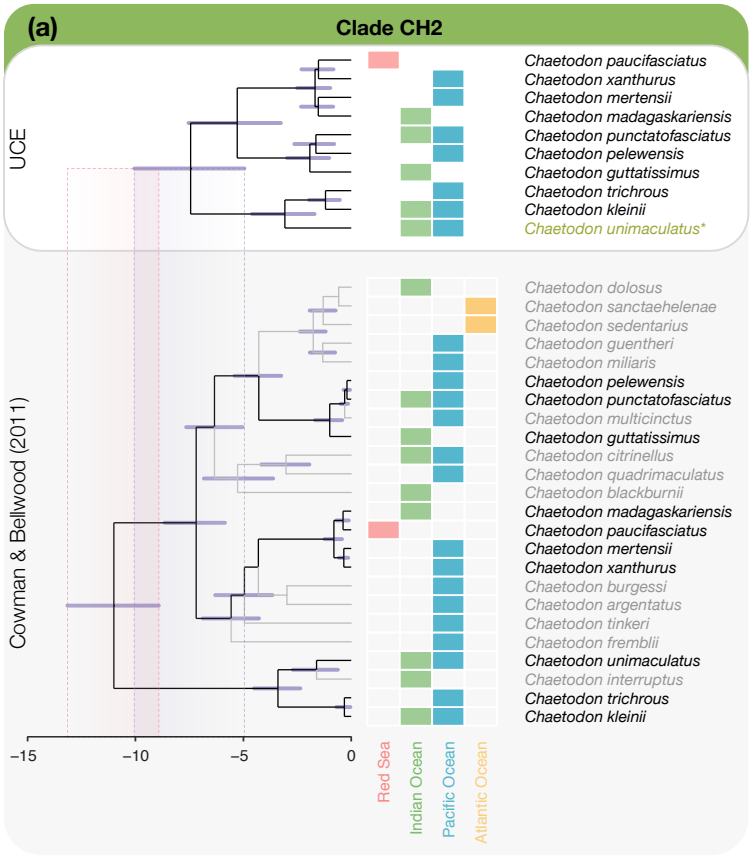
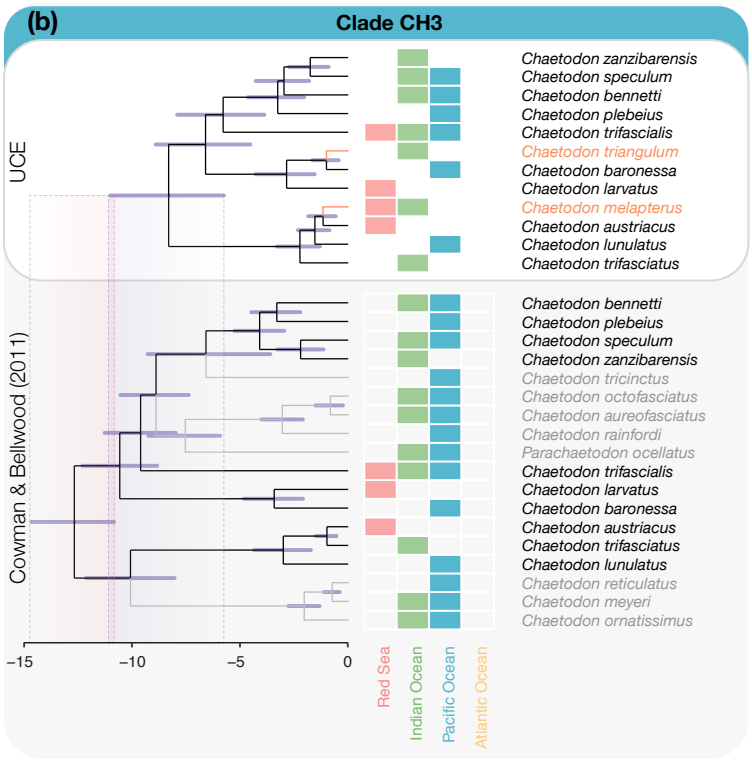
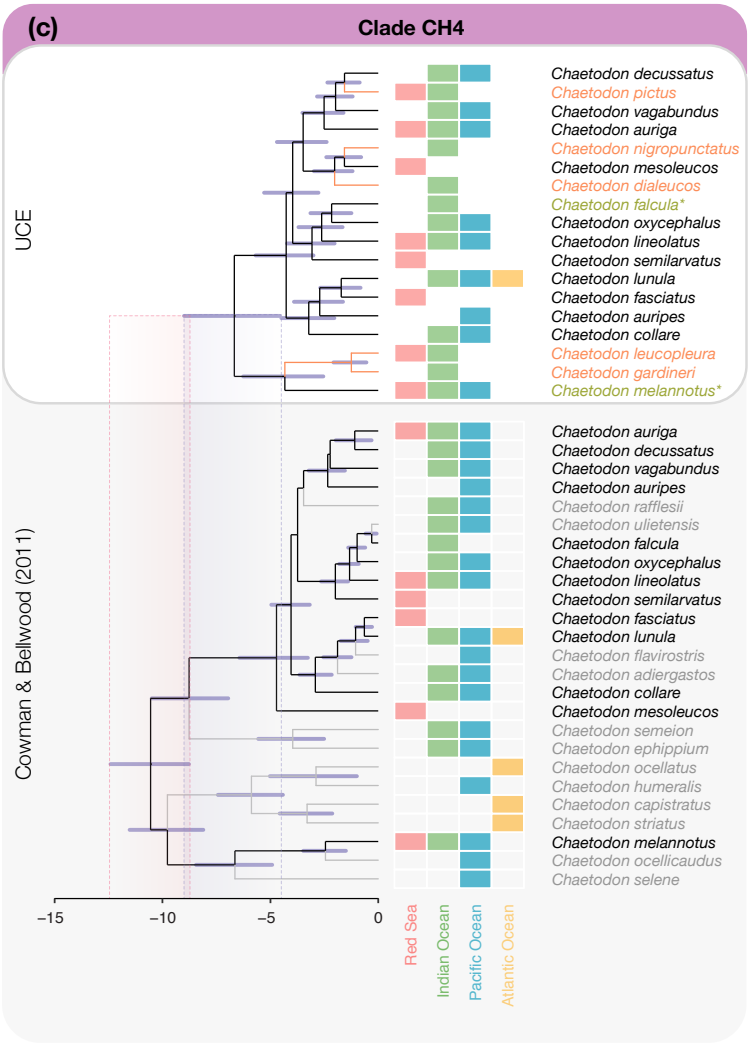
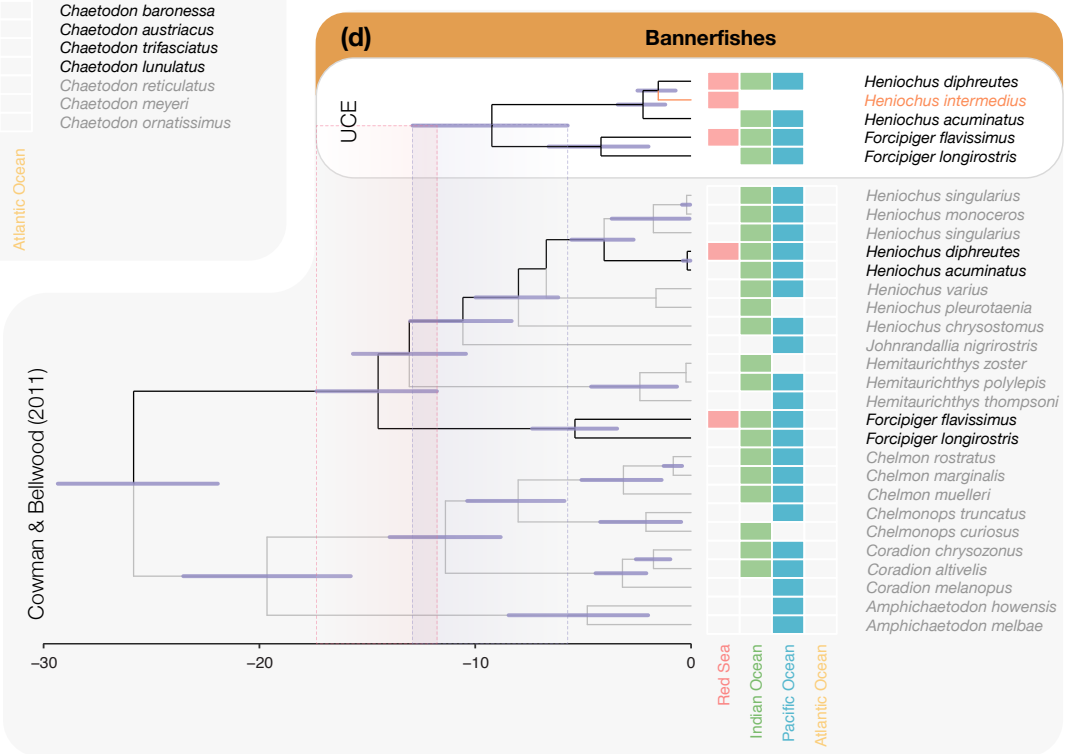

(a)
Clade CH2
UCE
Chaetodon paucifasciatus
Chaetodon xanthurus
Chaetodon mertensii
Chaetodon madagaskariensis
Chaetodon punctatofasciatus
Chaetodon pelewensis
Chaetodon guttatissimus
Chaetodon trichrous
Chaetodon kleinii
Chaetodon unimaculatus*
Cowman & Bellwood (2011)
Chaetodon dolosus
Chaetodon sanctaehelenae
Chaetodon sedentarius
Chaetodon guentheri
Chaetodon miliaris
Chaetodon pelewensis
Chaetodon punctatofasciatus
Chaetodon multicinctus
Chaetodon guttatissimus
Chaetodon citrinellus
Chaetodon quadrimaculatus
Chaetodon blackburnii
Chaetodon madagaskariensis
Chaetodon paucifasciatus
Chaetodon mertensii
Chaetodon xanthurus
Chaetodon burgessi
Chaetodon argentatus
Chaetodon tinkeri
Chaetodon fremblii
Chaetodon unimaculatus
Chaetodon interruptus
Chaetodon trichrous
Chaetodon kleinii
−15
−10
−5
0
Red Sea
Indian Ocean
Pacific Ocean
Atlantic Ocean


(b)
Clade CH3
UCE
Chaetodon zanzibarensis
Chaetodon speculum
Chaetodon bennetti
Chaetodon plebeius
Chaetodon trifascialis
Chaetodon triangulum
Chaetodon baronessa
Chaetodon larvatus
Chaetodon melapterus
Chaetodon austriacus
Chaetodon lunulatus
Chaetodon trifasciatus
Cowman & Bellwood (2011)
Chaetodon bennetti
Chaetodon plebeius
Chaetodon speculum
Chaetodon zanzibarensis
Chaetodon tricinctus
Chaetodon octofasciatus
Chaetodon aureofasciatus
Chaetodon rainfordi
Parachaetodon ocellatus
Chaetodon trifascialis
Chaetodon larvatus
Chaetodon baronessa
Chaetodon austriacus
Chaetodon trifasciatus
Chaetodon lunulatus
Chaetodon reticulatus
Chaetodon meyeri
Chaetodon ornatissimus
−15
−10
−5
0
Red Sea
Indian Ocean
Pacific Ocean
Atlantic Ocean


(c)
Clade CH4
UCE
Chaetodon decussatus
Chaetodon pictus
Chaetodon vagabundus
Chaetodon auriga
Chaetodon nigropunctatus
Chaetodon mesoleucos
Chaetodon dialeucos
Chaetodon falcula*
Chaetodon oxycephalus
Chaetodon lineolatus
Chaetodon semilarvatus
Chaetodon lunula
Chaetodon fasciatus
Chaetodon auripes
Chaetodon collare
Chaetodon leucopleura
Chaetodon gardineri
Chaetodon melannotus*
Cowman & Bellwood (2011)
Chaetodon auriga
Chaetodon decussatus
Chaetodon vagabundus
Chaetodon auripes
Chaetodon rafflesii
Chaetodon ulietensis
Chaetodon falcula
Chaetodon oxycephalus
Chaetodon lineolatus
Chaetodon semilarvatus
Chaetodon fasciatus
Chaetodon lunula
Chaetodon flavirostris
Chaetodon adiergastos
Chaetodon collare
Chaetodon mesoleucos
Chaetodon semeion
Chaetodon ephippium
Chaetodon ocellatus
Chaetodon humeralis
Chaetodon capistratus
Chaetodon striatus
Chaetodon melannotus
Chaetodon ocellicaudus
Chaetodon selene
−15
−10
−5
0
Red Sea
Indian Ocean
Pacific Ocean
Atlantic Ocean


(d)
Bannerfishes
UCE
Heniochus diphreutes
Heniochus intermedius
Heniochus acuminatus
Forcipiger flavissimus
Forcipiger longirostris
Cowman & Bellwood (2011)
Heniochus singularius
Heniochus monoceros
Heniochus singularius
Heniochus diphreutes
Heniochus acuminatus
Heniochus varius
Heniochus pleurotaenia
Heniochus chrysostomus
Johnrandallia nigrirostris
Hemitaurichthys zoster
Hemitaurichthys polylepis
Hemitaurichthys thompsoni
Forcipiger flavissimus
Forcipiger longirostris
Chelmon rostratus
Chelmon marginalis
Chelmon muelleri
Chelmonops truncatus
Chelmonops curiosus
Coradion chrysozonus
Coradion altivelis
Coradion melanopus
Amphichaetodon howensis
Amphichaetodon melbae
−30
−20
−10
0
Red Sea
Indian Ocean
Pacific Ocean
Atlantic Ocean