

Supplementary Materials of

Heterogeneity of Fish Taxonomic and Functional Diversity Evaluated by eDNA and Gillnet along a Mangrove–Seagrass–Coral Reef Continuum

Shuting Qiu ^{1,2,3}, Jillian Lean Sim Ooi ⁴, Weilin Chen ², Sze-Wan Poong ¹, Han Zhang ², Weiyi He ^{1,2}, Shangke Su ², Hao Luo ², Wenjia Hu ², Yang Amri Affendi ¹, Jianguo Du ^{2,5,*} and Kar-Hoe Loh ^{1,*}

¹ Institute of Ocean and Earth Sciences, University of Malaya, Kuala Lumpur 50603, Malaysia

² Key Laboratory of Marine Ecological Conservation and Restoration, Third Institute of Oceanography, Ministry of Natural Resources, Xiamen 361005, China

³ Institute for Advanced Study, University of Malaya, Kuala Lumpur 50603, Malaysia

⁴ Department of Geography, Faculty of Arts and Social Sciences, University of Malaya, Kuala Lumpur 50603, Malaysia

⁵ Faculty of Marine Biology, Xiamen Ocean Vocational College, Xiamen 36110, China

*Correspondence: dujianguo@tio.org.cn (J.D.) and khloh@um.edu.my (K.-H.L.)

Supplementary Table S1. Description of functional traits and categories.

Trait	Description	Categories
Trophic level	The position in the food chain is determined by the number of steps that energy is transferred to that level, from 2(for herbivores) to	2 (herbivore) to 4.5 (piscivore)
Maximum total length (cm)	The maximum length between the first and last points of the whole body, in a straight line, does not exceed the curve of the body.	Non-migratory Restricted migratory Long-distance migration

Mobility	The ability or tendency to move from one position or situation to another one	Sedentary Mobile within reefs Mobile across reefs
School size	The size of the fish population, generally measured by the number of individuals.	Solitary Pairing Small schools Large schools
Water column position	Preferred vertical position in the water column for living and feeding.	Benthic (0-3 m) Benthopelagic (3-10m) Pelagic (10-30 m) Demersal (>30 m)
Habitat type	Preferred habitats, do not mean that it does not occur in other habitats.	Estuarine Stream Mangrove Seagrass Coral Reef Open area

Supplementary Table S2. Functional trait matrix for the six functional traits

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Abudefduf bengalensis</i>	3.1	17.0	Benthic	Non-migratory	Coral reef	Large groups
<i>Abudefduf sordidus</i>	2.9	24.0	Benthic	Non-migratory	Coral reef	Solitary
<i>Abudefduf vaigiensis</i>	2.6	20.0	Benthopelagic	Long-distance migration	Coral reef	Large groups
<i>Acanthopagrus australis</i>	3.1	66.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Acanthopagrus latus</i>	3.8	40.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Acanthopagrus pacificus</i>	3.6	50.0	Pelagic	Restricted migratory	Estuarine	Small groups
<i>Acanthopagrus schlegelii</i>	3.2	50.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Acanthopagrus sp.</i>	3.8	40.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Acentrogobius caninus</i>	3.5	13.0	Benthic	Restricted migratory	Estuarine	Small groups
<i>Acentrogobius multifasciatus</i>	3.5	13.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Acentrogobius pflaumii</i>	3.1	12.0	Demersal	Non-migratory	Estuarine	Solitary
<i>Alectis indica</i>	4.1	165.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Alepes djedaba</i>	3.3	40.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Alepes kleinii</i>	3.5	18.2	Pelagic	Restricted migratory	Coral reef	Large groups
<i>Alepes vari</i>	3.7	56.0	Pelagic	Restricted migratory	Estuarine	Large groups
<i>Aluterus scriptus</i>	2.8	110.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Ambassis buruensis</i>	3.4	8.2	Benthic	Restricted migratory	Estuarine	Large groups
<i>Ambassis gymnocephalus</i>	3.9	8.2	Benthic	Restricted migratory	Estuarine	Large groups
<i>Ambassis interrupta</i>	2.7	12.0	Benthic	Long-distance migration	Estuarine	Large groups
<i>Ambassis urotaenia</i>	3.4	14.0	Demersal	Long-distance migration	Estuarine	Large groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Ambassis vachellii</i>	3.3	6.5	Benthic	Long-distance migration	Estuarine	Large groups
<i>Amblygobius phalaena</i>	3.6	15.0	Pelagic	Restricted migratory	Coral reef	Pair
<i>Amoya chusanensis</i>	3.4	7.2	Demersal	Non-migratory	Estuarine	Small groups
<i>Arothron hispidus</i>	3.2	50.0	Pelagic	Non-migratory	Coral reef	Solitary
<i>Asterropteryx semipunctata</i>	2.4	6.5	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Atherinomorus pinguis</i>	3.3	13.6	Benthopelagic	Restricted migratory	Coral reef	Small groups
<i>Atherion elymus</i>	3.4	6.4	Benthic	Non-migratory	Coral reef	Large groups
<i>Aurigequula fasciata</i>	3.3	21.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Boleophthalmus sp.</i>	2.0	17.5	Demersal	Non-migratory	Estuarine	Small groups
<i>Bothus pantherinus</i>	3.5	39.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Brachirus orientalis</i>	3.5	38.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Caffrogobius gilchristi</i>	3.6	15.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Callionymus enneactis</i>	3.3	8.0	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Callionymus meridionalis</i>	3.3	10.8	Demersal	Non-migratory	Estuarine	Small groups
<i>Callogobius tanegasimae</i>	3.2	5.5	Demersal	Non-migratory	Estuarine	Small groups
<i>Calotomus spinidens</i>	2.0	30.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Capoeta capoeta</i>	2.0	30.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Capoeta damascina</i>	2.4	50.0	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Carangoides malabaricus</i>	3.9	60.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Carangoides praeustus</i>	3.9	25.0	Demersal	Long-distance migration	Estuarine	Solitary
<i>Caranx ignobilis</i>	4.2	170.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Caranx tille</i>	4.1	80.0	Demersal	Non-migratory	Coral reef	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Cephalopholis boenak</i>	4.1	30.0	Demersal	Non-migratory	Coral reef	Pair
<i>Chaetodon auriga</i>	3.7	23.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Chaetodon lunula</i>	3.7	20.0	Demersal	Restricted migratory	Coral reef	Pair
<i>Chaetodon rafflesii</i>	4.3	18.0	Pelagic	Restricted migratory	Coral reef	Pair
<i>Chaetodon ulietensis</i>	2.7	15.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Chanos chanos</i>	2.4	180.0	Pelagic	Long-distance migration	Estuarine	Small groups
<i>Cheilinus chlorourus</i>	3.5	45.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Cheilio inermis</i>	3.5	50.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Chelonodontops patoca</i>	3.1	38.0	Demersal	Long-distance migration	Coral reef	Small groups
<i>Chirocentrus dorab</i>	4.4	100.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Chlorurus sordidus</i>	2.6	40.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Choerodon schoenleinii</i>	3.4	100.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Choerodon schoenleinii</i>	3.4	100.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Chrysiptera biocellata</i>	2.0	12.5	Benthic	Non-migratory	Coral reef	Pair
<i>Cirripectes polyzona</i>	2.8	12.0	Demersal	Non-migratory	Coral reef	Pair
<i>Cirripectes sp.</i>	2.0	9.2	Benthic	Restricted migratory	Coral reef	Small groups
<i>Clupanodon thrissa</i>	3.1	26.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Coryphaena hippurus</i>	4.4	210.0	Pelagic	Long-distance migration	open area	Large groups
<i>Crenimugil crenilabis</i>	2.3	60.0	Pelagic	Non-migratory	Coral reef	Large groups
<i>Crenimugil seheli</i>	2.3	60.0	Benthic	Long-distance migration	Coral reef	Large groups
<i>Crossorhombus azureus</i>	3.5	18.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Cryptocentrus caeruleomaculatus</i>	3.0	10.0	Benthic	Restricted migratory	Coral reef	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Cryptocentrus nigrocellatus</i>	3.4	13.0	Benthopelagic	Restricted migratory	Coral reef	Small groups
<i>Dactyloptena gilberti</i>	3.5	25.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Dactyloptena orientalis</i>	3.7	40.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Dascyllus reticulatus</i>	3.1	9.0	Demersal	Non-migratory	Coral reef	Large groups
<i>Decapterus maruadsi</i>	3.4	25.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Dendrochirus zebra</i>	4.0	25.0	Demersal	Long-distance migration	Coral reef	Small groups
<i>Diodon liturosus</i>	3.5	65.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Drombus globiceps</i>	3.2	4.3	Demersal	Long-distance migration	Estuarine	Small groups
<i>Drombus triangularis</i>	3.3	7.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Elops hawaiiensis</i>	4.0	120.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Engraulis japonicus</i>	3.1	18.0	Demersal	Long-distance migration	open area	Large groups
<i>Enneapterygius unimaculatus</i>	3.1	3.1	Benthic	Restricted migratory	Coral reef	Small groups
<i>Entomacrodus caudofasciatus</i>	2.0	6.2	Benthic	Non-migratory	Coral reef	Small groups
<i>Entomacrodus decussatus</i>	2.0	19.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Entomacrodus striatus</i>	2.0	11.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Entomacrodus thalassinus</i>	2.0	4.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Epinephelus bleekeri</i>	3.9	76.0	Demersal	Restricted migratory	Estuarine	Solitary
<i>Epinephelus coioides</i>	4.0	120.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Epinephelus fuscoguttatus</i>	4.1	120.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Epinephelus quoyanus</i>	4.0	40.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Equulites rivulatus</i>	3.2	12.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Escualosa thoracata</i>	3.2	10.0	Demersal	Long-distance migration	Estuarine	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Etroplus maculatus</i>	2.7	9.5	Benthopelagic	Restricted migratory	Estuarine	Pair
<i>Eubleekeria splendens</i>	2.9	17.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Eugnathogobius variegatus</i>	3.4	4.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Euthynnus affinis</i>	4.5	100.0	Demersal	Long-distance migration	open area	Large groups
<i>Exallias brevis</i>	4.3	14.5	Demersal	Non-migratory	Coral reef	Solitary
<i>Favonigobius melanobranchus</i>	3.5	8.3	Demersal	Restricted migratory	Seagrass	Small groups
<i>Favonigobius reichei</i>	3.5	8.3	Demersal	Long-distance migration	Estuarine	Small groups
<i>Favonigobius sp.</i>	3.5	8.3	Demersal	Long-distance migration	Estuarine	Small groups
<i>Fistularia commersonii</i>	4.3	160.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Gazza minuta</i>	4.2	21.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Gazza rhombea</i>	3.0	17.6	Demersal	Restricted migratory	Estuarine	Large groups
<i>Gerres decacanthus</i>	3.2	9.1	Benthopelagic	Restricted migratory	Estuarine	Large groups
<i>Gerres erythrourus</i>	3.3	30.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Gerres filamentosus</i>	3.3	39.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Gerres japonicus</i>	3.4	25.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Gerres longirostris</i>	3.5	44.5	Demersal	Long-distance migration	Coral reef	Large groups
<i>Gerres macracanthus</i>	3.4	30.0	Demersal	Non-migratory	Estuarine	Large groups
<i>Gerres oblongus</i>	3.5	30.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Gerres oyena</i>	2.7	30.0	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Gerres shima</i>	3.3	11.8	Benthopelagic	Restricted migratory	Estuarine	Large groups
<i>Glossogobius giuris</i>	3.7	50.0	Benthopelagic	Long-distance migration	Estuarine	Small groups
<i>Gnatholepis cauerensis</i>	2.3	6.0	Demersal	Non-migratory	Coral reef	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Gobiopsis arenaria</i>	3.0	1.6	Pelagic	Non-migratory	Coral reef	Small groups
<i>Gymnothorax fimbriatus</i>	4.0	93.4	Demersal	Restricted migratory	Coral reef	Solitary
<i>Gymnothorax thyrsoideus</i>	4.0	73.2	Demersal	Restricted migratory	Coral reef	Small groups
<i>Gymnothorax undulatus</i>	3.6	150.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Halichoeres nigrescens</i>	3.4	14.0	Benthopelagic	Long-distance migration	Coral reef	Small groups
<i>Halichoeres nigrescens</i>	3.4	14.0	Benthic	Long-distance migration	Coral reef	Small groups
<i>Haplogerys nigripinnis</i>	4.0	40.0	Benthopelagic	Restricted migratory	Estuarine	Large groups
<i>Helcogramma striata</i>	3.4	4.3	Demersal	Non-migratory	Coral reef	Small groups
<i>Helotes sexlineatus</i>	2.0	15.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Hemiculter leucisculus</i>	2.8	23.0	Benthopelagic	Restricted migratory	Estuarine	Large groups
<i>Hemigobius hoevenii</i>	3.3	6.0	Benthic	Long-distance migration	Mangrove	Small groups
<i>Hemiramphus lutkei</i>	3.4	40.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Hemitrygon bennettii</i>	4.5	50.0	Demersal	Restricted migratory	Estuarine	Solitary
<i>Hephaestus fuliginosus</i>	2.8	54.0	Benthopelagic	Non-migratory	Stream	Small groups
<i>Herklotsichthys quadrimaculatus</i>	3.6	25.0	Benthic	Restricted migratory	Coral reef	Large groups
<i>Hilsa kelee</i>	2.9	30.0	Benthic	Long-distance migration	open area	Large groups
<i>Hypoatherina temminckii</i>	3.4	12.0	Benthic	Restricted migratory	Coral reef	Large groups
<i>Hypoatherina tsurugae</i>	3.4	15.0	Benthic	Restricted migratory	Estuarine	Large groups
<i>Hypoatherina valenciennesi</i>	3.2	12.0	Benthic	Restricted migratory	Estuarine	Large groups
<i>Hypoatherina woodwardi</i>	3.4	10.0	Benthic	Restricted migratory	Coral reef	Large groups
<i>Hyporhamphus dussumieri</i>	3.5	38.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Hyporhamphus limbatus</i>	3.1	25.0	Benthic	Long-distance migration	Estuarine	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Hyporhamphus quoyi</i>	3.0	31.2	Benthopelagic	Restricted migratory	Estuarine	Large groups
<i>Ilisha elongata</i>	3.8	60.0	Pelagic	Restricted migratory	Estuarine	Small groups
<i>Iniistius evides</i>	3.4	19.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Istigobius campbelli</i>	3.3	7.8	Pelagic	Non-migratory	Coral reef	Solitary
<i>Istigobius goldmanni</i>	3.3	6.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Istigobius ornatus</i>	3.5	11.0	Benthic	Non-migratory	Mangrove	Solitary
<i>Johnius dussumieri</i>	4.1	40.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Konosirus punctatus</i>	2.9	32.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Kyphosus elegans</i>	2.9	53.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Kyphosus vaigiensis</i>	2.0	70.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Larimichthys crocea</i>	3.7	80.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Lates calcarifer</i>	3.8	200.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Lates japonicus</i>	4.3	130.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Leiognathus berbis</i>	3.3	11.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Leiognathus breviostris</i>	3.0	14.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Leiognathus equula</i>	3.0	28.0	Benthopelagic	Long-distance migration	Estuarine	Small groups
<i>Leiognathus equulus</i>	3.0	28.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Leptoscarus vaigiensis</i>	2.0	35.2	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Lethrinus haematopterus</i>	3.7	45.0	Demersal	Non-migratory	Coral reef	Large groups
<i>Lethrinus nebulosus</i>	3.8	38.8	Pelagic	Non-migratory	Coral reef	Small groups
<i>Lethrinus ornatus</i>	3.4	45.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Lethrinus sp.</i>	3.8	38.8	Pelagic	Non-migratory	Coral reef	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Lethrinus xanthochilus</i>	3.8	70.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Lethrinus haematopterus</i>	3.7	45.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Liza carinata</i>	2.6	18.0	Pelagic	Non-migratory	Estuarine	Large groups
<i>Liza subviridis</i>	2.7	40.0	Pelagic	Long-distance migration	Estuarine	Large groups
<i>Lutjanus argentimaculatus</i>	3.6	150.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Lutjanus fulviflamma</i>	3.8	35.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Lutjanus lutjanus</i>	4.1	35.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Lutjanus russellii</i>	4.1	80.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Lutjanus argentimaculatus</i>	3.6	150.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Mastacembelus armatus</i>	2.8	90.0	Demersal	Long-distance migration	Stream	Solitary
<i>Monacanthus chinensis</i>	2.4	38.0	Demersal	Restricted migratory	Coral reef	Pair
<i>Moolgarda perusii</i>	2.3	16.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Moolgarda seheli</i>	2.3	30.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Mugil cephalus</i>	2.5	100.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Nematalosa come</i>	2.8	21.0	Pelagic	Restricted migratory	Estuarine	Small groups
<i>Nematalosa japonica</i>	2.4	19.0	Benthopelagic	Restricted migratory	Estuarine	Large groups
<i>Nematalosa nasus</i>	2.2	25.5	Benthopelagic	Long-distance migration	Estuarine	Small groups
<i>Neopomacentrus azysron</i>	3.4	7.5	Pelagic	Non-migratory	Coral reef	Small groups
<i>Neopomacentrus cyanomos</i>	3.4	10.0	Demersal	Non-migratory	Coral reef	Large groups
<i>Norfolkia thomasi</i>	3.2	4.0	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Nuchequula longicornis</i>	2.9	7.9	Demersal	Restricted migratory	Estuarine	Large groups
<i>Nuchequula mannusella</i>	2.9	14.0	Demersal	Restricted migratory	Estuarine	Large groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Oedalechilus labiosus</i>	2.4	3.0	Benthic	Restricted migratory	Coral reef	Large groups
<i>Omobranchus elongatus</i>	2.7	5.0	Benthic	Non-migratory	Estuarine	Small groups
<i>Oreochromis niloticus</i>	2.0	60.0	Benthic	Long-distance migration	Estuarine	Solitary
<i>Osteomugil formosae</i>	2.4	25.0	Benthic	Long-distance migration	Coral reef	Large groups
<i>Osteomugil perusii</i>	2.4	25.0	Benthic	Long-distance migration	Coral reef	Large groups
<i>Ostorhinchus cookii</i>	3.5	10.0	Pelagic	Non-migratory	Coral reef	Small groups
<i>Ostracion cubicum</i>	3.4	45.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Oxyurichthys sp.</i>	4.2	17.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Pagrus major</i>	4.5	100.0	Demersal	Long-distance migration	open area	Large groups
<i>Pampus argenteus</i>	3.3	60.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Parablennius yatabei</i>	2.0	6.0	Pelagic	Long-distance migration	Estuarine	Small groups
<i>Paracentropogon longispinis</i>	3.2	13.0	Demersal	Non-migratory	Estuarine	Solitary
<i>Paralichthys olivaceus</i>	4.5	103.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Parapercis cylindrica</i>	3.0	23.0	Pelagic	Non-migratory	Coral reef	Solitary
<i>Parapristipoma trilineatum</i>	3.4	40.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Parascorpaena mossambica</i>	3.6	20.0	Pelagic	Non-migratory	Coral reef	Solitary
<i>Parupeneus ciliatus</i>	3.5	38.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Parupeneus cyclostomus</i>	4.2	50.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Parupeneus indicus</i>	3.5	45.0	Pelagic	Non-migratory	Coral reef	Small groups
<i>Pelates quadrilineatus</i>	3.6	30.0	Pelagic	Restricted migratory	Estuarine	Large groups
<i>Pelates sexlineatus</i>	2.0	32.0	Pelagic	Restricted migratory	Estuarine	Large groups
<i>Pelates quadrilineatus</i>	3.6	30.0	Demersal	Restricted migratory	Coral reef	Large groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Pempheris adusta</i>	3.4	17.0	Pelagic	Non-migratory	Coral reef	Small groups
<i>Pempheris schwenkii</i>	3.4	40.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Pennahia aneus</i>	4.0	30.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Petroscirtes mitratus</i>	2.0	8.5	Benthic	Non-migratory	Coral reef	Small groups
<i>Petroscirtes variabilis</i>	3.1	15.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Photopectoralis bindus</i>	2.9	11.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Pisodonophis cancrivorus</i>	3.8	108.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Planiliza carinata</i>	2.5	24.4	Pelagic	Restricted migratory	Estuarine	Large groups
<i>Planiliza subviridis</i>	2.7	40.0	Benthopelagic	Long-distance migration	Estuarine	Large groups
<i>Platycephalus indicus</i>	3.6	100.0	Demersal	Long-distance migration	Coral reef	Small groups
<i>Plectorhinchus lineatus</i>	3.9	72.0	Demersal	Restricted migratory	Coral reef	Pair
<i>Plectroglyphidodon leucozonus</i>	2.0	12.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Plectroglyphidodon obreptus</i>	2.0	12.0	Benthic	Non-migratory	Coral reef	Pair
<i>Plectropomus leopardus</i>	4.4	120.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Plesiops nakaharae</i>	3.5	14.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Plicomugil labiosus</i>		40.0	Benthic	Restricted migratory	Coral reef	Large groups
<i>Plotosus lineatus</i>	3.6	20.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Plotosus lineatus</i>	3.9	50.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Polydactylus plebeius</i>	3.6	45.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Pomacentrus chrysurus</i>	2.6	9.0	Benthic	Non-migratory	Coral reef	Small groups
<i>Pomacentrus tripunctatus</i>	2.0	7.5	Benthic	Non-migratory	Coral reef	Solitary
<i>Pomadasyd maculatus</i>	4.0	59.3	Demersal	Long-distance migration	Coral reef	Pair

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Psammogobius biocellatus</i>	3.4	12.0	Benthopelagic	Long-distance migration	Estuarine	Small groups
<i>Psenopsis anomala</i>	4.0	30.0	Demersal	Restricted migratory		Small groups
<i>Pseudetroplus maculatus</i>	2.4	40.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Pseudochromis cyanotaenia</i>	3.3	6.0	Demersal	Non-migratory	Coral reef	Pair
<i>Pseudogobius javanicus</i>	4.2	6.0	Benthopelagic	Restricted migratory	Estuarine	Small groups
<i>Pseudogobius masago</i>	3.1	2.5	Demersal	Non-migratory	Estuarine	Small groups
<i>Pseudogobius poecilosoma</i>	3.3	6.5	Demersal	Long-distance migration	Estuarine	Small groups
<i>Pseudorhombus dupliciocellatus</i>	4.5	40.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Pteragogus flagellifer</i>	3.5	20.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Ptereleotris microlepis</i>	3.4	13.0	Demersal	Non-migratory	Coral reef	Pair
<i>Rachycentron canadum</i>	4.0	200.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Rastrelliger kanagurta</i>	3.2	38.0	Demersal	Long-distance migration	open area	Large groups
<i>Rhynchoconger ectenurus</i>	4.0	65.0	Demersal	Non-migratory	Estuarine	Solitary
<i>Rhynchopelates oxyrhynchus</i>	3.6	25.0	Pelagic	Restricted migratory	Estuarine	Large groups
<i>Rogadius asper</i>	3.6	17.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Salarias fasciatus</i>	2.0	14.0	Benthic	Restricted migratory	Coral reef	Small groups
<i>Sardinella albella</i>	2.6	15.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Sardinella hualiensis</i>	2.9	12.5	Demersal	Restricted migratory	Estuarine	Large groups
<i>Scarus ghobban</i>	2.0	90.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Scarus sp.</i>	2.0	90.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Scatophagus argus</i>	3.0	38.0	Benthic	Long-distance migration	Coral reef	Large groups
<i>Scolopsis ciliata</i>	3.7	25.0	Pelagic	Restricted migratory	Coral reef	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Scolopsis lineata</i>	3.8	23.0	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Scolopsis monogramma</i>	3.5	38.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Scolopsis vosmeri</i>	3.5	25.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Scomberoides lysan</i>	4.0	110.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Scomberoides tol</i>	4.1	60.0	Pelagic	Restricted migratory	Coral reef	Small groups
<i>Scorpaenopsis diabolus</i>	4.2	30.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Scorpaenopsis macrochir</i>	3.9	13.6	Demersal	Restricted migratory	Coral reef	Pair
<i>Scorpaenopsis neglecta</i>	4.1	19.0	Demersal	Non-migratory	Coral reef	Solitary
<i>Scorpaenopsis possi</i>	4.1	19.4	Demersal	Non-migratory	Coral reef	Solitary
<i>Selenotoca multifasciata</i>	2.9	40.0	Benthic	Long-distance migration	Estuarine	Small groups
<i>Setipinna taty</i>	3.6	22.0	Demersal	Restricted migratory	Estuarine	Large groups
<i>Siganus canaliculatus</i>	2.8	40.0	Demersal	Long-distance migration	Coral reef	Small groups
<i>Siganus fuscescens</i>	2.0	40.0	Demersal	Long-distance migration	Coral reef	Small groups
<i>Siganus guttatus</i>	2.7	42.0	Benthic	Restricted migratory	Coral reef	Large groups
<i>Siganus sutor</i>	2.3	45.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Sillago aeolus</i>	3.3	30.0	Demersal	Non-migratory	Coral reef	Large groups
<i>Sillago maculata</i>	3.3	30.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Sillago sihama</i>	3.3	31.0	Demersal	Long-distance migration	Coral reef	Large groups
<i>Sparus aurata</i>	3.7	70.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Sphyaena jello</i>	4.5	150.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Spratelloides delicatulus</i>	3.1	7.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Stegastes obreptus</i>	2.0	12.0	Benthic	Non-migratory	Coral reef	Small groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Stephanolepis cirrhifer</i>	2.8	20.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Stethojulis terina</i>	3.5	12.6	Benthic	Non-migratory	Coral reef	Small groups
<i>Stolephorus commersonii</i>	3.1	10.0	Pelagic	Long-distance migration	Estuarine	Large groups
<i>Stolephorus indicus</i>	3.6	15.5	Demersal	Long-distance migration	Estuarine	Large groups
<i>Strongylura incisa</i>	4.2	100.0	Benthic	Restricted migratory	Coral reef	Small groups
<i>Strongylura strongylura</i>	4.2	40.0	Pelagic	Restricted migratory	Estuarine	Small groups
<i>Strophidon sathete</i>	4.0	400.0	Demersal	Restricted migratory	Coral reef	Solitary
<i>Synechogobius ommaturus</i>	3.8	43.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Taeniamia fucata</i>	3.5	8.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Taenioides cirratus</i>	3.9	30.0	Demersal	Long-distance migration	Estuarine	Small groups
<i>Takifugu alboplumbeus</i>	3.3	23.0	Demersal	Restricted migratory	Estuarine	Solitary
<i>Tatia intermedia</i>	3.5	12.0	Benthopelagic	Non-migratory	Stream	Solitary
<i>Terapon jarbua</i>	3.9	36.0	Pelagic	Long-distance migration	Estuarine	Large groups
<i>Terapon theraps</i>	3.5	30.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Thalassoma bifasciatum</i>	3.3	25.0	Demersal	Restricted migratory	Coral reef	Small groups
<i>Thalassoma lunare</i>	3.5	25.0	Pelagic	Non-migratory	Coral reef	Small groups
<i>Thyssa hamiltonii</i>	3.5	27.0	Pelagic	Long-distance migration	Estuarine	Large groups
<i>Thyssa hamiltonii</i>	3.5	27.0	Pelagic	Long-distance migration	Estuarine	Small groups
<i>Trachinocephalus myops</i>	4.4	25.0	Demersal	Non-migratory	Coral reef	Small groups
<i>Trachinotus carolinus</i>	3.5	64.0	Demersal	Long-distance migration	Estuarine	Large groups
<i>Triacanthus biaculeatus</i>	2.8	30.0	Demersal	Restricted migratory	Estuarine	Small groups
<i>Trichiurus lepturus</i>	4.4	234.0	Demersal	Long-distance migration	open area	Large groups

<i>Species</i>	Trophic level	Maximum total length (cm)	Water column position	Mobility	Habitat type	school size
<i>Tylosurus acus</i>	4.5	153.0	Demersal	Long-distance migration	open area	Small groups
<i>Tylosurus crocodilus</i>	4.4	150.0	Pelagic	Long-distance migration	Coral reef	Large groups
<i>Upeneus guttatus</i>	3.5	16.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Upeneus tragula</i>	3.6	25.0	Demersal	Long-distance migration	Coral reef	Solitary
<i>Valamugil formosae</i>	2.2	30.0	Demersal	Restricted migratory	Coral reef	Large groups
<i>Yongeichthys criniger</i>	3.4	15.0	Demersal	Non-migratory	Estuarine	Small groups
<i>Zenarchopterus buffonis</i>	2.5	23.0	Pelagic	Restricted migratory	Coral reef	Large groups
<i>Zenarchopterus dunckeri</i>	3.2	14.0	Benthic	Restricted migratory	Estuarine	Large groups