Impacts of Global Climate Change on Southern African Ecosystems (continued)

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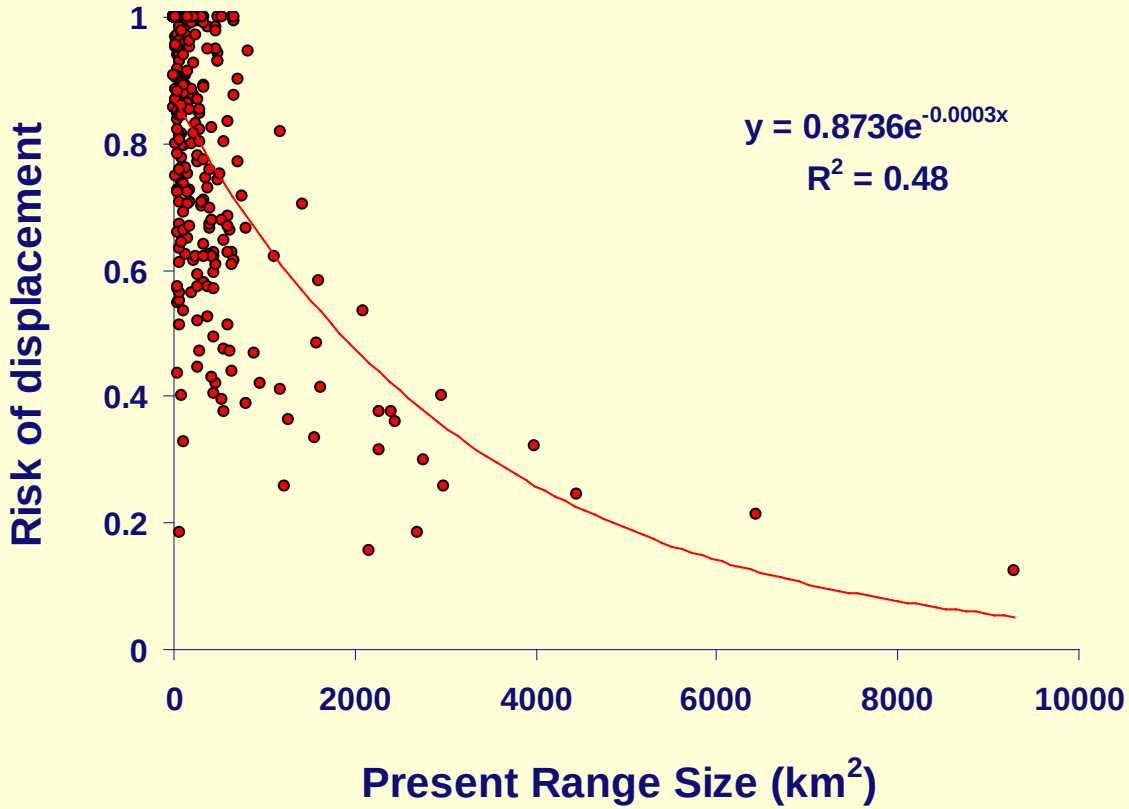
The Future of Species
(Area of biome loss)

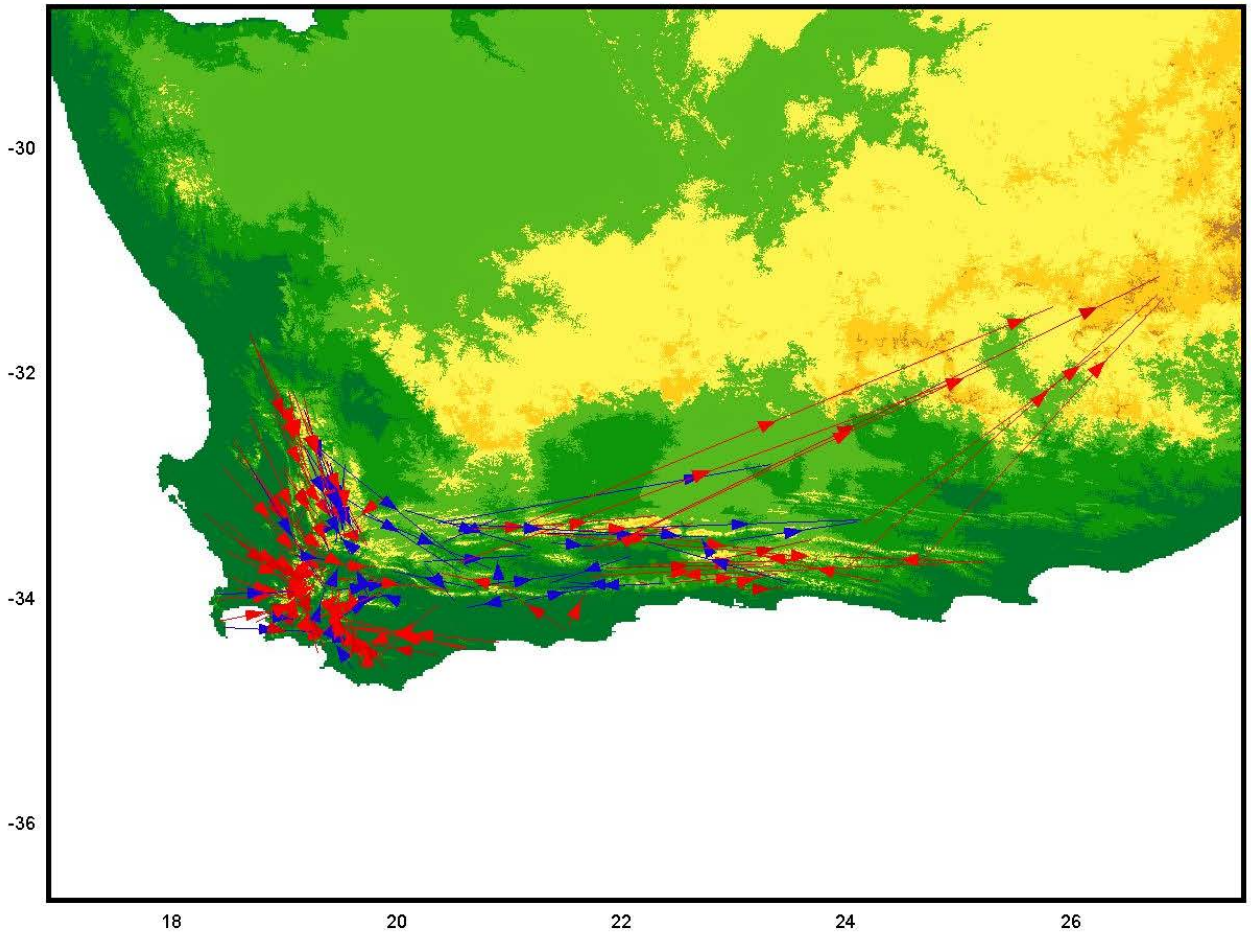
- 20% of species lose all climate space (extinct under all dispersal assumptions)
- 53% of species suffer total range displacement (extinct under ‘no dispersal’ assumption)
- More range lost to climate change than to *present* land transformation

Species Modeling



Proteaceae - displacement risk

Species Modeling - Range Shifts



Field Confirmation

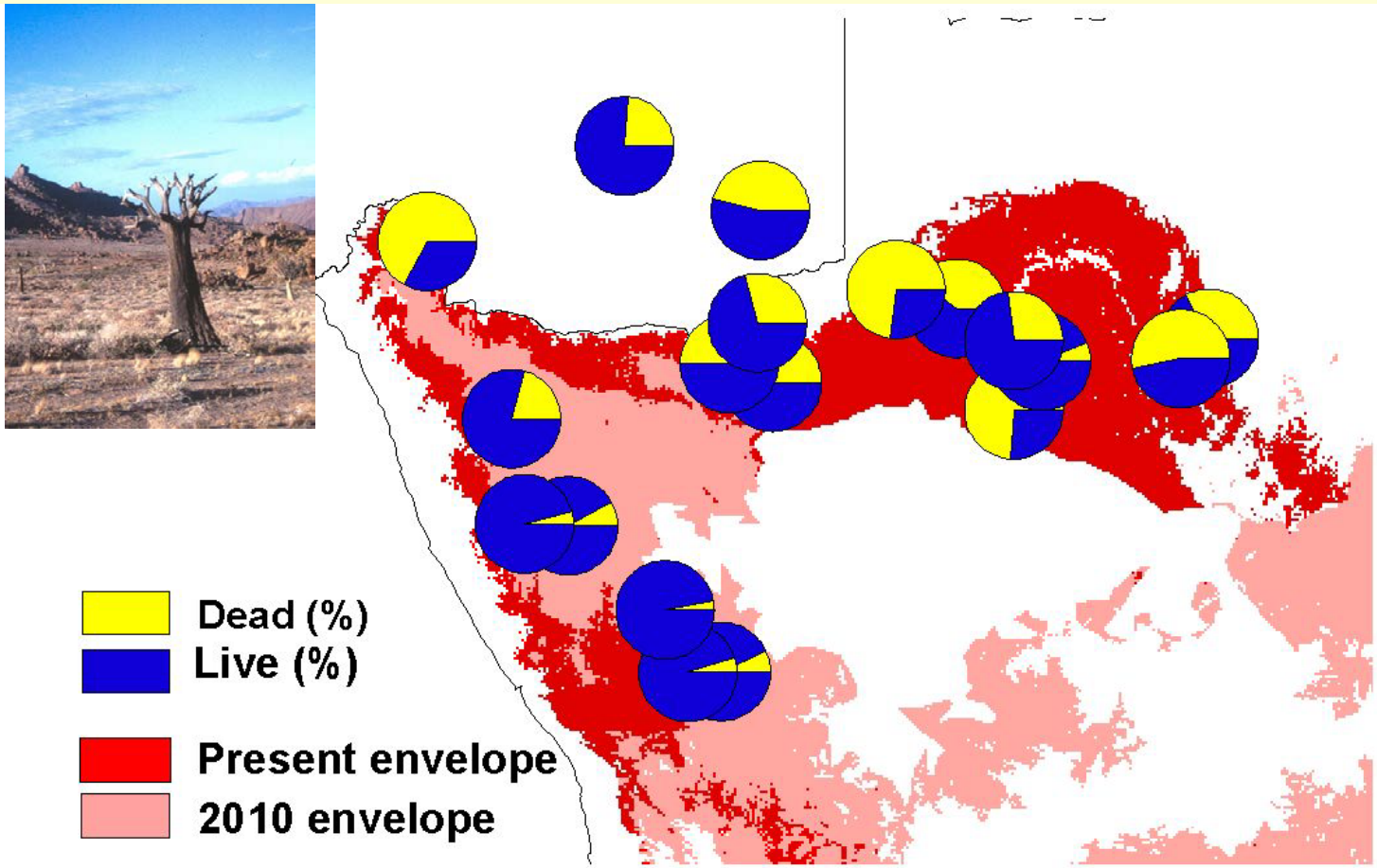
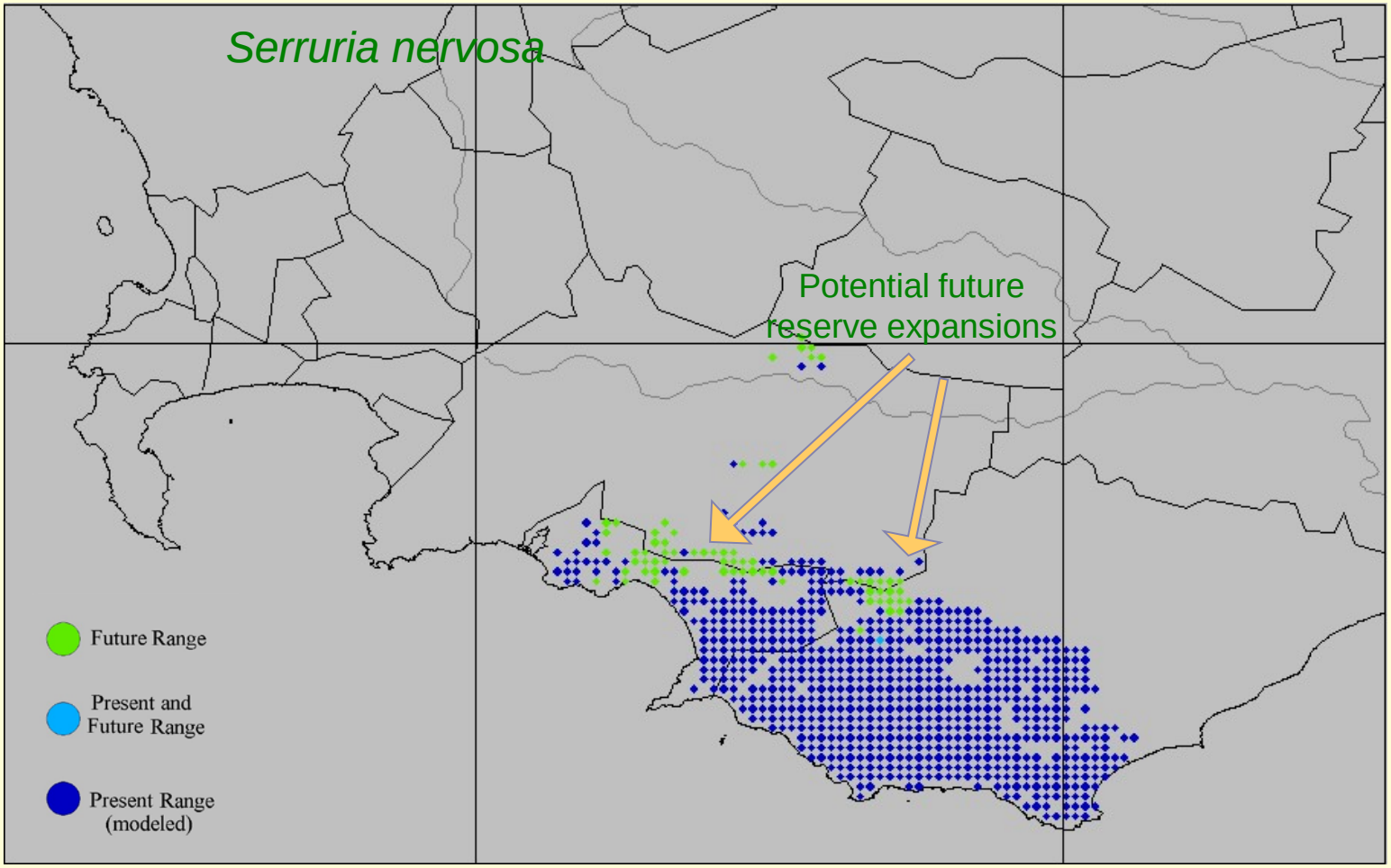


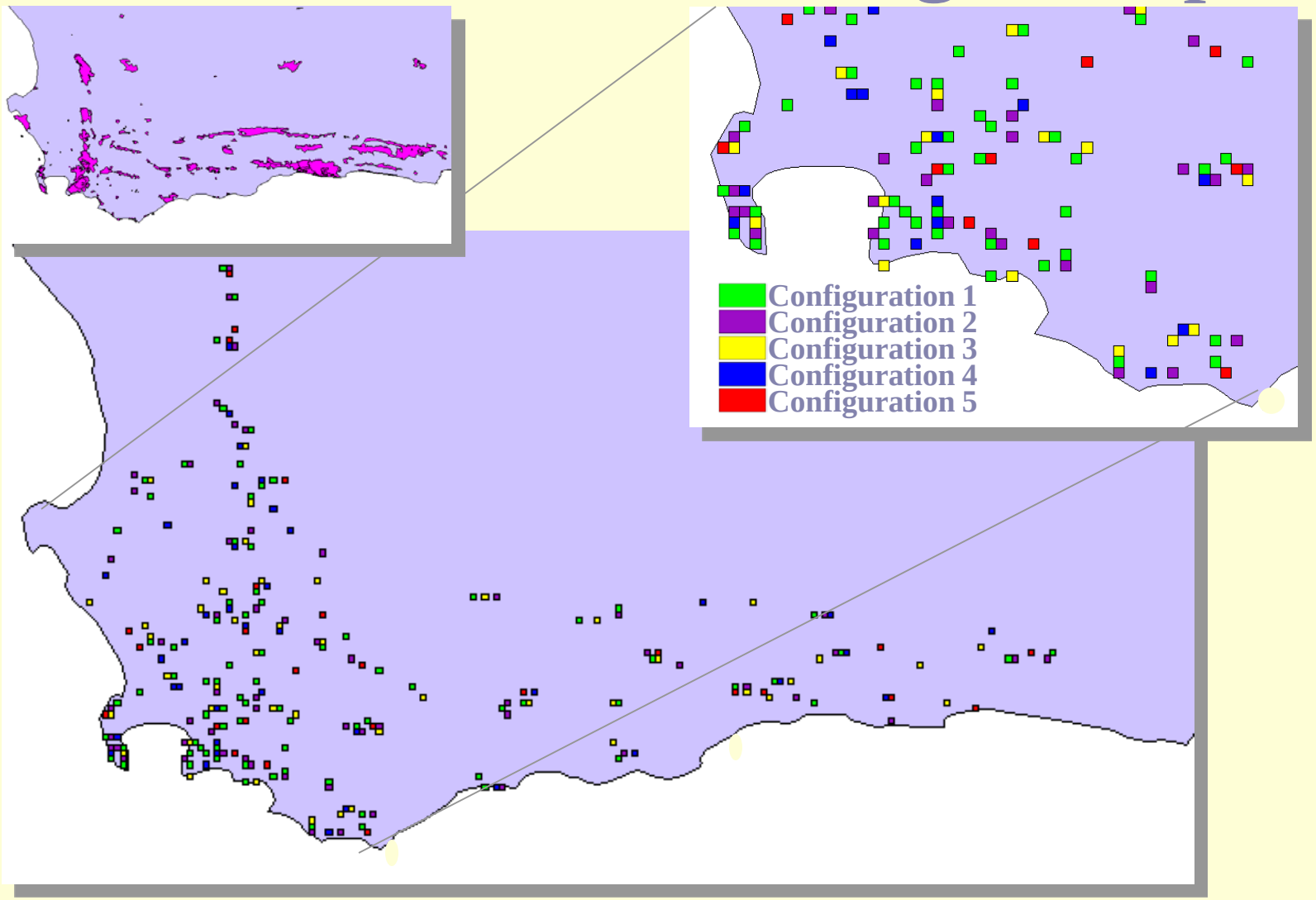
Figure 7: locations and percentage of live and dead individuals in 1997 and 2001 study populations. The red area shows the current bioclimatic envelope and the superimposed pinkarea shows the predicted 2010 envelope (HadCM2 no-sulphates model)

Dynamic Reserve System

343 Protea species from the Fynbos



Protected Areas Working Group



Collaborative Research

- Africa plant modeling
- Andes Biodiversity and Climate
- Land use and regional climate change

Prospects for the (near) Future

- Bioinformatics providing species distributions
- Desktop Regional Climate Models
- Desktop Species Models
- Tools for dynamic reserve selection and landscape design