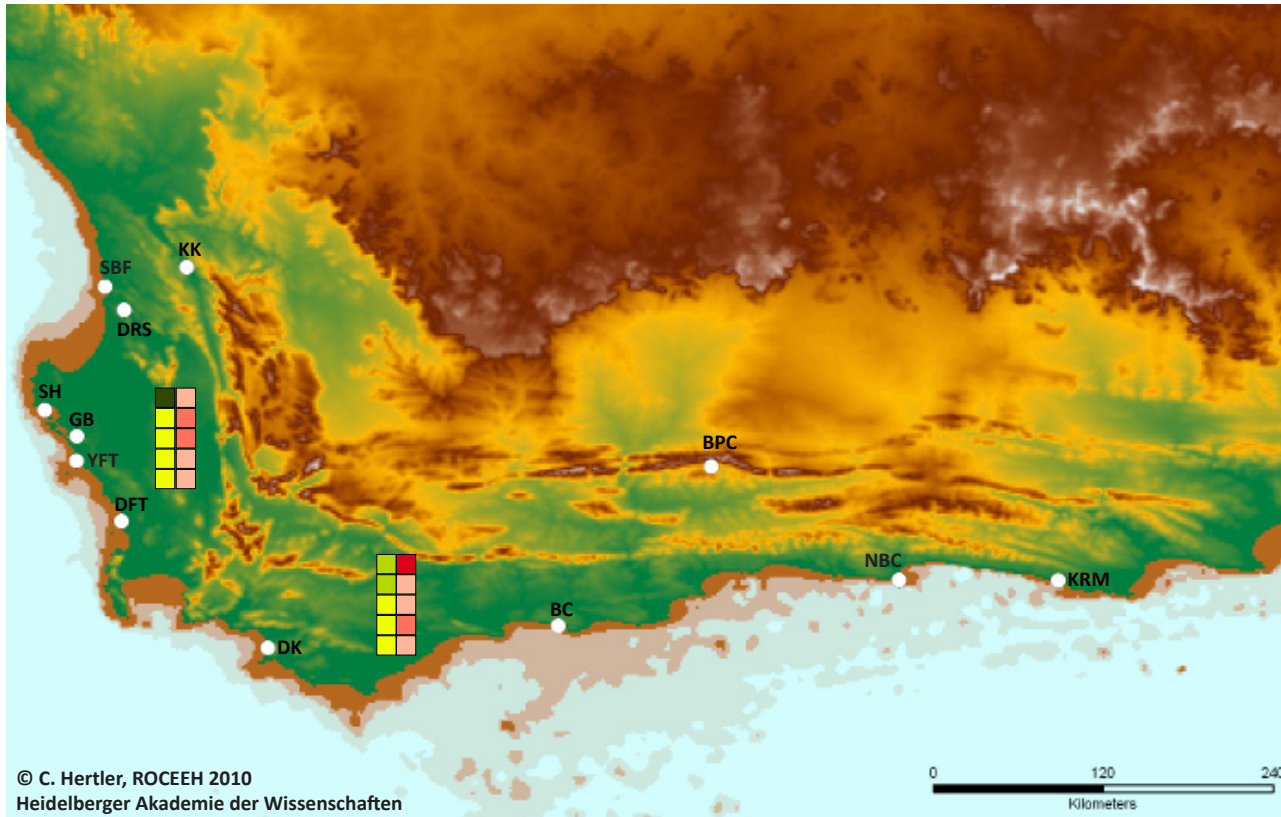




THE ROLE
OF CULTURE
IN EARLY
EXPANSIONS
OF HUMANS

Faunal Turnover in the Late Pleistocene on the South African West Coast



© C. Hertler, ROCEEH 2010
Heidelberger Akademie der Wissenschaften

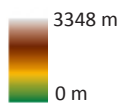
Source: ETOPO1, NOAA 2009 · Cartography: G. Quénéhervé 2010-10-26

A highly specialized and endemic fauna exists along the southwestern coast of South Africa. This fauna is associated with the fynbos ecosystem inhabited by early modern humans. The distribution patterns of the fynbos ecosystem and land connections between coastal areas varied as the Late Pleistocene climate and environment changed. The West Coast region consists of a western and southern zone separated from one another by the Hottentots-Holland Mountains, a low ridge east of False Bay that ends at Cape Hangklip in the south. A global cooling trend during the Upper Pleistocene led to progressive fluctuations in the shoreline. A 50-meter drop in sea level exposed a terrestrial corridor in False Bay leading around Cape Hangklip. This corridor opened in marine isotope stage (MIS) 3 and persisted through the last glacial maximum of MIS 2.

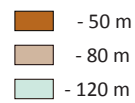
This map shows turnover rates of faunal communities on both sides of the Hottentots-Holland Mountains. Rates are based on the fossil sites depicted and illustrate the effects of climate change. The patterns shown by more than 50 large mammal taxa in both areas are robust. Effects correlate with the last glacial maximum in MIS 2. The pattern, however, is reversed in both areas. While progressive cooling and lowering of sea level leads to reduced numbers of species on the West Coast, the number of species along the South Coast rises in response to the last glacial maximum.

Legend

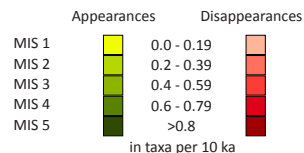
Altitude



Sea Level



Mammal Turnover



Site key

BC - Blombos Cave	KK - Klein Kliphuis
BPC - Boomplaas Cave	KRM - Klasies River Mouth
DFT - Duinefontein	NBC - Nelson Bay Cave
DK - Die Kelders	SBF - Steenbokfontein
DRS - Diepkloof Rock Shelter	SH - Sea Harvest
GB - Geelbek Dune	YFT - Ysterfontein