

**Electronic supplementary material, Table S1.** Coral reef fish species, size (total length; TL), and mortality (M) data sourced for use in the meta-analysis.

Family	Species	TL (mm)	M (% d <sup>-1</sup> )	Reference
Acanthuridae	<i>Acanthurus bahianus</i>	96.5	0.3	[1]
Acanthuridae	<i>Acanthurus chirurgus</i>	158.0	0.1	[1]
Acanthuridae	<i>Acanthurus coeruleus</i>	26.7	47.0	[2]
Acanthuridae	<i>Acanthurus coeruleus</i>	184.5	0.1	[1]
Acanthuridae	<i>Acanthurus lineatus</i>	190.0	0.0	[3]
Acanthuridae	<i>Acanthurus</i> sp.	25.0	40.0	[2]
Acanthuridae	<i>Acanthurus triostegus</i>	22.3	16.7	[2]
Acanthuridae	<i>Ctenochaetus striatus</i>	130.0	0.0	[3]
Acanthuridae	<i>Naso unicornis</i>	53.0	60.8	[4]
Acanthuridae	<i>Naso unicornis</i>	54.0	19.8	[4]
Acanthuridae	<i>Naso unicornis</i>	275.6	0.2	[5]
Acanthuridae	<i>Naso unicornis</i>	350.0	0.1	[3]
Acanthuridae	<i>Zebrasoma scopas</i>	26.0	43.3	[2]
Acanthuridae	<i>Zebrasoma scopas</i>	100.0	0.0	[3]
Apogonidae	<i>Apogon cyanosoma</i>	42.5	0.3	[6]
Apogonidae	<i>Apogon cyanosoma</i>	42.5	0.3	[6]
Apogonidae	<i>Apogon doederleinii</i>	51.6	0.3	[6]
Apogonidae	<i>Apogon doederleinii</i>	51.6	0.3	[6]
Apogonidae	<i>Cheilodipterus artus</i>	44.2	0.2	[6]
Apogonidae	<i>Cheilodipterus artus</i>	44.2	0.2	[6]
Apogonidae	<i>Cheilodipterus quinquelineatus</i>	62.3	0.2	[6]
Apogonidae	<i>Cheilodipterus quinquelineatus</i>	62.3	0.2	[6]
Apogonidae	<i>Rhabdamia gracilis</i>	25.0	1.5	[1]
Balistidae	<i>Balistes vetula</i>	225.0	0.7	[1]
Balistidae	<i>Balistes vetula</i>	300.0	0.1	[1]
Balistidae	<i>Pseudobalistes flavimarginatus</i>	280.0	0.3	[1]
Balistidae	<i>Rhinecanthus aculeatus</i>	37.0	34.0	[2]
Blenniidae	<i>Salarias patzneri</i>	34.9	0.3	[3]
Caesionidae	<i>Pterocaesio pisang</i>	87.5	0.6	[1]
Caesionidae	<i>Pterocaesio pisang</i>	88.2	0.6	[1]
Carangidae	<i>Caranx ignobilis</i>	442.0	0.2	[1]
Carangidae	<i>Caranx ruber</i>	260.0	0.4	[1]
Carangidae	<i>Caranx sexfasciatus</i>	400.0	0.2	[1]
Carangidae	<i>Elegatis bipinnulatus</i>	375.0	0.2	[1]
Carangidae	<i>Gnathodon speciosus</i>	284.5	0.2	[1]
Carangidae	<i>Megalaspis cordyla</i>	300.0	0.2	[1]
Carangidae	<i>Scomberoides lysan</i>	324.5	0.2	[1]
Carangidae	<i>Scomberoides lysan</i>	331.5	0.2	[1]
Chatodontidae	<i>Chaetodon auriga</i>	19.0	46.0	[2]
Chatodontidae	<i>Chaetodon citrinellus</i>	29.0	26.0	[2]
Chatodontidae	<i>Chaetodon ephippium</i>	17.0	50.0	[2]
Clupeidae	<i>Herklotsichthys quadrimaculatus</i>	65.0	1.0	[1]

Clupeidae	<i>Herklotsichthys quadrimaculatus</i>	67.5	1.0	[1]
Clupeidae	<i>Herklotsichthys quadrimaculatus</i>	70.0	1.0	[1]
Clupeidae	<i>Spratelloides delicatulus</i>	36.5	1.9	[1]
Clupeidae	<i>Spratelloides gracilis</i>	38.0	3.1	[1]
Clupeidae	<i>Spratelloides lewisi</i>	27.5	2.4	[1]
Engraulidae	<i>Stolephorus devisi</i>	37.0	2.0	[1]
Engraulidae	<i>Stolephorus devisi</i>	37.5	2.0	[1]
Engraulidae	<i>Stolephorus devisi</i>	39.0	2.1	[1]
Engraulidae	<i>Stolephorus heterolobus</i>	39.5	1.7	[1]
Engraulidae	<i>Stolephorus heterolobus</i>	43.5	1.7	[1]
Gobiidae	<i>Amblygobius bryonenesis</i>	38.4	0.3	[7]
Gobiidae	<i>Amblygobius bryonenesis</i>	38.4	0.3	[7]
Gobiidae	<i>Amblygobius bryonenesis</i>	38.4	0.3	[7]
Gobiidae	<i>Amblygobius bryonenesis</i>	48.7	0.3	[7]
Gobiidae	<i>Amblygobius bryonenesis</i>	48.7	0.3	[7]
Gobiidae	<i>Amblygobius bryonenesis</i>	48.7	0.3	[7]
Gobiidae	<i>Amblygobius phalaena</i>	49.5	0.3	[7]
Gobiidae	<i>Amblygobius phalaena</i>	49.5	0.3	[7]
Gobiidae	<i>Amblygobius phalaena</i>	49.5	0.3	[7]
Gobiidae	<i>Amblygobius phalaena</i>	59.9	0.3	[7]
Gobiidae	<i>Amblygobius phalaena</i>	59.9	0.3	[7]
Gobiidae	<i>Amblygobius phalaena</i>	59.9	0.3	[7]
Gobiidae	<i>Asterropteryx semipunctata</i>	25.5	0.3	[7]
Gobiidae	<i>Asterropteryx semipunctata</i>	25.5	0.3	[7]
Gobiidae	<i>Asterropteryx semipunctata</i>	25.5	0.3	[7]
Gobiidae	<i>Asterropteryx semipunctata</i>	27.7	0.3	[7]
Gobiidae	<i>Asterropteryx semipunctata</i>	27.7	0.3	[7]
Gobiidae	<i>Asterropteryx semipunctata</i>	27.7	0.3	[7]
Gobiidae	<i>Coryphopterus glaucofraenum</i>	6.4	26.0	[2]
Gobiidae	<i>Eviota melasma</i>	27.1	5.1	[8]
Gobiidae	<i>Eviota melasma</i>	27.1	4.2	[8]
Gobiidae	<i>Eviota queenslandica</i>	25.7	5.6	[8]
Gobiidae	<i>Eviota queenslandica</i>	25.7	4.2	[8]
Gobiidae	<i>Eviota sigillata</i>	18.0	8.0	[8]
Gobiidae	<i>Eviota sigillata</i>	18.0	7.0	[8]
Gobiidae	<i>Gnatholepis thompsoni</i>	8.4	6.0	[2]
Gobiidae	<i>Istigobius decoratus</i>	35.0	1.6	[9]
Gobiidae	<i>Istigobius goldmanni</i>	30.4	0.3	[7]
Gobiidae	<i>Istigobius goldmanni</i>	30.4	0.3	[7]
Gobiidae	<i>Istigobius goldmanni</i>	30.4	0.3	[7]
Gobiidae	<i>Istigobius goldmanni</i>	30.4	0.3	[7]
Gobiidae	<i>Istigobius goldmanni</i>	30.4	0.3	[7]
Gobiidae	<i>Istigobius goldmanni</i>	30.4	0.3	[7]
Gobiidae	<i>Trimma benjamini</i>	17.2	2.9	[10]
Gobiidae	<i>Trimma benjamini</i>	17.2	4.0	[10]
Gobiidae	<i>Trimma benjamini</i>	17.2	6.3	[10]

Gobiidae	<i>Trimma nasa</i>	12.3	4.7	[11]
Gobiidae	<i>Valenciennea muralis</i>	53.2	0.3	[7]
Gobiidae	<i>Valenciennea muralis</i>	53.2	0.3	[7]
Gobiidae	<i>Valenciennea muralis</i>	53.2	0.3	[7]
Gobiidae	<i>Valenciennea muralis</i>	53.2	0.3	[7]
Gobiidae	<i>Valenciennea muralis</i>	53.2	0.3	[7]
Gobiidae	<i>Valenciennea muralis</i>	53.2	0.3	[7]
Haemulidae	<i>Diagramma pictum</i>	261.0	0.2	[1]
Haemulidae	<i>Haemulon album</i>	325.0	0.2	[1]
Haemulidae	<i>Haemulon flavolineatum</i>	15.0	5.6	[12]
Haemulidae	<i>Haemulon flavolineatum</i>	37.5	3.7	[12]
Haemulidae	<i>Haemulon flavolineatum</i>	90.0	0.8	[12]
Haemulidae	<i>Haemulon plumieri</i>	210.0	0.6	[1]
Haemulidae	<i>Haemulon plumieri</i>	320.0	0.2	[1]
Haemulidae	<i>Plectorhinchus gibbosus</i>	432.5	0.1	[1]
Haemulidae	<i>Plectorhinchus gibbosus</i>	475.0	0.1	[1]
Haemulidae	<i>Plectorhinchus goldmanni</i>	315.0	0.2	[1]
Kyphosidae	<i>Kyphosus cinarescens</i>	240.0	0.2	[1]
Kyphosidae	<i>Kyphosus cinarescens</i>	265.0	0.2	[1]
Kyphosidae	<i>Kyphosus vaigiensis</i>	230.0	0.1	[1]
Kyphosidae	<i>Kyphosus vaigiensis</i>	231.5	0.2	[1]
Kyphosidae	<i>Kyphosus vaigiensis</i>	259.4	0.2	[5]
Labridae	<i>Bolbometopon muricatum</i>	510.0	0.1	[1]
Labridae	<i>Bolbometopon muricatum</i>	525.0	0.1	[1]
Labridae	<i>Cheilinus chlorurus</i>	180.0	0.1	[13]
Labridae	<i>Cheilinus undulatus</i>	550.0	0.0	[14]
Labridae	<i>Cheilinus undulatus</i>	550.0	0.0	[14]
Labridae	<i>Chlorurus sordidus</i>	164.8	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	166.1	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	168.8	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	175.6	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	196.1	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	199.9	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	200.0	0.1	[3]
Labridae	<i>Chlorurus sordidus</i>	204.5	0.1	[15]
Labridae	<i>Chlorurus sordidus</i>	217.6	0.1	[15]
Labridae	<i>Cirrhilabrus</i> sp.	62.0	0.2	[13]
Labridae	<i>Coris variegata</i>	85.0	0.1	[13]
Labridae	<i>Halichoeres melanurus</i>	52.5	0.1	[13]
Labridae	<i>Hemigymnus melapterus</i>	300.0	0.1	[13]
Labridae	<i>Hipposcarus longiceps</i>	260.0	0.2	[1]
Labridae	<i>Labrichthys unilineatus</i>	87.5	0.1	[13]
Labridae	<i>Labroides dimidiatus</i>	57.5	0.0	[13]
Labridae	<i>Pseudolabrus guentheri</i>	90.0	0.1	[13]
Labridae	<i>Scarus coeruleus</i>	230.0	0.2	[1]
Labridae	<i>Scarus frenatus</i>	191.8	0.1	[15]

Labridae	<i>Scarus frenatus</i>	202.0	0.1	[15]
Labridae	<i>Scarus frenatus</i>	204.1	0.1	[15]
Labridae	<i>Scarus frenatus</i>	209.9	0.1	[15]
Labridae	<i>Scarus frenatus</i>	258.4	0.1	[15]
Labridae	<i>Scarus frenatus</i>	262.8	0.1	[15]
Labridae	<i>Scarus frenatus</i>	264.1	0.1	[15]
Labridae	<i>Scarus frenatus</i>	271.1	0.1	[15]
Labridae	<i>Scarus ghobban</i>	245.0	0.1	[16]
Labridae	<i>Scarus ghobban</i>	245.0	0.1	[16]
Labridae	<i>Scarus ghobban</i>	245.0	0.1	[16]
Labridae	<i>Scarus rivulatus</i>	216.9	0.2	[5]
Labridae	<i>Scarus rubroviolaceus</i>	325.0	0.1	[16]
Labridae	<i>Scarus rubroviolaceus</i>	325.0	0.1	[16]
Labridae	<i>Scarus rubroviolaceus</i>	325.0	0.1	[16]
Labridae	<i>Scarus schlegeli</i>	190.0	0.1	[3]
Labridae	<i>Scarus schlegeli</i>	256.3	0.1	[5]
Labridae	<i>Scarus vetula</i>	195.0	0.4	[1]
Labridae	<i>Sparisoma chrysopterum</i>	176.0	0.5	[1]
Labridae	<i>Sparisoma rubripinne</i>	227.5	0.3	[1]
Labridae	<i>Sparisoma viride</i>	145.0	0.5	[1]
Labridae	<i>Sparisoma viride</i>	177.0	0.1	[17]
Labridae	<i>Sparisoma viride</i>	186.5	0.1	[17]
Labridae	<i>Sparisoma viride</i>	201.5	0.1	[17]
Labridae	<i>Sparisoma viride</i>	205.5	0.1	[17]
Labridae	<i>Strigiventer strigiventer</i>	75.0	0.2	[13]
Labridae	<i>Thalassoma lunare</i>	125.0	0.0	[13]
Lethrinidae	<i>Gymnocranius japonicus</i>	175.5	0.2	[1]
Lethrinidae	<i>Gymnocranius japonicus</i>	197.5	0.2	[1]
Lethrinidae	<i>Gymnocranius lethrinoides</i>	185.0	0.2	[1]
Lethrinidae	<i>Gymnocranius rivulatus</i>	232.0	0.2	[1]
Lethrinidae	<i>Lethrinus chrysostomus</i>	228.5	0.2	[1]
Lethrinidae	<i>Lethrinus chrysostomus</i>	244.5	0.2	[1]
Lethrinidae	<i>Lethrinus lentjan</i>	146.0	0.2	[1]
Lethrinidae	<i>Lethrinus lentjan</i>	215.0	0.0	[16]
Lethrinidae	<i>Lethrinus lentjan</i>	215.0	0.1	[16]
Lethrinidae	<i>Lethrinus lentjan</i>	215.0	0.0	[16]
Lethrinidae	<i>Lethrinus mahsena</i>	163.5	0.2	[1]
Lethrinidae	<i>Lethrinus mahsena</i>	200.0	0.1	[16]
Lethrinidae	<i>Lethrinus mahsena</i>	200.0	0.1	[16]
Lethrinidae	<i>Lethrinus mahsena</i>	200.0	0.1	[16]
Lethrinidae	<i>Lethrinus miniatus</i>	375.0	0.2	[1]
Lethrinidae	<i>Lethrinus nebulosus</i>	254.5	0.2	[1]
Lethrinidae	<i>Lethrinus nebulosus</i>	271.5	0.1	[1]
Lethrinidae	<i>Lethrinus nebulosus</i>	273.5	0.2	[1]
Lethrinidae	<i>Lethrinus nebulosus</i>	279.0	0.2	[1]
Lethrinidae	<i>Lethrinus nebulosus</i>	400.0	0.1	[1]

Lethrinidae	<i>Lethrinus nematacanthus</i>	70.0	0.5	[1]
Lethrinidae	<i>Lethrinus nematacanthus</i>	80.0	0.5	[1]
Lethrinidae	<i>Lethrinus variegatus</i>	151.5	0.3	[1]
Lutjanidae	<i>Aprion virescens</i>	328.0	0.2	[1]
Lutjanidae	<i>Lutjanus adetii</i>	240.0	0.1	[18]
Lutjanidae	<i>Lutjanus adetii</i>	240.0	0.1	[18]
Lutjanidae	<i>Lutjanus adetii</i>	243.3	0.1	[18]
Lutjanidae	<i>Lutjanus adetii</i>	243.3	0.1	[18]
Lutjanidae	<i>Lutjanus adetii</i>	243.3	0.1	[18]
Lutjanidae	<i>Lutjanus amabilis</i>	146.5	0.2	[1]
Lutjanidae	<i>Lutjanus amabilis</i>	167.0	0.2	[1]
Lutjanidae	<i>Lutjanus argentimaculatus</i>	377.5	0.1	[1]
Lutjanidae	<i>Lutjanus argentimaculatus</i>	413.5	0.2	[1]
Lutjanidae	<i>Lutjanus bohar</i>	260.0	0.1	[1]
Lutjanidae	<i>Lutjanus bohar</i>	405.0	0.2	[1]
Lutjanidae	<i>Lutjanus bohar</i>	405.0	0.2	[1]
Lutjanidae	<i>Lutjanus campechanus</i>	487.5	0.0	[1]
Lutjanidae	<i>Lutjanus carponotatus</i>	287.3	0.1	[19]
Lutjanidae	<i>Lutjanus carponotatus</i>	287.3	0.1	[19]
Lutjanidae	<i>Lutjanus carponotatus</i>	287.3	0.3	[19]
Lutjanidae	<i>Lutjanus chrysotaenia</i>	280.0	0.2	[1]
Lutjanidae	<i>Lutjanus erythropterus</i>	343.5	0.1	[20]
Lutjanidae	<i>Lutjanus erythropterus</i>	343.5	0.0	[20]
Lutjanidae	<i>Lutjanus fulviflamma</i>	124.0	0.2	[1]
Lutjanidae	<i>Lutjanus gibbus</i>	221.0	0.2	[1]
Lutjanidae	<i>Lutjanus kasmira</i>	105.5	0.3	[1]
Lutjanidae	<i>Lutjanus malabaricus</i>	260.0	0.2	[1]
Lutjanidae	<i>Lutjanus malabaricus</i>	401.0	0.1	[20]
Lutjanidae	<i>Lutjanus malabaricus</i>	401.0	0.0	[20]
Lutjanidae	<i>Lutjanus monostigma</i>	239.5	0.2	[1]
Lutjanidae	<i>Lutjanus monostigma</i>	275.0	0.2	[1]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	86.5	0.3	[1]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	185.4	0.0	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	185.4	0.0	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	185.4	0.1	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	185.4	0.1	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	198.6	0.0	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	198.6	0.0	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	198.6	0.1	[18]
Lutjanidae	<i>Lutjanus quinquelineatus</i>	198.6	0.2	[18]
Lutjanidae	<i>Lutjanus rivulatus</i>	337.0	0.2	[1]
Lutjanidae	<i>Lutjanus rivulatus</i>	350.0	0.2	[1]
Lutjanidae	<i>Lutjanus sebae</i>	464.5	0.1	[20]
Lutjanidae	<i>Lutjanus sebae</i>	464.5	0.0	[20]
Lutjanidae	<i>Lutjanus vitta</i>	119.0	0.2	[1]

Lutjanidae	<i>Lutjanus vitta</i>	141.0	0.2	[1]
Lutjanidae	<i>Lutjanus vitta</i>	226.0	0.1	[19]
Lutjanidae	<i>Lutjanus vitta</i>	226.0	0.1	[19]
Lutjanidae	<i>Lutjanus vitta</i>	226.0	0.5	[19]
Lutjanidae	<i>Ocyurus chrysurus</i>	225.5	0.2	[1]
Lutjanidae	<i>Ocyurus chrysurus</i>	300.0	0.2	[1]
Lutjanidae	<i>Symphorus nematophorus</i>	455.0	0.1	[1]
Pomacanthidae	<i>Centropyge bicolor</i>	65.0	0.4	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	65.0	0.2	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	65.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	75.0	0.3	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	75.0	0.2	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	75.0	0.2	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	75.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	85.0	0.3	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	85.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	85.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	85.0	0.0	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	95.0	0.3	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	95.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	95.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	95.0	0.0	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	105.0	0.1	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	105.0	0.0	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	105.0	0.0	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	115.0	0.0	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	115.0	0.0	[21]
Pomacanthidae	<i>Centropyge bicolor</i>	125.0	0.0	[21]
Pomacentridae	<i>Chromis viridis</i>	6.6	23.3	[2]
Pomacentridae	<i>Chrysiptera leucopoma</i>	19.0	46.7	[2]
Pomacentridae	<i>Dascyllus aruanus</i>	7.3	3.9	[22]
Pomacentridae	<i>Dascyllus aruanus</i>	14.9	1.4	[22]
Pomacentridae	<i>Dascyllus flavicaudus</i>	9.5	2.7	[22]
Pomacentridae	<i>Dascyllus flavicaudus</i>	16.8	1.1	[22]
Pomacentridae	<i>Dascyllus trimaculatus</i>	10.8	2.3	[22]
Pomacentridae	<i>Dascyllus trimaculatus</i>	20.1	0.8	[22]
Pomacentridae	<i>Dischistodus perspicillatus</i>	8.6	46.0	[2]
Pomacentridae	<i>Hemiglyphidodon plagiometopon</i>	9.8	19.0	[2]
Pomacentridae	<i>Neopomacentrus azysron</i>	10.5	25.0	[2]
Pomacentridae	<i>Neopomacentrus cyanomos</i>	10.5	22.0	[2]
Pomacentridae	<i>Pomacentrus amboinensis</i>	11.2	31.0	[2]
Pomacentridae	<i>Pomacentrus nagasakiensis</i>	11.9	42.5	[2]
Pomacentridae	<i>Pomacentrus pavo</i>	14.1	15.5	[2]
Pomacentridae	<i>Stegastes albifasciatus</i>	21.0	26.7	[2]
Pomacentridae	<i>Stegastes leucostictus</i>	9.5	63.0	[2]
Pomacentridae	<i>Stegastes nigricans</i>	18.0	37.3	[2]

Pomacentridae	<i>Stegastes nigricans</i>	87.5	0.4	[1]
Pomacentridae	<i>Stegastes partitus</i>	12.8	69.0	[2]
Scorpaenidae	<i>Paracentropogon longispinis</i>	61.5	1.0	[23]
Scorpaenidae	<i>Paracentropogon longispinis</i>	61.5	1.0	[23]
Scorpaenidae	<i>Paracentropogon longispinis</i>	62.7	1.0	[23]
Scorpaenidae	<i>Paracentropogon longispinis</i>	62.7	1.1	[23]
Scorpaenidae	<i>Trachicephalus uranoscopus</i>	47.3	0.9	[23]
Scorpaenidae	<i>Trachicephalus uranoscopus</i>	47.3	1.0	[23]
Scorpaenidae	<i>Trachicephalus uranoscopus</i>	59.3	0.6	[23]
Scorpaenidae	<i>Trachicephalus uranoscopus</i>	59.3	0.7	[23]
Serranidae	<i>Cephalopholis fulva</i>	155.5	0.1	[1]
Serranidae	<i>Cephalopholis fulva</i>	170.0	0.6	[1]
Serranidae	<i>Epinephelus adscensionis</i>	249.5	0.1	[1]
Serranidae	<i>Epinephelus aerolatus</i>	138.0	0.2	[1]
Serranidae	<i>Epinephelus chlorostigma</i>	275.0	0.0	[16]
Serranidae	<i>Epinephelus chlorostigma</i>	275.0	0.1	[16]
Serranidae	<i>Epinephelus chlorostigma</i>	275.0	0.0	[16]
Serranidae	<i>Epinephelus drummondhayi</i>	552.5	0.1	[1]
Serranidae	<i>Epinephelus fasciatus</i>	115.0	0.2	[1]
Serranidae	<i>Epinephelus fuscoguttatus</i>	452.5	0.1	[1]
Serranidae	<i>Epinephelus fuscoguttatus</i>	495.5	0.1	[1]
Serranidae	<i>Epinephelus fuscoguttatus</i>	580.0	0.0	[24]
Serranidae	<i>Epinephelus guttatus</i>	260.0	0.2	[1]
Serranidae	<i>Epinephelus guttatus</i>	284.0	0.1	[1]
Serranidae	<i>Epinephelus hoedti</i>	290.5	0.2	[1]
Serranidae	<i>Epinephelus maculatus</i>	201.0	0.2	[1]
Serranidae	<i>Epinephelus megachir</i>	325.0	0.2	[1]
Serranidae	<i>Epinephelus megachir</i>	330.0	0.2	[1]
Serranidae	<i>Epinephelus merra</i>	89.5	0.2	[1]
Serranidae	<i>Epinephelus merra</i>	205.0	0.3	[1]
Serranidae	<i>Epinephelus niveatus</i>	675.0	0.0	[1]
Serranidae	<i>Epinephelus rhyncolepis</i>	139.5	0.3	[1]
Serranidae	<i>Epinephelus striatus</i>	401.0	0.1	[1]
Serranidae	<i>Epinephelus summana</i>	263.0	0.2	[1]
Serranidae	<i>Epinephelus tauvina</i>	153.5	0.2	[1]
Serranidae	<i>Mycteroperca microlepis</i>	645.0	0.1	[1]
Serranidae	<i>Mycteroperca phenax</i>	545.0	0.1	[1]
Serranidae	<i>Mycteroperca venenosa</i>	447.5	0.1	[1]
Serranidae	<i>Plectopomus leopardus</i>	250.0	0.1	[1]
Serranidae	<i>Variola louti</i>	320.0	0.1	[1]
Siganidae	<i>Siganus corallinus</i>	214.0	0.2	[5]
Siganidae	<i>Siganus</i> sp.	29.3	2.5	[25]
Siganidae	<i>Siganus sutor</i>	235.0	1.4	[16]
Siganidae	<i>Siganus sutor</i>	235.0	1.1	[16]
Siganidae	<i>Siganus sutor</i>	235.0	1.8	[16]
Siganidae	<i>Siganus vulpinus</i>	217.5	0.1	[5]

Synanaceidae	<i>Synanceia horrida</i>	67.4	0.3	[23]
Synanaceidae	<i>Synanceia horrida</i>	67.4	0.4	[23]
Synanaceidae	<i>Synanceia horrida</i>	67.8	0.2	[23]
Synanaceidae	<i>Synanceia horrida</i>	67.8	0.2	[23]

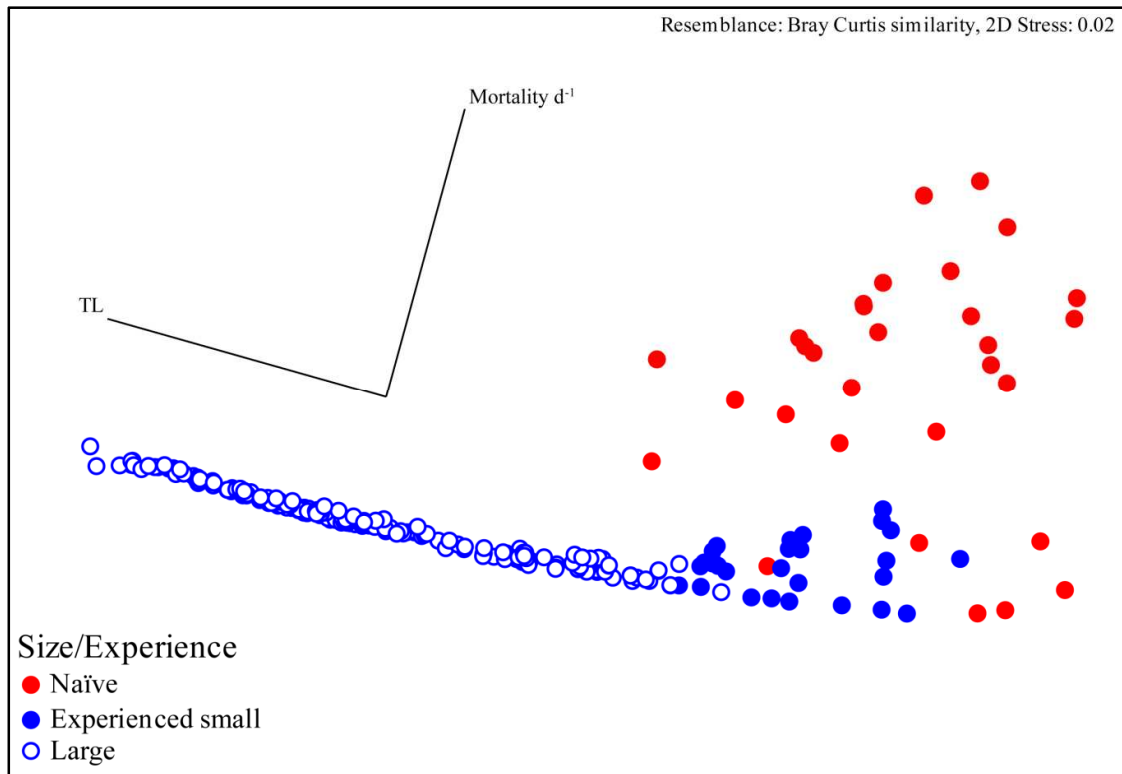
**Electronic supplementary material, Table S2.** Summary of results from a beta regression model used to analyse the relationship between the mortality rate (% d<sup>-1</sup>) and size (TL, mm) of naïve and small experienced fishes (<54 mm TL). Pseudo R<sup>2</sup> value = 0.75.

Response variable	Predictor variable	Estimate	SE	z value	p value
Mortality rate	Intercept	-2.53	0.33	-7.60	<0.0001
	TL	-0.06	0.01	-6.05	<0.0001
	Experience	1.24	0.38	3.23	<0.01
	TL × Experience	0.06	0.01	5.65	<0.0001

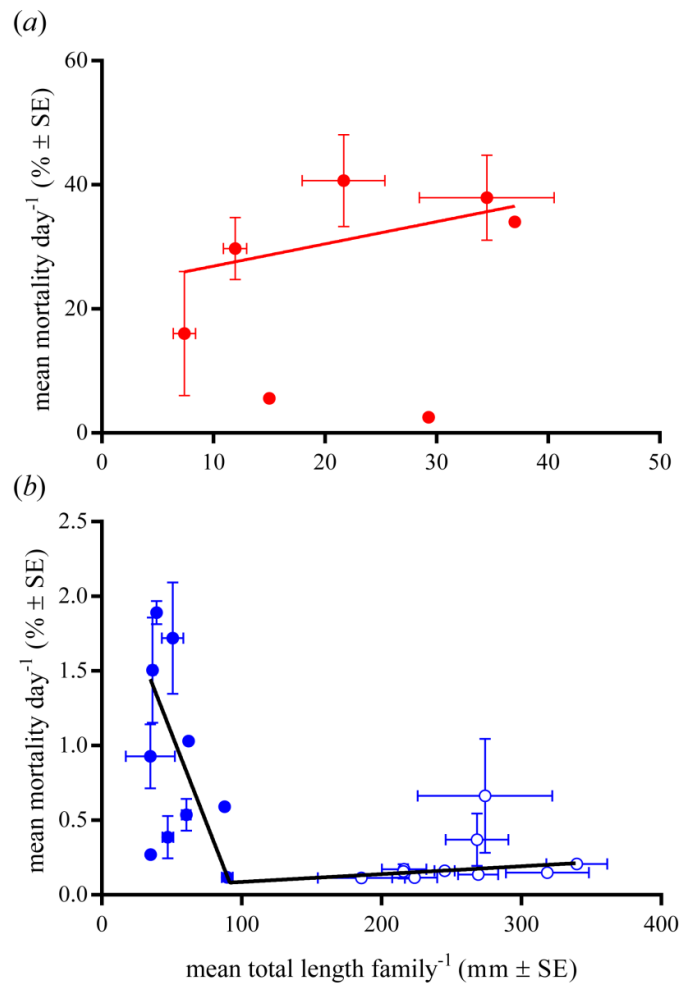
**Electronic supplementary material, Table S3.** Summary of results from segmental linear regressions conducted on all families with individuals in both the ‘small experiences’ and ‘large’ size/experience categories. These revealed strikingly similar results to the individual-based analyses which identified  $x_0$  (the break between the segments; i.e. phase 2-3 transition) as  $43.12 \pm 0.66$  mm. Data from the Clupeidae and Engraulidae display very high variance due to very small sample sizes (~ denotes a sample size too small to accurately calculate an error term).

	Apogonidae	Gobiidae	Clupeidae	Engraulidae
<b>Segmental linear regression</b>				
intercept1	3.31	11.05	1.97	3.86
slope1	-0.07	-0.34	0.01	-0.05
$x_0$	43.02	30.35	38.00	~45.57
slope2	0.00	-0.02	-0.05	~-0.05
<b>Std. Error</b>				
intercept1	0.06	1.54	3.04	1.84
slope1	0.00	0.06	0.09	0.05
X0	0.29	3.53	42.49	~
slope2	0.00	0.04	0.08	~
<b>95 % confidence intervals</b>				
intercept1	3.17 – 3.45	8.13 – 14.01	0.57 – 7.18	~
slope1	-0.08 – -0.07	-0.46 – -0.23	~	~
X0	~ – 43.8	27.28 – 37.27	~	~
slope2	-0.002 – 0.004	-0.07 – 0.08	-0.10 – ~	~
<b>Goodness of Fit</b>				
Degrees of Freedom	5.00	37.00	2.00	1.00
R <sup>2</sup>	1.00	0.61	0.82	0.54
n	9.00	41.00	6.00	4.00





**Electronic supplementary material, Figure S1.** Multidimensional scaling plot based on a Bray-Curtis matrix of untransformed data, using the size and mortality rates of fishes as variables and classifying size/experience category (naïve, small experienced and large fishes) and family as factors. Vectors are plotted using multiple correlations. The results clearly validate the findings of the individual-based analyses with a clear separation between ‘experienced small’ and ‘large’ fishes (solid blue and open blue points respectively), driven almost exclusively by body size (TL), and naïve recruits (red points) fishes separated from all experienced fishes by high mortality rates rather than size.



**Electronic supplementary material, Figure S2.** Mean mortality rates and mean total lengths of each family calculated and plotted as per the initial individual-based analyses (a) similarly to the individual-based analyses, naïve recruits displayed a weak positive relationship ( $r^2 = 0.04$ ). (b) The segmental linear regression also displayed similar patterns, but with a weaker relationship ( $r^2 = 0.23$ ) and a transition to phase 3 at  $x_0 = 91.51 \pm 13.62$  mm.

## References

1. Munro, J. L., Williams, D. M. B., Harmelin-vivien, M. & Parrish, J. 1985 Assessment and management of coral reef fisheries: biological, environmental and socio-economic aspects. *Proc. 5th Int. Coral Reef Congr. Tahiti* **4**, 544–578.
2. Almany, G. R. & Webster, M. S. 2006 The predation gauntlet: early post-settlement mortality in reef fishes. *Coral Reefs* **25**, 19–22. (doi:10.1007/s00338-005-0044-y)
3. Wilson, S. K. 2004 Growth, mortality and turnover rates of a small detritivorous fish. *Mar. Ecol. Prog. Ser.* **284**, 253–259. (doi:10.3354/meps284253)
4. Doherty, P. J., Dufour, V., Galzin, R., Hixon, M. A., Meekan, M. G. & Planes, A. S. 2004 High mortality during settlement is a population bottleneck for a tropical surgeonfish. *Ecology* **85**, 2422–2428. (doi:10.1890/0012-9658(2006)87[1073:E]2.0.CO;2)

5. Khan, J. A., Welsh, J. Q. & Bellwood, D. R. 2016 Using passive acoustic telemetry to infer mortality events in adult herbivorous coral reef fishes. *Coral Reefs* **35**, 411–420. (doi:10.1007/s00338-015-1387-7)
6. Marnane, M. J. 2001 The trophic role of cardinalfishes (family Apogonidae) on coral reefs. PhD Thesis (<http://researchonline.jcu.edu.au/33781/>)
7. Hernaman, V. & Munday, P. L. 2005 Life-history characteristics of coral reef gobies. II. Mortality rate, mating system and timing of maturation. *Mar. Ecol. Prog. Ser.* **290**, 223–237. (doi:10.3354/meps290223)
8. Depczynski, M. & Bellwood, D. R. 2006 Extremes, plasticity, and invariance in vertebrate life history traits: insights from reef fishes. *Ecology* **87**, 3119–3127. (doi:10.2307/20069341)
9. Kritzer, J. P. 2002 Stock structure, mortality and growth of the decorated goby, *Istigobius decoratus* (Gobiidae), at Lizard Island, Great Barrier Reef. *Environ. Biol. Fishes* **63**, 211–216. (doi:10.1023/A:1014278319097)
10. Winterbottom, R., Alofs, K. M. & Marseu, A. 2011 Life span growth and mortality in the western Pacific goby *Trimma benjamini* and comparisons with *T. nasa*. *Environ. Biol. Fishes* **91**, 295–301. (doi:10.1007/s10641-011-9782-6)
11. Winterbottom, R. & Southcott, L. 2008 Short lifespan and high mortality in the western Pacific coral reef goby *Trimma nasa*. *Mar. Ecol. Prog. Ser.* **366**, 203–208. (doi:10.3354/meps07517)
12. Shulman, M. J. & Ogden, J. C. 1987 What controls tropical reef fish populations: recruitment or benthic mortality? An example in the Caribbean reef fish *Haemulon flavolineatum*. *Mar. Ecol. Prog. Ser.* **39**, 233–242. (doi:10.3354/meps039233)
13. Eckert, G. J. 1987 Estimates of adult and juvenile mortality for labrid fishes at One Tree Reef, Great Barrier Reef. *Mar. Biol.* **95**, 167–171. (doi:10.1007/BF00409002)
14. Choat, J. H., Davies, C. R., Ackerman, J. L. & Mapstone, B. D. 2006 Age structure and growth in a large teleost, *Cheilinus undulatus*, with a review of size distribution in labrid fishes. *Mar. Ecol. Prog. Ser.* **318**, 237–246. (doi:10.3354/meps318237)
15. Gust, N., Choat, J. H. & Ackerman, J. L. 2002 Demographic plasticity in tropical reef fishes. *Mar. Biol.* **140**, 1039–1051. (doi:10.1007/s00227-001-0773-6)
16. Grandcourt, E. M. 2002 Demographic characteristics of a selection of exploited reef fish from the Seychelles: preliminary study. *Mar. Freshw. Res.* **53**, 123–130. (doi:10.1071/MF01123)
17. Choat, J. H., Robertson, D. R., Ackerman, J. L. & Posada, J. M. 2003 An age-based demographic analysis of the Caribbean stoplight parrotfish *Sparisoma viride*. *Mar. Ecol. Prog. Ser.* **246**, 265–277. (doi:10.3354/meps246265)
18. Newman, S. J., Williams, D. M. & Russ, G. R. 1996 Age validation, growth and mortality rates of the tropical snappers (Pisces: Lutjanidae) *Lutjanus adetii* (Castelnau, 1873) and *L. quinquelineatus* (Bloch, 1790) from the central Great Barrier Reef, Australia. *Mar. Freshw. Res.* **47**, 575–584. (doi:10.1071/MF9960575)
19. Newman, S. J., Cappel, M. & Williams, D. M. 2000 Age, growth and mortality of the stripey, *Lutjanus carponotatus* (Richardson) and the brown-stripe snapper, *L. vitta* (Quoy and Gaimard) from the central Great Barrier Reef, Australia. *Fish. Res.* **48**, 263–275. (doi:10.1016/S0165-7836(00)00184-3)
20. Newman, S. J., Cappel, M. & Williams, D. M. 2000 Age, growth, mortality rates and corresponding yield estimates using otoliths of the tropical red snappers, *Lutjanus erythropterus*, *L. malabaricus*, and *L. sebae*, from the central Great Barrier Reef. *Fish. Res.* **48**, 1–14. (doi:10.1016/S0165-7836(00)00115-6)
21. Aldenhoven, J. M. 1986 Local variation in mortality rates and life-expectancy estimates of the coral-reef fish *Centropyge bicolor* (Pisces: Pomacanthidae). *Mar. Biol.*

- 92**, 237–244. (doi:10.1007/BF00392841)
22. Schmitt, R. J. & Holbrook, S. J. 1999 Mortality of juvenile damselfish: implications for assessing processes that determine abundance. *Ecology* **80**, 35–50. (doi:10.2307/176978)
  23. Kwik, J. T. B. 2011 The biology and ecology of small tropical scorpaenoids inhabiting shallow coastal habitats in Singapore. PhD Thesis (<http://scholarbank.nus.sg/handle/10635/31654>)
  24. Pears, R. J., Choat, J. H., Mapstone, B. D. & Begg, G. A. 2006 Demography of a large grouper, *Epinephelus fuscoguttatus*, from Australia's Great Barrier Reef: implications for fishery management. *Mar. Ecol. Prog. Ser.* **307**, 259–272. (doi:10.3354/meps307259)
  25. Bellwood, D. R., Goatley, C. H. R., Khan, J. A. & Tebbett, S. B. In press. Site fidelity and homing in juvenile rabbitfishes (Siganidae). *Coral Reefs* (doi:10.1007/s00338-016-1466-4)