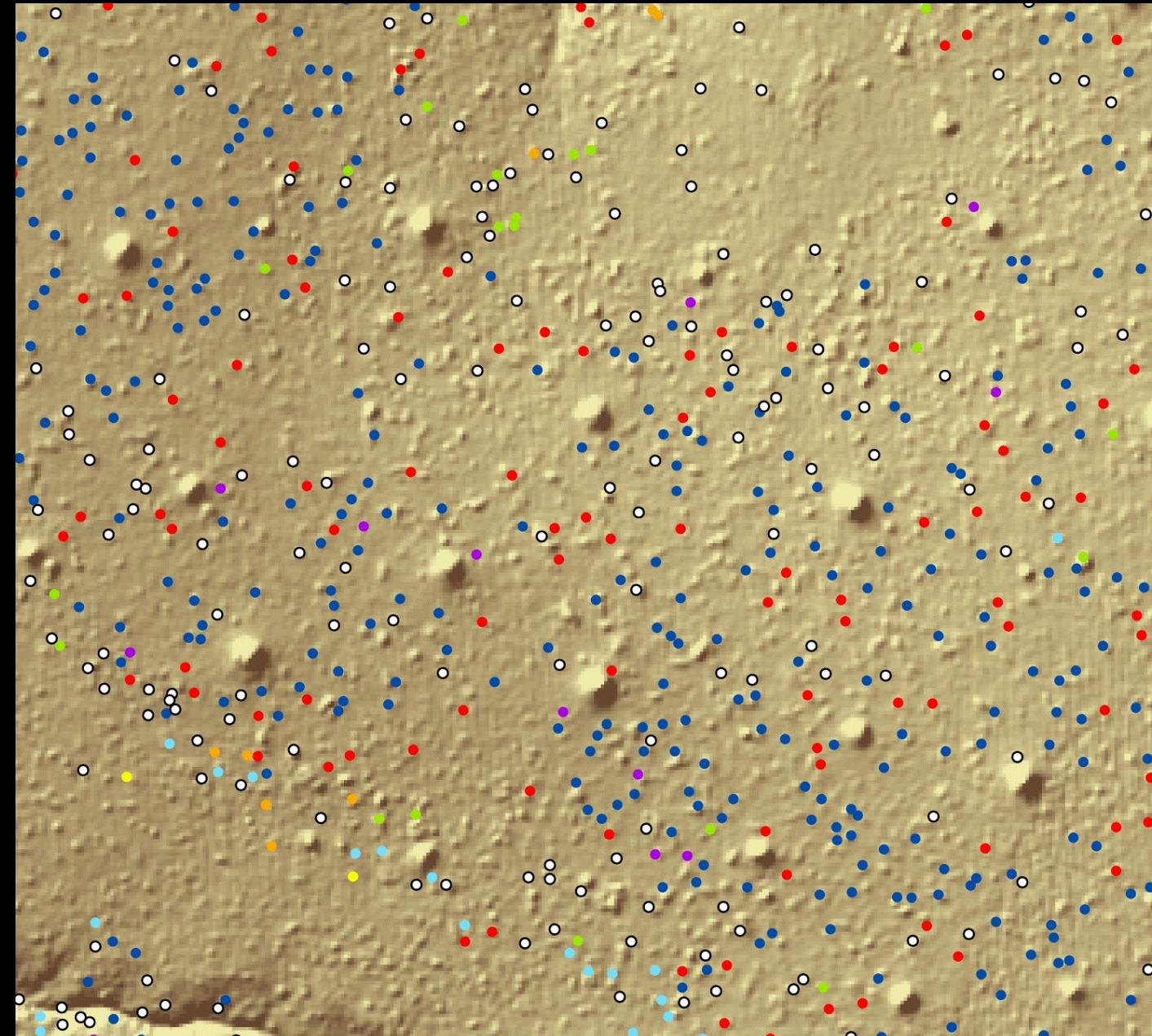
Davies et al. 2014 Ecography



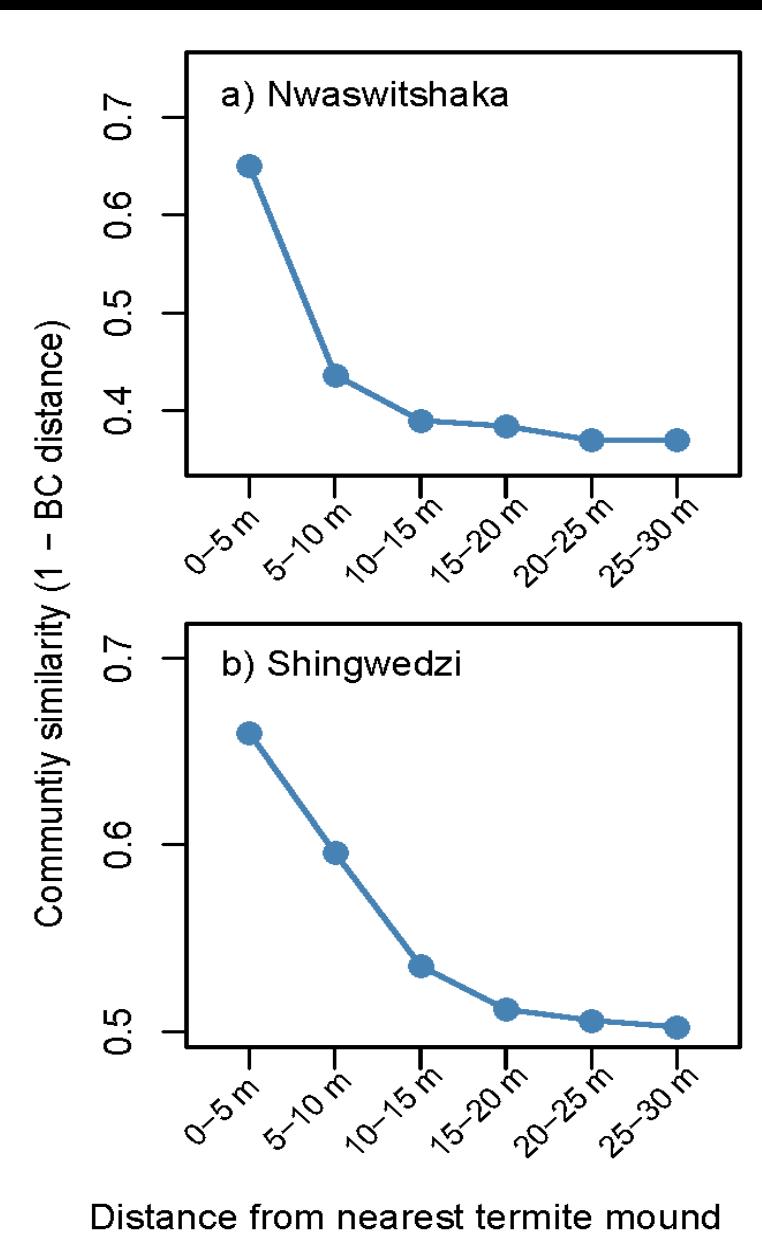
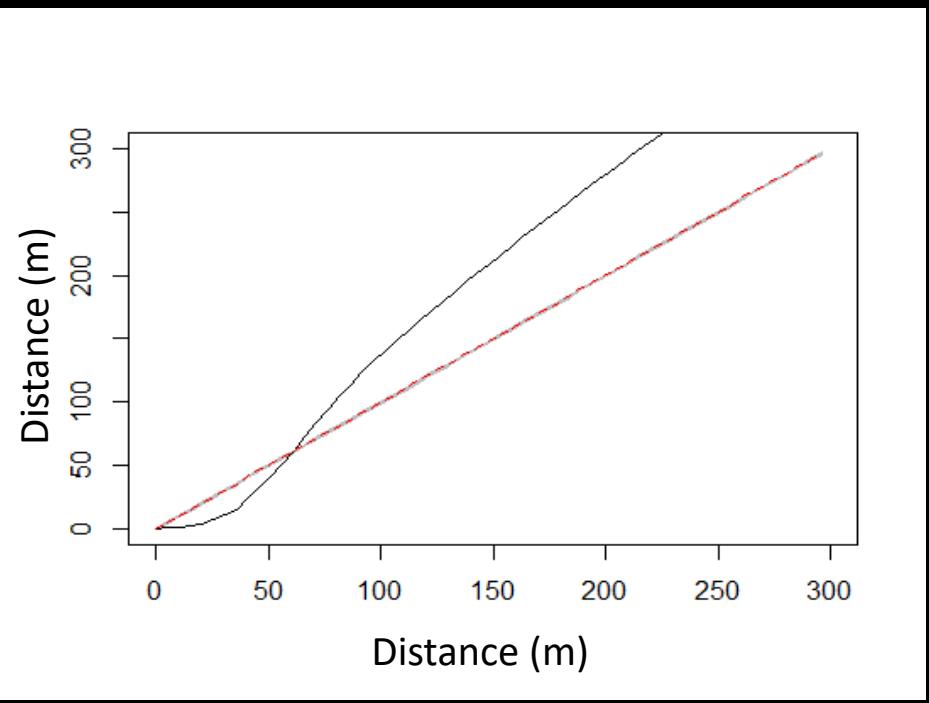
Davies et al. 2016 J Biogeography



Davies et al. 2014 Ecography



Davies et al. 2016 J Biogeography

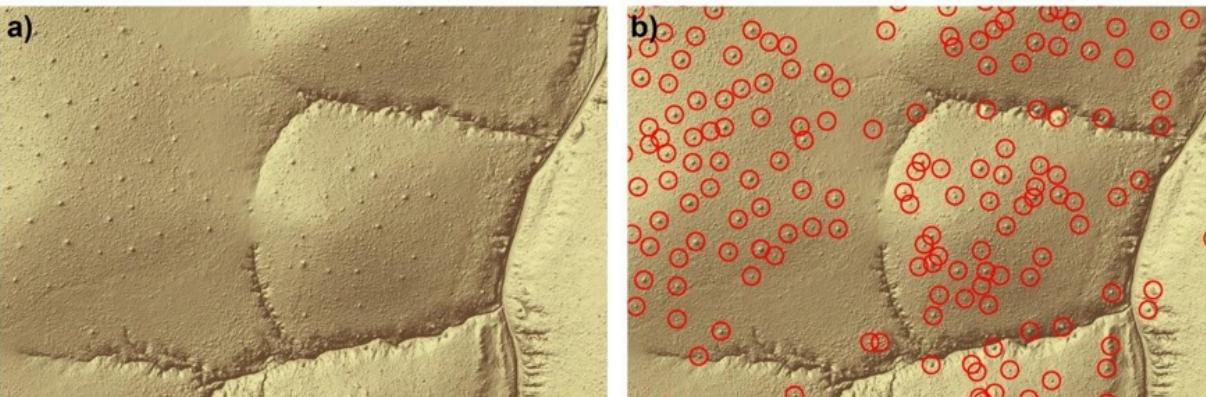


Davies et al. 2016 J Biogeography

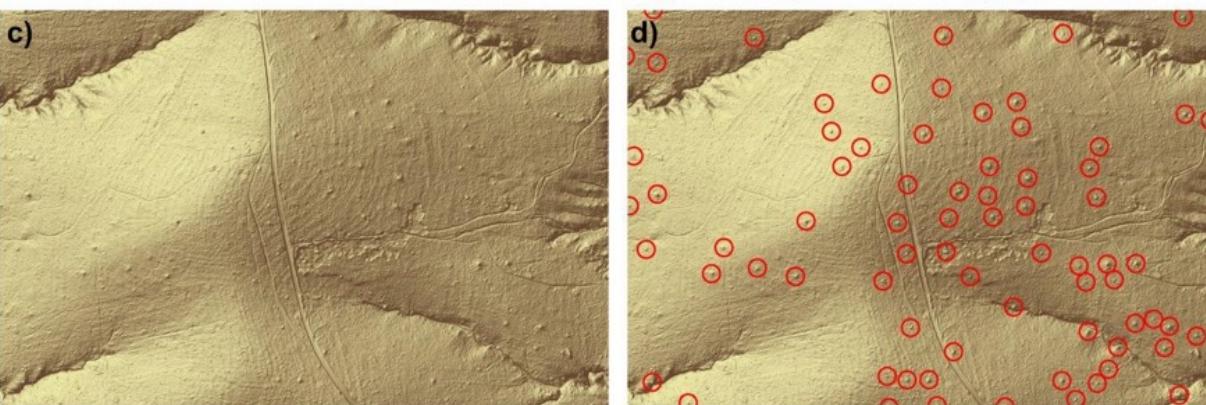


Davies et al. 2014 Ecography

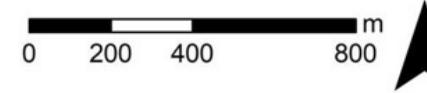
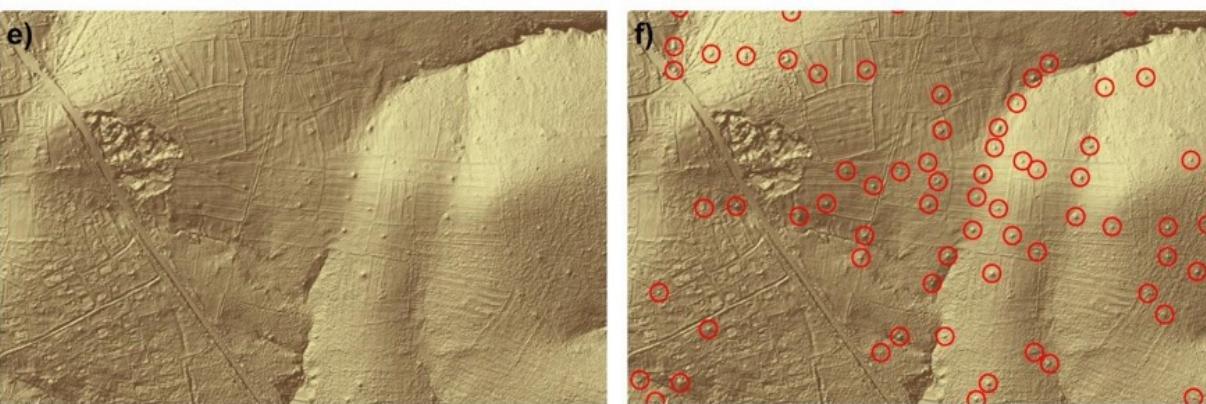
Protected Area

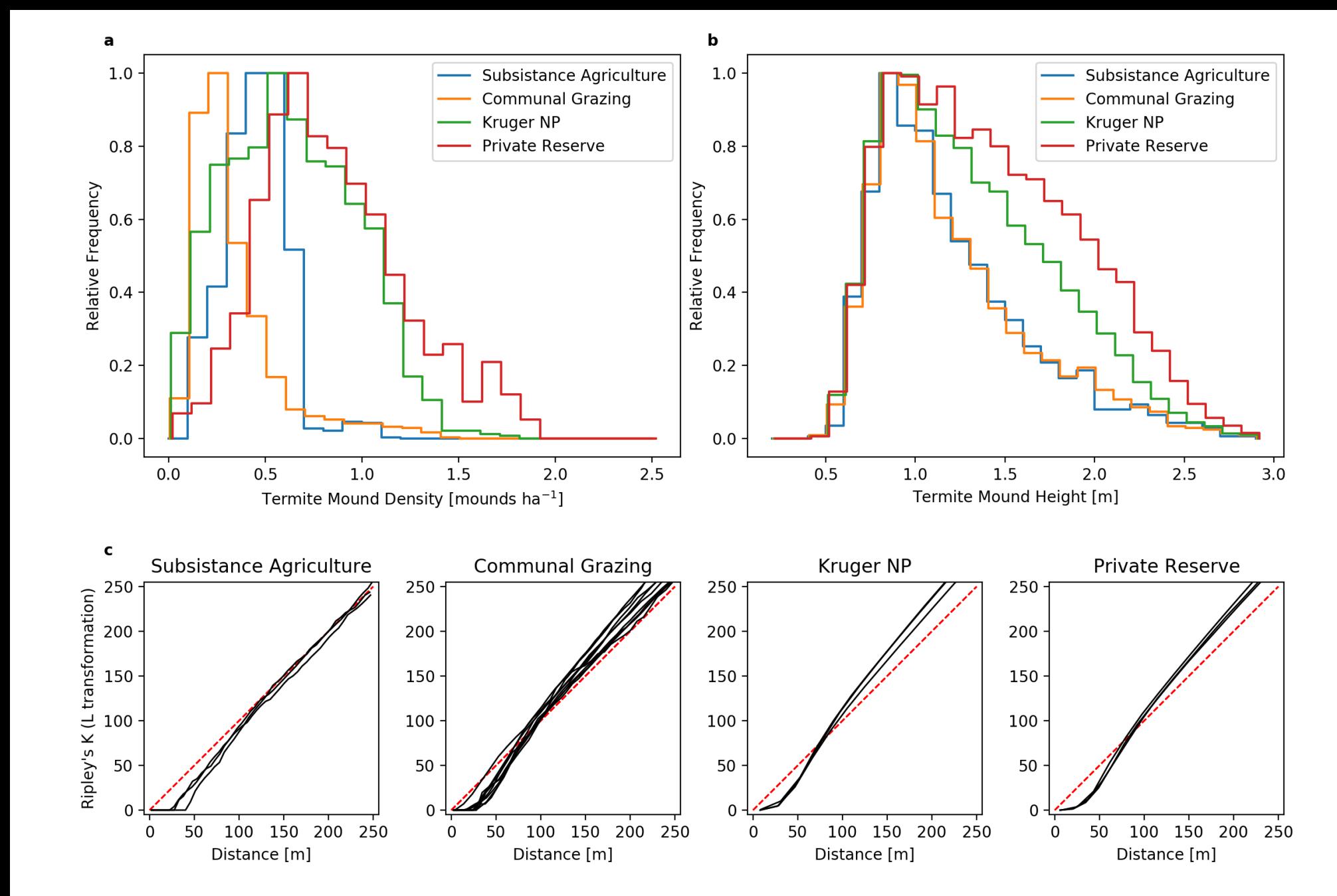


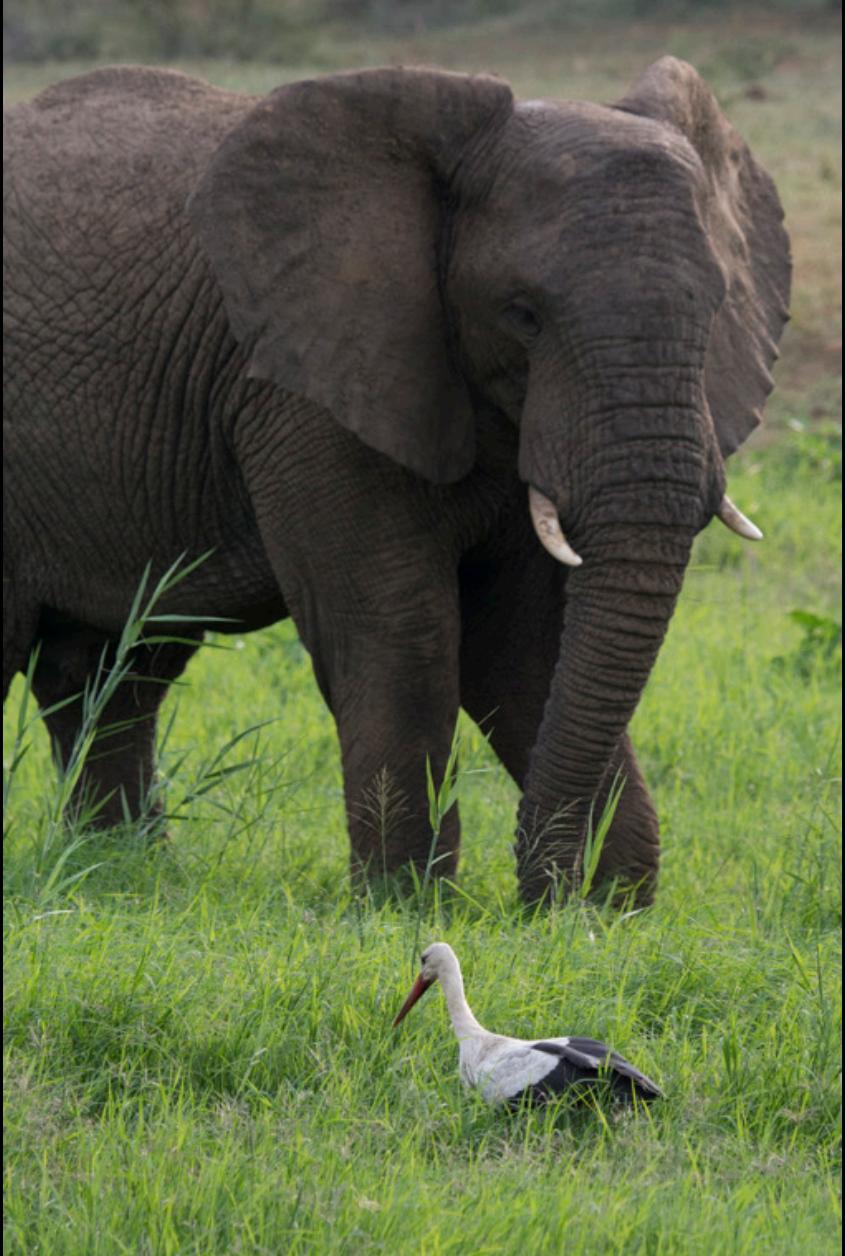
Grazing



Agriculture

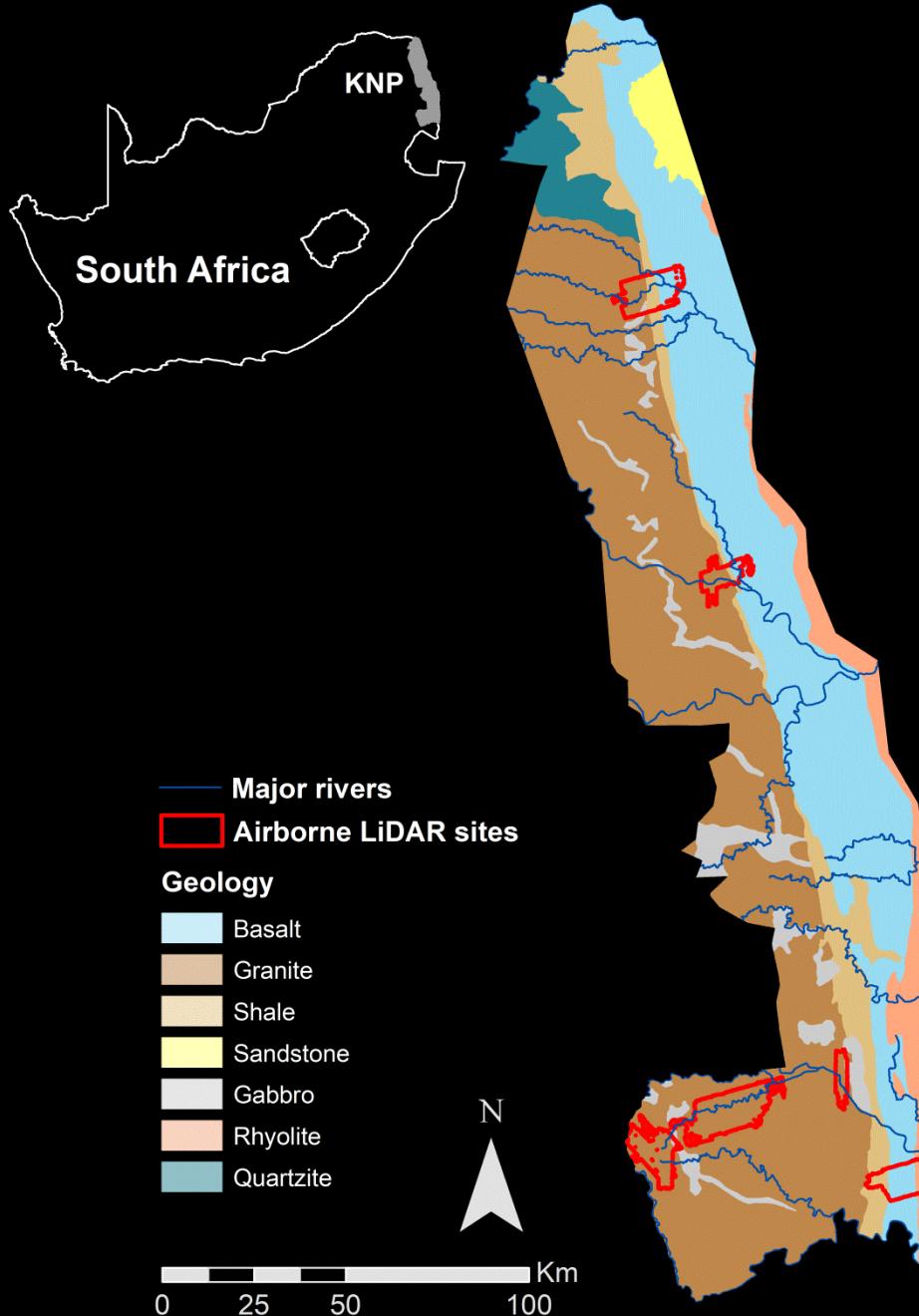


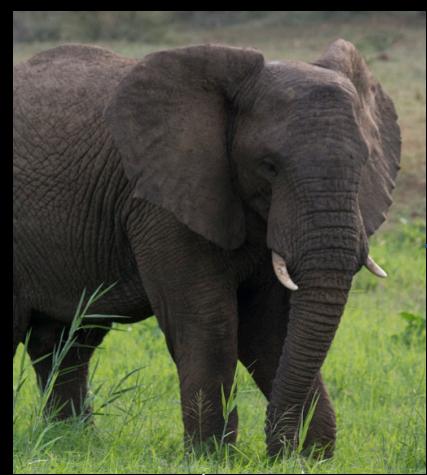
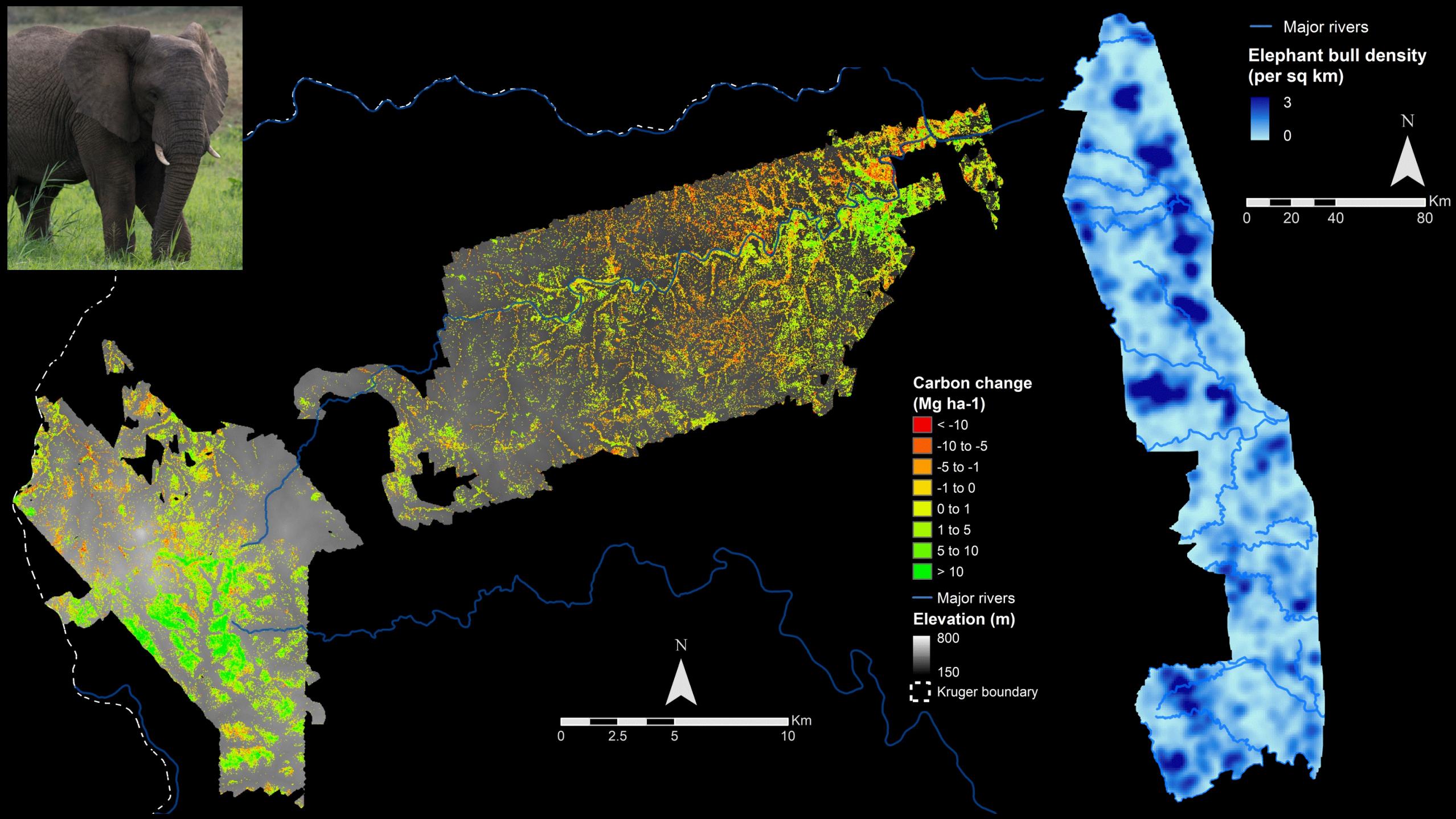


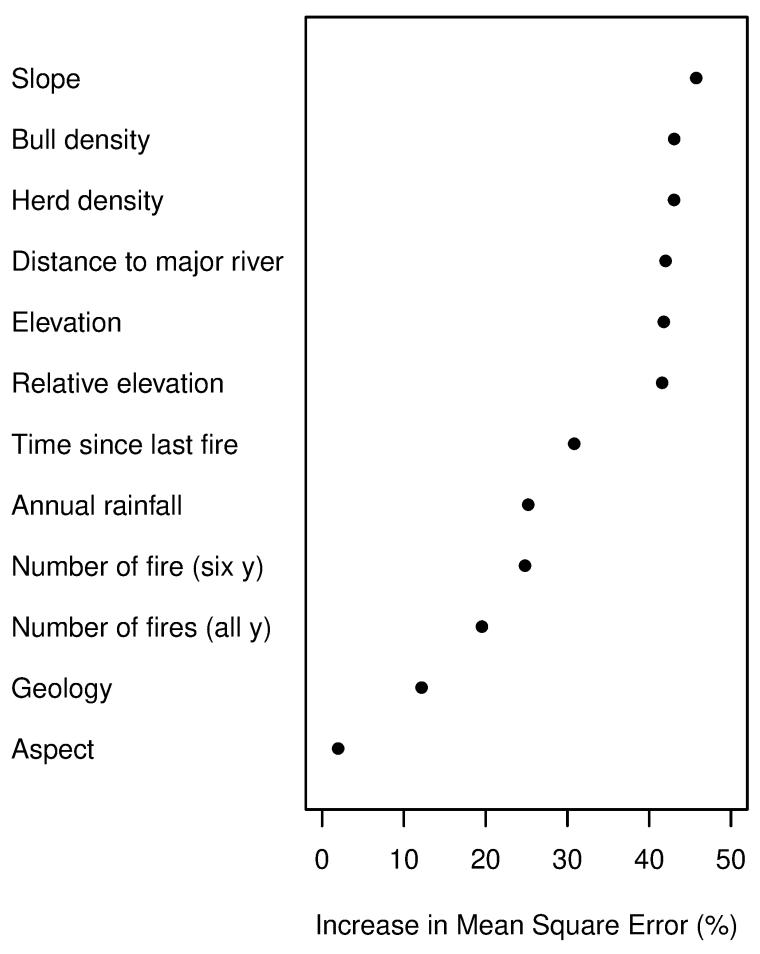


# Contrasting landscapes:

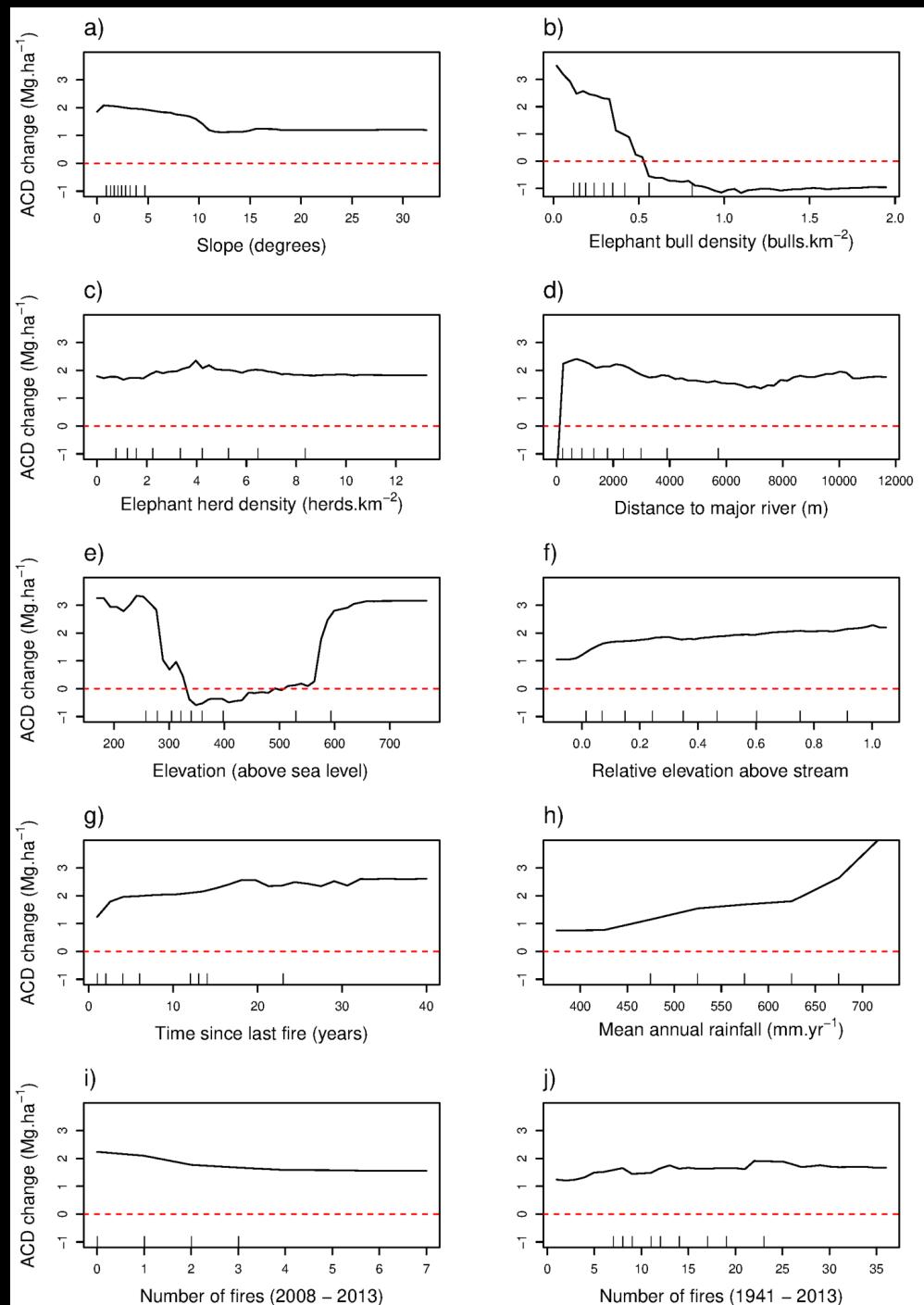
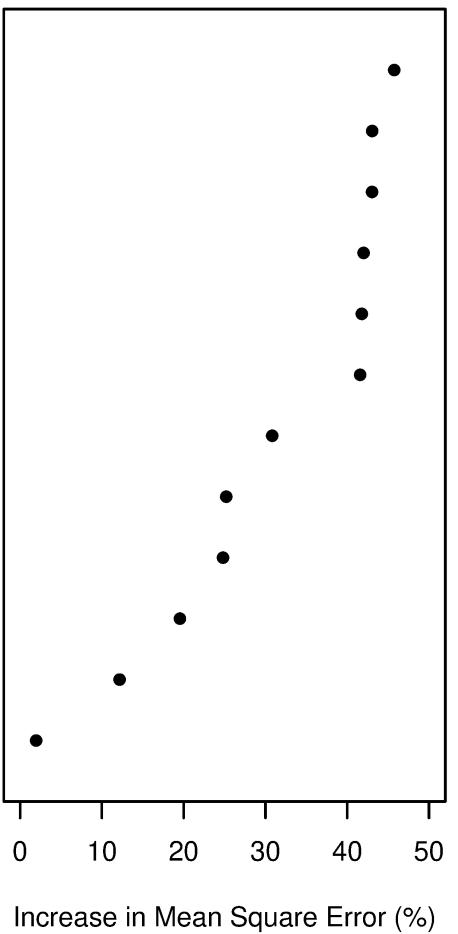
- Rainfall
- Slope
- Elevation
- Relative elevation
- Aspect
- Distance from river
- Geology
- Fire history
- Elephant densities



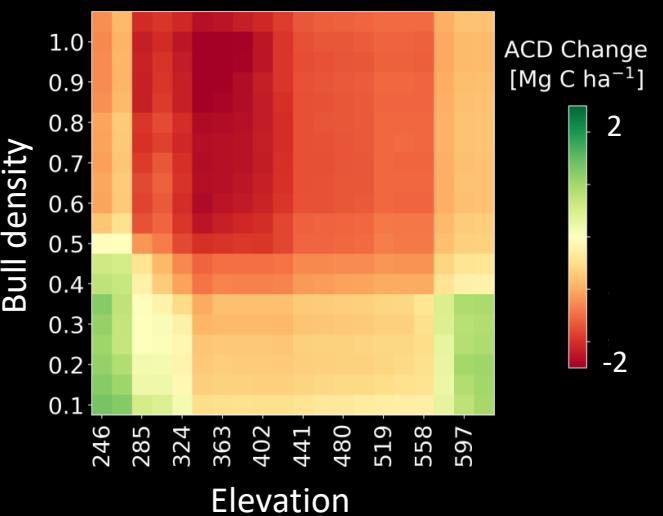
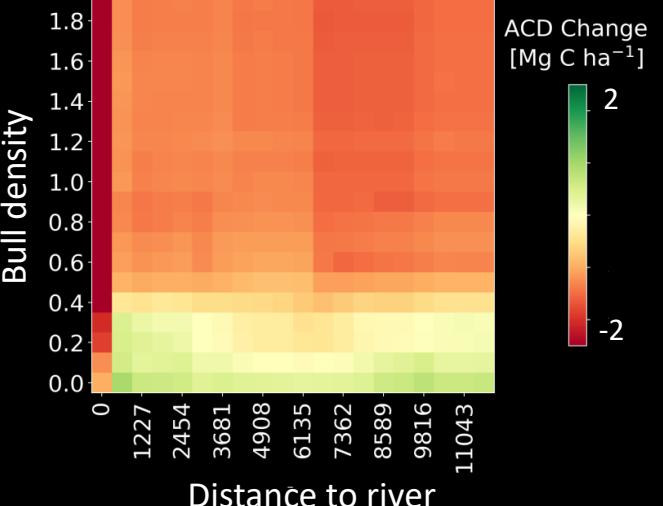
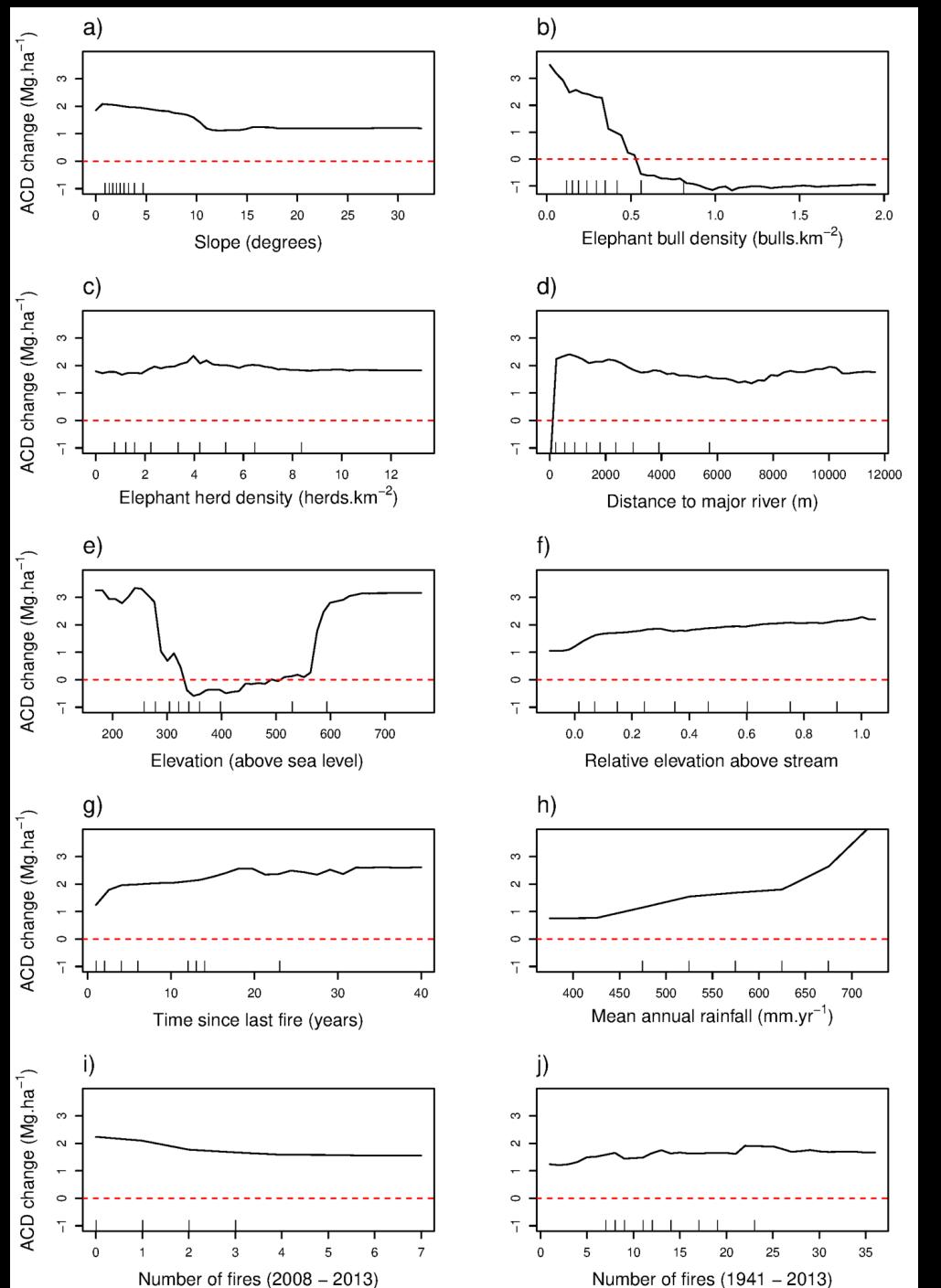
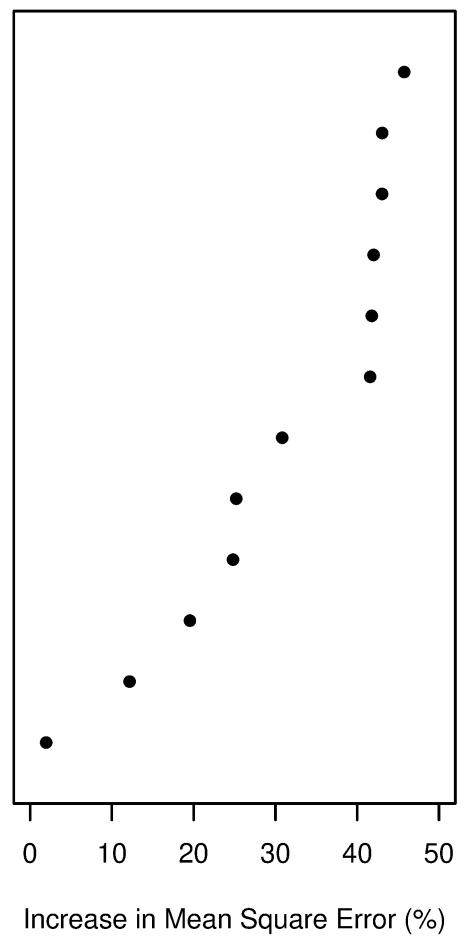




Slope  
Bull density  
Herd density  
Distance to major river  
Elevation  
Relative elevation  
Time since last fire  
Annual rainfall  
Number of fire (six y)  
Number of fires (all y)  
Geology  
Aspect



Slope  
Bull density  
Herd density  
Distance to major river  
Elevation  
Relative elevation  
Time since last fire  
Annual rainfall  
Number of fire (six y)  
Number of fires (all y)  
Geology  
Aspect

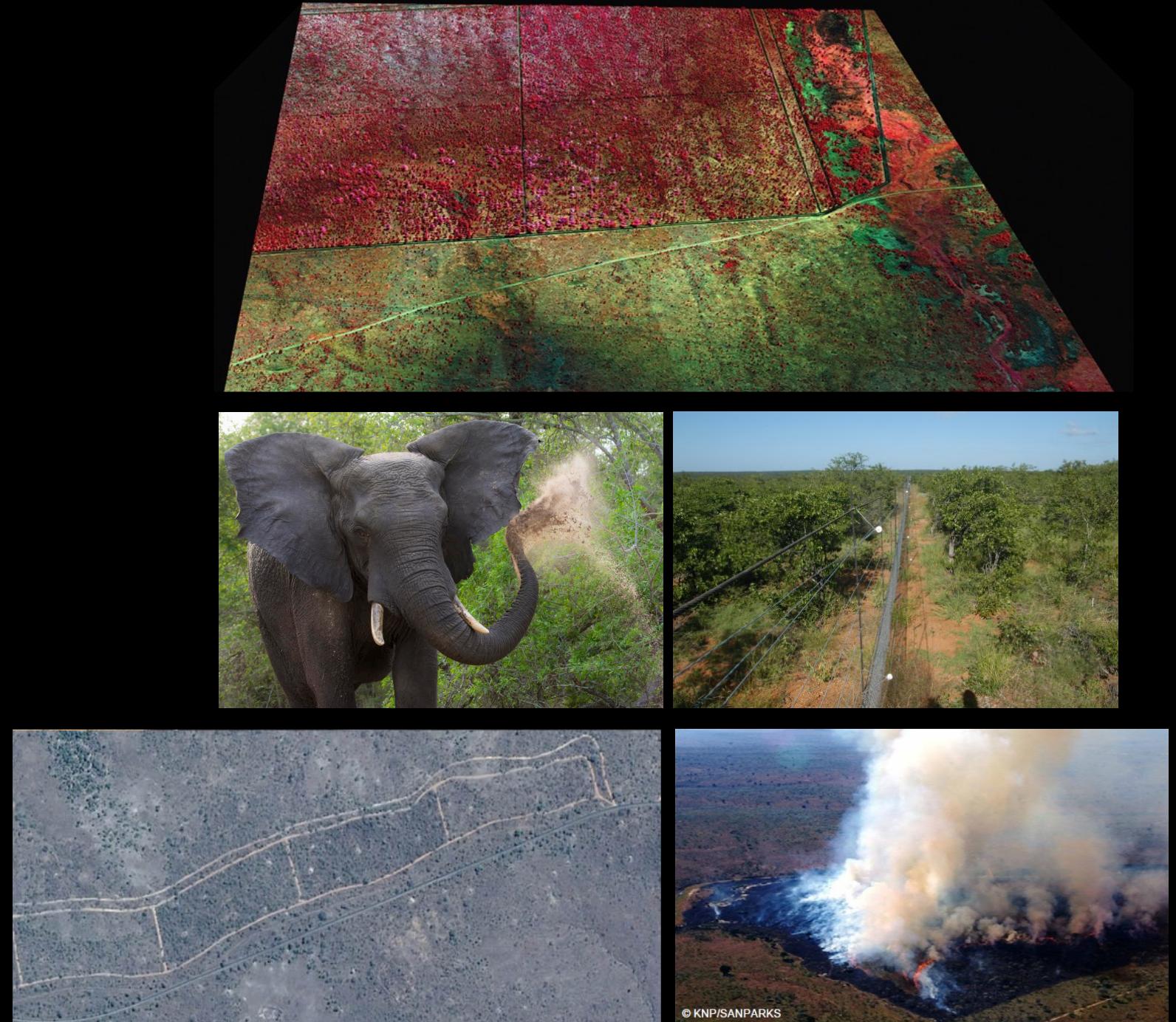
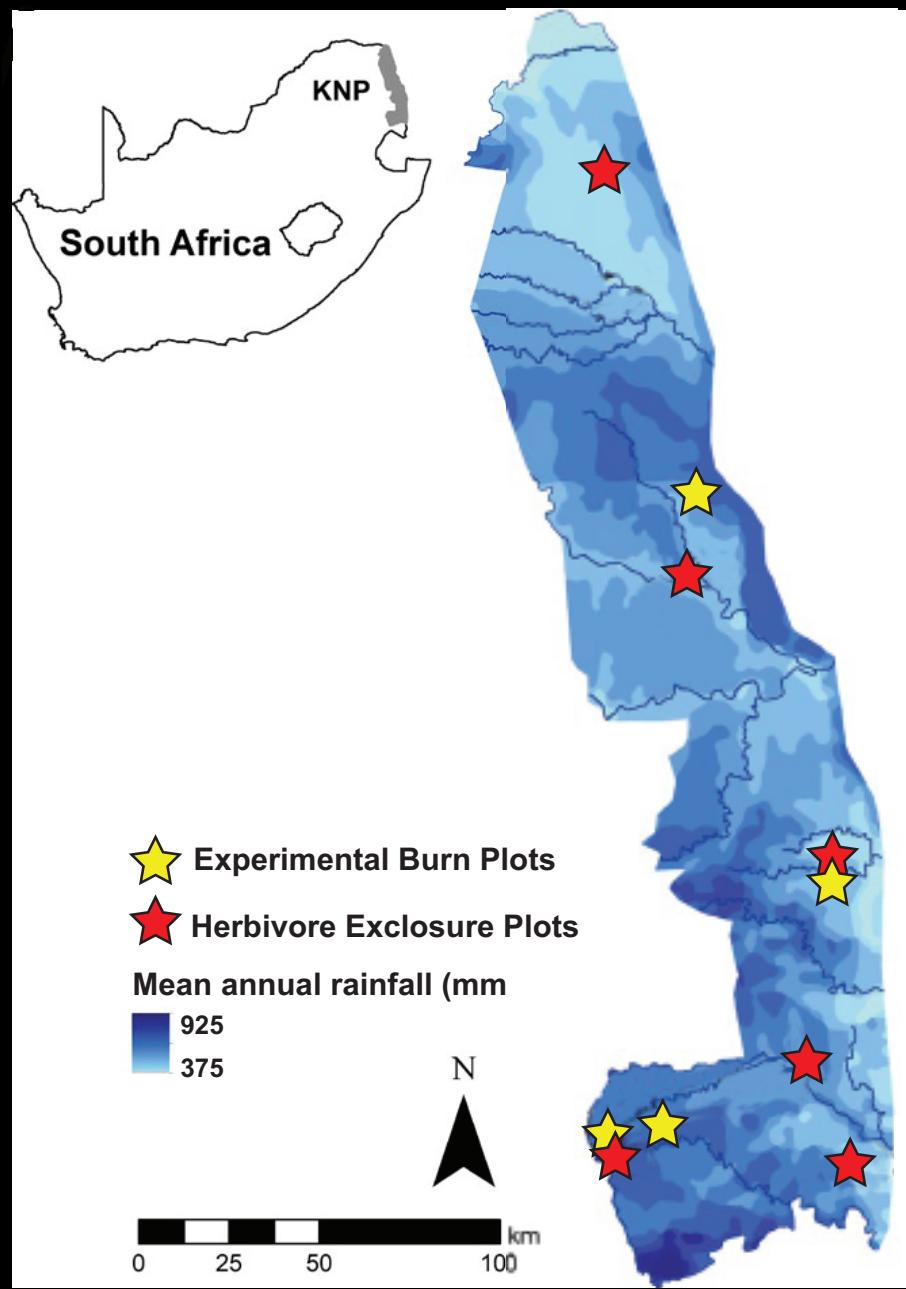


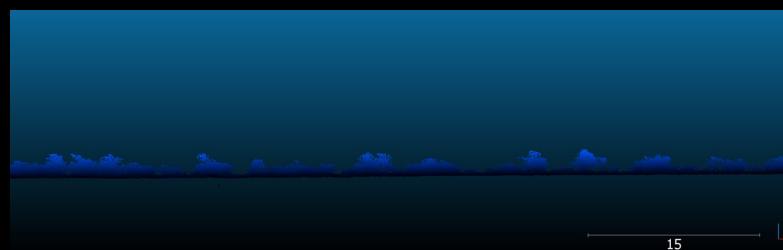
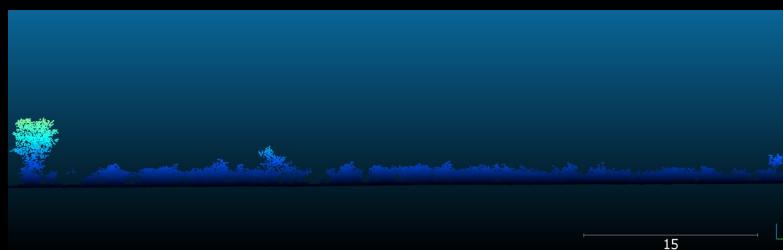
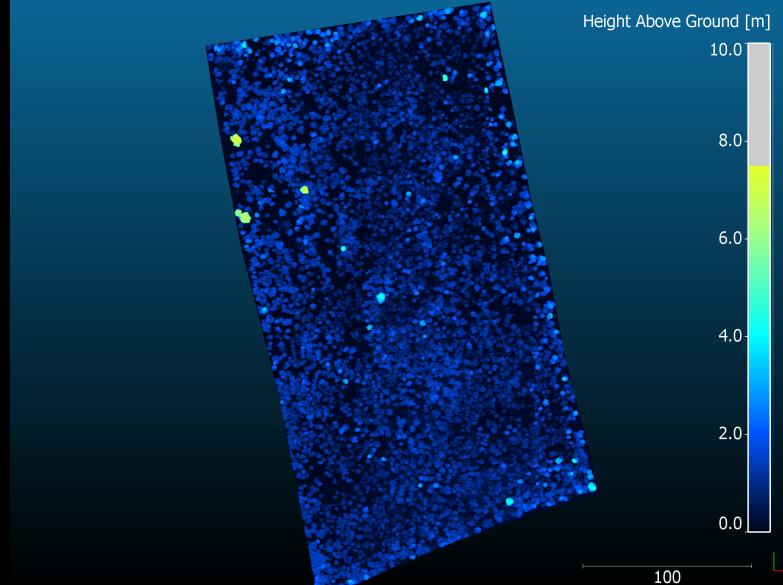
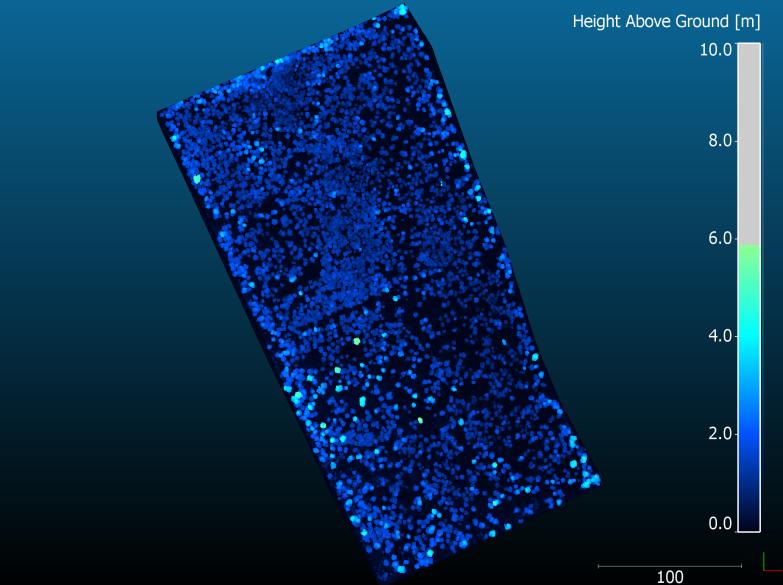
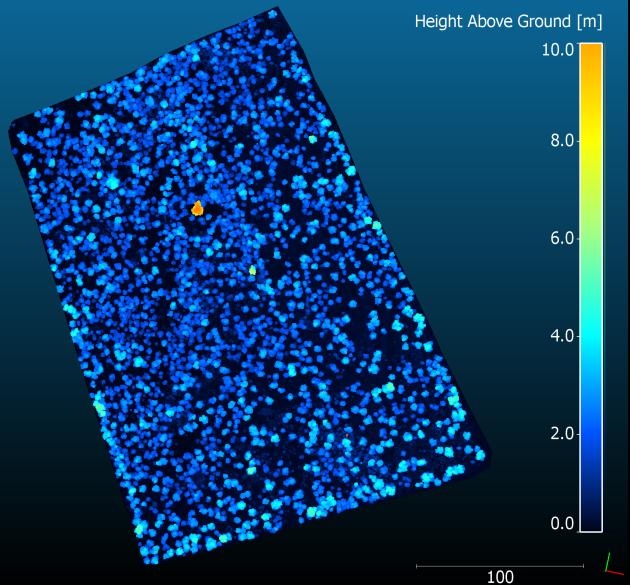
# Termites and elephants

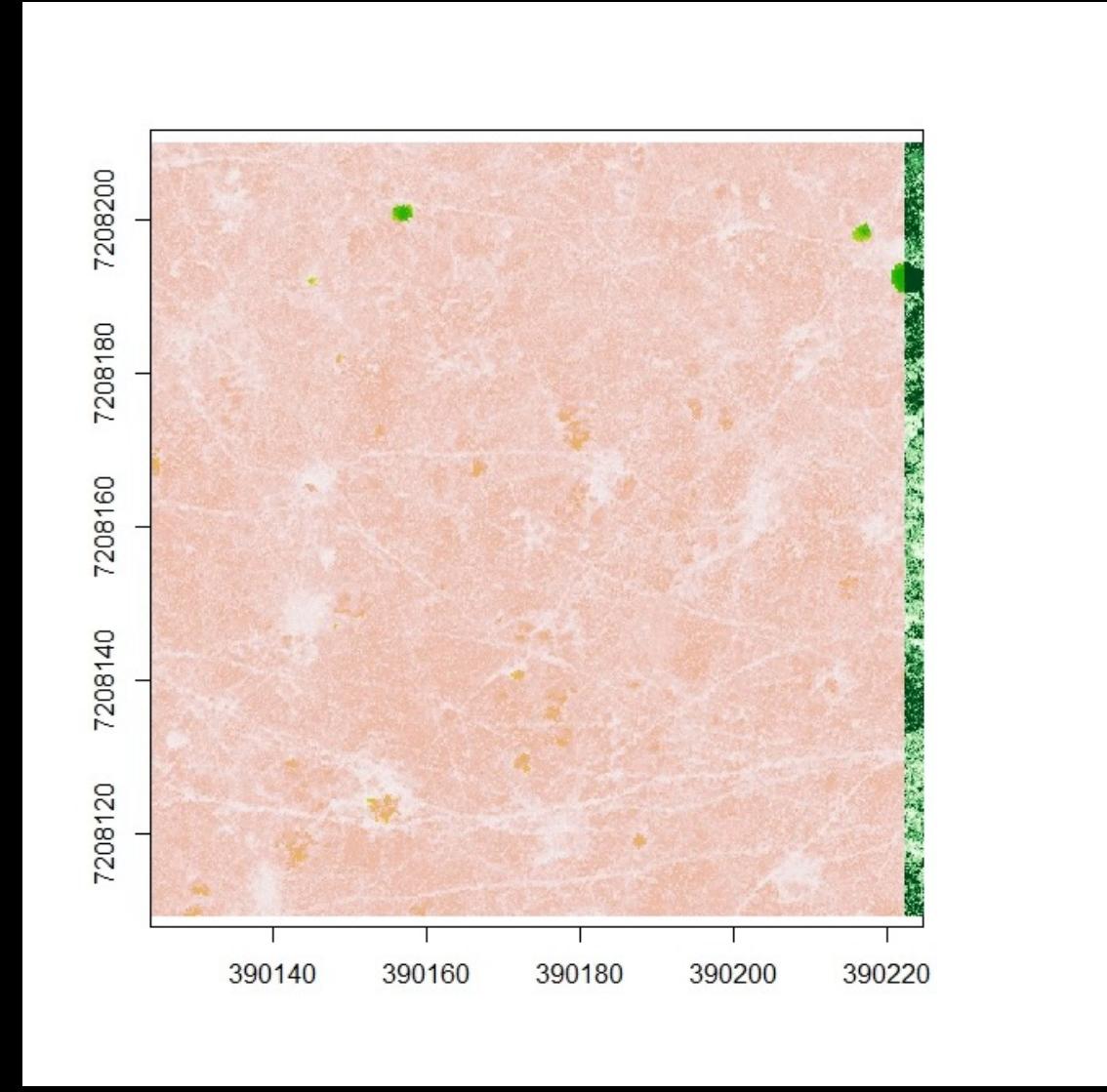
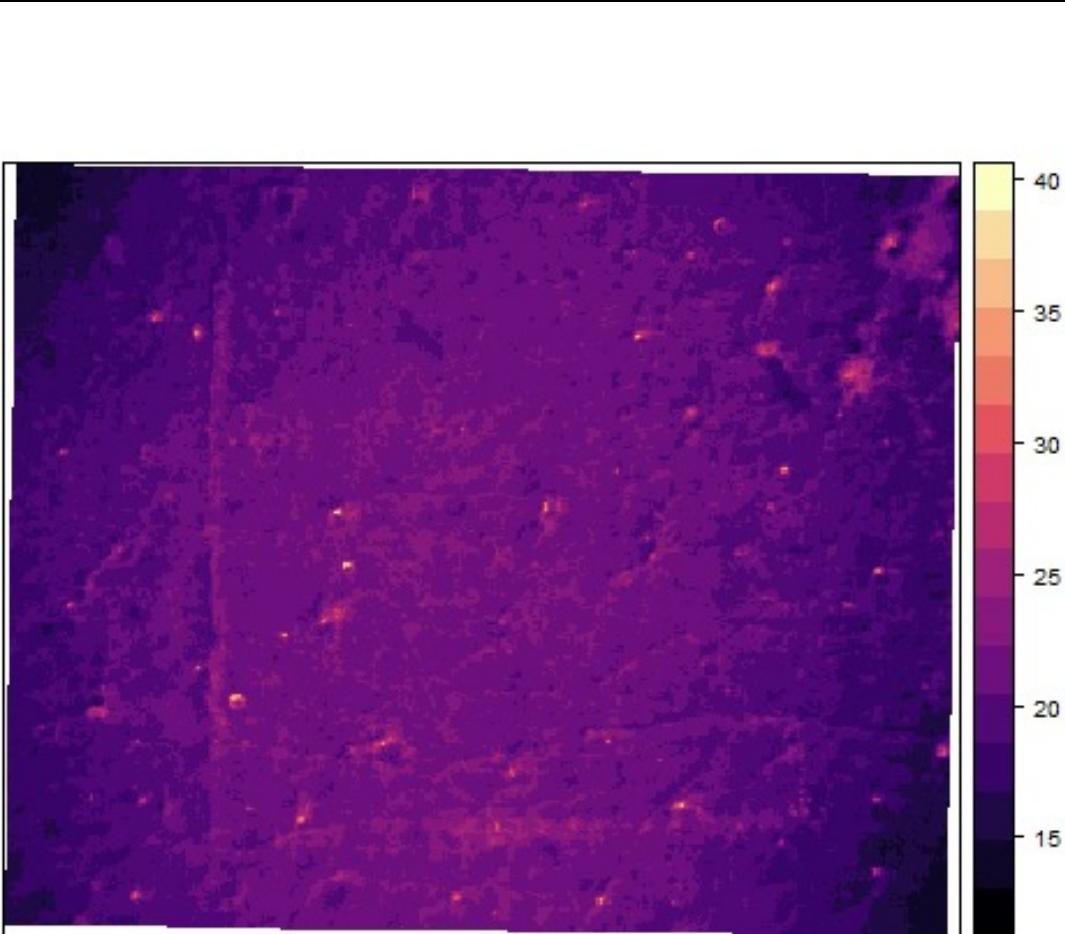


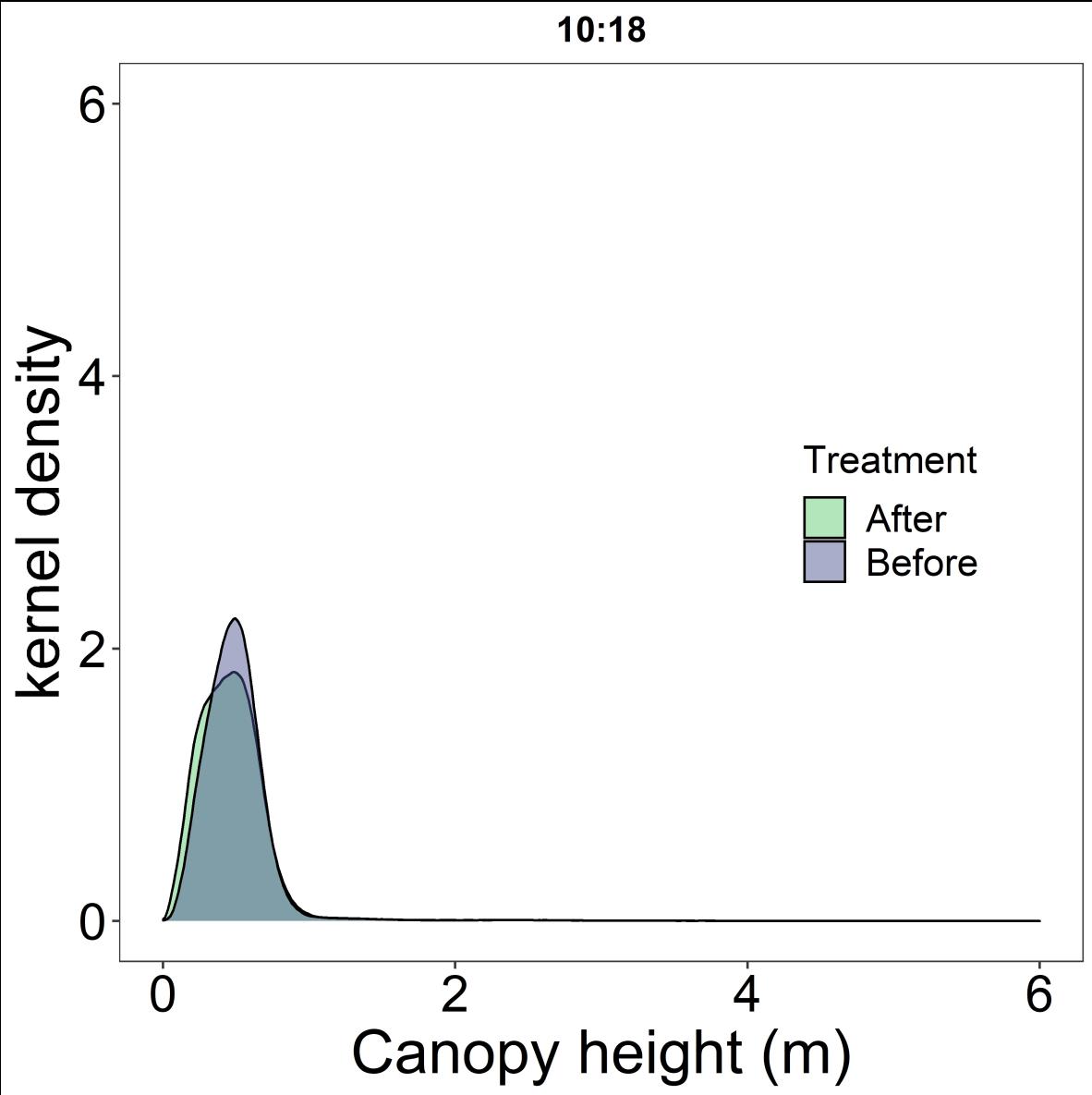
© E. Oosthuizen

# Manipulation experiments

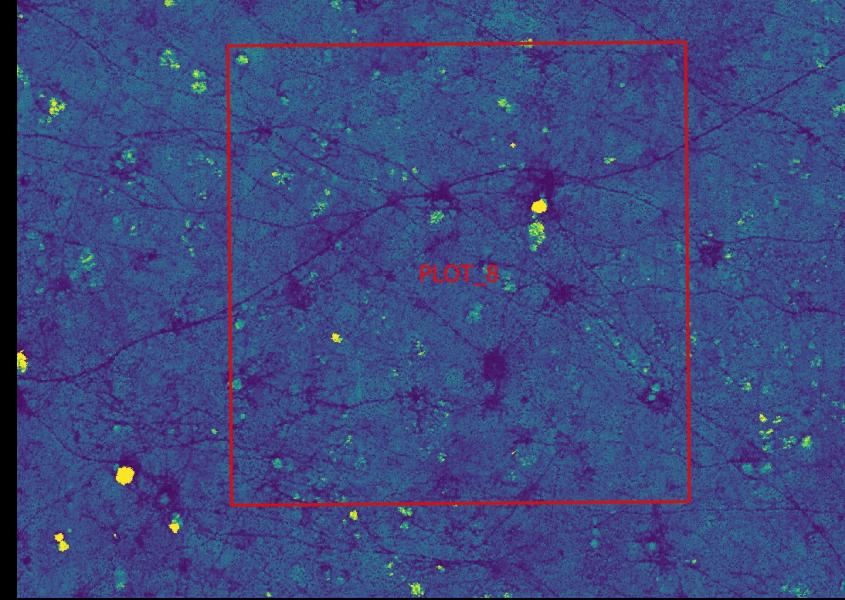




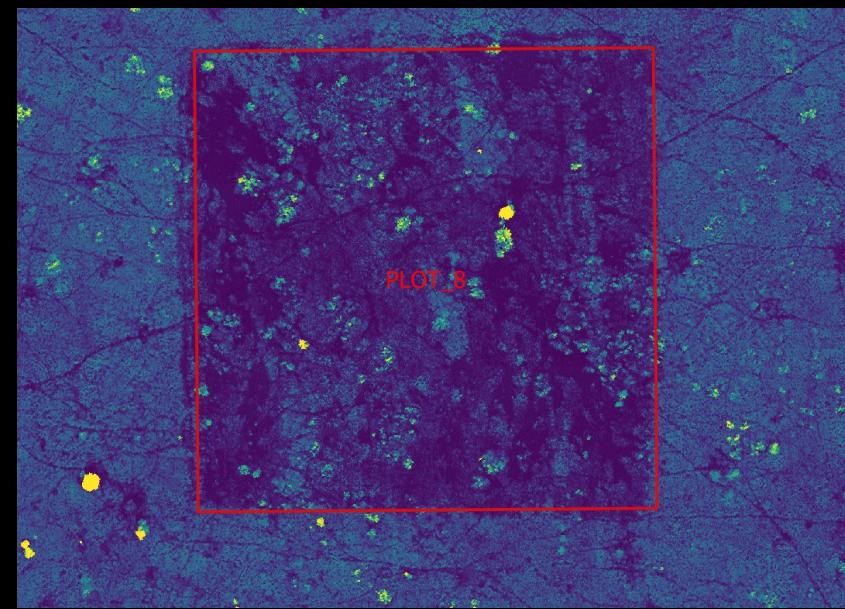




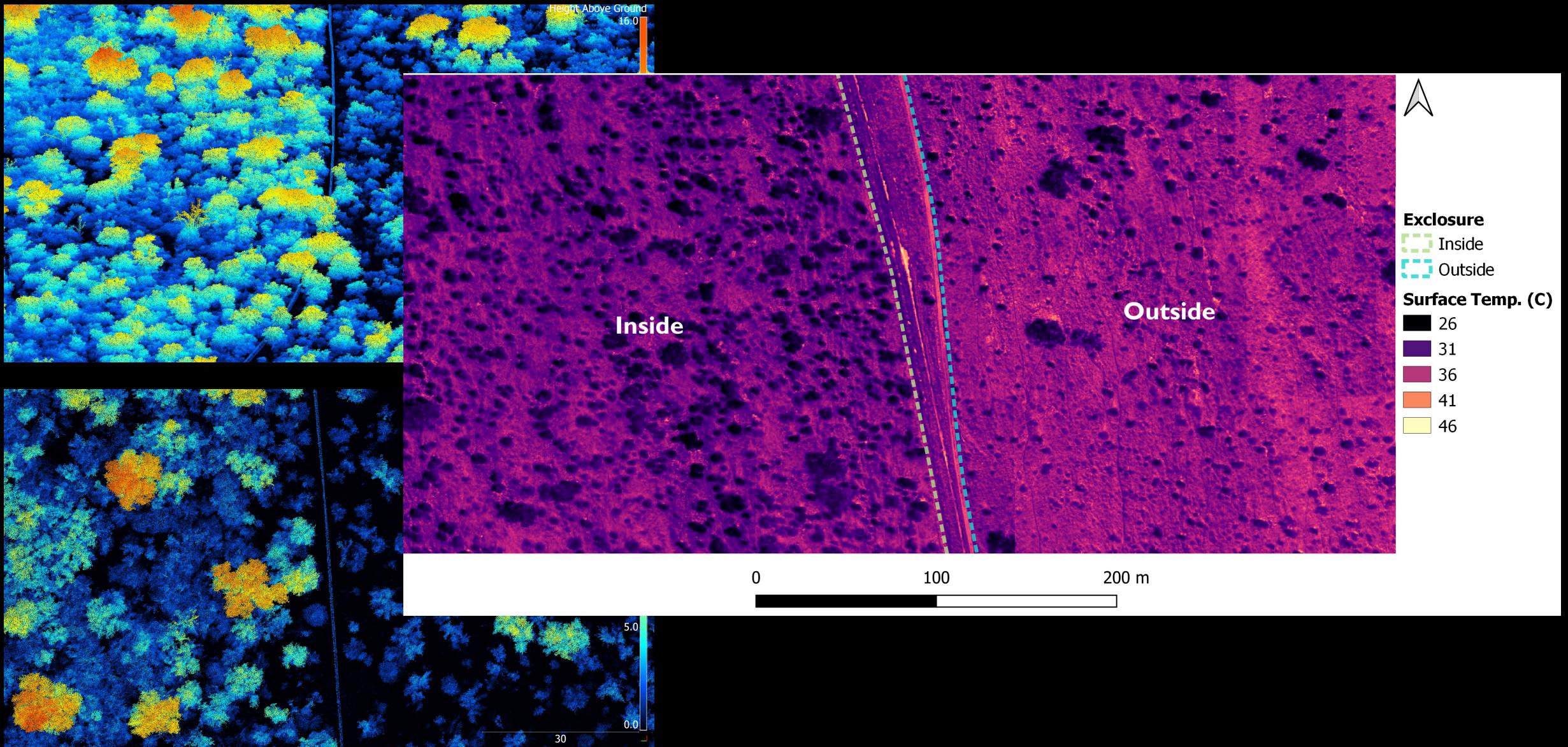
Before fire

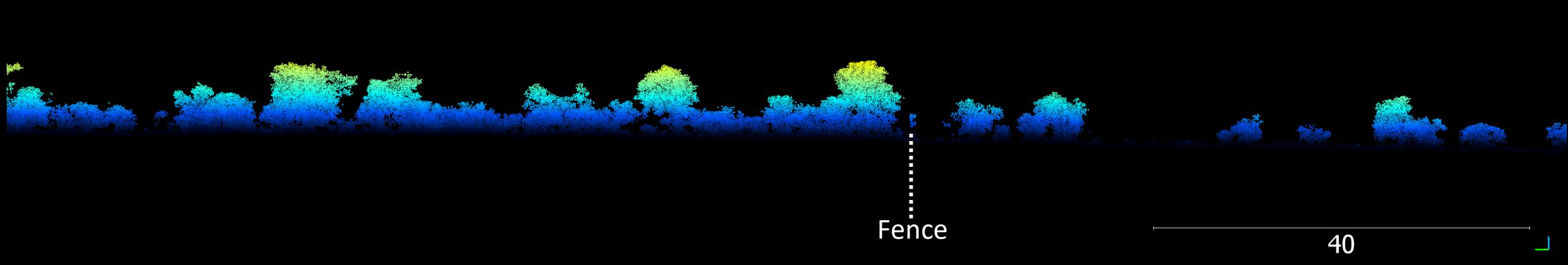
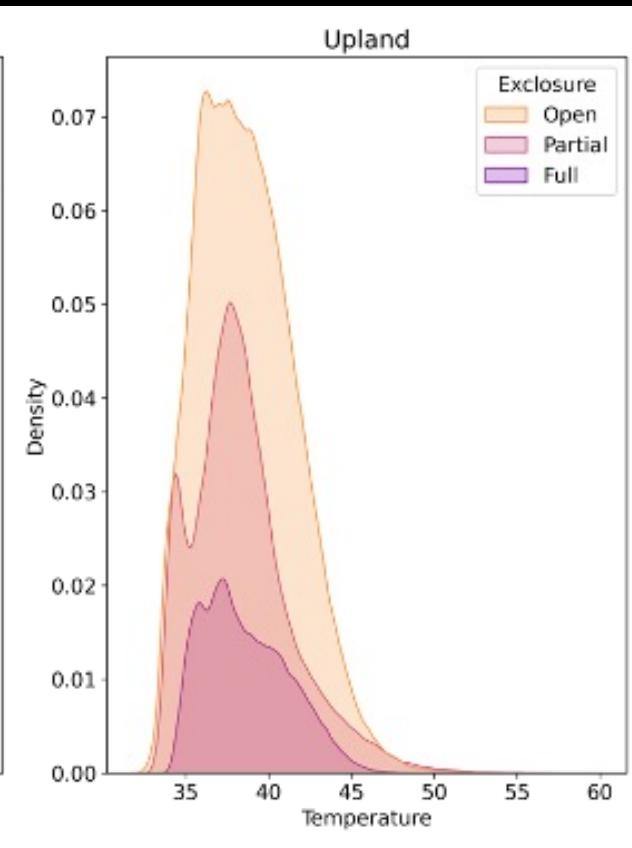
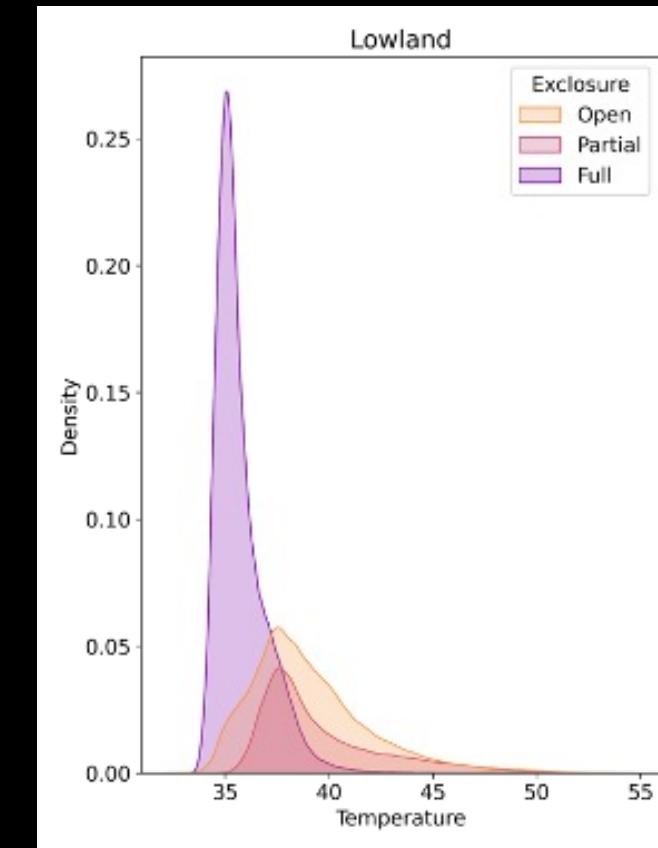
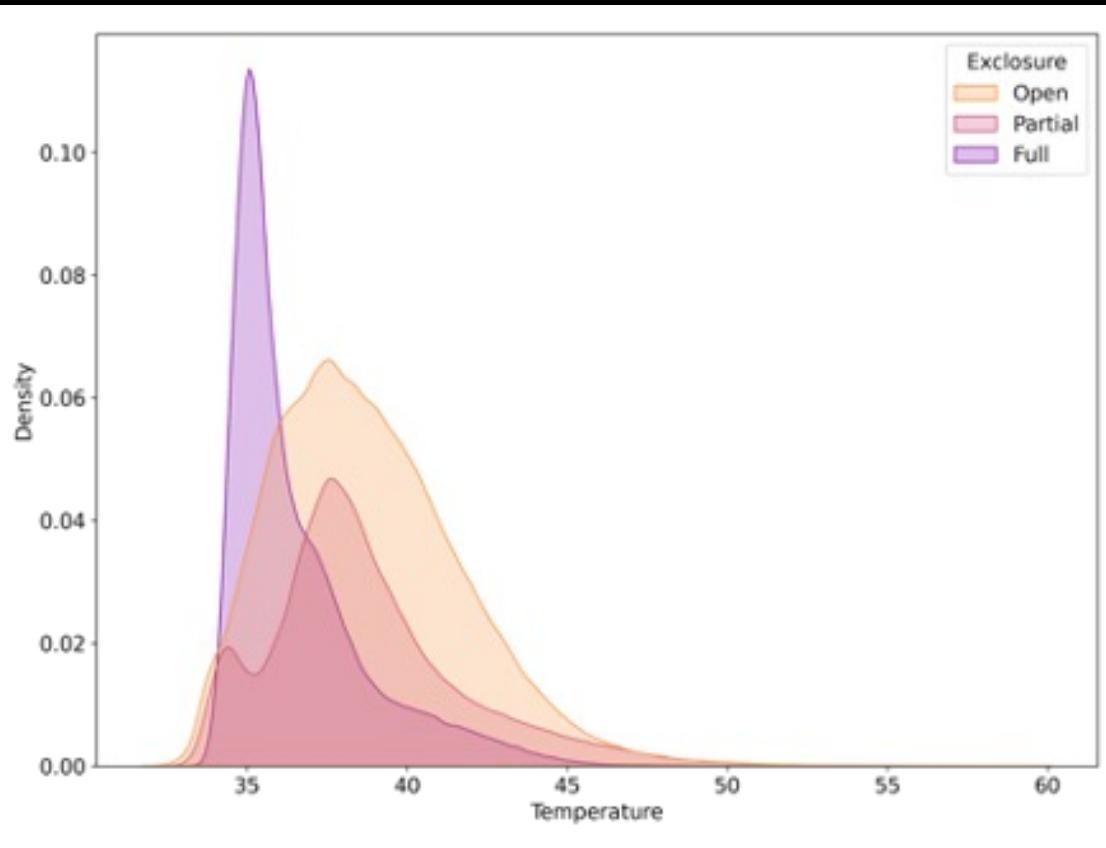


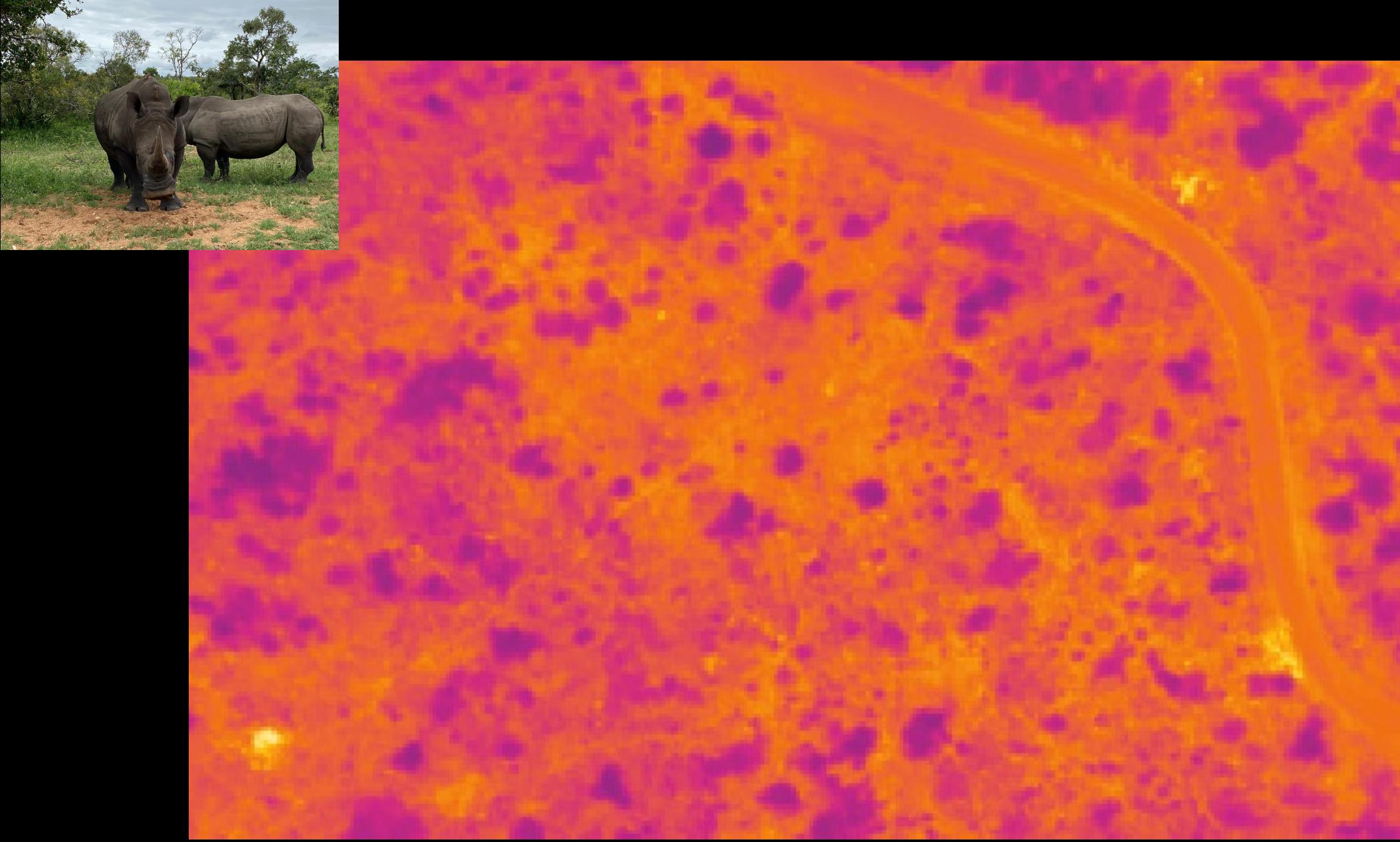
After fire

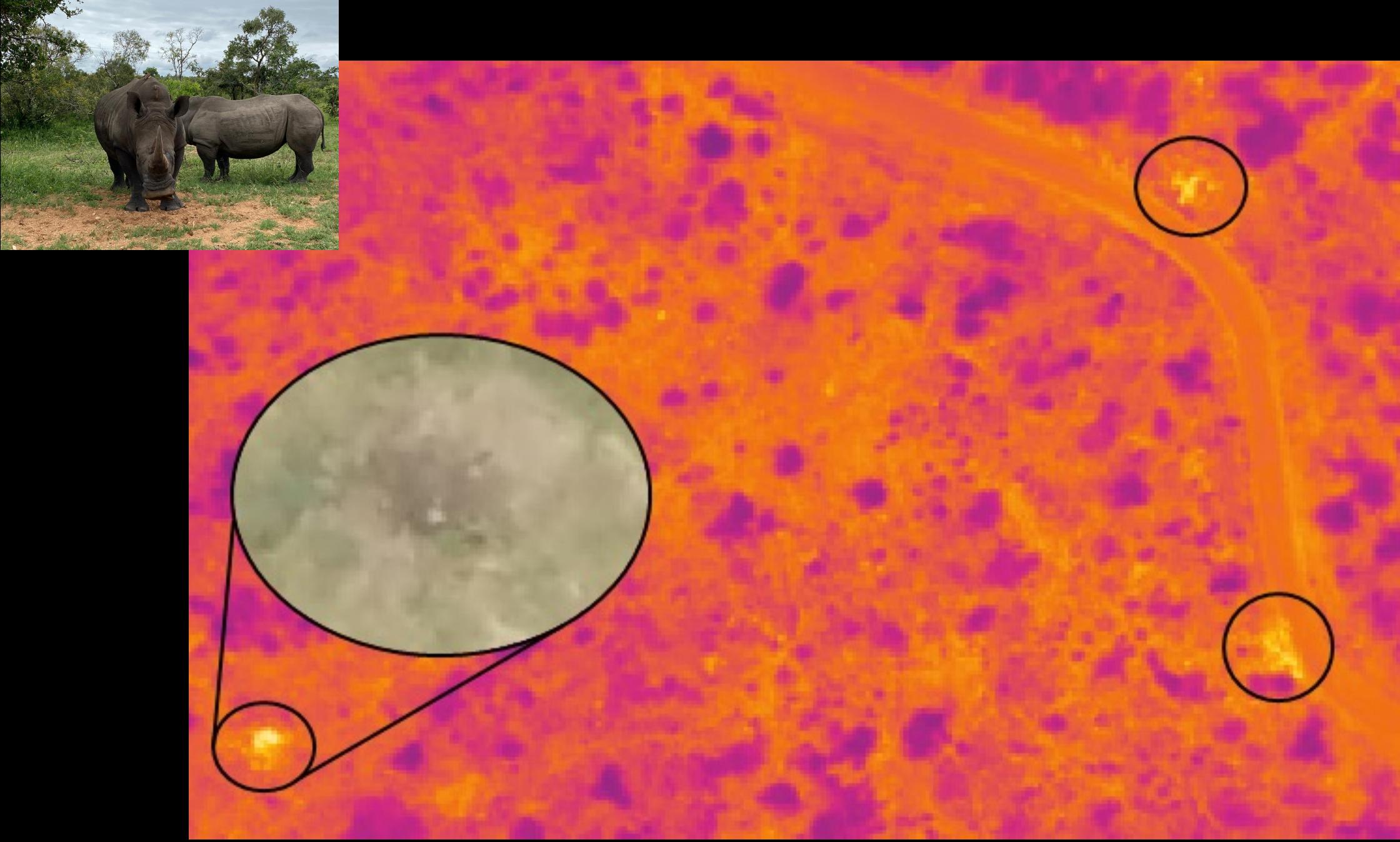


# Animal effects on thermal landscapes

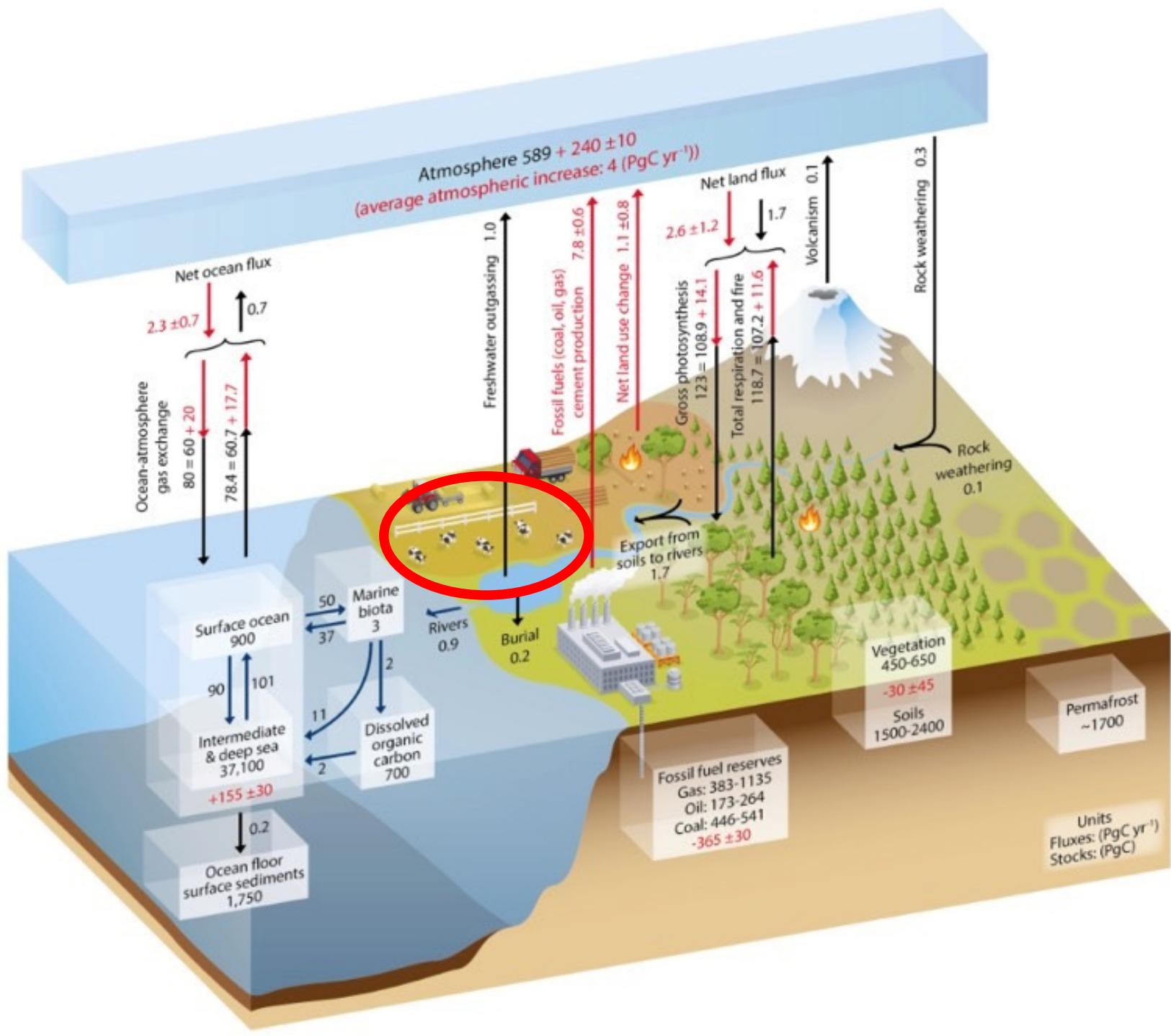












# Acknowledgements

- South African National Parks
- Andrew Mellon Foundation
- Many collaborators

A close-up, high-contrast photograph of a lizard's eye and surrounding scales. The eye is bright orange-red with a black pupil, set against dark, textured skin. The scales are large and clearly defined.

Gordon and Betty Moore Foundation,  
John and Catherine MacArthur Foundation,  
Avatar Alliance Foundation, W.M. Keck  
Foundation, Margaret Cargill Foundation,  
Grantham Foundation for the Protection of  
the Environment, Mary Anne Nyburg Baker  
and G. Leonard Baker Jr, William Hearst III