Appendix 1

Myomere Proportions in Leptocephalus Larvae

Ranges of selected meristic characters in leptocephalus larvae reported to occur in the study area are contained in the table below, ordered by the lower limit in the range of total myomeres. Fin ray counts are seldom reported in descriptions of anguilliform or saccopharyngiform eels. In this tabulation, important landmarks relative to myomere number are listed. Care must be taken to accurately establish the origin of the dorsal fin (see discussion in Leiby, 1989; fig. 762). Sources of meristic characters are cited in the species accounts.

Abbreviations or codes:

~ = approximately

vert = vertebrae

Total Myomers	Taxon	Preanal Myomers	Predorsal Myomers	Last Vertical Blood Vessel at Myomere
72–79	*Cyema atrum*	37–46	37–46	36
93–109	*Neoconger mucronatus*	49–61	39–56	50–59
97–104	*Chilorhinus suensoni*	40–47	20–27	50+
103–111	*Anguilla rostrata*	68–73	61–66	44–47
103–125	*Eurypharynx pelecanoides*	34–41	19–24	35
105–114	*Anarchias similis*	52–59	96–104	53–57
108–116	*Aplatophis chauliodus*	63–69	50–56	–
109 –123	*Moringua edwardsi*	72–82	79–87	70–79
111–119	*Anguilla anguilla*	–	–	–
113–120	*Kaupichthys hyoproroides*	38–44	14–19	50+
114–119	*Chlopsis dentatus*	38–39	19	45+
115–117	*Simenchelys parasiticus*[1]	–	–	–
118–123	*Uropterygius macularius*	71–77	107–114	65–67
118–128	*Dysomma anguillare*	57–62	45–48	60–64
120–125	*Gymnothorax miliaris*	69–74	68–73	64–69
121–125	*Kaupichthys nuchalis*	50–54	22–24	50–54
121–136	*Ariosoma balearicum*	90–126	~ 90–126	62–72
125–135	*Derichthys serpentinus*	67–83	45–50	59–61
125–137	*Robinsia catherinae*	125–137	43–47	50+
126–136	*Chlopsis bicolor*	46–50	20–23	50+
126–140	*Synaphobranchus bathybius*[1]	–	–	–
126–141	*Gnathophis bathytopos*	101–125	72–102	43–47
127–136	*Apterichtus ansp*	64–70	114–125	64–70
127–144	*Rhechias dubia*	85–103	51–60	44–53
128–134	*Leptocephalus proboscoideus*	72–79	69	59–62
128–134	*Monopenchelys acuta*	54–57	78–82	60–62
128–136	*Leptocephalus dolichorhynchus*	61–71	–	–
128–139	*Synaphobranchus affinis*[1]	–	–	–
129–140	*Ophichthus puncticeps*	69–77	49–58	63–71

Total Myomers	Taxon	Preanal Myomers	Predorsal Myomers	Last Vertical Blood Vessel at Myomere
130–139	*Ichthyapus ophioneus*	50–54	117–130	–
131–137	*Pseudophichthys splendens*	79–84	83–85	56–59
131–140	*Synaphobranchus* sp.	83–101	74–80	68
131–142	*Gymnothorax vicinus*	60–68	53–63	60–67
133–145	*Letharchus velifer*	85–95	8–13	–
135–138	*Quassiremus ascensionis*	68–70	56–58	–
136–140	*Gymnothorax species E*	73–75	40	72–73
136–150	*Gymnothorax ocellatus*	85–101	22–32	77–87
137–142	*Gymnothorax funebris*[1]	–	–	–
137–143	*Gymnothorax moringa*	66–74	52–61	60–72
137–148	*Apterichtus kendalli*	69–74	121–135	69–74
137–148	*Heteroconger luteolus*	79–87	21–30	62–68
137–152	*Myrophis punctatus*	53–62	30–38	53–62
138–148	*Callechelys muraena*	82–89	9–16	81–88
138–152	*Ophichthus gomesii*	67–76	60–73	59–68
140–148	*Conger oceanicus*	113–124	67–81	51–55
140–149	*Myrophis platyrhynchus*	51–58	21–27	51–58
143–154	*Synaphobranchus kaupi*	98–107	~ 85–92	68–73
145–151	*Ilyophus brunneus*[1]	–	–	–
145–154	*Ophichthus cruentifer*	70–76	47–56	65–71
147–155	*Ariosoma anale*	131–140	131–141	90–103
149–160	*Nessorhamphus ingolfianus*	117–121	62	77
150–156	*Ophichthus menezesi*	66–70	60–65	–
150–158	*Conger triporiceps*	124–133	65–78	54–70
152–168	*Ahlia egmontis*	67–75	65–76	67–75
153–163	*Letharchus aliculatus*	100–109	7–11	–
153–164	*Serrivomer beanii*	84–95	73–89	31–39
153–170	*Rhynchoconger flavus*	102–132	49–62	44–51
156–163	*Serrivomer lanceolatoides*	89–97	80–88	30–36
159–162	*Acromycter perturbator*	100–104	116–117	–
159–167	*Heteroconger halis*	82–94	20–30	63–69
161–169	*Bascanichthys scuticaris*	87–99	12–16	87–99
164–173	*Synaphobranchus capensis*[1]	–	–	–
166–181	*Myrichthys breviceps*	67–72	11–17	70–75
167–175	*Gordiichthys leibyi*	102–107	13–18	104–109
169–174	*Ariosoma selenops*	160–169	~ 160–169	96–103
170–240	*Saccopharynx* sp.	38–54	–	50
172–182	*Rhynchoconger gracilior*	102–130	48–59	43–49
174–184	*Callechelys guineensis*	112–121	6–10	111–120
174–194	*Bascanichthys bascanium*	101–114	11–18	101–114

Total Myomers	Taxon	Preanal Myomers	Predorsal Myomers	Last Vertical Blood Vessel at Myomere
176–187	*Bathyuroconger vicinus*[2]	94–95	59–66	59–64
176–193	*Ophichthus melanoporus*	69–76	42–53	65–72
179–182	*Labichthys carinatus*	130–157	153	73–74
186–211	*Nettastoma melanura*	60–70	39–48	61–62
189–221	*Xenomystax congroides*	120–148	99–101	52–67
192–201	*Avocettina infans*	132–178	162–171	72–77
192–214	*Gordiichthys irretitus*	112–128	13–21	–
200–205	*Venefica procera*[1]	57–62 vert	6–8 vert	–
201–209	*Saurenchelys cognita*	59–64	17–19	61–62
208–219	*Phaenomonas longissima*	141–149	11–17	143–152
209–226	*Nettenchelys inion*	59–64	33–43	49–54
216–227	*Uroconger syringinus*	154–175	64–77	65–75
220–251	*Nettenchelys pygmaea*	49–56	26–34	49–54
221–252	*Hoplunnis macrura*	51–58	9–13	54–58
222–232	*Hoplunnis diomediana*	50–54	13–17	55–56
225–255	*Notacanthiformes*[3]	–	41–55	–
232–251	*Hoplunnis tenuis*	44–48	11–18	46–47
240–254	*Facciolella* sp. B	57–61	15–16	57–61
253–264	*Facciolella* sp. C	43–47	18–20	43–47+
300–400	*Nemichthys curvirostris*	116–320	294–307	85–107
300–400	*Nemichthys scolopaceus*	93–257	232–242	83–94

[1] Based on adult vertebral counts; leptocephali poorly known or undescribed
[2] Counts based on tentatively identified leptocephali; adult (only) has occurred in study area
[3] See chapter preceding Anguilliformes

Appendix 2

Meristic Character Ranges

Taxa described in this study are ordered in the following table by the lower limit of the vertebral range. Counts in parentheses are rare extremes. If only one value is reported for vertebrae, it is presented as a range. Spines are indicated by Roman numerals and rays by Arabic numerals. Finlets follow a plus (+) sign. Total vertebrae, dorsal and anal fin rays are seldom reported for the Macrouridae, and are omitted here or indicated as "many". Note that "Preanus Length" pertains to an estimate of that measurement in larvae, and can indicate a range, or an ontogenetic increase or a decrease (or both) in that proportion. Elopiform leptocephali are included here, but see separate table for ranges of myomere characters in anguilliform and saccopharyngiform leptocephali.

Abbreviations or codes:

(ant-31) = number of fin rays anterior to vertebra no. 31; a convention in the family Carapidae
~ = approximately
Trailing = indicates that the larval gut extends beyond the limits of the body; given in lieu of a preanus length proportion.
"clavus" = caudal structure peculiar to Molidae. See Tetraodontiformes Introduction.
(Br) = number of branched rays in caudal fin.
(PC) = precaudal vertebrae.
(PrC) = principal caudal fin rays
(T) = total number of caudal fin rays.

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
10–11 (PC)	*Hymenocephalus italicus*	11–14 + many	Many	None	< 30
103–117	*Lamprogrammus niger*	103–117	81–91	8	Trailing
103–118	*Zoarces americanus*	92–103+16–24+16–31	105–124	8 (T)	<40
11–12 (PC)	*Sphagemacrurus grenadae*	12–13 + many	Many	None	< 20
11–12 (PC)	*Caelorinchus coelorhynchus*	11–12 + many	Many	None	~ 32
11–13 (PC)	*Coryphaenoides rupestris*	10–13 + many	Many	None	< 30
11–13 (PC)	*Malacocephalus occidentalis*	13–15 + many	Many	None	< 20
11–14 (PC)	*Coryphaenoides guentheri*	11–12 + many	Many	None	~ 33
111–121	*Stemonosudis intermedia*	9–10	41–47	10+9	60–65
114–121	*Radiicephalus elongatus*	150–160	6–7	4–5+6–7	60
12–13 (PC)	*Caelorinchus occa*	9–11 + many	Many	None	~ 33
12–13 (PC)	*Coryphaenoides leptolepis*	8–10 + many	Many	None	~ 33
12–13 (PC)	*Gadomus dispar*	12–13 + many	Many	None	~ 40
12–15 (PC)	*Coryphaenoides carapinus*	10–11 + many	Many	None	~ 33
122–132	*Benthodesmus tenuis*	XXXIX–XLII, 79–88	II, 69–75	9+8	60
123–129	*Porogadus miles*	170–188	135–156	6–7	35–20
124–153	*Lophotus lacepede*	206–263	12–20	16–17	50
13–13 (PC)	*Steindachneria argentea*	I, 7–9, >123	>123	–	34–19
13–14 (PC)	*Nezumia aequalis*	11–14 + many	Many	None	< 25
13–14 (PC)	*Nezumia suilla*	11–13 + many	Many	None	< 20
13–14 (PC)	*Nezumia sclerorhynchus*	11–12 + many	Many	None	< 35
13–14 (PC)	*Nezumia cyrano*	11–13 + many	Many	None	< 20

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
13–15 (PC)	*Coryphaenoides armatus*	10–12 + many	Many	None	~ 33
143–151	*Regalecus glesne*	260–412	None	3–4	60–50
15–17	*Diretmus argenteus*	25–29	20–24	10+9	58–65
16–16	*Masturus lanceolatus*	17–20	16–19	“clavus”	–
16–18 (PC)	*Macrourus berglax*	11–13 + many	Many	None	~ 40
16–19	*Halieutichthys aculeatus*	II, 4–6	4	5+4	55–75
162–168	*Trichiurus lepturus*	III, 120–140	II, 105–108	9+8	31–55–48
17–17	*Mola mola*	15–20	14–18	“clavus”	–
17–18	*Sphoeroides spengleri*	8	7	5+6	–
17–18 (PC)	*Carapus bermudensis*	36–45 (ant-31)	53–62 (ant-31)	None	< 10
18–18	*Rhinesomus triqueter*	10	10	5+5	~ 60
18–18	*Balistes capriscus*	III, 26–29	23–26	6+6	55–70
18–18	*Canthidermis sufflamen*	III, 25–28	23–25	6+6	60–70
18–18	*Ranzania laevis*	18–19	18–19	“clavus	–
18–18	*Lactophrys trogonus*	10	10	5+5	–
18–18	*Canthidermis maculata*	III, 23–25	20–22	6+6	60–70
18–18	*Balistes capriscus*	III, 26–29	23–26	6+6	55–70
18–19	*Histrio histrio*	I, I, 11–13	6–8	9 (T)	70
18–19	*Antennarius striatus*	I, I, I, 11–12	6–7	9 (T)	–
19–19	*Linophryne macrorhinus*	3	3	9)T)	60–75
19–19	*Himantolophus groenlandicus*	5–6	4–5	9 (T)	80–70
19–19	*Chaenophryne longiceps*	6–8	5–6	9 (T)	70
19–19	*Lophodolus acanthognathus*	5–7	4–6	9 (T)	60
19–19	*Linophryne arborifera*	3	3	9 (T)	70–80
19–19	*Microlophichthys microlophus*	5–7	4–6	9 (T)	65–70
19–19	*Haplophryne mollis*	3–4	3–4	9 (T)	45–70
19–19	*Chaenophryne draco*	6–8	4–6	9 (T)	80–70
19–19	*Cantherhines pullus*	II, 33–36	29–32	6+6	45–60
19–19	*Oneirodes eschrichtii*	6	4	9 (T)	40–70
19–19	*Acanthostracion quadricornis*	10	10	5+5	~ 65
19–19	*Monacanthus ciliatus*	II, 29–37	28–36	6+6	55–65
19–19	*Sphoeroides maculatus*	8	7	5+6	52–75
19–19	*Stephanolepis hispidus*	II, 32–34	32–34	6+6	55–65
19–19	*Caulophryne jordani*	16–19	14–18	4+4	70–65
19–19	*Pentherichthys atratus*	6–7	5–6	9 (T)	>60
19–19	*Chaunax stigmaeus*	I, 10–12	5–7	8 (T)	75
19–19	*Dolopichthys allector*	6	6	9 (T)	70
20–20	*Chilomycterus schoepfi*	10–12	9–11	4+5	–
20–20	*Aluterus heudelotii*	II, 36–41	39–44	6+6	~ 45
20–20	*Cryptopsaras couesi*	4	4	8 (T)	55–70
20–20	*Parahollardia lineata*	VI, 16	14	6+6	60–80
20–20	*Antennarius radiosus*	I, I, I, 12–13	7–8	9 (T)	60
20–21	*Diodon hystrix*	15–17	15–16	4+5	–

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
20–22	*Lasiognathus intermedius*	5	5	9 (T)	75
21–21	*Diodon holocanthus*	14–15	13–14	4+5	–
21–21	*Aluterus scriptus*	II, 44–47	47–49	6+6	45–50
21–21	*Melanocetus johnsoni*	13–17	4	9 (T)	80–70
21–21	*Melanocetus murrayi*	12–14	4	9 (T)	80–70
21–22	*Paradiplogrammus bairdi*	IV, 9–10	6–9	5+5	>50–<50
21–25 (PC)	*Echiodon dawsoni*	28–35 (ant–31)	39–43 (ant–31)	None	< 10
22–22	*Antigonia capros*	VII–IX, 31–38	III, 29–34	6+6	<70
22–22	*Dactylopterus volitans*	VII, 8	6	6+5	50
22–22	*Gigantactis vanhoeffeni*	5–7	5–7	9 (T)	80–70
22–22	*Acanthurus coeruleus*	IX, 26–28	III, 24–26	8+8	60–50
22–22	*Acanthurus chirurgus*	IX, 24–25	III, 22–23	8+8	60–50
22–22	*Acanthurus bahianus*	IX, 23–26	III, 21–23	8+8	60–50
23–23	*Aluterus schoepfi*	II, 32–39	35–41	6+6	~ 45
23–23	*Luvarus imperialis*	II, 12–13	13–18	8+8	70–50
23–23	*Aluterus monoceros*	II, 46–50	47–52	6+6	35–45
23–23	*Macroramphosus scolopax*	IV–VIII, 10–14	19–21	4+5	50
23–23	*Centrodraco acanthopoma*	III, 14	13	6+6	50
23–23	*Pristigenys alta*	X, 10–12	III, 9–11	8+8	>50
23–24	*Beryx splendens*	III–IV, 12–15	IV, 25–30	10+9	50
23–24	*Beryx decadactylus*	III–IV, 16–21	III–IV, 25–30	10+9	50
23–25	*Helicolenus dactylopterus*	XII, 11–12	III, 5	8+7	45–60
23–27	*Scopeloberyx robustus*	II–III, 10–13	I, 7–9	10+9	43–66
24–24	*Chaetodipterus faber*	IX, 21–23	III, 17–18	9+8	40–60
24–24	*Chloroscombrus chrysurus*	VIII, I, 26–28	II, I, 25–27	9+8	70–55
24–24	*Caranx ruber*	VIII, I, 26–30	II, I, 23–26	9+8	55
24–24	*Trachurus lathami*	VIII, I, 28–33	II, I, 26–30	9+8	60–55
24–24	*Pogonias cromis*	XI, 19–23	II, 5–7	9+8	40–55
24–24	*Lutjanus griseus*	X, 14	III, 7–9	9+8	44–66
24–24	*Chaetodon capistratus*	XII–XIII, 18–20	III, 16–17	9+8	60
24–24	*Chaetodon ocellatus*	XII–XIV, 18–21	III, 15–18	9+8	60
24–24	*Caranx hippos*	VII–VIII, I, 19–21	II, I, 16–17	9+8	55
24–24	*Pseudupeneus maculatus*	VII–VIII,I,8	I, 7	9+8	30–40
24–24	*Seriola rivoliana*	VII–VIII, I, 28–32	II, I, 19–22	9+8	70–65
24–24	*Gonioplectrus hispanus*	VIII, 13	III, 7	9+8	64
24–24	*Trachinotus carolinus*	V–VI, I, 22–27	II, I, 20–23	9+8	65–55
24–24	*Caranx bartholomaei*	VIII, I, 25–28	II, I, 21–24	9+8	55
24–24	*Elegatis bipinnulata*	VI, I, 25–30	I, I, 18–22	9+8	60
24–24	*Neoceratias spinifer*	11–13	10–12	9–10 (T)	55–75
24–24	*Pontinus longispinus*	XII, 9	III, 5	6+5 (Br)	–
24–24	*Makaira nigricans*	41–43 + 6–7	XIII–XV + 6–7	9+8	70–75
24–24	*Sphyraena barracuda*	V, I, 8–10	III, 7–9	9+8	70
24–24	*Lutjanus campechanus*	IX–X, 14	III, 8–9	9+8	47–67

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
24–24	*Lopholatilus chamaeleonticeps*	VII–VIII, 14–15	I, 13–14	9+8	55–70
24–24	*Rhomboplites aurorubens*	XII, 11–12	III, 8–9	9+8	50–>60
24–24	*Uraspis secunda*	VIII, I, 27–32	II, I, 19–23	9+8	–
24–24	*Pomacanthus arcuatus*	IX, 31–33	III, 23–25	9+8	>50
24–24	*Polydactylus* sp.	VII–VIII, I, 11–13	III, 11–14	9+8	60
24–24	*Selene setapinnis*	VIII, I, 21–24	II, I, 16–19	9+8	57–32
24–24	*Lutjanus analis*	X–XI, 13–14	III, 7–8	9+8	<50–60
24–24	*Pristipomoides aquilonaris*	X, (10) 11	III, 7–8	9+8	<50–55
24–24	*Mugil curema*	IV, I, 8	III, 9	7+7	<70
24–24	*Mugil cephalus*	IV, I, 8	III, 8	7+7	<70
24–24	*Alectis ciliaris*	VII–VIII, 18–19	II, I, 15–16	9+8	52–45
24–24	*Archosargus probatocephalus*	X–XII, 10–13	III, 9–11	9+8	50–60
24–24	*Diapterus auratus*	IX, 10	III, 7–8	9+8	40
24–24	*Mycteroperca phenax*	XI, 16–18	III, 10–12	9+8	50–60
24–24	*Archosargus rhomboidalis*	XIII, 11	III, 10	9+8	40–60
24–24	*Pontinus rathbuni*	XII, 9	III, 5	8+7	60
24–24	*Lobotes surinamensis*	XII, 15–16	III, 11–12	9+8	60–75
24–24	*Epinephelus itajara*	XI, 15–16	III, 8	9+8	50–60
24–24	*Lagodon rhomboides*	XI–XII, 10–12	III, 10–12	9+8	45–50
24–24	*Mycteroperca microlepis*	XI, 16–18	III, 10–13	9+8	50–60
24–24	*Serranus* sp.	X, 11–14	III, 6–8	9+8	55–60
24–24	*Epinephelus morio*	XI, 15–17	III, 8–10	9+8	50–60
24–24	*Tetrapterus pfluegeri*	44–50 + 6–7	XIII–XVII + 6–7	9+8	80
24–24	*Tetrapterus albidus*	38–46 + 5–6	XII–XVII + 5–6	9+8	80
24–24	*Diplodus holbrooki*	XII, 13–16	III, 13–15	9+8	45
24–24	*Sphyraena guachancho*	V, I, 9–10	I–II, 7–8	9+8	65–70
24–24	*Pterois volitans*	XII–XIII, 9–12	III, 5–8	8+7	55–50
24–24	*Etelis oculatus*	X, 10–11	III, 8	9+8	50–60
24–24	*Stenotomus chrysops*	XII, 12	III, 11–12	9+8	50
24–24	*Jeboehlkia gladifer*	VIII, 9	III, 7	9+8	56
24–24	*Serraniculus pumilio*	IX–X, 10–11	III, 6–7	9+8	>60
24–24	*Diplectrum formosum*	X, 11–13	III, 6–8	9+8	50
24–24	*Centropristis striata*	X, 11	III, 7	9+8	50–65
24–24	*Epinephelus niveatus*	X, 13–15	III, 9	9+8	50–60
24–24	*Epinephelus nigritus*	X, 13–15	III, 9	9+8	50–60
24–24	*Istiophorus albicans*	42–47 + 6–7	XI–XV + 6–7	9+8	65–80
24–24	*Lutjanus synagris*	X, 12–13	III, 8–9	9+8	<50–60
24–24	*Lutjanus buccanella*	X, 14	III, 7–9	9+8	–
24–24	*Seriola fasciata*	VIII, I, 30–32	II, I, 19–20	9+8	65
24–24	*Seriola zonata*	VII–VIII, I, 33–40	II, I, 27–30	9+8	60–65
24–24	*Caranx latus*	VIII, I, 19–22	II, I, 16–18	9+8	55
24–24	*Pagrus pagrus*	XII–XIII, 9–11	III, 7–9	9+8	40–60

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
24–24	*Ocyurus chrysurus*	IX–XI, 12–14	III, 8–9	9+8	<50–60
24–24	*Apogon maculatus*	VI, I, 9	II, 8	9+8	55–60
24–24	*Lutjanus apodus*	X, 14	III, 8	9+8	–
24–24	*Trachinotus goodei*	VI, I, 19–20	II, I, 16–18	9+8	58–60
24–24	*Caranx crysos*	VII–VIII, I, 22–25	II, I, 19–21	9+8	55
24–24	*Selene vomer*	VIII, I, 21–23	II, I, 18–20	9+8	45–55
24–24	*Sphyraena borealis*	V, I, 8–9	II, 8–9	9+8	63–72
24–24	*Selar crumenophthalmus*	VIII, I, 24–27	II, I, 20–23	9+8	60–50
24–24	*Mycteroperca bonaci*	XI, 15–17	III, 11–13	9+8	50–60
24–24	*Lutjanus jocu*	X, 13–14	III, 7–9	9+8	–
24–24	Mullidae	VII–VIII, I, 8	I, 7	8+7	30–40
24–24	*Decapterus macarellus*	VIII, I, 31–37	II, I, 27–30	9+8	65–58
24–24	*Trachinotus falcatus*	VI, I, 18–20	II, I, 17–18	9+8	60
24–24	*Lopholatilus chamaeleonticeps*	VII–VIII, 14–15	I, 13–14	9+8	55–70
24–24	*Seriola dumerili*	VII, I, 30–35	II, I, 19–22	9+8	60
24–25	*Hyperoglyphe perciformis*	VI–IX, 19–23	III, 15–17	9+8	50
24–25	*Scopelogadus mizolepis*	I–II, 11	I, 8	10+9	60
24–26	*Rondeletia loricata*	13–14	12–13	10+9	70
24–27	*Scopeloberyx opisthopterus*	II–III, 11–12	I, 7–8	10+9	70–60
25–25	*Menticirrhus americanus*	XI, 20–26	I, 6–8	9+8	<50–<60
25–25	*Menticirrhus littoralis*	XI, 21–26	I, 6–8	9+8	<50–<60
25–25	*Stellifer lanceolatus*	XI–XII, 19–21	II, 8–10	9+8	40–55
25–25	*Doratonotus megalepis*	IX, 10	III, 9	7+7	<60
25–25	*Epigonus* sp.	VII–VIII, I, 9–11	8–10	9+8	65–70
25–25	*Bairdiella chrysoura*	XI–XII, 19–23	II, 8–10	9+8	40–55
25–25	*Decapterus punctatus*	VIII, I, 29–34	II, I, 25–30	9+8	55
25–25	*Micropogonias undulatus*	XI, 26–31	II, 7–9	9+8	45–<60
25–25	*Larimus fasciatus*	XI–XII, 24–27	II, 6–7	9+8	50–60
25–25	*Umbrina coroides*	IX–X, I, 26–30	II, 6	9+8	50–55
25–25	*Pareques umbrosus*	IX–X, I, 38–40	II, 7	9+8	40–<60
25–25	*Menticirrhus saxatilis*	XI, 22–27	I, 7–9	9+8	<50–<60
25–25	*Symphysanodon berryi*	VIII–IX, 9–11	III, 7	9+8	50–60
25–25	*Synagrops bellus*	IX, I, 8–9	II, 7–8	9+8	55
25–25	*Cynoscion regalis*	XI, 24–29	II, 10–13	9+8	40–<60
25–25	*Centrolophus niger*	IV–V, 33–38	III, 20–24	9+8	65–55
25–25	*Schedophilus medusophagus*	III, 40–46	27–32 (total)	9+8	55–60
25–25	*Halichoeres* sp.	IX, 11	III, 11–12	7+7	60
25–25	*Pareques acuminatus*	VIII–X, I, 37–41	II, 7–8	9+8	about 50
25–25	*Synagrops spinosus*	IX, I, 9	II, 7–8	9+8	55–60
25–25	*Sciaenops ocellata*	XI, 23–25	II, 7–9	9+8	45–<60
25–25	*Rachycentron canadum*	VII–VIII, I, 26–34	I–II, 22–28	9+8	62–56
25–25	*Morone americana*	VII–XI, I, 11–13	III, 9–10	9+8	>50

Vertebrae	Taxon	Dorsal Fin (s)	Caudal Fin Anal Fin (s)	Length (PrC)	(% SL)
25–25	*Astroscopus guttatus*	IV–V, 13–15	13–14	7+6	60
25–25	*Morone saxatilis*	VIII–IX, I, 9–14	III, 7–13	9+8	>50
25–25	Scaridae (4 species)	IX, 10	III, 8–9	7+6	50–55
25–25	*Xyrichtys novacula*	VIII–IX, 12–13	III, 12	7+7	40–50
25–25	*Thalassoma bifasciatum*	VIII, 12–13	III, 10–11	7+7	50
25–25	*Leiostomus xanthurus*	X–XII, 33–35	II, 12–13	9+8	20–50
25–25	*Cynoscion nebulosus*	X–XI, 24–28	II, 9–12	9+8	40–65
25–26	*Naucrates ductor*	III–VI, I, 24–29	II, I, 15–18	9+8	63–70
25–26	*Poromitra capito*	III, 11–12	I, 8–9	10+9	60
25–26	*Gobiesox strumosus*	9–12	8–10	10+12	60
25–27	*Cyprinodon variegatus*	9–13	9–12	14–16 (T)	45–50
25–27	*Anoplogaster cornuta*	17–19	7–9	10+9	70–80
25–27	*Xiphias gladius*	38–45 + 4–5	12–16	9+8	70–80
25–27	*Melamphaes typhlops*	III, 14–15	I, 8	10+9	68–74
25–27	*Achirus lineatus*	47–58	35–44	16 (T)	<60–44
25–30	*Lucania parva*	9–14	8–13	12–18 (T)	42–50
26–26	*Amblycirrhitus pinos*	X, 11	III, 6	8+7	55–58
26–26	*Howella brodiei*	VIII, I, 9	III, 7	9+8	67–52
26–26	*Hoplostethus mediterraneus*	VI–VII, 12–14	III, 9–11	9+8	70
26–26	*Kyphosus incisor*	IX–XII, 13–15	III, 12–13	9+8	>50
26–26	*Gobionellus oceanicus*	VI, I, 12–14	I, 13–14	9+8	55
26–26	*Kyphosus sectatrix*	X–XI, 11–13	III, 10–12	9+8	>50
26–26	*Ctenogobius saepepallens*	VI, I, 10–12	I, 11–13	9+8	44–57
26–26	*Ptereleotris calliurus*	VI, I, 21–23	I, 21–22	9+8	58
26–26	*Haemulon aurolineatum*	XIII, 14–16	III, 7–9	9+8	55
26–26	*Gephyroberyx darwini*	VII–IX, 12–15	III, 10–12	9+8	70
26–26	*Pronotogrammus martinicus*	X, 13–16	III, 7	9+8	60
26–26	*Gnatholepis thompsoni*	VI, I, 10–11	I, 10–11	9+8	47–52
26–26	*Orthopristis chrysoptera*	XII–XIII, 15–16	III, 12–13	9+8	<50
26–26	*Ectreposebastes imus*	XII, 9–10	III, 5–6	14	50–75
26–26	*Prionotus evolans*	X, 13–14	11	7+6	50
26–26	*Prionotus carolinus*	X, 13–14	12	7+6	50
26–26	*Hemanthias aureorubens*	X, 14–15	III, 7–9	9+8	60
26–26	*Haemulon plumieri*	XII, 15–17	III, 15–17	9+8	>50
26–26	*Evorthodus lyricus*	VI, I, 9–11	I, 10–12	9+8	55
26–26	*Anthias nicholsi*	X, 14–15	III, 6–8	9+8	60
26–26	*Oligoplites saurus*	III–V, I, 19–21	II, I, 18–21	9+8	55–60
26–26	*Pomatomus saltatrix*	VII–VIII, I, 23–28	II, 24–29	9+8	50–33–50
26–26	*Hemanthias vivanus*	IX–X, 13–14	III, 8–9	9+8	>50
26–26	*Abudefduf saxatilis*	XIII, 13	II, 12	9+8	40–>70
26–26	*Ctenogobius boleosoma*	VI, I, 10	I, 11	9+8	50
26–27	*Scopelogadus beanii*	II, 11	I, 8	10+9	60–50
26–27	*Melamphaes ebelingi*	III, 14–16	I, 8	10+9	–

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
26–27	*Lophius gastrophysus*	VI, 9–10	8–9	4+4	38–50
26–29	*Poromitra crassiceps*	III, 11–14	I, 8–11	10+9	33–64
26–29 (PC)	*Echiodon drummondi*	42–47 (ant-31)	46–51 (ant-31)	None	< 10
26–30	*Poromitra megalops*	II–III, 10–12	I, 8–10	10+9	36–56
26–31	*Lophius americanus*	VI, 9–12	8–10	4+4	35–50
27–27	*Microgobius thalassinus*	VI–VIII, I, 14–16	I, 14–16	9+8	50–56
27–27	*Polyprion americanus*	XI–XII, 11–12	III, 9–10	9+8	75–<65
27–27	*Sargocentron vexillarium*	XI, 12–14	IV, 8–10	10+9	55–70
27–27	*Gobiosoma bosc*	VII, I, 11–12	I, 9–11	9+8	55–60
27–27	*Remora osteochir*	20–27	20–26	9+8	75–50
27–27	*Cynoscion nothus*	XI, 26–31	II, 8–10	9+8	50–>60
27–27	*Rondeletia bicolor*	14–15	14–15	10+9	>70
27–27	*Dormitator maculatus*	VIII, 8	I, 10	9+8	56
27–27	*Gobiosoma parri*	VII (VIII), 11–13	9–11	9+8	55–60
27–27	*Gobiosoma ginsburgi*	VII, I, 11–12	I, 9–11	9+8	53–59
27–27	*Caulolatilus microps*	VII–VIII, 24–27	II, 22–24	9+8	50–62
27–28	*Melamphaes pumilus*	III, 14–16	I, 7–9	10+9	55–60
27–31	*Notolychnus valdiviae*	10–12	12–15	10+9	35–50
28–29	*Trinectes maculatus*	50–56	36–46	14–16 (T)	60–35
28–29	*Melamphaes suborbitalis*	III, 15–16	I, 7–8	10+9	61–64
28–29	*Cyclopterus lumpus*	VI–VIII, 9–11	9–10	11–12	40–65
28–30	*Melamphaes microps*	III, 16–18	I, 7–8	10+9	60
28–30	*Melamphaes simus*	III, 15–17	I, 8–10	10+9	29–64
29–29	*Polymixia nobilis*	IV–VI, 34–38	III–IV, 15–18	10+9	–
29–29	*Hoplostethus atlanticus*	V–VI, 15–19	II–III, 10–12	9+8	63–77
29–30	*Bembrops gobioides*	VI, 16–17	17–18	7+6	50–60
29–30	*Sternoptyx pseudobscura*	9–12	13–15	10+9	~ 55
29–30	*Lachnolaimus maximus*	XIV, 11–12	III, 10–11	7+7	60
29–30	*Echeneis naucrates*	33–45	31–41	9+8	50–60
29–30	*Sternoptyx diaphana*	9–11	13–16	10+9	65–50
29–30	*Polymixia lowei*	IV–VI, 26–32	III–IV, 15–18	10+9	70
29–31	*Peprilus paru*	II–IV, 38–49	II–III, 35–45	9+8	59–51
29–31	*Sebastes mentella*	XIV–XVI, 14–15	III, 8–10	8+7	36–54
29–31	*Sebastes viviparus*	XIV–XVI, 12–15	III, 6–8	8+7	39–50
29–32	*Diretmichthys parini*	26–30	20–23	10+9	50
29–32	*Sebastes fasciatus*	XIV–XVI, 13–14	III, 6–8	8+7	30–56
29–33	*Gasterosteus aculeatus*	II–V, 6–13	I, 6–13	–	40–60
29–34	*Apeltes quadracus*	II–IV, 9–14	I, 7–11	13	>50
29–34	*Cyclothone pseudopallida*	12–15	17–21	10+9	> 50
30–30	*Gigantura indica*	16–19	11–14	10+6–7	~ 60
30–30	*Scombrolabrax heterolepis*	XII, 15–16	III, 15–17	9+8	55–60
30–31	*Acanthochaenus luetkenii*	11	I, 10	10+9	60–70
30–31	*Neoscopelus microchir*	12–13	10–13	10+9	> 50

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
30–31	*Neoscopelus macrolepidotus*	12–13	11–13	10+9	> 60
30–31	*Gibberichthys pumilius*	V–VI, 8–9	II–III, 7–8	10+9	50
30–31	*Coryphaena hippurus*	58–66	25–31	9+8	60
30–31	*Cubiceps pauciradiatus*	XI–XIII, 15–18	II, 14–16	9+8	52–65
30–31	*Sebastes norvegicus*	XIV–XVI, 13–17	III, 7–10	8+7	35–58
30–31	*Ariomma melanum*	XI, 15–18	III, 13–16	9+8	45–>60
30–32	*Lampanyctus pusillus*	11–13	13–16	10+9	65
30–32	*Ariomma regulus*	XI–XII, 14–15	III, 14–15	9+8	>60
30–32	*Pungitius pungitius*	IX, 9–11	I, 8–10	12	50
30–32	*Cyclothone braueri*	13–14	18–20	10+9	> 50
30–32	*Cyclothone acclinidens*	14–15	18–20	10+9	> 50
30–33	*Peprilus triacanthus*	II–IV, 40–48	III, 37–44	9+8	56–46
30–34	*Gambusia holbrooki*	7–8	9	–	50
30–34	*Myoxocephalus aenaeus*	VIII–XI, 13–14	10–11	6+6	40–50
31–31	*Scomber scombrus*	XII–XVII, 11 + 5	II, 11 + 5	9+8	40–>60
31–31	*Psenes cyanophrys*	IX–X, I, 23–28	III, 23–28	9+8	48–59
31–31	*Cubiceps capensis*	XI, I, 20–23	III, 20–21	9+8	56–61
31–31	*Scomber colias*	IX–XIII, 11–12 + 5	II, 11–14 + 5	9+8	50–>60
31–32	*Lepidocybium flavobrunneum*	VIII–XII, 16–18	II, 10–14	9+8	55–70–67
31–32	*Cyclothone alba*	12–15	17–20	10+9	> 50
31–33	*Etropus microstomus*	67–84	50–63	17 (T)	43–33
31–33	*Cyclothone pallida*	12–15	16–19	10+9	> 50
31–33	*Fundulus luciae*	7–9	9–11	–	50–55
31–33	*Cyclothone microdon*	13–14	17–20	10+9	> 50
31–34	*Hypsoblennius hentz*	XI–XIII, 13–17	II, 14–17	7+6	40
31–35	*Diogenichthys atlanticus*	10–12	14–18	10+9	50–60
32–32	*Ruvettus pretiosus*	XIII–XV, 15–18	III, 12–16	9+8	58–78–65
32–32	*Neoepinnula americana*	XVI, I, 17–20	II, I, 17–20	9+8	55–>70
32–33	*Polyipnus* spp.	12–16	15–18	10+9	–
32–33	*Valenciennellus tripunctulatus*	7–8	24–25	10+9	55–60
32–33	*Maurolicus weitzmani*	9–12	22–28	10+9	52–69
32–34	*Electrona risso*	12–15	18–20	10+9	50–60
32–34	*Cubiceps gracilis*	XI–XII, I, 21–24	III, 19–22	9+8	36–55
32–34	*Nannobrachium cuprarium*	16–19	17–20	10+9	59–72
32–41	*Myoxocephalus scorpius*	VII–XII, 12–20	9–16	6+6	45–50
33–33	*Hypleurochilus geminatus*	XI–XIII, 14–15	II, 17–18	7+6	40
33–34	*Bolinichthys indicus*	11–14	12–14	10+9	60–50
33–34	*Coryphaena equiselis*	52–59	23–29	9+8	60
33–34	*Diaphus mollis*	12–14	12–14	10+9	55–60
33–34	*Citharichthys gymnorhinus*	70–77	51–61	17 (T)	43–35
33–34	*Diaphus rafinesquii*	12–14	13–15	10+9	60
33–35	*Fundulus heteroclitus*	10–14	9–12	17–22 (T)	45–55
33–35	*Bathophilus brevis*	10–11	9–10	10+9	Trailing

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
33–35	*Peristedion* sp.	VII–VIII, 15–21	16–21	7+6	–
33–35	*Psenes maculatus*	X–XI, I, 22–24	III, 21–23	9+8	47–57
33–35	*Citharichthys spilopterus*	75–84	56–63	17 (T)	42–30
33–35	*Lobianchia dofleini*	15–17	13–15	10+9	60
33–35	*Benthosema suborbitale*	11–14	16–19	10+9	<50
33–36	*Syacium papillosum*	79–94	62–75	17 (T)	48–39
33–36	*Lampanyctus alatus*	11–13	16–18	10+9	30–60
33–37	*Nesiarchus nasutus*	XIX–XXII, I, 19–22	II–III, 15–17	9+8	60–78
33–38	*Liparis inquilinus*	33–38	28–31	5+5–6	42–45–40
34–34	*Bolinichthys supralateralis*	12–15	13–15	10+9	60–50
34–34	*Promethichthys prometheus*	XII–XIV, I, 17–21	I–II, 15–17	9+8	50–75
34–34	*Margrethia obtusirostre*	15–16	21–26	10+9	60–55
34–35	*Opsanus tau*	II–III, 24–28	20–24	7+7	50
34–35	*Lobianchia gemellarii*	16–18	13–15	10+9	52–60
34–35	*Myctophum selenops*	12–14	17–19	10+9	50–64
34–35	*Fundulus majalis*	11–16	10–12	14–20 (T)	45–55
34–35	*Citharichthys arctifrons*	75–87	58–71	17 (T)	36–42
34–36	*Argyropelecus aculeatus*	9	12	10+9	–
34–36	*Benthosema glaciale*	12–14	17–19	10+9	50–58
34–36	*Lampanyctus photonotus*	12–15	16–18	10+9	70–60
34–36	*Scophthalmus aquosus*	63–73	46–56	17 (T)	<50
34–36	*Zenopsis concjifera*	VIII–X, 24–27	III, 24–26	13	50–70
34–36	*Chasmodes bosquianus*	X–XII, 17–20	II, 16–20	7+6	35–45
34–36	*Etropus crossotus*	75–87	58–68	17 (T)	41–32
34–37	*Hygophum benoiti*	12–14	19–21	10+9	55–60
34–37	*Lampanyctus tenuiformis*	13–15	17–19	10+9	55–65
34–38	*Pleuronectes putnami*	48–59	35–41	18–20 (T)	50–36
34–40	*Pseudopleuronectes americanus*	60–76	44–58	19 (T)	40–30
34–44	*Myoxocephalus octodecemspinosus*	VII–X, 15–17	12–15	6+6	35–60
35–35	*Bolinichthys photothorax*	12–14	13–15	10+9	60–50
35–35	*Tautoga onitis*	XVII, 11	III, 8	8+7	50
35–35	*Diaphus metopoclampus*	14–16	14–16	10+9	50–60
35–35	*Hygophum macrochir*	12–14	17–21	10+9	60
35–36	*Ceratoscopelus warmingi*	13–15	13–15	10+9	50–60
35–36	*Myctophum obtusirostre*	12–14	17–19	10+9	50–60
35–36	*Hygophum taaningi*	12–14	17–23	10+9	60–65
35–36	*Citharichthys cornutus*	74–83	59–66	17 (T)	45–32
35–36	*Lampanyctus crocodilus*	13–15	16–18	10+9	50–60
35–36	*Lepidophanes gaussi*	12–15	13–15	10+9	59–64
35–36	*Caristius maderensis*	35–36	15–20	9+8	25–50
35–36	*Lampadena anomala*	15	14	10+9	<70
35–36	*Fundulus diaphanous*	9–16	9–13	14–17 (T)	42–50

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
35–37	*Lampadena luminosa*	14–15	13–15	10+9	50–60
35–37	*Bothus ocellatus*	76–91	58–68	17 (T)	26
35–37	*Argyropelecus sladeni*	9	12	10+9	40–35
35–38	*Notoscopelus resplendens*	21–24	17–20	10+9	40–60
35–38	*Lampadena urophaos*	14–16	13–14	10+9	50–60
35–38	*Myctophum asperum*	12–14	17–19	10+9	<50–64
35–40	*Centrobranchus nigroocellatus*	9–11	16–19	10+9	50–70
36–36	*Parablennius marmoreus*	XI–XII, 17–18	II, 19–20	7+6	<40–35–45
36–36	*Tautogolabrus adspersus*	XVIII, 9–10	III, 8–9	8+7	50
36–36	*Lepidophanes guentheri*	13–15	13–16	10+9	48–58
36–37	*Cyclopsetta fimbriata*	78–87	59–67	17 (T)	50–40
36–38	*Hygophum hygomii*	13–15	20–22	10+9	<60
36–38	*Xenolepidichthys dalgleishi*	V–VI, 27–31	II, 27–29	15	30
36–38	*Brama caribbea*	32–35	27–30	9+8	60–55
36–38	*Bonapartia pedaliota*	17–20	29–31	10+9	40–50
36–39	*Nannobrachium atrum*	12–16	17–21	10+9	60–70
36–39	*Myctophum nitidulum*	12–14	18–21	10+9	50–65
36–39	*Nealotus tripes*	XIX–XXI, I, 16–19	II, 15–19	9+8	55–76
36–40	*Parexocoetus hillianus*	9–14	10–14	7+8	68
36–40	*Gymnocanthus tricuspis*	X–XII, 14–17	15–19	6+6	33–40
36–41	*Menidia beryllina*	IV–VI, 7–11	I, 13–20	9+8	30–50
36–41	*Argyropelecus hemigymnus*	8–9	11–12	10+9	44–59
36–41	*Protomyctophum arcticum*	11–13	21–24	10+9	40–50
37–37	*Symbolophorus rufinus*	14–16	20–22	10+9	67–71
37–37	*Notoscopelus caudispinosus*	24–27	19–21	10+9	43–60
37–37	*Paralichthys albigutta*	71–85	53–63	18–19 (T)	44–30
37–37	*Ceratoscopelus maderensis*	13–15	13–15	10+9	50–60
37–37	*Sigmops bathyphilum*	12–14	22–24	10+9	<50
37–38	*Pseudoscopelus altipinnis*	VI–IX, 23–26	I, 24–26	9+8	35–40
37–38	*Myctophum affine*	12–14	17–20	10+9	48–67
37–39	*Paralichthys lethostigma*	80–95	63–74	18–19 (T)	46–40
37–39	*Ulcina olriki*	5–7	5–7	5+5	<50
37–39	*Loweina rara*	10–13	13–17	10+9	80–60
37–39	*Engyophrys senta*	71–85	60–69	17 (T)	51–22
37–39	*Lampanyctus nobilis*	14–16	17–20	10+9	40–60
37–40	*Nannobrachium lineatum*	15–19	19–23	10+9	<40–66
37–40	*Gonostoma atlanticum*	16–18	28–30	10+9	>50
37–41	*Kali indica*	XI–XIV, 22–24	I, 21–25	9+8	<40
37–47	*Menidia menidia*	III–VII, 7–11	I, 19–29	9+8	24–50
38–39	*Vinciguerria poweriae*	13–15	12–14	10+9	>70
38–39	*Parasudis truculenta*	10	8–9	10+9	>45
38–39	*Hemitripterus americanus*	XV–XVII, I, 12	13–14	6+6	50
38–40	*Hygophum reinhardti*	13–15	21–25	10+9	55–65

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
38–41	*Argyropelecus affinis*	8–9	12–14	10+9	40–30
38–42	*Limanda ferruginea*	73–91	51–68	16–18 (T)	35
38–42	*Ichthyococcus ovatus*	11–12	15–17	10+9	~70
38–42	*Liparis atlanticus*	31–35	25–29	5–6+5–6	39–50–45
38–43	*Myoxocephalus quadricornis*	VI–X, 13–17	13–17	6+6	38–45
38–44	*Anchoa mitchilli*	13–17	23–30	10+9	77–70
39–39	*Thunnus alalunga*	XI–XIV, 12–16 + 7–9	11–16 + 7–8	9+8	40–55
39–39	*Thunnus atlanticus*	XI–XIV, 12–16 + 7–9	11–16 + 6–8	9+8	40–55
39–39	*Thunnus obesus*	XI–XIV, 12–16 + 8–10	11–16 + 7–10	9+8	40–55
39–39	*Thunnus albacares*	XI–XIV, 12–16 + 8–10	11–16 + 7–10	9+8	45–55
39–39	*Sigmops elongatum*	12–14	29–32	10+9	<50
39–39	*Auxis thazard*	XX–XXII, 10–12 + 8	11–14 + 7	9+8	37–50
39–39	*Auxis rochei*	XX–XXII, 10–12 + 8	11–14 + 7	9+8	37–50
39–39	*Gonostoma denudatum*	14–15	28–30	10+9	>50
39–39	*Euthynnus alleteratus*	XIII–XVII, 11–13 + 8	11–15 + 7	9+8	50–70
39–39	*Thunnus thynnus*	XI–XIV, 12–16 + 8–10	11–16 + 7–9	9+8	40–55
39–40	*Caristius macropus*	33–35	21–23	9+8	50
39–40	*Symbolophorus veranyi*	12–14	21–23	10+9	>60
39–40	*Loweina interrupta*	10–12	15–16	10+9	>70
39–41	*Taaningichthys minimus*	11–13	11–14	10+9	58–65
39–41	*Omosudis lowei*	9–11	13–14	10+9	~60
40–40	*Myctophum punctatum*	13–14	20–22	10+9	60
40–41	*Gonichthys cocco*	10–13	20–23	10+9	50–60
40–41	*Vinciguerria attenuata*	13–15	14–16	10+9	>70
40–41	*Trichopsetta ventralis*	89–95	69–75	17 (T)	50–19
40–42	*Psenes pellucidus*	IX–XII, I, 26–32	III, 26–31	9+8	39–53
40–42	*Vinciguerria nimbaria*	13–14	13–15	10+9	>70
40–43	*Brama dussumieri*	33–35	27–28	9+8	32–48
40–43	*Icelus bicornis*	VII–X, 17–23	12–17	6+6	45
40–43	*Barbourisia rufa*	19–22	15–18	10+9	55–70
40–44	*Anchoa hepsetus*	14–17	19–23	10+9	80–72
40–44	*Scopelarchus michaelsarsi*	7–9	18–21	10+9	~50
40–44	*Membras martinica*	II–VII, 6–9	I, 15–23	9+8	25–50
40–44	*Pollichthys mauli*	10–12	25–26	10+9	80
41–41	*Nomeus gronovii*	X–XIII, 24–28	I–II, 24–29	9+8	56–59
41–41	*Katsuwonus pelamis*	XIV–XVI, 14–16 + 7–9	14–16 + 7–8	9+8	50–70
41–42	*Hippoglossina oblonga*	71–86	58–72	18–19 (T)	<50
41–42	*Taractes asper*	31–34	23–26	9+8	60–50
41–42	*Paralichthys dentatus*	80–96	61–73	18–19 (T)	48–30
41–42	*Poecilopsetta beanii*	63–68	53–56	20 (T)	48–38
41–43	*Brama brama*	35–38	29–32	9+8	40–45
41–43	*Scomberomorus cavalla*	XII–XVIII, 15–18 + 7–10	16–20 + 7–10	9+8	>50
41–43	*Harengula jaguana*	17–19	17–18	10+9	88–83

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
41–44	*Dolichopteryx longipes*	10–11	8–9	10+9	70–75
41–46	*Bathylaco nigricans*	17–22	11–12	10+9	–
42–44	*Prognichthys occidentalis*	10–13	8–10	7+8	–
42–45	*Nansenia oblita*	10–11	9–10	10+9	~80
42–45	*Exocoetus obtusirostris*	12–14	12–14	7+8	70–67
42–46	*Liparis coheni*	36–41	30–35	5+5–6	44–47–43
43–44	*Cheilopogon exsiliens*	13–15	8–10	7+8	68
43–44	*Dorosoma petenense*	11–15	17–27	10+9	88–72
43–45	*Exocoetus volitans*	13–15	12–14	7+8	70–64
43–45	*Nansenia groenlandica*	9–10	8–10	10+9	~80
43–45	*Engraulis eurystole*	13–16	15–18	10+9	80–68
43–46	*Cheilopogon cyanopterus*	12–14	9–11	7+8	66–70
43–46	*Chiasmodon niger*	XI–XIII, 26–29	I, 26–29	9+8	16–34
43–46	*Grammicolepis brachiusculus*	VI–VII, 28–35	II–III, 28–36	15	<40
43–49	Platytroctidae	15–22	12–19	10+9	–
44–45	*Anisarchus medius*	59–62	I, 39–42	–	50
44–45	*Bathylagichthys greyae*	11–14	11–13	10+9	73–84
44–46	*Bathylagus euryops*	9–11	16–19	10+9	~80
44–46	*Cheilopogon furcatus*	11–14	8–12	7+8	70–68
44–47	*Cypselurus comatus*	11–13	8–9	7+8	–
44–47	*Taractichthys longipinnis*	33–38	27–30	9+8	55–60
44–47	*Hippoglossoides platessoides*	78–98	60–79	18 (T)	41–35
44–47	*Triglops murrayi*	IX–XII, 20–26	20–27	6+6	35–45
44–48	*Urophycis regia*	8–10, 43–52	41–52	30–33 (T)	50–55
44–49	*Scopelarchus analis*	7–9	21–26	10+9	~50
44–49	*Leptagonus decagonus*	V–VIII, 5–8	6–8	6+5	<50
44–49	*Symphurus plagiusa*	81–91	66–75	9–11 (T)	<50–35
44–50	*Saurida brasiliensis*	9–12	10–13	10+9	~70–75
44–50	*Liparis gibbus*	38–46	32–37	4–5+5–6	35–43–39
44–51	*Urophycis floridana*	10–13 + 54–63	45–55	28–34 (T)	–
44–51	*Tetragonurus atlanticus*	XIV–XVII, 10–13	I, 9–12	9+8	63–71
44–52	*Aristostomias* spp.	18–26	24–32	10+9	Trailing
45–46	*Monolene sessilicauda*	92–109	76–89	17 (T)	31–43
45–46	*Hirundichthys rondeletii*	10–12	11–13	7+8	62–67
45–46	*Argyripnus atlanticus*	11–12	22–25	10+9	43–50
45–47	*Hirundichthys speculiger*	10–13	11–13	7+8	–
45–47	*Microstoma microstoma*	11–12	8–9	10+9	~80
45–47	*Hirundichthys affinis*	10–12	11–13	7+8	70–65
45–48	*Cheilopogon melanurus*	12–13	8–10	7+8	–
45–48	*Urophycis earlii*	8–11, 57–68	49–60	27–31 (T)	42
45–49	*Bregmaceros cantori*	45–48	45–49	12 (Br)	50–42
45–49	*Sardinella aurita*	16–19	16–20	10+9	89–73
45–49	*Opisthonema oglinum*	17–22	20–25	10+9	90–83

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
45–49	*Ulvaria subbifurcata*	43–44	II, 30–31	–	<50
45–50	*Brevoortia tyrannus*	18–24	18–24	10+9	80–70
45–50	*Liparis tunicatus*	39–44	33–37	4–6+4–6	41
45–51	*Urophycis chuss*	9–12, 52–64	45–57	28–34 (T)	<50
45–51	*Triglops pingeli*	X–XIII, 23–26	23–26	6+6	50–40
45–52	*Urophycis chesteri*	8–12, 50–63	43–54	28–36 (T)	43–50
45–55	*Astronesthes* spp.	11–21	11–19	10+9	Trailing
46–46	*Lampris guttatus*	48–52	33–42	30–32	50–60
46–48	*Chlorophthalmus agassizi*	10–11	7–9	10+9	45
46–50	*Etrumeus teres*	15–22	10–13	10+9	88–82
46–50	*Xenodermichthys copei*	27–31	26–30	10+9	~ 60
46–50	*Alosa pseudoharengus*	12–18	15–20	10+9	80
47–48	*Scomberomorus regalis*	XVI–XVIII, 16–19 + 7–9	15–20 + 7–10	9+8	42–>60
47–50	*Ahliesaurus berryi*	10–11	19–21	10+9	57–60
47–50	*Bregmaceros houdei*	40–44	41–46	12 (Br)	50–40
47–50	*Physiculus fulvus*	9–12, 57–61	59–68	–	40–33
47–51	*Dorosoma cepedianum*	10–15	25–37	10+9	88–75
47–51	*Urophycis tenuis*	9–12, 51–62	45–53	33–39 (T)	41–52
47–52	*Alepisaurus ferox*	36–45	14–18	10+9	35–60
47–53	*Urophycis cirrata*	9–12 + 54–68	46–58	28–33 (T)	–
47–53	*Alosa aestivalis*	15–20	15–21	10+9	90–78
48–50	*Coccorella atlantica*	10–13	26–30	10+9	58–60
48–50	*Scopelarchoides danae*	7–8	24–27	10+9	55+
48–51	*Dolicholagus longirostris*	10–12	19–21	10+9	90–70
48–51	*Pterycombus brama*	48–53	38–43	9+8	55–45
48–52	*Odontostomops normalops*	11–13	30–35	10+9	65–60
48–52	*Aspidophoroides monopterygius*	5–6	5–6	5+5	<50
48–53	*Liparis fabricii*	43–49	36–42	4–5+5–6	35–40
48–53	*Melanolagus bericoides*	10–11	18–22	10+9	85–90
49–49	*Parataeniophorus gulosus*	28–33	23–29	10+9	65–75
49–50	*Benthocometes robustus*	95–111	79–98	11	40
49–50	*Evermanella indica*	12	27–29	10+9	62–50
49–51	*Hippocampus erectus*	16–20	3–4	none	–
49–51	*Oxyporhamphus micropterus*	13–15	13–16	7+8	70
49–51	*Gadella imberbis*	10, 53–61	63–66	9	40
49–52	*Pteraclis carolinus*	48–54	42–47	9+8	50–28
49–55	*Saurida normani*	10–12	9–11	10+9	~70–75
49–55	*Gadus morhua*	13–16, 19–24, 18–21	20–24,17–22	51–58 (T)	39–50
49–55	*Enchelyopus cimbrius*	1+ 50 + 45–55	39–49	31–35 (T)	48–55
50–50	*Alepisaurus brevirostris*	36–48	13–18	10+9	50–60
50–51	*Hippoglossus hippoglossus*	98–106	69–84	17–19 (T)	40–32
50–52	*Arius felis*	II, 7	18–20	7+8	~68

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
50–52	*Bathypterois viridensis*	12–13	10–12	10+9	Trailing
50–52	*Bathysaurus mollis*	15–17	11–13	10+9	>70
50–53	*Stylophorus chordatus*	115–124	14–17	5–6+2	55–60
50–53	*Hyporhamphus meeki*	12–16	14–18	7+8	66
50–55	*Sarda sarda*	XX–XXIII, 13–18 + 7–9	14–16 + 6–8	9+8	50–>60
50–55	*Melanostomias* spp.	13–17	16–20	10+9	Trailing
50–56	*Laemonema barbatulum*	6–7, 57–63	54–63	6	40+
51–52	*Merluccius albidus*	11–13, 37–40	I, 37–41	40	45–50
51–53	*Bajacalifornia megalops*	16–18	14–16	10+9	55–70
51–53	*Scomberomorus maculatus*	XVII–XIX, 17–20 + 7–9	17–20 + 7–10	9+8	>50
51–53	*Saurido suspicio*	10–11	10–12	10+9	~70–75
51–55	*Gempylus serpens*	XXVI–XXXII, I–II, 10–12	II, I, 10–12	9+8	62–72
51–56	*Stichaeus punctatus*	46–50	I–II, 32–38	–	<50
51–57	*Neonesthes capensis*	9–12	22–28	10+9	Trailing
51–58	*Halargyreus johnsonii*	6–9, 47–60	39–53	38–43 (T)	50+
51–58	*Tetragonurus cuvieri*	XV–XXI, 10–17	I–II, 9–15	9+8	57–67
52–53	*Gaidropsarus ensis*	1+ many + 52–64	40–48	41–46 (T)	40–57
52–54	*Evermanella balbo*	12–13	34–35	10+9	60–55
52–55	*Hemiramphus brasiliensis*	12–15	11–15	7+8	66–75
52–57	*Melanogrammus aeglefinus*	13–18, 19–25, 18–23	21–28,19–24	57–60 (T)	37–45
52–58	*Photostomias guernei*	22–28	25–32	10+9	Trailing
52–59	*Bregmaceros* sp.	57–65	58–69	12 (Br)	50–40
52–62	*Clupea harengus*	16–22	15–21	10+9	~80
53–54	*Yarella blackfordi*	14–17	28–31	10+9	>60
53–54	*Bagre marinus*	I, 7	22–28	7+8	~62
53–54	Sudis atrox	11	21	10+9	48–65
53–55	*Bregmaceros atlanticus*	47–56	49–58	12 (Br)	50–40
53–55	*Alosa mediocris*	15–20	19–23	10+9	86–80
53–56	*Gadus ogac*	13–17, 14–20, 15–20	18–23,15–20	47–51 (T)	43+
53–56	*Scopelosaurus smithii*	10–12	17–19	10+9	43–45
53–57	*Laemonema melanurum*	7, 53–61	52–59	6	45
53–57	*Pollachius virens*	13–14, 21–22, 24–28	24–28,20–21	66–70 (T)	42–50
53–57	*Microgadus tomcod*	11–15, 15–19, 16–21	17–21,16–20	46–50 (T)	35–45
53–58	*Boreogadus saida*	11–15, 12–17, 17–23	14–20,18–24	50–54 (T)	35–50
53–59	*Megalops atlanticus*	10–13	17–23	10+9	85–75
54–55	*Dissostichus eleginoides*	IX–XI, 26–30	26–30	9+8	50
54–56	*Hemiramphus balao*	11–15	10–13	7+8	–
54–56	*Merluccius bilinearis*	11–14, 36–42	I, 37–42	34–37	45
54–57	*Scopelosaurus argenteus*	12–13	17–18	10+9	40–45
54–58	*Trachinocephalus myops*	11–13	14–16	10+9	~66
54–61	*Ipnops murrayi*	9	14	10+9	32
54–62	*Chauliodus sloani*	5–7	10–13	10+9	~90
55–55	*Chascanopsetta danae*	114–120	80–87	17 (T)	45–30

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
55–57	*Scopelosaurus mauli*	10–11	17–20	10+9	38–40
55–57	*Chirolophis ascanii*	50–54	I, 35–40	–	33
55–57	*Alosa sapidissima*	14–21	18–25	10+9	84–74
55–58	*Benthalbella infans*	8–10	19–25	10+9	58+
55–58	*Micromesistius poutassou*	12–14, 12–14, 23–28	33–39,24–27	50 (T)	50–40
55–60	*Syngnathus fuscus*	33–49	3	10	50–40
56–58	*Otophidium omostigma*	99–108	84–87	9	40
56–59	*Laemonema goodebeanorum*	(5)6+66–73	65–71	6	–
56–60	*Borostomias antarcticus*	10–13	14–16	10+9	Trailing
56–63	*Careproctus reinhardti*	50–58	41–52	8–11	28–25
56–64	*Synodus foetens*	9–13	10–14	10+9	72–75
56–71	*Eustomias* spp.	20–29	32–46	10+9	Trailing
57–58	*Dolichopteryx binocularis*	15	11	10+9	~80
57–59	*Echiostoma barbatum*	11–14	13–19	10+9	Trailing
57–61	*Arctogadus glacialis*	9–14, 14–22, 16–22	17–24,18–24	50–52 (T)	42–46
58–60	*Glyptocephalus cynoglossus*	97–117	86–102	20–24 (T)	<33
58–61	*Diplospinus multistriatus*	XXX–XXXVI, I, 35–41	II, 29–35	9+8	67–70
58–61	*Scopelosaurus lepidus*	10–12	17–19	10+9	40–44
58–62	*Melanonus zugmayeri*	72–78	50–58	55–60 (T)	45
59–60	*Sudis hyalina*	13	21–23	10+9	55–80
60–61	*Acipenser brevirostrum*	32–43	18–24	60 (T)	65–60
60–61	*Acipenser oxyrhynchus*	30–46	23–30	90 (T)	60
60–63	*Bathysaurus ferox*	60–63	16–18	10+9	~70
60–65	*Photonectes parvimanus*	17–19	21–24	10+9	Trailing
60–65	*Acanthonus armatus*	98–108	88–100	8	22
61–63	*Reinhardtius hippoglossoides*	92–104	66–80	19 (T)	40–37
61–63	*Ophidion robinsi*	107–125	85–93	9	61–39
61–66	*Neobythites marginatus*	103–113	89–97	8	28
62–63	*Photonectes margarita*	15–20	19–24	10+9	Trailing
62–64	*Osmerus mordax*	10–11	15–17	10+9	65–75
62–64	*Acanthocybium solandri*	XXIII–XXVII, 11–16 + 7–10	11–14 + 7–10	9+8	60–73
62–65	*Bathytyphlops marionae*	12–13	13–14	10+9	45–50
62–67	*Molva molva*	13–16, 57–70	55–67	52–53	45–50
62–69	*Zu cristatus*	120–150	None	8–12+1–5	50–60–50
62–73	*Mallotus villosus*	12–14	17–22	10+9	~75
62–76	*Ammodytes* sp.	52–67	26–35	8+7	60–70
63–63	*Manducus maderensis*	10–13	34–41	10+9	70
63–66	*Microdesmus longipinnis*	XIX–XXII, 66–74	41–47	9+8	<60
63–66	*Brotulotaenia brevicauda*	79–84	58–64	9	Trailing
63–66	*Magnisudis atlantica*	9–11	20–26	10+9	38–70
64–64	*Dicrolene kanazawai*	105–108	82–89	6–7	35
64–66	*Brosme brosme*	85–105	71–76	45–48 (T)	<30–50

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
64–67	*Paralepis brevirostris*	10–12	22–24	10+9	?–55–?
64–67	*Argentina silus*	11–13	13–17	10+9	75–80
64–70	*Scomberesox saurus*	9–12+5–6	12–13+5–7	7+8	60–70
65–65	*Flagellostomias boureei*	14–17	21–26	10+9	Trailing
65–67	*Paralepis elongata*	10–12	20–25	10+9	<50–70
65–72	*Albula vulpes*	17–19	8–10	10+9	98–80
66–67	*Parophidion schmidti*	115–126	98–106	9	32
66–68	*Heterophotus ophistoma*	11–13	12–17	10+9	Trailing
66–71	*Stomias affinis*	17–20	13–23	10+9	87–90
66–72	*Leptoclinus maculatus*	57–64	I, 34–40	–	<50
67–67	*Barathrites parri*	112	82	8	40
67–68	*Ophidion josephi*	128–150	105–122	9	48–33
67–70	*Ophidion marginatum*	138–162	116–129	9	48–33
67–72	*Bassozetus compressus*	123–129	102–109	8	30
67–75	*Abyssobrotula galatheae*	97–116	79–96	8	36
68–68	*Dicrolene intronigra*	100–115	85–98	6–7	35
68–71	*Lamprogrammus niger*	108–125	92–108	8–9	Trailing
68–74	*Paralepis coregonoides*	9–11	22–26	10+9	25–75
69–77	*Strongylura marina*	14–17	16–20	7+8	66
71–73	*Euleptorhamphus velox*	21–24	20–24	7+8	70
71–74	*Lamprogrammus shcherbachevi*	131–140	104–117	8	Trailing
71–74	*Desmodema polystictum*	120–124	None	7–10	80
71–75	*Lumpenella longirostris*	61–71	II, 36	–	–
71–79	*Spectrunculus grandis*	121–148	90–113	8	38–42
72–78	*Molva dipterygia*	11–15, 69–83	62–75	–	40–45
72–82	*Anarhichas* spp.	69–80	42–48	18–26 (T)	<50
73–75	*Lepophidium jeannae*	131–140	112–117	9	40
73–78	*Lepophidium profundorum*	131–140	110–121	9	48–29
74–86	*Elops saurus*	18–25	8–15	10+9	94–80
75–78	*Uncisudis advena*	9–10	30–31	10+9	50–70
75–78	*Leptostomias gladiator*	19–22	26–29	10+9	Trailing
75–85	*Lestidiops affinis*	8–10	27–30	10+9	22–58
75–88	*Fistularia tabacaria*	13–18	13–17	7+7	75
76–85	*Lestidiops jayakari*	10	27–31	10+9	25–60
77–81	*Ophidion selenops*	132–140	123–129	9	40–30
77–83	*Stomias boa ferox*	17–21	19–23	10+9	87–90
78–78	*Idiacanthus fasciola*	54–65	38–49	10+9	Trailing
78–83	*Anotopterus pharao*	None	14–16	10+9	~65
80–83	*Lestidium atlanticum*	9–10	29–30	10+9	30–70
80–84	*Tylosurus crocodilus*	21–23	18–22	7+8	66
80–85	*Lumpenus lampretaeformis*	68–85	I, 46–62	–	<50
80–85	*Arctozenus risso*	8–11	31–34	10+9	30–78
81–86	*Macroparalepis brevis*	11–13	19–24	10+9	23–75

Vertebrae	Taxon	Dorsal Fin (s)	Anal Fin (s)	Caudal Fin (PrC)	Length (% SL)
83–93	*Melanostigma atlanticum*	92–99	77–84	–	30
85–86	*Cryptacanthodes maculatus*	73–77	47–50	–	<50
86–89	*Pholis gunnellus*	80–83	II, 42–44	19 (T)	>50
86–91	*Stemonosudis rothschildi*	8–9	31–34	10+9	50–60
88–96	*Brotulotaenia crassa*	119–134	98–108	9	Trailing
89–90	*Brotulotaenia nigra*	113–115	91–94	–	Trailing
90–95	*Tylosurus acus*	22–26	20–24	7+8	66
91–93	*Lestrolepis intermedia*	9	41–42	10+9	24–50
92–98	*Diplophos taenia*	12–13	59–72	10+9	70–58
93–97	*Ablennes hians*	23–26	24–27	7+8	66
96–103	*Macroparalepis affinis*	10–14	25–28	10+9	10–70
99–102	*Trachipterus arcticus*	150–190	None	8+5–6	50–64

Appendix 3

Sources and Collection Data

Larval and juvenile specimens described and illustrated in this monograph are attributed to formally published sources (where details of their collection are described) in the species accounts. Collection details for previously unpublished material are entered in the table below. Museum numbers for deposited specimens (if applicable) are contained on the appropriate species account pages.

Taxon	Size (mmSL)	Collection Location	Date	Collecting Gear or Ship
Ariosoma anale	–	163 km E of Atlantic City, New Jersey	16 Aug 1975	Bongo net
Bathypterois viridensis	33.1	26°47' N, 79°50' W	7 May 1967	2-m Hoop
Enchelyopus cimbrius	2.6–10.3	Shoreham, Long Island Sound, New York	Unknown	Unknown
Merluccius albidus	5.5–8.5	40°13'N, 70°25'W	8 Jul 1978	Bongo net
Merluccius albidus	10.0–14.0	40°25'N, 68°20'W	30 Sep 1979	Bongo net
Merluccius bilinearis	4.1	41°04'N, 71°42'W	21 Aug 1979	Bongo net
Merluccius bilinearis	5.7	42°15'N, 69°43'W	1 Sep 1979	Bongo net
Merluccius bilinearis	9.0	40°54'N, 71°47'W	27 Jul 1971	Bongo net
Merluccius bilinearis	21.5	42°17'N, 67°48'W	1 Sep 1978	Bongo net
Merluccius bilinearis	~ 25.0	New York Bight, Continental Shelf	1994–1998	2-m Beam Trawl
Laemonema barbatulum	13.0	40°32'N, 71°17'W	6 Mar 1977	Bongo net
Ophidion josephi	45.0	35°19.8'N, 75°12.6'W	6 Jan 1978	R/V Eastward
Ophidion robinsi	23.6	E8–77, Sta. 6	17 Oct 1977	R/V Eastward
Abyssobrotula galatheae	36.0	37°01'N, 71°18'W	20 Aug 1982	R/V Oceanus
Barathrites parri	21.5	34°56'N, 71°13'W	13 Aug 1975	Dip-net (diver)
Bassozetus compressus	53.0	32°38'N, 77°18'W	29 Jul 1993	R/V Columbus Iselin
Benthocometes robustus	14.5	40°52'N, 66°47'W	19 May 1982	–
Dicrolene sp.	32.0	38°54.4'N, 71°36.5'W	23 Apr 1982	R/V Oceanus
Neobythites marginatus	38.0	37°0.5'N, 71°17.3'W	20 Aug 1982	R/V Oceanus
Porogadus miles	12.0	38°49.2'N, 72°12'W	17 Jul 1988	Unknown
Porogadus miles "# 250"	23.9	Straits of Florida	Unknown	R/V Longhorn Cr01, H204
Porogadus miles	63.0	38°30'N, 66°30'W	30 Jul 1976	R/V Oceanus
Lophius americanus	5.0	3.5 km E of Sandy Hook, New Jersey	28 Jun 1978	Otter trawl (egg veil)
Amblycirrhitus pinos	14.0	41°03.1N, 66°25.4W	23 May 1999	Bongo net
Sarda sarda	5.3	38°27' N, 74°05' W	21 Jul 1974	Bongo net
Sarda sarda	9.8	38°33' N, 73°53' W	18 Jul 1974	Bongo net
Sarda sarda	10.0	39°34' N, 72°22.5' W	7 Aug 1966	Gulf V
Poecilopsetta beanii	23.5	40°53.8' N, 66°27.3' W	16 Jun 1995	R/V Endeavor