

Chapter 4

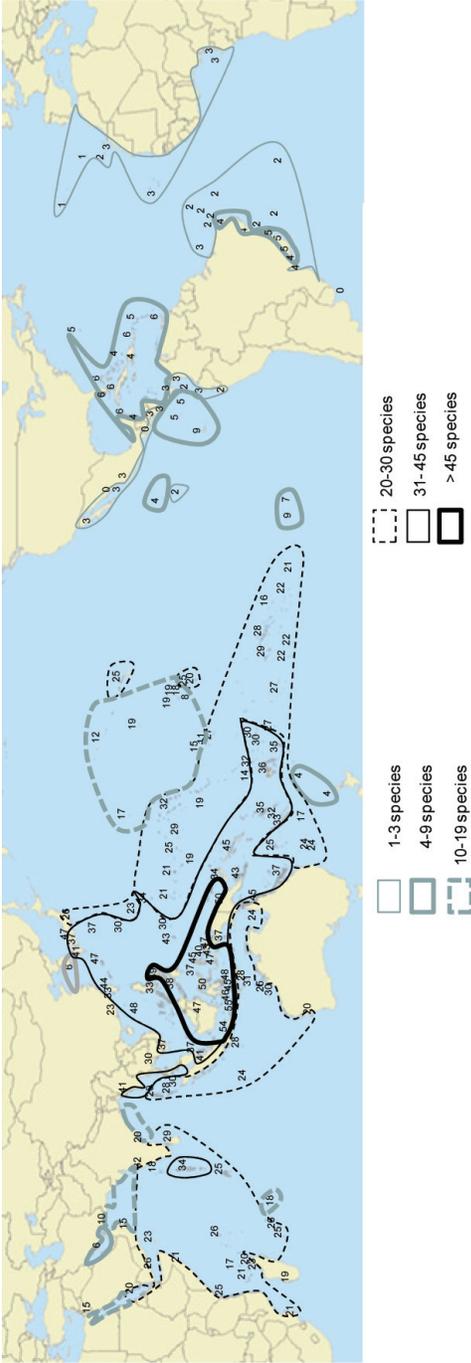


Fig. 4.1 World wide map of the alpha diversity distribution of butterflyfishes.

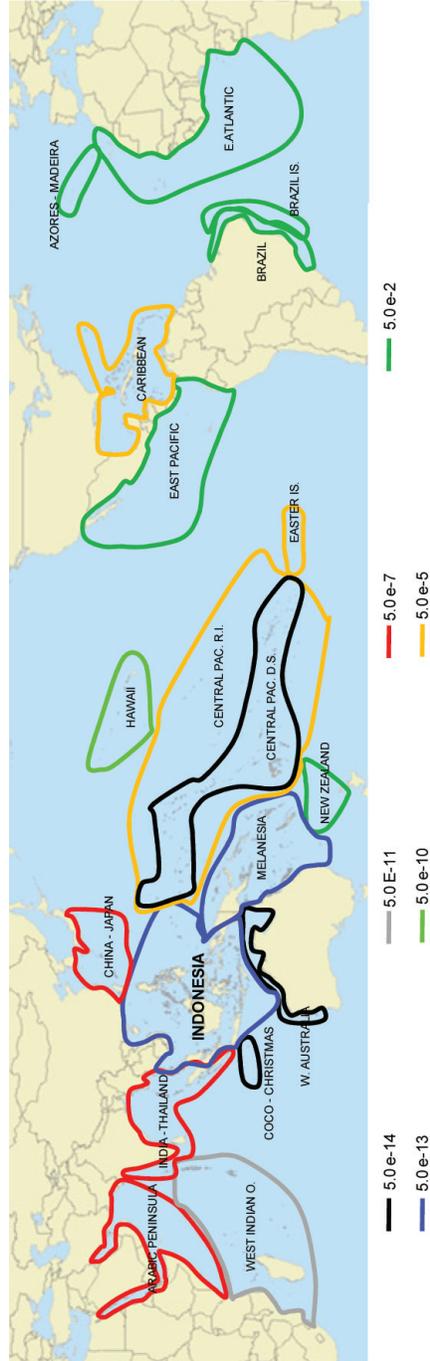


Fig. 4.2 Map of the 19 biogeographic regions determined by stepwise clustering of 175 butterflyfish species lists around the tropics. The lines indicate Ward's minimum variance distance levels.

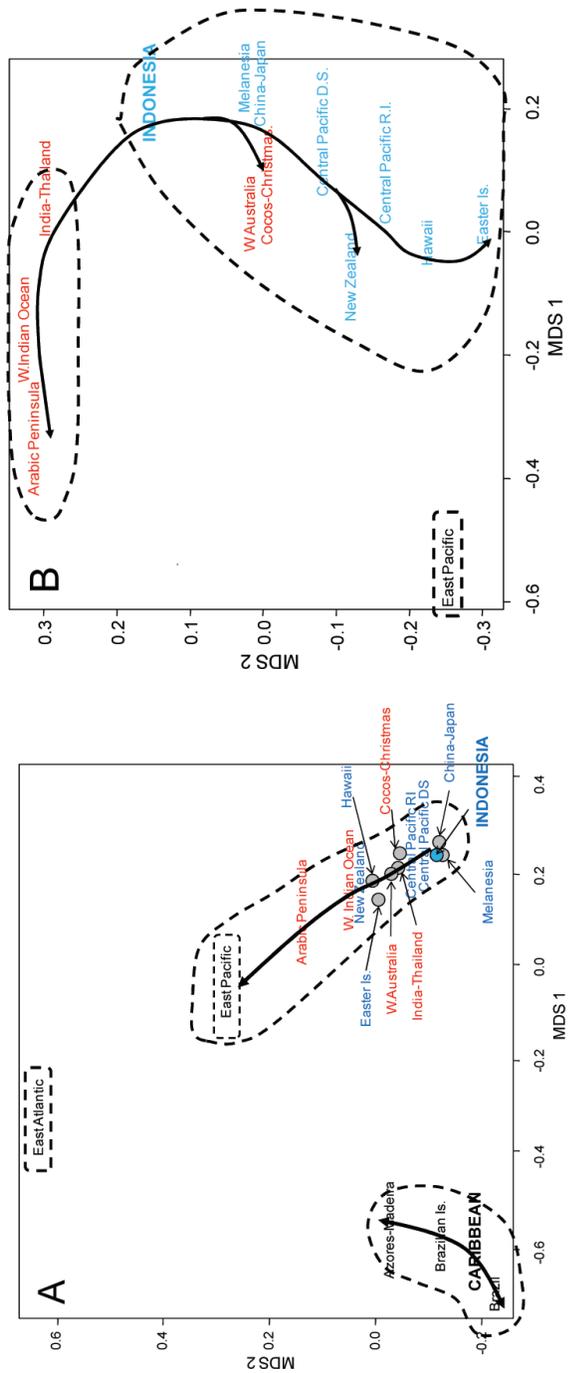


Fig. 4.4 Multidimensional scaling (A) all 19 biogeographic regions, (B) only Indo-Pacific regions. Regions from the Indian Ocean are in red; regions from the west and central Pacific are in blue. MDS1 and MDS2 are axes of the multidimensional scaling. The arrows indicate the shortest pathways from one region to another.

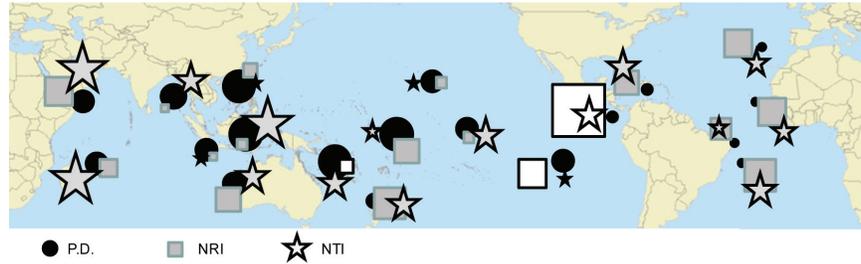


Fig. 4.14 Regional values of PD, NRI and NTI for Chaetodontidae across the world. PD: phylogenetic distance, radius of circle is proportional to value of PD. NRI: Net Relatedness Index, size of square is proportional to NRI value, grey represents >0 and white <0 values. NTI: Nearest Taxon Index, size of star is proportional to NTI value, black represents values <-0.3; +0.3>, grey represents >0.3 and white <-0.3 values.

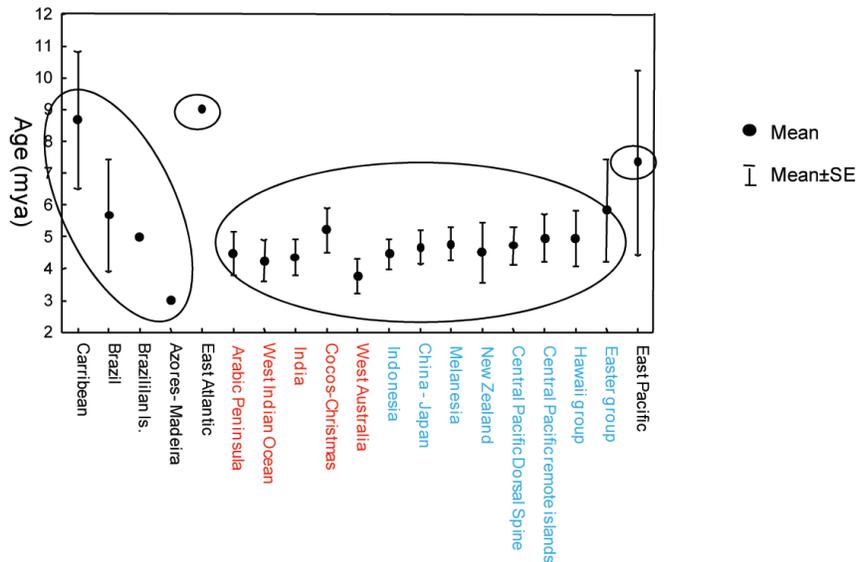


Fig. 4.15 Average age (mya) of species in each of the 19 biogeographic regions. Regions are ordered according to longitude. Indian Ocean regions are in red, west Pacific regions are in blue.