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**SUPPORTING INFORMATION**

**Analysis of Red Sea fish species’ introductions into the Mediterranean reveals shifts in introduction patterns**

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Table S1: List of bony fishes from the Red Sea according to Golani and Bogorodsky (2010) and their status in the study. Right censored: no Mediterranean record; introduced: reported in the Mediterranean Sea.

|  |  |  |
| --- | --- | --- |
| Species | Reason for exclusion | Classification |
| *Abalistes stellatus* | - | right censored |
| *Ablennes hians* | widely distributed species | excluded |
| *Abudefduf sexfasciatus* | - | right censored |
| *Abudefduf sordidus* | - | right censored |
| *Abudefduf vaigiensis* | - | introduced |
| *Acanthopagrus berda* | - | right censored |
| *Acanthopagrus bifasciatus* | - | right censored |
| *Acanthurus gahhm* | - | right censored |
| *Acanthurus mata* | - | right censored |
| *Acanthurus nigrofuscus* | - | right censored |
| *Acanthurus sohal* | - | right censored |
| *Acentrogobius nebulosus* | - | right censored |
| *Acentronura tentaculata* | - | right censored |
| *Acropoma japonicum* | - | right censored |
| *Aeoliscus punctulatus* | - | right censored |
| *Aesopia cornuta* | - | right censored |
| *Aethaloperca rogaa* | - | right censored |
| *Albula glossodonta* | - | right censored |
| *Alectis ciliaris* | widely distributed species | excluded |
| *Alectis indica* | - | right censored |
| *Alepes djedaba* | - | introduced |
| *Alloblennius jugularis* | - | right censored |
| *Alloblennius pictus* | - | right censored |
| *Alticus kirkii* | - | right censored |
| *Aluterus monoceros* | widely distributed species | excluded |
| *Aluterus scriptus* | widely distributed species | excluded |
| *Amanses scopas* | - | right censored |
| *Ambassis dussumieri* | - | right censored |
| *Ambassis urotaenia* | - | right censored |
| *Amblyeleotris diagonalis* | - | right censored |
| *Amblyeleotris neglecta* | - | right censored |
| *Amblyeleotris steinitzi* | - | right censored |
| *Amblyeleotris sungami* | - | right censored |
| *Amblyeleotris triguttata* | - | right censored |
| *Amblyeleotris wheeleri* | - | right censored |
| *Amblygaster sirm* | - | right censored |
| *Amblyglyphidodon flavilatus* | - | right censored |
| *Amblyglyphidodon indicus* | - | right censored |
| *Amblygobius albimaculatus* | - | right censored |
| *Amblygobius esakiae* | - | right censored |
| *Amblygobius nocturnus* | - | right censored |
| *Amblygobius sewardii* | - | right censored |
| *Amphiprion bicinctus* | - | right censored |
| *Anampses caeruleopunctatus* | - | right censored |
| *Anampses lineatus* | - | right censored |
| *Anampses meleagrides* | - | right censored |
| *Anampses twistii* | - | right censored |
| *Antennablennius adenensis* | - | right censored |
| *Antennablennius australis* | - | right censored |
| *Antennablennius hypenetes* | - | right censored |
| *Antennarius commerson* | - | right censored |
| *Antennarius pictus* | - | right censored |
| *Antennarius striatus* | widely distributed species | excluded |
| *Antennatus coccineus* | - | right censored |
| *Antennatus nummifer* | - | right censored |
| *Antennatus rosaceus* | - | right censored |
| *Anyperodon leucogrammicus* | - | right censored |
| *Aphanius dispar* | Mediterranean record prior to opening of the Suez Canal (Kornflield & Nevo, 1976) | excluded |
| *Aphareus furca* | - | right censored |
| *Aphareus rutilans* | - | right censored |
| *Apistus carinatus* | - | right censored |
| *Apogon bryx* | - | right censored |
| *Apogon campbelli* | - | right censored |
| *Apogon coccineus* | - | right censored |
| *Apogon erythrosoma* | - | right censored |
| *Apogon isus* | - | right censored |
| *Apogon multitaeniatus* | - | right censored |
| *Apogon pselion* | - | right censored |
| *Apogon queketti* | - | introduced |
| *Apogon semiornatus* | - | right censored |
| *Apogon smithi* | - | introduced |
| *Apogon spilurus* | - | right censored |
| *Apogonichthyoides heptastygma* | - | right censored |
| *Apogonichthyoides pharaonis* | - | introduced |
| *Apogonichthyoides pseudotaeniatus* | - | right censored |
| *Apogonichthyoides taeniatus* | - | right censored |
| *Apogonichthyoides timorensis* | - | right censored |
| *Apogonichthys perdix* | - | right censored |
| *Apolemichthys xanthotis* | - | right censored |
| *Aprion virescens* | - | right censored |
| *Archamia bilineata* | - | right censored |
| *Archamia fucata* | - | right censored |
| *Archamia lineolata* | - | right censored |
| *Arcygobius baliurus* | - | right censored |
| *Argyrops filamentosus* | - | right censored |
| *Argyrops megalommatus* | - | right censored |
| *Argyrops spinifer* | - | right censored |
| *Argyrosomus regius* | Atlantic and/or Mediterranean species | excluded |
| *Ariomma brevimanum* | - | right censored |
| *Ariomma indicum* | - | right censored |
| *Ariosoma sanzoi* | - | right censored |
| *Arnoglossus macrolophus* | - | right censored |
| *Arnoglossus marisrubri* | - | right censored |
| *Arothron diadematus* | - | right censored |
| *Arothron hispidus* | - | right censored |
| *Arothron immaculatus* | - | right censored |
| *Arothron reticularis* | - | right censored |
| *Arothron stellatus* | - | right censored |
| *Aseraggodes sinusarabici* | - | right censored |
| *Aseraggodes steinitzi* | - | right censored |
| *Aspidontus dussumieri* | - | right censored |
| *Aspidontus tractus* | - | right censored |
| *Asterorhombus intermedius* | - | right censored |
| *Asterropteryx semipunctata* | - | right censored |
| *Astronesthes martensii* | deep sea species | excluded |
| *Ateleopus natalensis* | deep sea species | excluded |
| *Atherinomorus forskalii* | - | introduced |
| *Atherinomorus lacunosus* | - | right censored |
| *Atrobucca geniae* | - | right censored |
| *Atrosalarias fuscus* | - | right censored |
| *Atule mate* | - | right censored |
| *Aulacocephalus temminckii* | - | right censored |
| *Aurigequula fasciata* | - | right censored |
| *Auxis thazard* | widely distributed species | excluded |
| *Balistapus undulatus* | - | right censored |
| *Balistoides viridescens* | - | right censored |
| *Barchatus cirrhosus* | - | right censored |
| *Bathygobius cyclopterus* | - | right censored |
| *Bathygobius fuscus* | - | right censored |
| *Bembrops caudimacula* | deep sea species | excluded |
| *Benthosema pterotum* | deep sea species | excluded |
| *Blenniella periophthalmus* | - | right censored |
| *Bodianus anthioides* | - | right censored |
| *Bodianus axillaris* | - | right censored |
| *Bodianus diana* | - | right censored |
| *Bodianus opercularis* | - | right censored |
| *Bodianus trilineatus* | - | right censored |
| *Bolbometopon muricatum* | - | right censored |
| *Bothus pantherinus* | - | right censored |
| *Brachaluteres fahaqa* | - | right censored |
| *Brachypterois serrulata* | - | right censored |
| *Brachysomophis cirrocheilos* | - | right censored |
| *Branchiostegus sawakinensis* | - | right censored |
| *Bregmaceros arabicus* | - | right censored |
| *Brosmophyciops pautzkei* | - | right censored |
| *Brotula multibarbata* | - | right censored |
| *Bryaninops natans* | - | right censored |
| *Bryaninops ridens* | - | right censored |
| *Bryaninops yongei* | - | right censored |
| *Bryx analicarens* | - | right censored |
| *Caesio caerulaurea* | - | right censored |
| *Caesio lunaris* | - | right censored |
| *Caesio striata* | - | right censored |
| *Caesio suevica* | - | right censored |
| *Caesio varilineata* | - | right censored |
| *Caesio xanthonota* | - | right censored |
| *Callechelys catostoma* | - | right censored |
| *Callechelys marmorata* | - | right censored |
| *Callionymus bentuviai* | - | right censored |
| *Callionymus delicatulus* | - | right censored |
| *Callionymus erythraeus* | - | right censored |
| *Callionymus filamentosus* | - | introduced |
| *Callionymus flavus* | - | right censored |
| *Callionymus gardineri* | - | right censored |
| *Callionymus muscatensis* | - | right censored |
| *Callionymus oxycephalus* | - | right censored |
| *Callogobius amikami* | - | right censored |
| *Callogobius bifasciatus* | - | right censored |
| *Callogobius dori* | - | right censored |
| *Callogobius flavobrunneus* | - | right censored |
| *Callogobius maculipinnis* | - | right censored |
| *Calloplesiops altivelis* | - | right censored |
| *Calotomus viridescens* | - | right censored |
| *Cantherhines pardalis* | - | right censored |
| *Canthidermis macrolepis* | - | right censored |
| *Canthigaster cyanospilota* | - | right censored |
| *Canthigaster margaritata* | - | right censored |
| *Canthigaster pygmaea* | - | right censored |
| *Carangoides armatus* | - | right censored |
| *Carangoides bajad* | - | right censored |
| *Carangoides chrysophrys* | - | right censored |
| *Carangoides coeruleopinnatus* | - | right censored |
| *Carangoides equula* | - | right censored |
| *Carangoides ferdau* | - | right censored |
| *Carangoides fulvoguttatus* | - | right censored |
| *Carangoides plagiotaenia* | - | right censored |
| *Caranx heberi* | - | right censored |
| *Caranx ignobilis* | - | right censored |
| *Caranx melampygus* | - | right censored |
| *Caranx sexfasciatus* | - | right censored |
| *Carapus mourlani* | - | right censored |
| *Centropyge multispinis* | - | right censored |
| *Cephalopholis argus* | - | right censored |
| *Cephalopholis hemistiktos* | - | right censored |
| *Cephalopholis miniata* | - | right censored |
| *Cephalopholis oligosticta* | - | right censored |
| *Cephalopholis sexmaculata* | - | right censored |
| *Cercamia eremia* | - | right censored |
| *Cetoscarus bicolor* | - | right censored |
| *Chaetodon auriga* | - | right censored |
| *Chaetodon austriacus* | - | introduced |
| *Chaetodon fasciatus* | - | right censored |
| *Chaetodon larvatus* | - | introduced |
| *Chaetodon leucopleura* | - | right censored |
| *Chaetodon lineolatus* | - | right censored |
| *Chaetodon melannotus* | - | right censored |
| *Chaetodon melapterus* | - | right censored |
| *Chaetodon mesoleucos* | - | right censored |
| *Chaetodon paucifasciatus* | - | right censored |
| *Chaetodon pictus* | - | right censored |
| *Chaetodon semilarvatus* | - | right censored |
| *Chaetodon trifascialis* | - | right censored |
| *Champsodon capensis* | - | right censored |
| *Champsodon omanensis* | - | right censored |
| *Chanos chanos* | - | introduced |
| *Cheilinus abudjubbe* | - | right censored |
| *Cheilinus fasciatus* | - | right censored |
| *Cheilinus lunulatus* | - | right censored |
| *Cheilinus undulatus* | - | right censored |
| *Cheilio inermis* | - | right censored |
| *Cheilodipterus arabicus* | - | right censored |
| *Cheilodipterus lachneri* | - | right censored |
| *Cheilodipterus macrodon* | - | right censored |
| *Cheilodipterus novemstriatus* | - | introduced |
| *Cheilodipterus pygmaios* | - | right censored |
| *Cheilodipterus quinquelineatus* | - | right censored |
| *Cheilopogon cyanopterus* | - | right censored |
| *Cheimerius nufar* | - | right censored |
| *Chelidoperca pleurospilus* | - | right censored |
| *Chelon planiceps* | - | right censored |
| *Chelon subviridis* | - | right censored |
| *Chirocentrus dorab* | - | right censored |
| *Chirocentrus nudus* | - | right censored |
| *Chlidichthys auratus* | - | right censored |
| *Chlidichthys rubiceps* | - | right censored |
| *Chlorurus genazonatus* | - | right censored |
| *Chlorurus gibbus* | - | right censored |
| *Chlorurus sordidus* | - | right censored |
| *Choerodon robustus* | - | right censored |
| *Choeroichthys brachysoma* | - | right censored |
| *Choridactylus multibarbus* | - | right censored |
| *Chromis dimidiata* | - | right censored |
| *Chromis flavaxilla* | - | right censored |
| *Chromis pelloura* | - | right censored |
| *Chromis pembae* | - | right censored |
| *Chromis trialpha* | - | right censored |
| *Chromis viridis* | - | right censored |
| *Chromis weberi* | - | right censored |
| *Chrysiptera annulata* | - | right censored |
| *Chrysiptera unimaculata* | - | right censored |
| *Cirrhilabrus blatteus* | - | right censored |
| *Cirrhilabrus rubriventralis* | - | right censored |
| *Cirrhimuraena playfairii* | - | right censored |
| *Cirrhitichthys oxycephalus* | - | right censored |
| *Cirrhitus pinnulatus* | - | right censored |
| *Cirripectes castaneus* | - | right censored |
| *Cirripectes filamentosus* | - | right censored |
| *Cociella punctata* | - | right censored |
| *Cocotropus steinitzi* | - | right censored |
| *Conger cinereus* | - | right censored |
| *Congresox talabonoides* | - | right censored |
| *Coris aygula* | - | right censored |
| *Coris caudimacula* | - | right censored |
| *Coris cuvieri* | - | right censored |
| *Coris formosa* | - | right censored |
| *Coris variegata* | - | right censored |
| *Coryogalops anomolus* | - | right censored |
| *Coryogalops ocheticus* | - | introduced |
| *Coryphaena hippurus* | widely distributed species | excluded |
| *Coryphopterus humeralis* | - | right censored |
| *Corythoichthys flavofasciatus* | - | right censored |
| *Corythoichthys nigripectus* | - | right censored |
| *Corythoichthys schultzi* | - | right censored |
| *Cosmocampus banneri* | - | right censored |
| *Cosmocampus maxweberi* | - | right censored |
| *Crenidens crenidens* | - | introduced |
| *Crenimugil crenilabis* | - | right censored |
| *Cryptocentroides arabicus* | - | right censored |
| *Cryptocentrus caeruleopunctatus* | - | right censored |
| *Cryptocentrus cryptocentrus* | - | right censored |
| *Cryptocentrus fasciatus* | - | right censored |
| *Cryptocentrus lutheri* | - | right censored |
| *Ctenochaetus striatus* | - | right censored |
| *Ctenogobiops crocineus* | - | right censored |
| *Ctenogobiops feroculus* | - | right censored |
| *Ctenogobiops maculosus* | - | right censored |
| *Cyclichthys orbicularis* | - | right censored |
| *Cyclichthys spilostylus* | - | introduced |
| *Cynoglossus acutirostris* | - | right censored |
| *Cynoglossus bilineatus* | - | right censored |
| *Cynoglossus dollfusi* | - | right censored |
| *Cynoglossus lachneri* | - | right censored |
| *Cynoglossus lingua* | - | right censored |
| *Cynoglossus pottii* | - | right censored |
| *Cynoglossus sinusarabici* | - | introduced |
| *Cypselurus hexazona* | - | right censored |
| *Dactyloptena orientalis* | - | right censored |
| *Dactyloptena peterseni* | - | right censored |
| *Dascyllus aruanus* | - | right censored |
| *Dascyllus marginatus* | - | right censored |
| *Dascyllus trimaculatus* | - | right censored |
| *Decapterus macarellus* | widely distributed species | excluded |
| *Decapterus macrosoma* | - | right censored |
| *Decapterus russelli* | - | introduced |
| *Dendrochirus brachypterus* | - | right censored |
| *Dendrochirus zebra* | - | right censored |
| *Dermatolepis striolata* | - | right censored |
| *Diagramma punctatum* | - | right censored |
| *Diaphus coeruleus* | deep sea species | excluded |
| *Dicentrarchus labrax* | Atlantic and/or Mediterranean species | excluded |
| *Dicentrarchus punctatus* | Atlantic and/or Mediterranean species | excluded |
| *Dinematichthys iluocoeteoides* | - | right censored |
| *Diodon hystrix* | widely distributed species | excluded |
| *Diodon liturosus* | - | right censored |
| *Diploconger polystigmatus* | - | right censored |
| *Diplodus noct* | - | right censored |
| *Diplogrammus gruveli* | - | right censored |
| *Diplogrammus infulatus* | - | right censored |
| *Diplogrammus randalli* | - | right censored |
| *Diploprion drachi* | - | right censored |
| *Discordipinna griessingeri* | - | right censored |
| *Doryrhamphus excisus abbreviatus* | - | right censored |
| *Drepane longimana* | - | right censored |
| *Dunckerocampus boylei* | - | right censored |
| *Dunckerocampus multiannulatus* | - | right censored |
| *Dussumieria elopsoides* | - | introduced |
| *Dysomma fuscoventralis* | deep sea species | excluded |
| *Echeneis naucrates* | widely distributed species | excluded |
| *Echidna nebulosa* | - | right censored |
| *Echidna polyzona* | - | right censored |
| *Ecsenius aroni* | - | right censored |
| *Ecsenius dentex* | - | right censored |
| *Ecsenius frontalis* | - | right censored |
| *Ecsenius gravieri* | - | right censored |
| *Ecsenius midas* | - | right censored |
| *Elagatis bipinnulata* | widely distributed species | excluded |
| *Ellochelon vaigiensis* | - | right censored |
| *Elops machnata* | - | right censored |
| *Encheliophis gracilis* | - | right censored |
| *Encheliophis homei* | - | right censored |
| *Enchelycore bayeri* | - | right censored |
| *Enchelycore schismatorhynchus* | - | right censored |
| *Enchelyurus kraussii* | - | right censored |
| *Enchelyurus petersi* | - | right censored |
| *Encrasicholina heteroloba* | - | right censored |
| *Encrasicholina punctifer* | - | right censored |
| *Engraulis encrasicolus* | Atlantic and/or Mediterranean species | excluded |
| *Engyprosopon grandisquama* | - | right censored |
| *Engyprosopon hureaui* | - | right censored |
| *Engyprosopon latifrons* | - | right censored |
| *Engyprosopon macrolepis* | - | right censored |
| *Enneapterygius abeli* | - | right censored |
| *Enneapterygius clarkae* | - | right censored |
| *Enneapterygius destai* | - | right censored |
| *Enneapterygius obscurus* | - | right censored |
| *Enneapterygius pallidus* | - | right censored |
| *Enneapterygius pusillus* | - | right censored |
| *Enneapterygius tutuilae* | - | right censored |
| *Enneapterygius ventermaculus* | - | right censored |
| *Epibulus insidiator* | - | right censored |
| *Epigonus marisrubri* | - | right censored |
| *Epinephelus areolatus* | - | right censored |
| *Epinephelus chlorostigma* | - | right censored |
| *Epinephelus coioides* | - | introduced |
| *Epinephelus epistictus* | - | right censored |
| *Epinephelus fasciatus* | - | introduced |
| *Epinephelus fuscoguttatus* | - | right censored |
| *Epinephelus lanceolatus* | - | right censored |
| *Epinephelus latifasciatus* | - | right censored |
| *Epinephelus malabaricus* | - | introduced |
| *Epinephelus morrhua* | - | right censored |
| *Epinephelus polyphekadion* | - | right censored |
| *Epinephelus radiatus* | - | right censored |
| *Epinephelus stoliczkae* | - | right censored |
| *Epinephelus summana* | - | right censored |
| *Epinephelus tauvina* | - | right censored |
| *Epinephelus tukula* | - | right censored |
| *Equulites klunzingeri* | - | introduced |
| *Etrumeus golanii* | - | introduced |
| *Eubleekeria splendens* | - | right censored |
| *Euleptorhamphus viridis* | - | right censored |
| *Eurypegasus draconis* | - | right censored |
| *Euthynnus affinis* | - | right censored |
| *Eviota distigma* | - | right censored |
| *Eviota guttata* | - | right censored |
| *Eviota pardalota* | - | right censored |
| *Eviota prasina* | - | right censored |
| *Eviota sebreei* | - | right censored |
| *Eviota zebrina* | - | right censored |
| *Exallias brevis* | - | right censored |
| *Exyrias belissimus* | - | right censored |
| *Facciolella karreri* | deep sea species | excluded |
| *Facciolella saurencheloides* | deep sea species | excluded |
| *Favonigobius melanobranchus* | - | right censored |
| *Favonigobius reichei* | - | right censored |
| *Feia nympha* | - | right censored |
| *Fistularia commersonii* | - | introduced |
| *Fistularia petimba* | widely distributed species | excluded |
| *Foa fo* | - | right censored |
| *Forcipiger flavissimus* | - | right censored |
| *Fowleria aurita* | - | right censored |
| *Fowleria isostigma* | - | right censored |
| *Fowleria marmorata* | - | right censored |
| *Fowleria vaiulae* | - | right censored |
| *Fowleria variegata* | - | right censored |
| *Fusigobius longispinus* | - | right censored |
| *Fusigobius maximus* | - | right censored |
| *Fusigobius neophytus* | - | right censored |
| *Gazza minuta* | - | right censored |
| *Genicanthus caudovittatus* | - | right censored |
| *Gerres filamentosus* | - | right censored |
| *Gerres longirostris* | - | right censored |
| *Gerres macracanthus* | - | right censored |
| *Gerres oblongus* | - | right censored |
| *Gerres oyena* | - | right censored |
| *Gladiogobius rex* | - | right censored |
| *Glossogobius giuris* | - | right censored |
| *Gnathanodon speciosus* | - | right censored |
| *Gnatholepis anjerensis* | - | right censored |
| *Gobiodon citrinus* | - | right censored |
| *Gobiodon histrio* | - | right censored |
| *Gobiodon prolixus* | - | right censored |
| *Gobiodon reticulatus* | - | right censored |
| *Gobiodon rivulatus* | - | right censored |
| *Gobius cobitis* | Atlantic and/or Mediterranean species | excluded |
| *Gobius paganellus* | Atlantic and/or Mediterranean species | excluded |
| *Gomphosus caeruleus* | - | right censored |
| *Gorgasia sillneri* | - | right censored |
| *Grammatobothus krempfi* | - | right censored |
| *Grammatorcynus bilineatus* | - | right censored |
| *Grammistes sexlineatus* | - | right censored |
| *Grammonus robustus* | - | right censored |
| *Grammoplites suppositus* | - | right censored |
| *Gunnellichthys monostigma* | - | right censored |
| *Gymnapogon melanogaster* | - | right censored |
| *Gymnocaesio gymnoptera* | - | right censored |
| *Gymnocranius grandoculis* | - | right censored |
| *Gymnomuraena zebra* | - | right censored |
| *Gymnosarda unicolor* | - | right censored |
| *Gymnothorax angusticauda* | - | right censored |
| *Gymnothorax atolli* | - | right censored |
| *Gymnothorax baranesi* | - | right censored |
| *Gymnothorax buroensis* | - | right censored |
| *Gymnothorax elegans* | - | right censored |
| *Gymnothorax favagineus* | - | right censored |
| *Gymnothorax flavimarginatus* | - | right censored |
| *Gymnothorax griseus* | - | right censored |
| *Gymnothorax hepaticus* | - | right censored |
| *Gymnothorax javanicus* | - | right censored |
| *Gymnothorax johnsoni* | - | right censored |
| *Gymnothorax moluccensis* | - | right censored |
| *Gymnothorax nudivomer* | - | right censored |
| *Gymnothorax pictus* | - | right censored |
| *Gymnothorax pindae* | - | right censored |
| *Gymnothorax pseudoherrei* | - | right censored |
| *Gymnothorax punctatus* | - | right censored |
| *Gymnothorax randalli* | - | right censored |
| *Gymnothorax reticularis* | - | introduced |
| *Gymnothorax rueppelliae* | - | right censored |
| *Gymnothorax undulatus* | - | right censored |
| *Halicampus dunckeri* | - | right censored |
| *Halicampus macrorhynchus* | - | right censored |
| *Halicampus mataafae* | - | right censored |
| *Halichoeres hortulanus* | - | right censored |
| *Halichoeres iridis* | - | right censored |
| *Halichoeres marginatus* | - | right censored |
| *Halichoeres nebulosus* | - | right censored |
| *Halichoeres scapularis* | - | right censored |
| *Halichoeres zeylonicus* | - | right censored |
| *Haliophis guttatus* | - | right censored |
| *Harpadon erythraeus* | - | right censored |
| *Hazeus elati* | - | right censored |
| *Helcogramma obtusirostris* | - | right censored |
| *Helcogramma steinitzi* | - | right censored |
| *Hemigymnus fasciatus* | - | right censored |
| *Hemigymnus melapterus* | - | right censored |
| *Hemiramphus convexus* | - | right censored |
| *Hemiramphus far* | - | introduced |
| *Hemiramphus marginatus* | - | right censored |
| *Heniochus diphreutes* | - | right censored |
| *Heniochus intermedius* | - | introduced |
| *Herklotsichthys punctatus* | - | introduced |
| *Herklotsichthys quadrimaculatus* | - | right censored |
| *Hetereleotris bipunctata* | - | right censored |
| *Hetereleotris diademata* | - | right censored |
| *Hetereleotris vulgaris* | - | right censored |
| *Heteroconger balteatus* | - | right censored |
| *Hippichthys cyanospilos* | - | right censored |
| *Hippichthys spicifer* | - | right censored |
| *Hippocampus debelius* | - | right censored |
| *Hippocampus fuscus* | - | introduced |
| *Hippocampus jayakari* | - | right censored |
| *Hippocampus suezensis* | - | right censored |
| *Hipposcarus harid* | - | right censored |
| *Hirculops cornifer* | - | right censored |
| *Histiopterus typus* | - | right censored |
| *Histrio histrio* | - | right censored |
| *Hologymnosus annulatus* | - | right censored |
| *Hologymnosus doliatus* | - | right censored |
| *Hoplolatilus geo* | - | right censored |
| *Hoplolatilus oreni* | - | right censored |
| *Hoplostethus marisrubri* | deep sea species | excluded |
| *Hypoatherina temminckii* | - | right censored |
| *Hyporhamphus affinis* | - | introduced |
| *Hyporhamphus balinensis* | - | right censored |
| *Hyporhamphus gamberur* | - | right censored |
| *Iniistius baldwini* | - | right censored |
| *Iniistius bimaculatus* | - | right censored |
| *Iniistius pavo* | - | introduced |
| *Iniistius pentadactylus* | - | right censored |
| *Inimicus filamentosus* | - | right censored |
| *Istiblennius edentulus* | - | right censored |
| *Istiblennius flaviumbrinus* | - | right censored |
| *Istiblennius pox* | - | right censored |
| *Istiblennius rivulatus* | - | right censored |
| *Istiblennius unicolor* | - | right censored |
| *Istigobius decoratus* | - | right censored |
| *Istigobius ornatus* | - | right censored |
| *Istiophorus platypterus* | - | right censored |
| *Katsuwonus pelamis* | widely distributed species | excluded |
| *Koumansetta hectori* | - | right censored |
| *Kraemeria samoensis* | - | right censored |
| *Kuhlia mugil* | - | right censored |
| *Kyonemichthys rumengani* | - | right censored |
| *Kyphosus bigibbus* | - | right censored |
| *Kyphosus cinerascens* | - | right censored |
| *Kyphosus vaigiensis* | - | right censored |
| *Labroides dimidiatus* | - | right censored |
| *Lactoria cornuta* | - | right censored |
| *Lagocephalus lunaris* | - | right censored |
| *Lagocephalus sceleratus* | - | introduced |
| *Lagocephalus spadiceus* | - | introduced |
| *Lagocephalus suezensis* | - | introduced |
| *Larabicus quadrilineatus* | - | right censored |
| *Leiognathus equulus* | - | right censored |
| *Leiognathus oblongus* | - | right censored |
| *Lepadichthys erythraeus* | - | right censored |
| *Lepadichthys lineatus* | - | right censored |
| *Lepidotrigla bispinosa* | - | right censored |
| *Lepidotrigla spiloptera* | - | right censored |
| *Leptoscarus vaigiensis* | - | right censored |
| *Lestidiops jayakari* | widely distributed and deep sea species | excluded |
| *Lestrolepis luetkeni* | - | right censored |
| *Lethrinus borbonicus* | - | right censored |
| *Lethrinus harak* | - | right censored |
| *Lethrinus lentjan* | - | right censored |
| *Lethrinus mahsena* | - | right censored |
| *Lethrinus microdon* | - | right censored |
| *Lethrinus nebulosus* | - | right censored |
| *Lethrinus obsoletus* | - | right censored |
| *Lethrinus olivaceus* | - | right censored |
| *Lethrinus variegatus* | - | right censored |
| *Lethrinus xanthochilus* | - | right censored |
| *Limnichthys nitidus* | - | right censored |
| *Liopropoma lunulatum* | - | right censored |
| *Liopropoma mitratum* | - | right censored |
| *Liopropoma susumi* | - | right censored |
| *Liparis fishelsoni* | - | right censored |
| *Lissocampus bannwarthi* | - | right censored |
| *Liza carinata* | - | introduced |
| *Lobotes surinamensis* | widely distributed species | excluded |
| *Lophiomus setigerus* | - | right censored |
| *Lotilia graciliosa* | - | right censored |
| *Luposicya lupus* | - | right censored |
| *Lutjanus argentimaculatus* | - | introduced |
| *Lutjanus bengalensis* | - | right censored |
| *Lutjanus bohar* | - | right censored |
| *Lutjanus coeruleolineatus* | - | right censored |
| *Lutjanus ehrenbergii* | - | right censored |
| *Lutjanus fulviflamma* | - | right censored |
| *Lutjanus fulvus* | - | right censored |
| *Lutjanus gibbus* | - | right censored |
| *Lutjanus kasmira* | - | right censored |
| *Lutjanus lutjanus* | - | right censored |
| *Lutjanus monostigma* | - | right censored |
| *Lutjanus rivulatus* | - | right censored |
| *Lutjanus russellii* | - | right censored |
| *Lutjanus sanguineus* | - | right censored |
| *Lutjanus sebae* | - | right censored |
| *Macolor niger* | - | right censored |
| *Macrodontogobius wilburi* | - | right censored |
| *Macropharyngodon marisrubri* | - | right censored |
| *Malacanthus brevirostris* | - | right censored |
| *Malacanthus latovittatus* | - | right censored |
| *Masturus lanceolatus* | widely distributed species | excluded |
| *Maurolicus mucronatus* | deep sea species | excluded |
| *Megalaspis cordyla* | - | right censored |
| *Megalops cyprinoides* | - | right censored |
| *Meiacanthus nigrolineatus* | - | right censored |
| *Microbrotula bentleyi* | - | right censored |
| *Micrognathus andersonii* | - | right censored |
| *Micrognathus brevirostris brevirostris* | - | right censored |
| *Mimoblennius cirrosus* | - | right censored |
| *Minilabrus striatus* | - | right censored |
| *Minous coccineus* | - | right censored |
| *Minous monodactylus* | - | right censored |
| *Mola mola* | widely distributed species | excluded |
| *Monocentris japonica* | - | right censored |
| *Monodactylus argenteus* | - | right censored |
| *Monotaxis grandoculis* | - | right censored |
| *Moolgarda cunnesius* | - | right censored |
| *Moolgarda seheli* | - | right censored |
| *Mugil cephalus* | widely distributed species | excluded |
| *Mulloidichthys flavolineatus* | - | right censored |
| *Mulloidichthys vanicolensis* | - | right censored |
| *Muraena helena* | Atlantic and/or Mediterranean species | excluded |
| *Muraenesox cinereus* | - | introduced |
| *Muraenichthys schultzei* | - | right censored |
| *Myrichthys colubrinus* | - | right censored |
| *Myrichthys maculosus* | - | right censored |
| *Myripristis chryseres* | - | right censored |
| *Myripristis murdjan* | - | right censored |
| *Myripristis xanthacra* | - | right censored |
| *Myrophis microchir* | - | right censored |
| *Naso annulatus* | - | right censored |
| *Naso brevirostris* | - | right censored |
| *Naso elegans* | - | right censored |
| *Naso hexacanthus* | - | right censored |
| *Naso unicornis* | - | right censored |
| *Naucrates ductor* | widely distributed species | excluded |
| *Neamia octospina* | - | right censored |
| *Nectamia annularis* | - | right censored |
| *Nectamia fusca* | - | right censored |
| *Nectamia zebrinus* | - | right censored |
| *Neenchelys microtretus* | - | right censored |
| *Nemateleotris decora* | - | right censored |
| *Nemipterus bipunctatus* | - | right censored |
| *Nemipterus japonicus* | - | right censored |
| *Nemipterus peronii* | - | right censored |
| *Nemipterus randalli* | - | introduced |
| *Nemipterus zysron* | - | right censored |
| *Neobythites stefanovi* | deep sea species | excluded |
| *Neocentropogon mesedai* | - | right censored |
| *Neoglyphidodon melas* | - | right censored |
| *Neomerinthe bathyperimensis* | - | right censored |
| *Neoniphon sammara* | - | right censored |
| *Neopomacentrus cyanomos* | - | right censored |
| *Neopomacentrus miryae* | - | right censored |
| *Neopomacentrus xanthurus* | - | right censored |
| *Netuma thalassina* | - | right censored |
| *Norfolkia brachylepis* | - | right censored |
| *Novaculichthys taeniourus* | - | right censored |
| *Novaculoides macrolepidotus* | - | right censored |
| *Obliquogobius turkayi* | - | right censored |
| *Odonus niger* | - | right censored |
| *Oedalechilus labiosus* | - | right censored |
| *Omobranchus fasciolatus* | - | right censored |
| *Omobranchus punctatus* | - | introduced |
| *Omobranchus steinitzi* | - | right censored |
| *Onigocia bimaculata* | - | right censored |
| *Ophichthus echeloides* | - | right censored |
| *Ophichthus erabo* | - | right censored |
| *Ophidion smithi* | deep sea species | excluded |
| *Opistognathus nigromarginatus* | - | right censored |
| *Oplopomus oplopomus* | - | right censored |
| *Ostichthys acanthorhinus* | - | right censored |
| *Ostichthys hypsipterygion* | - | right censored |
| *Ostorhinchus apogonoides* | - | right censored |
| *Ostorhinchus cookii* | - | right censored |
| *Ostorhinchus cyanosoma* | - | right censored |
| *Ostorhinchus fasciatus* | - | introduced |
| *Ostorhinchus fleurieu* | - | right censored |
| *Ostorhinchus gularis* | - | right censored |
| *Ostorhinchus nigrofasciatus* | - | right censored |
| *Ostorhinchus talboti* | - | right censored |
| *Ostracion cubicus* | - | introduced |
| *Ostracion cyanurus* | - | right censored |
| *Oxycheilinus arenatus* | - | right censored |
| *Oxycheilinus digramma* | - | right censored |
| *Oxycheilinus mentalis* | - | right censored |
| *Oxycheilinus orientalis* | - | right censored |
| *Oxycirrhites typus* | - | right censored |
| *Oxymonacanthus halli* | - | right censored |
| *Oxyurichthys petersi* | - | introduced |
| *Palutrus scapulopunctatus* | - | right censored |
| *Papilloculiceps longiceps* | - | introduced |
| *Parablennius cyclops* | - | right censored |
| *Parabothus budkeri* | - | right censored |
| *Paracaesio sordida* | - | right censored |
| *Paracheilinus octotaenia* | - | right censored |
| *Paracirrhites forsteri* | - | right censored |
| *Paragobiodon echinocephalus* | - | right censored |
| *Paragobiodon xanthosoma* | - | right censored |
| *Paragunnellichthys springeri* | - | right censored |
| *Paraluteres arqat* | - | right censored |
| *Paramonacanthus nematophorus* | - | right censored |
| *Paramonacanthus pusillus* | - | right censored |
| *Parapercis hexophtalma* | - | right censored |
| *Parapercis simulata* | - | right censored |
| *Parapercis somaliensis* | - | right censored |
| *Paraplagusia bilineata* | - | right censored |
| *Parapriacanthus ransonneti* | - | right censored |
| *Parascolopsis aspinosa* | - | right censored |
| *Parascolopsis baranesi* | - | right censored |
| *Parascolopsis eriomma* | - | right censored |
| *Parascorpaena aurita* | - | right censored |
| *Pardachirus marmoratus* | - | right censored |
| *Parexocoetus brachypterus* | - | right censored |
| *Parexocoetus mento* | - | introduced |
| *Parupeneus cyclostomus* | - | right censored |
| *Parupeneus forsskali* | - | introduced |
| *Parupeneus heptacanthus* | - | right censored |
| *Parupeneus macronemus* | - | right censored |
| *Parupeneus rubescens* | - | right censored |
| *Pectinochromis lubbocki* | - | right censored |
| *Pelates quadrilineatus* | - | introduced |
| *Pempheris rhomboidea* | - | introduced |
| *Pempheris schwenkii* | - | right censored |
| *Periophthalmus argentilineatus* | - | right censored |
| *Periophthalmus kalolo* | - | right censored |
| *Pervagor randalli* | - | right censored |
| *Petroscirtes ancylodon* | - | introduced |
| *Petroscirtes mitratus* | - | right censored |
| *Phaenomonas cooperae* | - | right censored |
| *Photoblepharon steinitzi* | deep sea species | excluded |
| *Photopectoralis bindus* | - | right censored |
| *Phoxocampus belcheri* | - | right censored |
| *Phyllophichthus xenodontus* | - | right censored |
| *Physiculus marisrubri* | - | right censored |
| *Pisodonophis cancrivorus* | - | right censored |
| *Plagiotremus rhinorhynchos* | - | right censored |
| *Plagiotremus tapeinosoma* | - | right censored |
| *Plagiotremus townsendi* | - | right censored |
| *Platax orbicularis* | - | right censored |
| *Platax teira* | - | introduced |
| *Platybelone argalus platura* | - | right censored |
| *Platycephalus indicus* | - | introduced |
| *Plectorhinchus albovittatus* | - | right censored |
| *Plectorhinchus flavomaculatus* | - | right censored |
| *Plectorhinchus gaterinus* | - | right censored |
| *Plectorhinchus gibbosus* | - | right censored |
| *Plectorhinchus schotaf* | - | right censored |
| *Plectorhinchus sordidus* | - | right censored |
| *Plectranthias klausewitzi* | - | right censored |
| *Plectranthias nanus* | - | right censored |
| *Plectranthias winniensis* | - | right censored |
| *Plectroglyphidodon lacrymatus* | - | right censored |
| *Plectroglyphidodon leucozonus* | - | right censored |
| *Plectropomus areolatus* | - | right censored |
| *Plectropomus pessuliferus* | - | right censored |
| *Plesiops coeruleolineatus* | - | right censored |
| *Plesiops mystaxus* | - | right censored |
| *Plesiops nigricans* | - | right censored |
| *Pleurosicya micheli* | - | right censored |
| *Pleurosicya mossambica* | - | right censored |
| *Pleurosicya plicata* | - | right censored |
| *Pleurosicya prognatha* | - | right censored |
| *Plotosus lineatus* | - | introduced |
| *Polysteganus coeruleopunctatus* | - | right censored |
| *Pomacanthus asfur* | - | right censored |
| *Pomacanthus imperator* | - | introduced |
| *Pomacanthus maculosus* | - | introduced |
| *Pomacentrus albicaudatus* | - | right censored |
| *Pomacentrus aquilus* | - | right censored |
| *Pomacentrus leptus* | - | right censored |
| *Pomacentrus sulfureus* | - | right censored |
| *Pomacentrus trichrourus* | - | right censored |
| *Pomacentrus trilineatus* | - | right censored |
| *Pomadasys argenteus* | - | right censored |
| *Pomadasys kaakan* | - | right censored |
| *Pomadasys punctulatus* | - | right censored |
| *Pomadasys stridens* | - | introduced |
| *Priacanthus blochii* | - | right censored |
| *Priacanthus hamrur* | - | right censored |
| *Priacanthus sagittarius* | - | introduced |
| *Priolepis cincta* | - | right censored |
| *Priolepis goldshmidtae* | - | right censored |
| *Priolepis randalli* | - | right censored |
| *Priolepis semidoliata* | - | right censored |
| *Pristiapogon exostigma* | - | right censored |
| *Pristiapogon fraenatus* | - | right censored |
| *Pristiapogon kallopterus* | - | right censored |
| *Pristigenys niphonia* | - | right censored |
| *Pristipomoides filamentosus* | - | right censored |
| *Pristipomoides multidens* | - | right censored |
| *Pristipomoides sieboldii* | - | right censored |
| *Pristotis cyanostigma* | - | right censored |
| *Pristotis obtusirostris* | - | right censored |
| *Psettodes erumei* | - | right censored |
| *Pseudamia gelatinosa* | - | right censored |
| *Pseudanthias fasciatus* | - | right censored |
| *Pseudanthias heemstrai* | - | right censored |
| *Pseudanthias lunulatus* | - | right censored |
| *Pseudanthias squamipinnis* | - | right censored |
| *Pseudanthias taeniatus* | - | right censored |
| *Pseudobalistes flavimarginatus* | - | right censored |
| *Pseudobalistes fuscus* | - | right censored |
| *Pseudocheilinus evanidus* | - | right censored |
| *Pseudocheilinus hexataenia* | - | right censored |
| *Pseudochromis dixurus* | - | right censored |
| *Pseudochromis flavivertex* | - | right censored |
| *Pseudochromis fridmani* | - | right censored |
| *Pseudochromis nigrovittatus* | - | right censored |
| *Pseudochromis olivaceus* | - | right censored |
| *Pseudochromis pesi* | - | right censored |
| *Pseudochromis sankeyi* | - | right censored |
| *Pseudochromis springeri* | - | right censored |
| *Pseudodax moluccanus* | - | right censored |
| *Pseudogramma megamyctera* | - | right censored |
| *Pseudorhombus elevatus* | - | right censored |
| *Psilogobius randalli* | - | right censored |
| *Ptarmus gallus* | - | right censored |
| *Pteragogus cryptus* | - | right censored |
| *Pteragogus flagellifer* | - | right censored |
| *Pteragogus pelycus* | - | introduced |
| *Ptereleotris arabica* | - | right censored |
| *Ptereleotris evides* | - | right censored |
| *Ptereleotris heteroptera* | - | right censored |
| *Ptereleotris microlepis* | - | right censored |
| *Ptereleotris zebra* | - | right censored |
| *Pterocaesio chrysozona* | - | right censored |
| *Pterois miles* | - | introduced |
| *Pterois radiata* | - | right censored |
| *Pterygotrigla spirai* | - | right censored |
| *Pygoplites diacanthus* | - | right censored |
| *Rachycentron canadum* | widely distributed species | excluded |
| *Rastrelliger kanagurta* | - | introduced |
| *Remora albescens* | widely distributed species | excluded |
| *Remora brachyptera* | widely distributed species | excluded |
| *Remora remora* | widely distributed species | excluded |
| *Rhabdamia cypselurus* | - | right censored |
| *Rhabdamia nigrimentum* | - | right censored |
| *Rhabdamia spilota* | - | right censored |
| *Rhabdosargus haffara* | - | introduced |
| *Rhabdosargus sarba* | - | right censored |
| *Rhinecanthus assasi* | - | right censored |
| *Rhynchoconger trewavasae* | - | introduced |
| *Roa jayakari* | - | right censored |
| *Rogadius pristiger* | - | right censored |
| *Salarias fasciatus* | - | right censored |
| *Samaris cristatus* | - | right censored |
| *Samariscus inornatus* | - | right censored |
| *Sarda orientalis* | - | right censored |
| *Sardinella albella* | - | right censored |
| *Sardinella longiceps* | - | right censored |
| *Sargocentron caudimaculatum* | - | right censored |
| *Sargocentron diadema* | - | right censored |
| *Sargocentron ittodai* | - | right censored |
| *Sargocentron macrosquamis* | - | right censored |
| *Sargocentron marisrubri* | - | right censored |
| *Sargocentron punctatissimum* | - | right censored |
| *Sargocentron rubrum* | - | introduced |
| *Sargocentron spiniferum* | - | right censored |
| *Saurenchelys meteori* | deep sea species | excluded |
| *Saurida gracilis* | - | right censored |
| *Saurida macrolepis* | - | right censored |
| *Saurida tumbil* | - | right censored |
| *Scarus collana* | - | right censored |
| *Scarus ferrugineus* | - | right censored |
| *Scarus frenatus* | - | right censored |
| *Scarus fuscopurpureus* | - | right censored |
| *Scarus ghobban* | - | introduced |
| *Scarus niger* | - | right censored |
| *Scarus psittacus* | - | right censored |
| *Scarus rubroviolaceus* | - | right censored |
| *Scarus scaber* | - | right censored |
| *Scarus viridifucatus* | - | right censored |
| *Schindleria sp.* | unspecified species | excluded |
| *Scolecenchelys erythraeensis* | - | right censored |
| *Scolecenchelys gymnota* | - | right censored |
| *Scolecenchelys laticaudata* | - | right censored |
| *Scolopsis bimaculata* | - | right censored |
| *Scolopsis ghanam* | - | right censored |
| *Scolopsis taeniata* | - | right censored |
| *Scolopsis vosmeri* | - | right censored |
| *Scomber australasicus* | - | right censored |
| *Scomberoides commersonnianus* | - | right censored |
| *Scomberoides lysan* | - | right censored |
| *Scomberomorus commerson* | - | introduced |
| *Scorpaenodes albaiensis* | - | right censored |
| *Scorpaenodes guamensis* | - | right censored |
| *Scorpaenodes hirsutus* | - | right censored |
| *Scorpaenodes parvipinnis* | - | right censored |
| *Scorpaenodes steinitzi* | - | right censored |
| *Scorpaenopsis barbata* | - | right censored |
| *Scorpaenopsis diabolus* | - | right censored |
| *Scorpaenopsis oxycephala* | - | right censored |
| *Scorpaenopsis possi* | - | right censored |
| *Scorpaenopsis vittapinna* | - | right censored |
| *Sebastapistes cyanostigma* | - | right censored |
| *Sebastapistes strongia* | - | right censored |
| *Secutor insidiator* | - | right censored |
| *Selar crumenophthalmus* | widely distributed species | excluded |
| *Seriola dumerili* | widely distributed species | excluded |
| *Seriolina nigrofasciata* | - | right censored |
| *Serranus cabrilla* | Atlantic and/or Mediterranean species | excluded |
| *Siganus argenteus* | - | right censored |
| *Siganus luridus* | - | introduced |
| *Siganus rivulatus* | - | introduced |
| *Siganus stellatus* | - | right censored |
| *Silhouettea aegyptia* | - | introduced |
| *Silhouettea chaimi* | - | right censored |
| *Silhouettea insinuans* | - | right censored |
| *Sillago sihama* | - | right censored |
| *Siokunichthys bentuviai* | - | right censored |
| *Siokunichthys herrei* | - | right censored |
| *Siphamia tubifer* | - | right censored |
| *Sirembo jerdoni* | deep sea species | excluded |
| *Skythrenchelys lentiginosa* | - | right censored |
| *Soleichthys dori* | - | right censored |
| *Solenostomus cyanopterus* | - | right censored |
| *Solenostomus paradoxus* | - | right censored |
| *Sorsogona prionota* | - | introduced |
| *Sparus aurata* | Atlantic and/or Mediterranean species | excluded |
| *Sphaeramia orbicularis* | - | right censored |
| *Sphyraena barracuda* | - | right censored |
| *Sphyraena chrysotaenia* | - | introduced |
| *Sphyraena forsteri* | - | right censored |
| *Sphyraena jello* | - | right censored |
| *Sphyraena obtusata* | - | introduced |
| *Sphyraena putnamae* | - | right censored |
| *Sphyraena qenie* | - | right censored |
| *Spratelloides delicatulus* | - | introduced |
| *Spratelloides gracilis* | - | right censored |
| *Stalix davidsheni* | - | right censored |
| *Stegastes nigricans* | - | right censored |
| *Stegastes punctatus* | - | right censored |
| *Stephanolepis diaspros* | - | introduced |
| *Stethojulis albovittata* | - | right censored |
| *Stethojulis interrupta* | - | right censored |
| *Stolephorus indicus* | - | right censored |
| *Stomias affinis* | deep sea species | excluded |
| *Strophidon sathete* | - | right censored |
| *Suezichthys caudavittatus* | - | right censored |
| *Suezichthys russelli* | - | right censored |
| *Sufflamen albicaudatum* | - | right censored |
| *Sufflamen fraenatum* | - | right censored |
| *Symphysanodon disii* | - | right censored |
| *Synagrops philippinensis* | - | right censored |
| *Synanceia nana* | - | right censored |
| *Synanceia verrucosa* | - | introduced |
| *Synchiropus sechellensis* | - | right censored |
| *Syngnathoides biaculeatus* | - | right censored |
| *Syngnathus macrophthalmus* | - | right censored |
| *Syngnathus safina* | - | right censored |
| *Synodus dermatogenys* | - | right censored |
| *Synodus hoshinonis* | - | right censored |
| *Synodus indicus* | - | right censored |
| *Synodus randalli* | - | right censored |
| *Synodus variegatus* | - | right censored |
| *Taractichthys steindachneri* | widely distributed species | excluded |
| *Teixeirichthys jordani* | - | right censored |
| *Tentoriceps cristatus* | - | right censored |
| *Terapon jarbua* | - | introduced |
| *Terapon puta* | - | introduced |
| *Terapon theraps* | - | right censored |
| *Tetrosomus gibbosus* | - | introduced |
| *Thalassoma lunare* | - | right censored |
| *Thalassoma purpureum* | - | right censored |
| *Thalassoma rueppellii* | - | right censored |
| *Thamnaconus modestoides* | - | right censored |
| *Thryssa baelama* | - | right censored |
| *Thunnus alalunga* | widely distributed species | excluded |
| *Thunnus albacares* | widely distributed species | excluded |
| *Thunnus tonggol* | - | right censored |
| *Thyrsitoides marleyi* | - | right censored |
| *Thysanophrys chiltonae* | - | right censored |
| *Tilapia zillii* | freshwater species | excluded |
| *Tomiyamichthys fourmanoiri* | - | right censored |
| *Tomiyamichthys latruncularius* | - | right censored |
| *Torquigener flavimaculosus* | - | introduced |
| *Trachinocephalus myops* | widely distributed species | excluded |
| *Trachinotus baillonii* | - | right censored |
| *Trachinotus blochii* | - | right censored |
| *Trachurus indicus* | - | right censored |
| *Trachyrhamphus bicoarctatus* | - | right censored |
| *Trachyrhamphus longirostris* | - | right censored |
| *Trichiurus auriga* | - | right censored |
| *Trichiurus lepturus* | widely distributed species | excluded |
| *Trichonotus nikii* | - | right censored |
| *Trimma avidori* | - | right censored |
| *Trimma barralli* | - | right censored |
| *Trimma filamentosum* | - | right censored |
| *Trimma fishelsoni* | - | right censored |
| *Trimma flammeum* | - | right censored |
| *Trimma flavicaudatum* | - | right censored |
| *Trimma mendelssohni* | - | right censored |
| *Trimma sheppardi* | - | right censored |
| *Trimma taylori* | - | right censored |
| *Trimma tevegae* | - | right censored |
| *Trimmatom nanus* | - | right censored |
| *Tylosurus acus melanotus* | - | right censored |
| *Tylosurus choram* | - | introduced |
| *Tylosurus crocodilus* | - | right censored |
| *Ulua mentalis* | - | right censored |
| *Upeneus davidaromi* | - | right censored |
| *Upeneus guttatus* | - | right censored |
| *Upeneus margarethae* | - | right censored |
| *Upeneus moluccensis* | - | introduced |
| *Upeneus pori* | - | introduced |
| *Upeneus suahelicus* | - | right censored |
| *Upeneus sulphureus* | - | right censored |
| *Upeneus tragula* | - | right censored |
| *Upeneus vittatus* | - | right censored |
| *Uranoscopus bauchotae* | - | right censored |
| *Uranoscopus dahlakensis* | - | right censored |
| *Uranoscopus dollfusi* | - | right censored |
| *Uranoscopus guttatus* | - | right censored |
| *Uranoscopus marisrubri* | - | right censored |
| *Uranoscopus scaber* | Atlantic and/or Mediterranean species | excluded |
| *Uranoscopus sulphureus* | - | right censored |
| *Uraspis helvola* | widely distributed species | excluded |
| *Uroconger erythraeus* | - | right censored |
| *Uroconger lepturus* | - | right censored |
| *Uropterygius concolor* | - | right censored |
| *Uropterygius genie* | - | right censored |
| *Uropterygius golanii* | - | right censored |
| *Uropterygius macrocephalus* | - | right censored |
| *Uropterygius micropterus* | - | right censored |
| *Uropterygius nagoensis* | - | right censored |
| *Uropterygius polyspilus* | - | right censored |
| *Valenciennea helsdingenii* | - | right censored |
| *Valenciennea puellaris* | - | right censored |
| *Valenciennea sexguttata* | - | right censored |
| *Valenciennea wardii* | - | right censored |
| *Vanderhorstia ambanoro* | - | right censored |
| *Vanderhorstia delagoae* | - | right censored |
| *Vanderhorstia mertensi* | - | right censored |
| *Vanderhorstia opercularis* | - | right censored |
| *Vanderhorstia ornatissima* | - | right censored |
| *Variola louti* | - | right censored |
| *Vinciguerria mabahiss* | deep sea species | excluded |
| *Wetmorella nigropinnata* | - | right censored |
| *Xenisthmus polyzonatus* | - | right censored |
| *Xestochilus nebulosus* | - | right censored |
| *Xiphasia setifer* | - | right censored |
| *Xiphias gladius* | widely distributed species | excluded |
| *Xyrichtys javanicus* | - | right censored |
| *Yirrkala tenuis* | - | right censored |
| *Zebrasoma desjardinii* | - | right censored |
| *Zebrasoma xanthurum* | - | right censored |
| *Zoramia leptacantha* | - | right censored |

Table S2: List of introduced bony fishes in the Mediterranean Sea from the Indo-Pacific area according to Golani et al. (2013) and their status in the study. Right censored: no Mediterranean record; introduced

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Species | Classification | Reason of Classification | Place of the first record | Year of record | Reference of first record |
| [*Abudefduf vaigiensis*](http://www.ciesm.org/atlas/Abudefdufvaigiensis.php) | introduced | - | Italy | 1959 | Tardent (1959) |
| [*Acanthopagrus bifasciatus*](http://www.ciesm.org/atlas/Acanthopagrusbifasciatus.php) | right censored | Location of first record | Tunisia | 2009 | Iwatsuki & Heemstra (2011) |
| [*Alepes djedaba*](http://www.ciesm.org/atlas/Alepesdjedaba.php) | introduced | - | Palestine | 1927 | Steinitz (1927) |
| [*Apogon queketti*](http://www.ciesm.org/atlas/Apogonqueketti.php) | introduced | - | Turkey | 2004 | Eryilmaz & Dalyan (2006) |
| [*Apogon smithi*](http://www.ciesm.org/atlas/Apogonsmithi.php) | introduced | - | Israel | 2007 | Golani et al. (2008) |
| [*Apogonichthyoides pharaonis*](http://www.ciesm.org/atlas/Apogonpharaonis.php) | introduced | - | Palestine | 1947 | Haas & Steinitz (1947) |
| [*Atherinomorus forskalii*](http://www.ciesm.org/atlas/Atherinomorusforskali.php) | introduced | - | Egypt | 1902 | Tillier (1902) |
| [*Callionymus filamentosus*](http://www.ciesm.org/atlas/Callionymusfilamentosus.php) | introduced | - | Israel | 1953 | Ben-Tuvia (1953) |
| *Chaetodon austriacus* | introduced | - | Israel | 2011 | Gorenet al. (2011) |
| [*Chaetodon larvatus*](http://www.ciesm.org/atlas/Chaetodonlarvatus.php) | introduced | - | Israel | 2011 | Salameh et al. (2011) |
| [*Chanos chanos*](http://www.ciesm.org/atlas/Chanoschanos.php) | introduced | - | Turkey | 2011 | Özvarol & Gökoglu (2012) |
| [*Cheilodipterus novemstriatus*](http://www.ciesm.org/atlas/Cheilodipterusnovemstriatus.php) | introduced | - | Israel | 2010 | Bariche & Azzurro (2013) |
| [*Coryogalops ocheticus*](http://www.ciesm.org/atlas/Coryogalopsochetica.php) | introduced | - | Egypt | 1927 | Norman (1927) |
| [*Crenidens crenidens*](http://www.ciesm.org/atlas/Crenidenscrenidens.php) | introduced | - | Egypt | 1970 | Lourie & Ben-Tuvia (1970) |
| [*Cyclichthys spilostylus*](http://www.ciesm.org/atlas/Cyclichthysspilostylus.php) | introduced | - | Israel | 1993 | Golani (1993) |
| [*Cynoglossus sinusarabici*](http://www.ciesm.org/atlas/Cynoglossussinusarabici.php) | introduced | - | Israel | 1953 | Ben-Tuvia (1953) |
| [*Decapterus russelli*](http://www.ciesm.org/atlas/Decapterusrusselli.php) | introduced | - | Israel | 2005 | Golani (2006) |
| [*Dussumieria elopsoides*](http://www.ciesm.org/atlas/Dussumieriaelopsoides.php) | introduced | - | Israel | 1949 | Lissner (1949) |
| [*Epinephelus coioides*](http://www.ciesm.org/atlas/Epinepheluscoioides.php) | introduced | - | Israel | 1969 | Ben-Tuvia & Lourie (1969) |
| [*Epinephelus fasciatus*](http://www.ciesm.org/atlas/Epinephelusfasciatus.php) | introduced | - | Lebanon | 2011 | Bariche & Heemstra (2012) |
| [*Epinephelus malabaricus*](http://www.ciesm.org/atlas/Epinephelusmalabaricus.php) | introduced | - | Israel | 1969 | Ben-Tuvia & Lourie (1969) |
| [*Equulites klunzingeri*](http://www.ciesm.org/atlas/Leiognathusklunzingeri.php) | introduced | - | Syria | 1931 | Gruvel (1931) |
| [*Etrumeus golanii*](http://www.ciesm.org/atlas/Etrumeusteres.php) | introduced | - | Israel | 1963 | Whitehead (1963) |
| [*Fistularia commersonii*](http://www.ciesm.org/atlas/Fistulariacommersonii.php) | introduced | - | Israel | 2000 | Golani (2000) |
| [*Gymnothorax reticularis*](http://www.ciesm.org/atlas/Gymnothoraxreticularis.php) | introduced | - | Israel | 2012 | Stern & Goren (2013) |
| [*Hemiramphus far*](http://www.ciesm.org/atlas/Hemiramphusfar.php) | introduced | - | Palestine | 1927 | Steinitz (1927) |
| [*Heniochus intermedius*](http://www.fishbase.com/) | introduced | - | Turkey | 2002 | Gökoglu et al. (2003) |
| [*Herklotsichthys punctatus*](http://www.ciesm.org/atlas/Herklotsichthyspunctatus.php) | introduced | - | Palestine | 1943 | Bertin (1943) |
| [*Hippocampus fuscus*](http://www.ciesm.org/atlas/Hippocampusfuscus.php) | introduced | - | Israel | 2001 | Golani & Fine (2002) |
| [*Hyporhamphus affinis*](http://www.ciesm.org/atlas/Hyporhamphusaffinis.php) | introduced | - | Lebanon | 1964 | George et al. (1964) |
| [*Iniistius pavo*](http://www.ciesm.org/atlas/Iniistiuspavo.php) | introduced | - | Greece | 2004 | Corsini et al. (2006) |
| [*Lagocephalus sceleratus*](http://www.ciesm.org/atlas/Lagocephalussceleratus.php) | introduced | - | Turkey | 2003 | Golani & Levy (2005) |
| [*Lagocephalus spadiceus*](http://www.ciesm.org/atlas/Lagocephalusspadiceus.php) | introduced | - | Greece | 1930 | Sanzo (1930) |
| [*Lagocephalus suezensis*](http://www.ciesm.org/atlas/Lagocephalussuezensis.php) | introduced | - | Lebanon | 1977 | Mouneimne (1979) |
| [*Liza carinata*](http://www.ciesm.org/atlas/Lizacarinata.php) | introduced | - | Egypt | 1929 | Norman (1929) |
| [*Lutjanus argentimaculatus*](http://www.ciesm.org/atlas/Lutjanusargentimaculatus.php) | introduced | - | Lebanon | 1979 | Mouneimne (1979) |
| [*Muraenesox cinereus*](http://www.ciesm.org/atlas/Muraenesoxcinereus.php) | introduced | - | Israel | 1982 | Golani & Ben-Tuvia (1982) |
| [*Nemipterus randalli*](http://www.ciesm.org/atlas/Nemipterusrandalli.php) | introduced | - | Israel | 2005 | Golani & Sonin (2006) |
| [*Omobranchus punctatus*](http://www.ciesm.org/atlas/Omobranchuspunctatus.php) | introduced | - | Israel | 2003 | Golani (2004) |
| [*Ostracion cubicus*](http://www.ciesm.org/atlas/Ostracioncubicus.php) | introduced | - | Lebanon | 2011 | Bariche (2011) |
| [*Ostorhinchus fasciatus*](http://www.ciesm.org/atlas/Ostorhinchusfasciatus.php) | introduced | - | Israel | 2008 | Goren et al. (2009) |
| [*Oxyurichthys petersi*](http://www.ciesm.org/atlas/Oxyurichthyspetersi.php) | introduced | - | Israel | 1983 | Ben-Tuvia (1983) |
| [*Papilloculiceps longiceps*](http://www.ciesm.org/atlas/Papilloculicepslongiceps.php) | introduced | - | Israel | 1990 | Golani & Ben-Tuvia (1990) |
| [*Parexocoetus mento*](http://www.ciesm.org/atlas/Parexocoetusmento.php) | introduced | - | Palestine | 1935 | Bruun (1935) |
| [*Parupeneus forsskali*](http://www.ciesm.org/atlas/Parupeneusforsskali.php) | introduced | - | Lebanon | 2006 | Çinar et al. (2006) |
| [*Pelates quadrilineatus*](http://www.ciesm.org/atlas/Pelatesquadrilineatus.php) | introduced | - | Egypt | 1977 | Ben-Tuvia (1977) |
| *Pempheris rhomboidea* | introduced | - | Lebanon | 1979 | Mouneimne (1979) |
| [*Petroscirtes ancylodon*](http://www.ciesm.org/atlas/Petroscirtesancylodon.php) | introduced | - | Israel | 1989 | Goren & Galil (1989) |
| [*Platax teira*](http://www.ciesm.org/atlas/Plataxteira.php) | introduced | - | Turkey | 2006 | Bilecenoglu & Kaya (2006) |
| [*Platycephalus indicus*](http://www.ciesm.org/atlas/Platycephalusindicus.php) | introduced | - | Israel | 1953 | Ben-Tuvia (1953) |
| [*Plotosus lineatus*](http://www.ciesm.org/atlas/Plotosuslineatus.php) | introduced | - | Israel | 2002 | Golani (2002) |
| [*Pomacanthus imperator*](http://www.ciesm.org/atlas/Pomacanthusimperator.php) | introduced | - | Israel | 2009 | Golani et al. (2010) |
| [*Pomacanthus maculosus*](http://www.ciesm.org/atlas/Pomacanthusmaculosus.php) | introduced | - | Lebanon | 2008 | Bariche (2012) |
| [*Pomadasys stridens*](http://www.ciesm.org/atlas/Pomadasysstridens.php) | introduced | - | Israel | 1976 | Torchio (1976) |
| [*Priacanthus sagittarius*](http://www.ciesm.org/atlas/Priacanthussagittarius.php) | introduced | - | Israel | 2010 | Goren et al. (2010) |
| [*Pteragogus pelycus*](http://www.ciesm.org/atlas/Pteragoguspelycus.php) | introduced | - | Israel | 1992 | Golani & Sonin (1992) |
| [*Pterois miles*](http://www.ciesm.org/atlas/Pteroismiles.php) | introduced | - | Israel | 1992 | Golani & Sonin (1992) |
| *Rastrelliger kanagurta* | introduced | - | Israel | 1970 | Collette (1970) |
| [*Rhabdosargus haffara*](http://www.ciesm.org/atlas/Rhabdosargushaffara.php) | introduced | - | Israel | 1992 | Golani (1992) |
| [*Rhynchoconger trewavasae*](http://www.ciesm.org/atlas/Rhynchocongertrewavasae.php) | introduced | - | Israel | 1993 | Ben-Tuvia (1993) |
| [*Sargocentron rubrum*](http://www.ciesm.org/atlas/Sargocentronrubrum.php) | introduced | - | Palestine | 1947 | Haas & Steinitz (1947) |
| [*Scarus ghobban*](http://www.ciesm.org/atlas/Scarusghobban.php) | introduced | - | Israel | 2001 | Goren & Aronov (2002) |
| [*Scomberomorus commerson*](http://www.ciesm.org/atlas/Scomberomoruscommerson.php) | introduced | - | Palestine | 1935 | Hornell (1935) |
| [*Siganus luridus*](http://www.ciesm.org/atlas/Siganusluridus.php) | introduced | - | Israel | 1964 | Ben-Tuvia (1964) |
| [*Siganus rivulatus*](http://www.ciesm.org/atlas/Siganusrivulatus.php) | introduced | - | Palestine | 1927 | Steinitz (1927) |
| [*Silhouettea aegyptia*](http://www.ciesm.org/atlas/Silhouettaaegyptia.php) | introduced | - | Egypt | 1979 | Ben-Tuvia & Golani (1979) |
| [*Sorsogona prionota*](http://www.ciesm.org/atlas/Sorsogonaprionota.php) | introduced | - | Israel | 1947 | Golani & Ben-Tuvia (1990) |
| [*Sphyraena chrysotaenia*](http://www.fishbase.com/) | introduced | - | Palestine | 1931 | Spicer (1931) |
| [*Sphyraena obtusata*](http://www.fishbase.com/) | introduced | - | Israel | 1992 | Golani (1992) |
| [*Spratelloides delicatulus*](http://www.ciesm.org/atlas/Spratelloidesdelicatulus.php) | introduced | - | Israel | 1978 | Ben-Tuvia (1978) |
| [*Stephanolepis diaspros*](http://www.ciesm.org/atlas/Stephanolepisdiaspros.php) | introduced | - | Palestine | 1927 | Steinitz (1927) |
| [*Synanceia verrucosa*](http://www.ciesm.org/atlas/Synanceiaverrucosa.php) | introduced | - | Israel | 2010 | Edelist et al. (2011) |
| [*Terapon jarbua*](http://www.ciesm.org/atlas/Teraponjarbua.php) | introduced | - | Israel | 2009 | Golani & Appelbaum-Golani (2010) |
| [*Terapon puta*](http://www.ciesm.org/atlas/Teraponputa.php) | introduced | - | Egypt | 1976 | Ben-Tuvia (1976) |
| [*Terapon theraps*](http://www.ciesm.org/atlas/Terapontherapes.php) | right censored | Location of first record | Slovenia | 2007 | Lipej et al. (2008) |
| [*Tetrosomus gibbosus*](http://www.ciesm.org/atlas/Tetrosomusgibbosus.php) | introduced | - | Israel | 1988 | Spanier & Goren (1988) |
| [*Torquigener flavimaculosus*](http://www.ciesm.org/atlas/Torquigenerflavimaculosus.php) | introduced | - | Israel | 1987 | Golani (1987) |
| [*Tylosurus choram*](http://www.ciesm.org/atlas/Tylosuruschoram.php) | introduced | - | Israel | 1967 | Parin (1967) |
| [*Upeneus moluccensis*](http://www.ciesm.org/atlas/Upeneusmoluccensis.php) | introduced | - | Palestine | 1947 | Haas & Steinitz (1947) |
| [*Upeneus pori*](http://www.ciesm.org/atlas/Upeneuspori.php) | introduced | - | Turkey | 1950 | Kosswig (1950) |

Table S3: Traits of Red Sea fish species that were analysed. *P-*value according to the likelihood ratio test; Adjusted *P* according to Benjamini-Hochberg correction. NA: no data. The asterisk refers to *adjusted P <* 0.05.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable | Short Description | *P* | Adjusted *P* | Type of Variable | Nr. of Cat. | Categories |
| MinDistToCanal | Straight line distance from the closest location of the recoded species to the Suez Canal | 3.92E-05 | 0.001\* | numerical | - | - |
| NrSpPerFamily\_RS | Number of species per family | 6.27E-05 | 0.0008\* | numerical | - | - |
| DemersPelag | Habitat of the species in relation to the bottom | 8.11E-05 | 0.0007\* | ordinal | 5 | 1 = surface, 2 = midwater, 3 = close to bottom, 4 = on the bottom, NA |
| Schooling.Ordinal | The way fish species aggregate | 0.0013 | 0.008\* | ordinal | 8 | 1 = 1-2, 1.5 = 1-2 & 3-10, 2 = 3-10, 2.5 = 3-10 & 11-100, 3 = 11-100, 3.5 = 11-100 & >100, 4 = >100, NA |
| Type.of.Bottom.1 | Preferred bottom beneath each species | 0.0018 | 0.009\* | categorical/ nominal | 5 | soft, hard, both, none (water column), NA |
| *SSTmax* | Monthly maximum sea surface temperature recorded for the observed species | 0.004 | 0.016\* | numerical | - | - |
| Special.Habitats | Whether a species exists in estuaries, mangroves, bays, harbour, brakish water or river | 0.025 | 0.085 | binary | 2 | yes, no info |
| *SSTrange* | Mean value of the yearly sea surface temperature range of the observed species | 0.042 | 0.13 | numerical | - | - |
| Transport | Whether the species is capable of attaching to moving bodies | 0.061 | 0.16 | binary | 2 | yes, no info |
| Eggs | Way of suspension of the eggs | 0.078 | 0.19 | categorical/ nominal | 3 | benthic, pelagic, NA |
| RepGuild1 | Strategies to parental care | 0.083 | 0.18 | categorical/ nominal | 4 | bearers, guarders, nonguarders, NA |
| Vulnerability | "Level of catchability" | 0.09 | 0.18 | numerical | - | - |
| FeedingType | Most common diet of the fish species | 0.09 | 0.17 | categorical/ nominal | 6 | carnivore, detritivore, herbivore, omnivore, piscivore, NA |
| Length | Maximum Length (TL) | 0.143 | 0.25 | numerical | - | - |
| Fertilization | Way of exchanging gametes | 0.20 | 0.33 | categorical/nominal | 4 | external, in brood pouch or similar structure, internal (oviduct), NA |
| BodyShapeI | Body shape lateral view | 0.33 | 0.48 | categorical/nominal | 6 | eel-like, elongated, fusiform, short & deep, other, NA |
| Resilience | Ability of the fish species to recover from fishing pressure | 0.36 | 0.51 | ordinal | 5 | 1 = Very low, 2 = Low, 3 = Medium, 4 = High, NA |
| Vertical.Migration | Diel vertical movement with depth | 0.41 | 0.55 | binary | 2 | yes, no info |
| CaringParent | Defines which parent is the caring parent | 0.43 | 0.55 | categorical/nominal | 4 | maternal, paternal, none, NA |
| Habitat.1 | Mode of living | 0.45 | 0.54 | categorical/nominal | 4 | benthic, pelagic, benthopelagic, NA |
| CShape | Shape of the caudal fin | 0.48 | 0.56 | categorical/nominal | 5 | forked, truncate, pointed, other, NA |
| Food.items | Common food items in stomach contents | 0.48 | 0.54 | categorical/nominal | 13 | benthic invertebrates, fish, benthic algae, seaweed, zooplankton, cephalopods, seagrass, detritus, phytoplankton, scavenger, parasites, other, NA |
| MaxDepth | Maximum depth the species was recorded | 0.49 | 0.52 | numerical | - | - |
| ReproMode | Reproduction mode of the species | 0.54 | 0.55 | categorical/nominal | 5 | dioecism, protandry, protogyny, true hermaphroditism, NA |
| Territoriality | Whether a species is territorial or not | 0.55 | 0.532 | binary | 2 | yes, no info |
| FoodTroph | Trophic level of the species | 0.55 | 0.51 | numerical | - | - |
| PosOfMouth | Position of the mouth | 0.65 | 0.58 | categorical/nominal | 4 | inferior, superior, terminal, NA |
| Herbivory2 | Very general description of the diet of fish species | 0.69 | 0.60 | categorical/ nominal | 4 | mainly animals (troph.2.8 and up), mainly pants/detritus (troph.2-2.19), plants/detritus + animals (troph.2.2-2.79), NA |
| PD50 | Phylogenetic diversity index (PD50) | 0.73 | 0.61 | numerical | - | - |
| BodyShapeII | Body shape cross section | 0.76 | 0.61 | categorical/ nominal | 7 | angular, circular, compressed, flattened, oval, other, NA |
| MinDepth | Minimum depth the species was recorded | 0.77 | 0.61 | numerical | - | - |
| StockDefs | Distributions of each fish species from the Red Sea | 0.84 | 0.64 | categorical/ nominal | 6 | Indo Pacific, Indo West Pacific, Indian, Red Sea, Western Indian, Western Pacific |
| Activity | Peak time of activity | 0.94 | 0.69 | categorical/ nominal | 4 | diurnal, nocturnal, both, NA |

(1): Food Items variable has mutually exclusive categories therefore each category was treated as an independent variable.

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