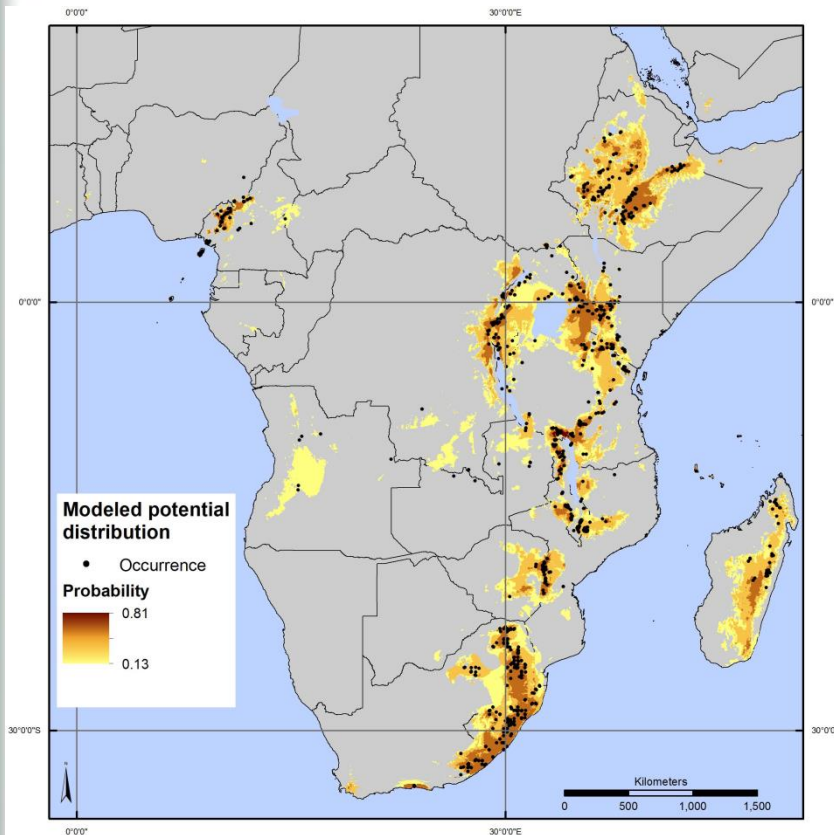


Improved conservation of *Prunus africana*: lessons learnt from a case study

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Prunus africana



- heavily threatened (CITES)
- Afromontane, medicinal tree
- high economic value

Intensive sampling throughout Africa

Modelling of the distribution under different climatic scenarios

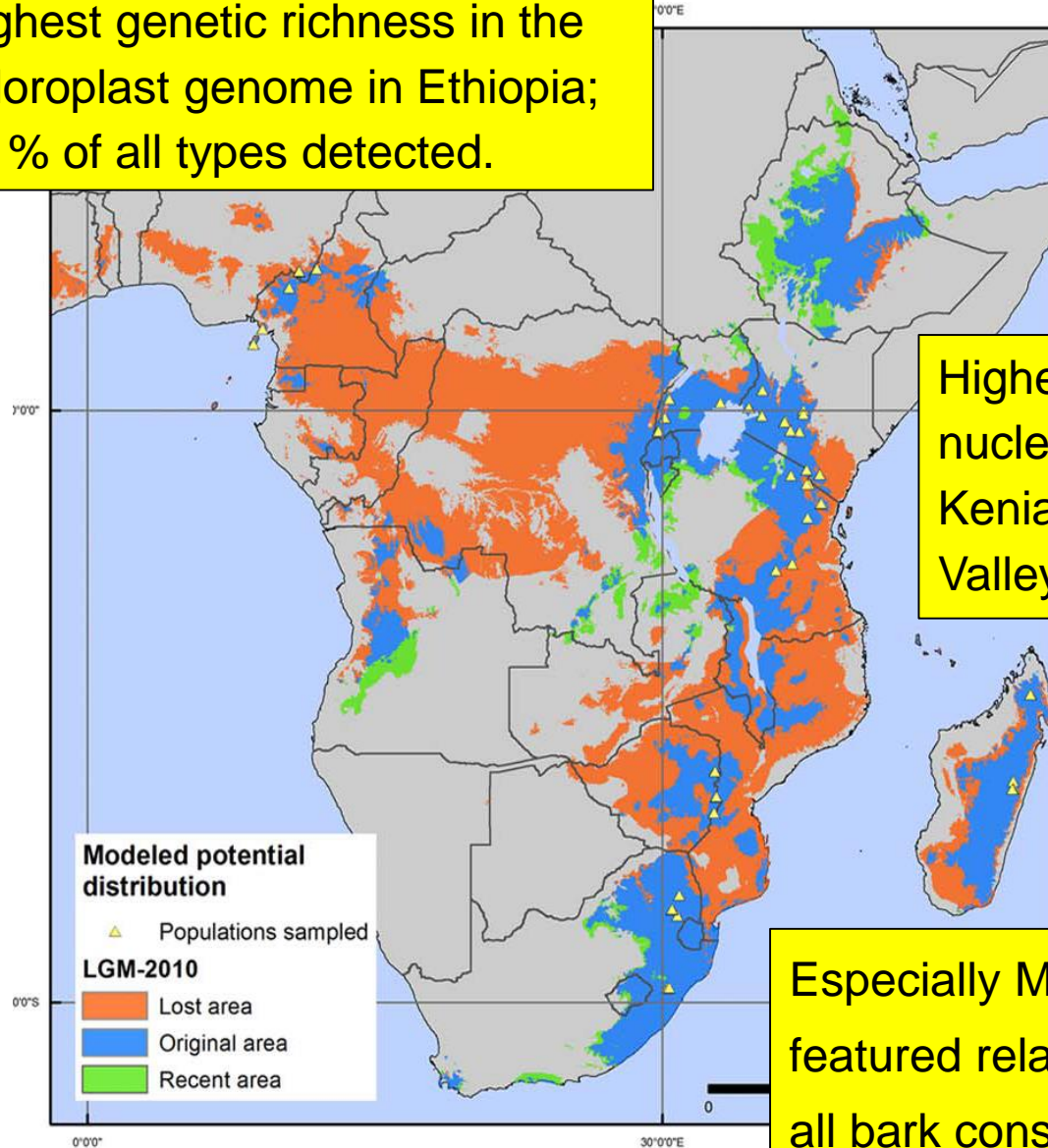
Molecular analysis based on the nuclear and chloroplast genome

Chemical analysis



Identification of priority areas for conservation

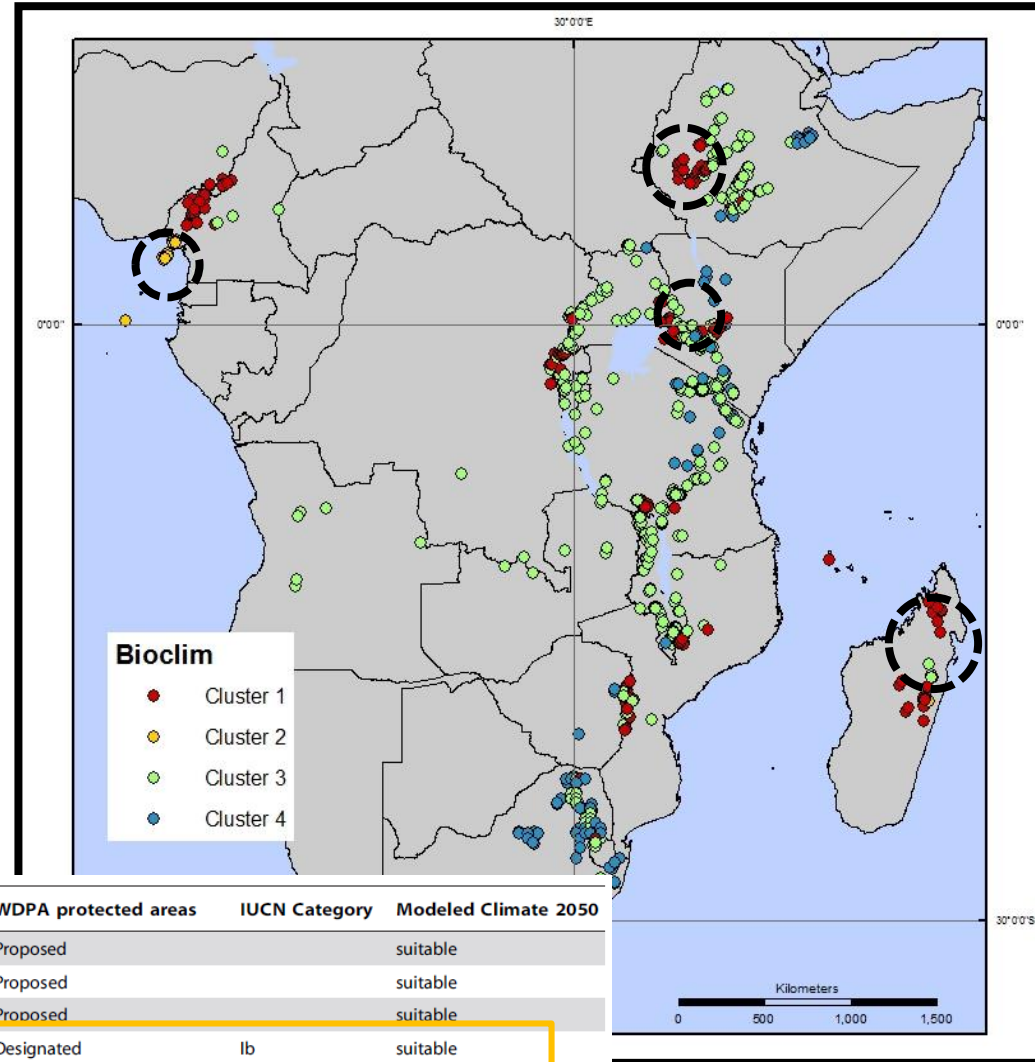
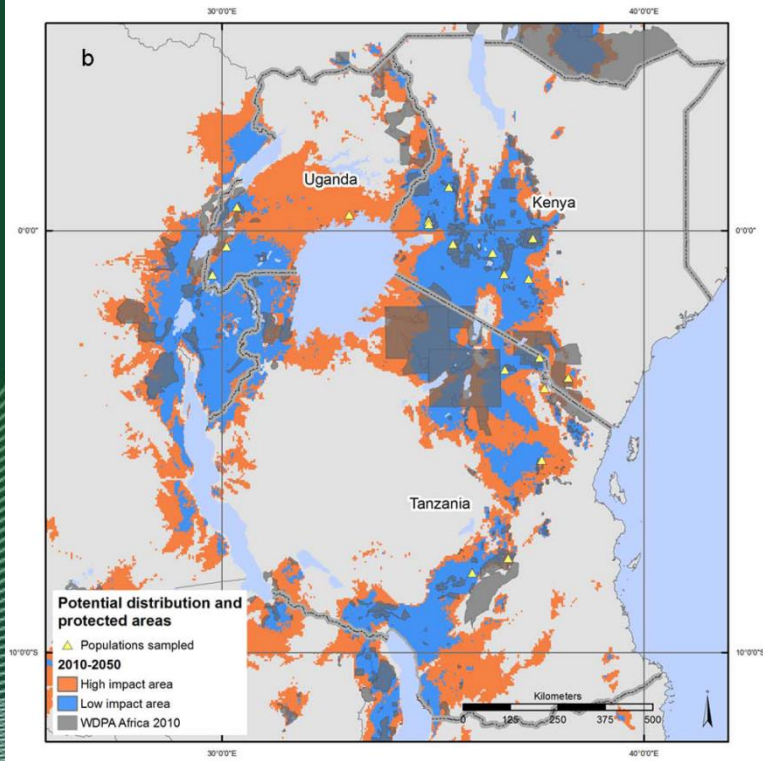
Highest genetic richness in the chloroplast genome in Ethiopia; 50 % of all types detected.



Highest genetic richness in the nuclear genome in Uganda and Kenia west of the Eastern Rift Valley.

Especially Madagascan populations featured relative high concentrations of all bark constituents studied.

Conservation priorities



Examples for priority areas

Coder	Name of population	Country	WDPA protected areas	IUCN Category	Modeled Climate 2050
1	Ngashie-Mt Oku	Cameroon	Proposed		suitable
2	Lower Mann's Spring, Mt Cameroon	Cameroon	Proposed		suitable
3	Mt Danoua	Cameroon	Proposed		suitable
4	Moka	Equatorial Guinea	Designated	Ib	suitable
5	Chula, Central province	Kenya	Designated	II	suitable
6	Kinale, Central province	Kenya	NOT PROTECTED		suitable
7	Kapcherop, Cherangani Forest, Rift Valley	Kenya	Designated		suitable
8	Kakamega Forest, Western Province	Kenya	Designated		MARGINAL

Conclusions

- Observed genetic patterns indicate divergent population history across the African continent likely associated with Pleistocene climate changes.
- Horn of Africa is a hot spot of chloroplast diversity but not the ancestral source. Origin (genetic center) of *P. africana* probably is located north of Lake Victoria.
- Genetic data are crucial for conservation, but should be supplemented by phenotypic and environmental data as well as by an assessment of current and potential threats.