

Supplementary Materials to:

Evolution of the Visual System in Ray-Finned Fishes

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Visual Neuroscience

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Table 1: List of species with independent eye movements

Table 2: List of species with retinal specializations

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Suppl. Table 1: Presence of eye movements as classified by our survey in public aquaria, fish dealer, and videos.

Species	Eye movements
Actinopterygii	
Lepisosteiformes	
Lepisosteidae	
<i>Lepisosteus platostomus</i>	conjugated
Teleostei	
Elopomorpha	
Anguilliformes	
Congridae	
<i>Conger cinereus</i>	conjugated
Muraenidae	
<i>Echidna nebulosa</i>	conjugated
<i>Rhinomuraena quaesita</i>	conjugated
Ophichthidae	
<i>Myrichthys maculosus</i>	conjugated
Osteoglossomorpha	
Osteoglossiformes	
Gymnarchidae	
<i>Gymnarchus niloticus</i>	conjugated
Mormyridae	
<i>Brienomyrus brachyistius</i>	conjugated
<i>Brienomyrus niger</i>	conjugated
<i>Gnathonemus petersii</i>	conjugated
<i>Mormyrus longirostris</i>	conjugated
Notopteridae	
<i>Chitala chitala</i>	conjugated
<i>Xenomystus nigri</i>	conjugated
Osteoglossidae	
<i>Osteoglossum bicirrhosum</i>	conjugated
Pantodontidae	
<i>Pantodon buchholzi</i>	conjugated
Otomorpha	
Cypriniformes	
Gyrinocheiloidei	
Gyrinocheilidae	
<i>Gyrinocheilus aymonieri</i>	conjugated
Cobitoidei	
Cobitidae	
<i>Acantopsis choirorhynchos</i>	conjugated
Gastromyzontidae	
<i>Gastromyzon punctulatus</i>	conjugated
Cyprinoidei	
Acheilognathidae	
<i>Rhodeus amarus</i>	conjugated
Cyprinidae	
Barbinae	
<i>Puntius denisonii</i>	conjugated
<i>Systemus rhomboocellatus</i>	conjugated
Cyprininae	
<i>Carassius auratus</i>	conjugated
Leuciscidae	
<i>Chondrostoma nasus</i>	conjugated
<i>Phreatichthys andruzzii</i>	conjugated
<i>Rutilus rutilus</i>	conjugated
<i>Scardinius erythrophthalmus</i>	conjugated
Tincidae	

<i>Tinca tinca</i>	conjugated
Characiformes	
Characoidei	
Characidae	
<i>Aphyocharax anisitsi</i>	conjugated
<i>Hyphessobrycon pulchripinnis</i>	conjugated
<i>Inpaichthys kerri</i>	conjugated
Chilodontidae	
<i>Chilodus punctatus</i>	conjugated
Lebiasinidae	
<i>Nannostomus beckfordi</i>	conjugated
Gymnotiformes	
Sternopygoidei	
Apteronotidae	
<i>Apteronotus albifrons</i>	conjugated
Siluriformes	
Loricarioidei	
Callichthyidae	
<i>Corydoras reticulatus</i>	conjugated
<i>Megalechis thoracata</i>	conjugated
Loricariidae	
<i>Glyptoperichthys joselimaianus</i>	conjugated
<i>Macrotocinclus affinis</i>	conjugated
<i>Pterygoplichthys pardalis</i>	conjugated
<i>Rineloricaria parva</i>	conjugated
<i>Sturisoma aureum</i>	conjugated
Siluroidei	
Bagridae	
<i>Mystus bimaculatus</i>	conjugated
Doradidae	
<i>Platydoras costatus</i>	conjugated
Erethistidae	
<i>Hara jerdoni</i>	conjugated
Heteropneustidae	
<i>Heteropneustes fossilis</i>	conjugated
Mochokidae	
<i>Synodontis nigriventris</i>	conjugated
<i>Synodontis petricola</i>	conjugated
Pimelodidae	
<i>Zungaro zungaro</i>	conjugated
Pseudopimelodidae	
<i>Microglanis iheringi</i>	conjugated
Euteleostei	
Protacanthopterygii	
Salmoniformes	
Salmonidae	
<i>Oncorhynchus mykiss</i>	conjugated
<i>Salmo trutta</i>	conjugated
Esociformes	
Esocidae	
<i>Esox lucius</i>	conjugated
Acanthopterygii	
Holocentriformes	
Holocentridae	
<i>Myripristis murdjan</i>	conjugated
Batrachoidiformes	
Batrachoididae	
<i>Porichthys notatus</i>	conjugated
Scombrimorpharia	

Syngnathiformes	
Callionymoidei	
Callionymidae	
<i>Callionymus maculatus</i>	independent
<i>Synchiropus ocellatus</i>	independent
<i>Synchiropus splendidus</i>	independent
Syngnathoidei	
Syngnathidae	
<i>Corythoichthys haematopterus</i>	independent
<i>Dunckerocampus dactyliophorus</i>	
<i>Nerophis lumbriciformis</i>	independent
<i>Syngnathus rostellatus</i>	independent
<i>Syngnathus typhle</i>	independent
<i>Trachyrhamphus longirostris</i>	independent
<i>Hippocampus barbouri</i>	independent
Pegasidae	
<i>Eurypegasus draconis</i>	independent
Gobiomorpharia	
Gobioidei	
Eleotridae	
<i>Tateurndina ocellicauda</i>	conjugated
Butidae	
<i>Oxyeleotris marmorata</i>	conjugated
Oxudercidae	
<i>Trypauchen vagina</i>	conjugated
<i>Sicyopterus macrostetholepis</i>	conjugated
<i>Brachygobius doriae</i>	conjugated
<i>Chlamydogobius eremius</i>	conjugated
<i>Rhinogobius cliffordpopei</i>	conjugated
Gobiidae	
<i>Cryptocentrus cinctus</i>	conjugated
<i>Tomiyamichthys oni</i>	conjugated
<i>Paragobiodon xanthosoma</i>	conjugated
<i>Valenciennea strigata</i>	conjugated
Anabantomorpharia	
Synbranchiformes	
Mastacembelidae	
<i>Macrogathus pancalus</i>	conjugated
Anabantiformes	
Helostomatidae	
<i>Helostoma temminckii</i>	conjugated
Osphronemidae	
<i>Betta splendens</i>	conjugated
<i>Trichogaster chuna</i>	conjugated
<i>Trichopodus leerii</i>	conjugated
Channidae	
<i>Channa pulchra</i>	conjugated
Carangimorpharia	
Carangiformes	
Rachycentridae	
<i>Rachycentron canadum</i>	conjugated
Ovalentaria	
Ovalentaria_i.s.	
Opistognathidae	
<i>Opistognathus randalli</i>	
Polycentridae	
<i>Monocirrhus polyacanthus</i>	conjugated
Pomacentridae	
<i>Premnas biaculeatus</i>	conjugated

<i>Amphiprion ephippium</i>	
<i>Chromis retrofasciata</i>	conjugated
<i>Abudefduf saxatilis</i>	
<i>Amblyglyphidodon curacao</i>	
<i>Chrysiptera taupou</i>	
<i>Neoglyphidodon melas</i>	
Cichliformes	
Cichlidae	
<i>Astronotus ocellatus</i>	conjugated
<i>Aequidens pulcher</i>	conjugated
<i>Heros efasciatus</i>	conjugated
<i>Heros severus</i>	conjugated
<i>Pterophyllum scalare</i>	conjugated
<i>Thorichthys meeki</i>	conjugated
<i>Apistogramma agassizii</i>	conjugated
<i>Mikrogeophagus ramirezi</i>	conjugated
<i>Maylandia zebra</i>	conjugated
<i>Julidochromis marlieri</i>	conjugated
<i>Neolamprologus brichardi</i>	conjugated
<i>Steatocranus casuarius</i>	conjugated
Atheriniformes	
Melanotaeniidae	
<i>Glossolepis incisus</i>	conjugated
<i>Melanotaenia boesemani</i>	conjugated
Beloniformes	
Zenarchopteridae	
<i>Nomorhamphus ebrardtii</i>	conjugated
Cyprinodontiformes	
Poeciliidae	
<i>Heterandria formosa</i>	conjugated
<i>Poecilia</i>	conjugated
<i>Xiphophorus hellerii</i>	conjugated
<i>Xiphophorus maculatus</i>	conjugated
Goodeidae	
<i>Ameca splendens</i>	conjugated
Mugiliformes	
Mugilidae	
<i>Mugil cephalus</i>	conjugated
Gobiesociformes	
Gobiesocidae	
<i>Diademichthys lineatus</i>	independent
Blenniiformes	
Tripterygiidae	
<i>Helcogramma maldivensis</i>	
Blenniidae	
<i>Atrosalarias fuscus</i>	independent
<i>Blenniella chrysospilos</i>	independent
<i>Cirripectes stigmaticus</i>	independent
<i>Ecsenius stigmatura</i>	independent
<i>Exallias brevis</i>	independent
<i>Hypsoblennius brevipinnis</i>	
<i>Lipophrys pholis</i>	conjugated
<i>Meiacanthus grammistes</i>	conjugated
<i>Plagiotremus rhinorhynchus</i>	
<i>Salarias segmentatus</i>	independent
Percomorpharia	
Eupercaria_i.s.	
Pomacanthidae	
<i>Centropyge bicolor</i>	

<i>Centropyge loriculus</i>	
<i>Centropyge potteri</i>	
<i>Chaetodontoplus mesoleucus</i>	
Haemulidae	
<i>Plectorhinchus chaetodonoides</i>	conjugated
Lutjanidae	
<i>Lutjanus synagris</i>	conjugated
Uranoscopiformes	
Ammodytidae	
<i>Ammodytes tobianus</i>	
Labriformes	
Labridae	
<i>Hologymnosus doliatus</i>	independent
<i>Labroides dimidiatus</i>	
<i>Pseudocheilinus hexataenia</i>	independent
<i>Stethojulis bandanensis</i>	
Chaetodontiformes	
Chaetodontidae	
<i>Chaetodon auriga</i>	
<i>Hemitaurichthys zoster</i>	
Acanthuriformes	
Acanthuridae	
<i>Naso vlamingii</i>	conjugated
<i>Acanthurus bahianus</i>	conjugated
<i>Ctenochaetus truncatus</i>	conjugated
Zanclidae	
<i>Zanclus cornutus</i>	
Lophiiformes	
Antennarioidei	
Antennariidae	
<i>Antennarius .sp</i>	conjugated
Tetraodontiformes	
Tetraodontoidei	
Tetraodontidae	
<i>Arothron nigropunctatus</i>	
<i>Canthigaster valentini</i>	independent
<i>Carinotetraodon travancoricus</i>	
<i>Colomesus asellus</i>	independent
Balistoidei	
Balistidae	
<i>Balistapus undulatus</i>	independent
<i>Odonus niger</i>	independent
<i>Rhinecanthus aculeatus</i>	independent
Monacanthidae	
<i>Acreichthys tomentosus</i>	independent
<i>Oxymonacanthus longirostris</i>	independent
<i>Pervagor janthinosoma</i>	independent
Centrarchiformes	
Centrarchoidei	
Centrarchidae	
<i>Lepomis gibbosus</i>	
Cirrhitoidaei	
Cirrhitidae	
<i>Amblycirrhitus pinos</i>	independent
<i>Cirrhitichthys aprinus</i>	independent
<i>Oxycirrhites typus</i>	independent
<i>Paracirrhites arcatus</i>	independent
Terapontoidei	
Kuhliidae	

<i>Kuhlia mugil</i>	conjugated
Perciformes	
Serranoidei	
Serranidae	
<i>Cephalopholis miniata</i>	independent
<i>Pseudanthias dispar</i>	
Percoidei	
Percidae	
<i>Perca fluviatilis</i>	conjugated
<i>Sander lucioperca</i>	conjugated
Scorpaenoidei	
Scorpaenidae	
<i>Dendrochirus zebra</i>	conjugated
<i>Ablabys taenianotus</i>	conjugated
Cottoidei	
Zoarcales	
Stichaeidae	
<i>Anoplarchus purpurescens</i>	
<i>Xiphister mucosus</i>	
Gasterosteales	
Gasterosteidae	
<i>Gasterosteus aculeatus</i>	conjugated
Cottales	
Cottidae	
<i>Cottus gobio</i>	conjugated
<i>Taurulus bubalis</i>	conjugated

Suppl. Table 2: Literature survey on the presence of a fovea in ray finned fish. Species with a fovea (FO) are highlighted with green. All others have no fovea. Some reports simply state that a fovea does not exist (no FO) or they classify the retinal distribution in regional differences (RD), Area Centralis (AC), and/or Horizontal streak (HS).

Species	Reference	Retina
Actinopterygii		
Chondrostei		
Acipenseridae		
<i>Acipenser medirostris</i>	Sillman et al. 2005	no FO
<i>Scaphirhynchus albus</i>	Sillman et al. 2005	no FO
Polyodontidae		
<i>Polyodon spathula</i>	Sillman and Dahlin 2004	no FO
Lepisosteiformes		
Lepisosteidae		
<i>Lepisosteus platyrhincus</i>	Collin and Northcutt 1993	AC-HS
Teleost		
Elopomorpha		
Anguilliformes		
Synphobranchidae		
<i>Synphobranchus kaupii</i>	Collin and Partridge 1996	RD
Serrivomeridae		
<i>Serrivomer beanii</i>	Collin and Partridge 1996	RD
Clupeiformes		
Engraulidae		
<i>Engraulis mordax</i>	O'Connell 1963	AC
<i>Anchoa compressa</i>	O'Connell 1963	AC
Clupeidae		
<i>Sardina pilchardus</i>	Marquez Legorreta 2019	RD
<i>Sardinella aurita</i>	Salem 2016	no FO
<i>Sardinops sagax</i>	O'Connell 1963	AC
<i>Alosa sapidissima</i>	O'Connell 1963	AC
Alepocephaliformes		
Platyroctidae		
<i>Platyroctes apus</i>	Locket 1971	FO
<i>Searsia koefoedi</i>	Collin and Partridge 1996	FO
<i>Platyroctes apus</i>	Collin and Partridge 1996	FO
Alepocephalidae		
<i>Conocara macropterum</i>	Collin et al. 2000	FO
<i>Conocara murrayi</i>	Collin et al. 2000	FO
<i>Bajacalifornia drakei</i>	Locket 1985	FO
<i>Xenodermichthys copei</i>	Collin and Partridge 1996	FO
<i>Bathyroctes microlepis</i>	Collin and Partridge 1996	FO
<i>Alepocephalus rostratus</i>	Collin and Partridge 1996	FO
<i>Rouleina attrita</i>	Collin and Partridge 1996	FO
<i>Conocara murrayi</i>	Collin and Partridge 1996	FO
Cypriniformes		
Cyprinidae		
<i>Carassius auratus</i>	Mednick and Springer 1988	AC
<i>Aspius aspius</i>	Zaunreiter et al. 1991	RD
<i>Rutilus rutilus</i>	Zaunreiter et al. 1991	RD
<i>Abramis brama</i>	Zaunreiter et al. 1991	RD

<i>Cyprinus carpio</i>	Zaunreiter et al. 1991	RD
<i>Pelecus cultratus</i>	Zaunreiter et al. 1991	RD
<i>Garra gotyla</i>	Nag and Bhattacharjee 2002	no FO
<i>Garra lamta</i>	Nag and Bhattacharjee 2002	no FO
<i>Barilius bendelisis</i>	Nag and Bhattacharjee 2002	no FO
<i>Barilius vagra</i>	Nag and Bhattacharjee 2002	no FO
<i>Schizothorax richardsonii</i>	Nag and Bhattacharjee 2002	no FO
<i>Neolissochilus hexagonolepis</i>	Nag and Bhattacharjee 2002	no FO
<i>Danio aequipinnatus</i>	Nag and Bhattacharjee 2002	no FO
<i>Notemigonus crysoleucas</i>	Kim and Park 2017	RD
<i>Rutilus rutilus</i>	Engström 1960	no FO
<i>Scardinius erythrophthalmus</i>	Engström 1960	no FO
<i>Leuciscus idus</i>	Engström 1960	no FO
<i>Abramis brama</i>	Engström 1960	no FO
<i>Blicca bjoerkna</i>	Engström 1960	no FO
<i>Vimba vimba</i>	Engström 1960	no FO
<i>Cyprinus carpio</i>	Engström 1960	no FO
<i>Carassius carassius</i>	Engström 1960	no FO
<i>Carassius auratus</i>	Engström 1960	no FO
<i>Tinca tinca</i>	Engström 1960	no FO
<i>Danio rerio</i>	Engström 1960	no FO
<i>Phoxinus phoxinus</i>	Engström 1960	no FO
<i>Alburnus alburnus</i>	Engström 1960	no FO
<i>Exoglossum maxillingua</i>	Collin and Ali 1994	AC
<i>Semotilus atromaculatus</i>	Collin and Ali 1994	AC
Balitoridae		
<i>Balitora Brucei</i>	Nag and Bhattacharjee 2002	no FO
Nemacheilidae		
<i>Nemacheilus beavani</i>	Nag and Bhattacharjee 2002	no FO
<i>Nemacheilus devdevi</i>	Nag and Bhattacharjee 2002	no FO
Siluriformes		
Ictaluridae		
<i>Ictalurus punctatus</i>	Dunn-Meynell and Sharma 1987	HS
Loricariidae		
<i>Liposcarus pardalis</i>	Douglas et al. 2002	AC
Amblycipitidae		
<i>Liobagrus mediadiposalis</i>	Nag and Bhattacharjee 2002	no
Gymnotiformes		
Apteronotidae		
<i>Apteronotus albifrons</i>	Takiyama et al. 2015	RD
Protacanthopterygii		
Salmonidae		
<i>Salmo salar</i>	Ahlbert 1976	RD
<i>Salmo trutta</i>	Ahlbert 1976	RD
<i>Salmo trutta</i>	Anadón et al. 2001	no FO
<i>Oncorhynchus keta</i>	Beaudet et al. 1997	RD
<i>Oncorhynchus tshawytscha</i>	Beaudet et al. 1997	RD
<i>Oncorhynchus kisutch</i>	Beaudet et al. 1997	RD
<i>Oncorhynchus mykiss</i>	Beaudet et al. 1997	RD
Argentiniformes		
Argentinidae		
<i>Argentina semifasciata</i>	Tamura 1957	RD
Stomiiformes		

Sternoptychidae		
<i>Argyrolepecus sladeni</i>	Collin and Partridge 1996	AC
<i>Argyrolepecus aculeatus</i>	Collin and Partridge 1996	AC
Osmeriformes		
Osmeridae		
<i>Osmerus eperlanus</i>	Reckel et al. 2003	RD
Aulopiformes		
Scopelarchidae		
<i>Scopelarchus michaelisarsii</i>	Collin and Partridge 1996	AC
Ipnopidae		
<i>Bathypterois dubius</i>	Collin and Partridge 1996	AC
Chlorophthalmidae		
<i>Chlorophthalmus albatrossis</i>	Tamura 1957	RD
Notosudidae		
<i>Scopelosaurus lepidus</i>	Munk 1977	FO
Myctophiformes		
Myctophidae		
<i>Myctophum punctatum</i>	Collin and Partridge 1996	RD
<i>Lampanyctus macdonaldi</i>	Collin and Partridge 1996	RD
Paracanthopterygii		
Zeiformes		
Zeniontidae		
<i>Zenion japonicum</i>	Tamura 1957	RD
Gadiformes		
Merlucciidae		
<i>Merluccius merluccius</i>	Bozzano and Catalán 2002	AC
Acanthopterygii		
Holocentriformes		
Holocentridae		
<i>Myripristis violacea</i>	de Busserolles et al. 2020	AC
<i>Neoniphon sammara</i>	de Busserolles et al. 2020	AC
<i>Sargocentron diadema</i>	de Busserolles et al. 2020	AC
Batrachoidiformes		
Batrachoididae		
<i>Halophryne diemensis</i>	Collin and Pettigrew 1988	AC
<i>Halophryne diemensis</i>	Collin and Pettigrew 1989	AC
Gobiaria		
Kurtiformes		
Apogonidae		
<i>Apogon lineatus</i>	Tamura 1957	RD
Gobiiformes		
Oxudercidae		
<i>Acanthogobius flavimanus</i>	Miyazaki et al. 2019	AC
Gobiidae		
<i>Zosterisessor ophiocephalus</i>	Ota et al. 1999	AC
Scombriformes		
Scombridae		
<i>Scomber japonicus</i>	Tamura 1957	RD
<i>Thunnus orientalis</i>	Miyazaki 2013	AC
<i>Scomber japonicus</i>	O'Connell 1963	RD
Syngnathiformes		
Aulostomidae		
<i>Aulostomus chinensis</i>	Collin and Pettigrew 1988	AC-HS

<i>Aulostomus chinensis</i>	Collin and Pettigrew 1989	AC
Syngnathidae		
<i>Corythoichthys paxtoni</i>	Collin 19999	FO
<i>Hippocampus .sp</i>	Walls 1942	FO
<i>Syngnathus typhle</i>	Walls 1942	FO
<i>Syngnathus acus</i>	Walls 1942	FO
<i>Syngnathus tenuirostris</i>	Walls 1942	FO
<i>Trachyrhamphus bicoarctatus</i>	Easter 1992	FO
Carangaria		
Carangaria_Incerta_sedis		
Toxotidae		
<i>Toxotes chatareus</i>	Temple et al. 2013	RD
<i>Toxotes .sp</i>	Kahmann 1936	no FO
Carangiformes		
Carangidae		
<i>Seriola quinqueradiata</i>	Tamura 1957	RD
<i>Trachurus japonicus</i>	Tamura 1957	RD
<i>Trachurus symmetricus</i>	O'Connell 1963	RD
Ovalentaria		
Ovalentaria_Incerta_sedis		
Pomacentridae		
<i>Amblyglyphidodon curacao</i>	Collin and Pettigrew 1988	AC
<i>Amblyglyphidodon curacao</i>	Collin and Pettigrew 1989	AC
<i>Amphiprion akindynos</i>	Stieb et al. 2019	AC-HS
Cichliformes		
Cichlidae		
<i>Nannacara anomala</i>	Wagner 1974	RD
<i>Nannacara anomala</i>	Wagner 1974	AC
<i>Maylandia zebra</i>	Dalton et al. 2016	AC
Atheriniformes		
Melanotaeniidae		
<i>Melanotaenia maccullochi</i>	Reckel and Melzer 2003	RD
<i>Glossolepis incisus</i>	Reckel and Melzer 2003	RD
<i>Marosatherina ladigesii</i>	Reckel and Melzer 2003	RD
Atherinidae		
<i>Atherina boyeri</i>	Reckel and Melzer 2003	RD
Cyprinodontiformes		
Goodeidae		
<i>Ameca splendens</i>	Reckel and Melzer 2003	RD
Fundulidae		
<i>Fundulus heteroclitus</i>	Butcher 1938	AC
Anablepidae		
<i>Anableps anableps</i>	Oliveira et al. 2006	HS
<i>Anableps microlepis</i>	Schwassmann and Kruger 1965	HS
Beloniformes		
Adrianichthyidae		
<i>Oryzias celebensis</i>	Reckel and Melzer 2003	RD
Exocoetidae		
<i>Parexocoetus mento</i>	Reckel and Melzer 2003	RD
Hemiramphidae		
<i>Hyporhamphus affinis</i>	Reckel and Melzer 2003	RD
Zenarchopteridae		
<i>Dermogenys pusilla</i>	Reckel and Melzer 2003	RD

Belonidae		
<i>Belone belone</i>	Reckel et al. 2002	RD
<i>Xenentodon cancila</i>	Reckel and Melzer 2003	RD
<i>Belone belone</i>	Reckel and Melzer 2003	RD
<i>Tylosurus crocodilus</i>	Reckel and Melzer 2003	RD
Scomberesocidae		
<i>Scomberesox saurus</i>	Reckel and Melzer 2003	RD
<i>Cololabis saira</i>	Kondrashev and Gnyubkina 2011	FO
Blenniiformes		
Tripterygiidae		
<i>Tripterygion delaisi</i>	Fritsch et al. 2017	FO
<i>Tripterygion delaisi</i>	Ahlbert 1976	FO
<i>Tripterygion delaisi</i>	Neiße et al. 2020	FO
Blenniidae		
<i>Salaria basilisca</i>	Walls 1942	FO
<i>Parablennius gattorugine</i>	Walls 1942	FO
<i>Parablennius sanguinolentus</i>	Walls 1942	FO
<i>Parablennius tentacularis</i>	Walls 1942	FO
<i>Blennius ocellaris</i>	Walls 1942	FO
<i>Salaria pavo</i>	Walls 1942	FO
<i>Petroscirtes variabilis</i>	Collin and Pettigrew 1989	AC
<i>Istiblennius edentulus</i>	Easter 1992	FO
<i>Parablennius gattorugine</i>	Kahmann 1936	FO
<i>Blennius ocellaris</i>	Kahmann 1936	FO
<i>Parablennius sanguinolentus</i>	Kahmann 1936	FO
<i>Parablennius tentacularis</i>	Kahmann 1936	FO
Eupercaria		
Eupercaria_Incerta_sedis		
Pomacanthidae		
<i>Pomacanthus semicirculatus</i>	Collin and Pettigrew 1988	AC
<i>Pomacanthus semicirculatus</i>	Collin and Pettigrew 1989	AC
Priacanthidae		
<i>Heteropriacanthus cruentatus</i>	Tamura 1957	RD
Uranoscopiformes		
Pinguipedidae		
<i>Parapercis cylindrica</i>	Collin and Pettigrew 1988	AC
<i>Parapercis cylindrica</i>	Collin and Pettigrew 1989	AC
<i>Parapercis nebulosa</i>	Easter 1992	FO
<i>Parapercis cylindrica</i>	Easter 1992	FO
Labriformes		
Labridae		
<i>Choerodon cyanodus</i>	Collin and Pettigrew 1988	AC-HS
<i>Coris julis</i>	Walls 1942	FO
<i>Choerodon cyanodus</i>	Collin and Pettigrew 1989	AC
<i>Thalassoma pavo</i>	Kahmann 1936	FO
<i>Thalassoma lunare</i>	Kahmann 1936	FO
<i>Coris julis</i>	Kahmann 1936	FO
<i>Labrus .sp</i>	Kahmann 1936	AC
<i>Symphodus .sp</i>	Kahmann 1936	AC
Chaetodontiformes		
Leiognathidae		
<i>Leiognathus equula</i>	Tamura 1957	RD
Acanthuriformes		

Acanthuridae		
<i>Prionurus scalprum</i>	Tamura 1957	RD
Spariformes		
Lethrinidae		
<i>Lethrinus miniatus</i>	Collin and Pettigrew 1988	AC-HS
<i>Gymnocranius audleyi</i>	Collin and Pettigrew 1988	AC-HS
<i>Lethrinus miniatus</i>	Collin and Pettigrew 1989	AC
<i>Gymnocranius audleyi</i>	Collin and Pettigrew 1989	AC
Sparidae		
<i>Acanthopagrus butcheri</i>	Shand et al. 2000	AC
<i>Acanthopagrus butcheri</i>	Shand et al. 2000	AC
<i>Pagrus major</i>	Tamura 1957	RD
<i>Acanthopagrus berda</i>	Tamura 1957	RD
<i>Acanthopagrus schlegelii</i>	Tamura 1957	RD
<i>Dentex tumifrons</i>	Tamura 1957	RD
Tetraodontiformes		
Ostraciidae		
<i>Lactoria cornuta</i>	Kahmann 1936	FO
Balistidae		
<i>Balistoides conspicillum</i>	Collin and Pettigrew 1988	AC-HS
<i>Balistoides conspicillum</i>	Collin and Pettigrew 1989	AC
<i>Rhinecanthus aculeatus</i>	Champ et al. 2014	AC
<i>Balistes capriscus</i>	Kahmann 1936	FO
<i>Rhinecanthus aculeatus</i>	Kahmann 1936	FO
Monacanthidae		
<i>Navodon modestus</i>	Ito and Murakami 1984	AC
<i>Thamnaconus modestus</i>	Tamura 1957	RD
Molidae		
<i>Mola mola</i>	Kino et al. 2009	RD
Tetraodontidae		
<i>Marilyna pleurosticta</i>	Collin and Pettigrew 1989	AC
<i>Takifugu chrysops</i>	Tamura 1957	RD
<i>Takifugu niphobles</i>	Tamura 1957	RD
<i>Canthigaster valentini</i>	Easter 1992	FO
<i>Tetraodon fluviatilis</i>	Kahmann 1936	FO
Pemppheriformes		
Acropomatidae		
<i>Malakichthys wakiyae</i>	Tamura 1957	RD
Creediidae		
<i>Limnichthys fasciatus</i>	Collin and Collin 1988	FO
Howellidae		
<i>Howella sherborni</i>	Collin and Partridge 1996	FO
Lateolabracidae		
<i>Lateolabrax japonicus</i>	Tamura 1957	RD
Centrarchiformes		
Centrarchidae		
<i>Lepomis macrochirus</i>	Gomi and Miyazaki 2015	AC
<i>Lepomis cyanellus</i>	Cameron 1995	AC
Cirrhitidae		
<i>Cirrhichthys falco</i>	Easter 1992	FO
Kyphosidae		
<i>Girella .sp</i>	Walls 1942	FO
<i>Girella punctata</i>	Tamura 1957	RD

Terapontidae		
<i>Rhynchopelates oxyrhynchus</i>	Tamura 1957	RD
Perciformes		
Serranoidei		
Serranidae		
<i>Cephalopholis miniata</i>	Collin and Pettigrew 1988	AC
<i>Serranus cabrilla</i>	Walls 1942	FO
<i>Serranus hepatus</i>	Walls 1942	FO
<i>Serranus scriba</i>	Walls 1942	FO
<i>Paralabrax clathratus</i>	Schwassmann 1968	FO
<i>Paralabrax maculatofasciatus</i>	Schwassmann 1968	FO
<i>Paralabrax nebulifer</i>	Schwassmann 1968	FO
<i>Cephalopholis miniata</i>	Collin and Pettigrew 1989	AC
<i>Hyporthodus septemfasciatus</i>	Tamura 1957	RD
<i>Epinephelus chlorostigma</i>	Tamura 1957	RD
<i>Serranus hepatus</i>	Kahmann 1936	FO
Percoidei		
Percidae		
<i>Perca fluviatilis</i>	Guthrie and Banks 1978	RD
Trachinidae		
<i>Trachinus draco</i>	Kahmann 1936	FO
<i>Echiichthys vipera</i>	Kahmann 1936	FO
Nothothenioidei		
Channichthyidae		
<i>Champscephalus gunnari</i>	Miyazaki et al. 2011	AC
Scorpaenoidei		
Sebastidae		
<i>Sebastiscus marmoratus</i>	Ito and Murakami 1984	AC
<i>Sebastiscus marmoratus</i>	Tamura 1957	RD
<i>Helicolenus dactylopterus</i>	Tamura 1957	RD
Trigloioidei		
Triglidae		
<i>Chelidonichthys kumu</i>	Tamura 1957	RD
Cottoidei		
Agonidae		
<i>Agonus cataphractus</i>	Kahmann 1936	FO
Cottidae		
<i>Pseudoblennius totomius</i>	Tamura 1957	RD
Pholidae		
<i>Pholis gunellus</i>	Walls 1942	FO
Zoarcidae		
<i>Zoarces .sp</i>	Kahmann 1936	AC

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