

Biogeography of Protea in the Cape

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Protea compacta Credit: Tim Barraclough

The South African Cape region is a hotspot of angiosperm biodiversity, but the reasons for the high levels of diversity and endemism are still obscure.

Protea (Proteaceae) is a genus that has its centre of [species richness](#) and endemism in the Cape, but it also has smaller numbers of species in tropical Africa, some occurring as far as Eritrea and Angola.

In a recent phylogenetic study of *Protea* published in [Evolution](#), a team of scientists from Imperial College London, the South African National Biodiversity Institute, Real Jardín Botánico de Madrid, Tel Aviv University and the Royal Botanic Gardens, Kew, identified the Cape as the ancestral area for the radiation of the extant lineages of the genus. Contrary to previous views, most species in subtropical and tropical Africa are derived from a single invasion, and diversification rates have

been similar both inside and outside the Cape region. Migration northwards opened up vast areas, but the resulting lineages have not diversified as extensively at fine spatial scales as those in the Cape.

In *Protea*, higher net rates of diversification do not explain the high levels of diversity and endemism in the Cape. Instead, understanding the patterns of diversity in the Cape will require an explanation of how Cape [species](#) are able to diverge and persist at such small spatial scales.

More information: Valente, L.M., et al. (2010). Diversification of the African genus *Protea* (Proteaceae) in the Cape biodiversity hotspot and beyond: equal rates in different biomes. *Evolution* 64:745-760

Provided by Royal Botanic Gardens, Kew

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