

Ecography

E7231

Geange, S. W., Connell, A. M., Lester, P. J., Dunn, M. R. and Burns, K. C. 2011. Fish distributions along depth gradients of a sea mountain range conform to the mid-domain effect. – *Ecography* 34: xxx–xxx.

Supplementary material

Appendix 1 Summary capture and range information for species enumerated in the dataset rarified from 1,891 trawls made between 200-800 m below sea level on the Chatham Rise, New Zealand, between 1991 and 2006 (see *methods* for rarefaction details). Only the 59 species that were sampled in ten or more trawls are shown (of a total 97 species sampled). Range mid-point, range min, and range max are expressed as meters below sea-level. * indicates species whose ranges commonly occur between 200-800 m.

ID	Family	Species	Common name	No. trawls captured in	Rarified Ranges			
					Mean range width (m)	Mean range mid-point	Mean range min (sd)	Mean range max (sd)
1	Argentinidae	<i>Argentina elongata</i>	Silverside	171	321	384	223 (15)	544 (62)
2	Berycidae	<i>Beryx decadactylus</i> *	Longfinned beryx	10	17	434	425 (52)	442 (46)
3		<i>Beryx splendens</i> *	Alfonsino	585	465	484	251 (11)	716 (68)
4	Bramidae	<i>Brama spp.</i>	Ray's bream	300	502	479	228 (12)	730 (37)
5	Carangidae	<i>Trachurus declivis</i>	Jack mackerel	30	108	312	258 (24)	366 (92)
6		<i>Trachurus symmetricus murphyi</i>	Slender mackerel	223	419	430	220 (7)	640 (106)
7	Centriscidae	<i>Centriscops humerosus</i> *	Banded bellowfish	229	458	501	272 (50)	730 (40)
8	Centrolophidae	<i>Centrolophus niger</i> *	Rudderfish	25	105	514	462 (82)	567 (74)
9		<i>Centrophorus squamosus</i>	Leafscale gulper shark	55	250	653	528 (72)	778 (18)
10		<i>Deania calcea</i>	Shovelnose dogfish	294	335	619	452 (38)	787 (7)
11		<i>Hyperoglyphe antarctica</i> *	Bluenose	93	270	457	322 (53)	592 (90)
12		<i>Serirolella caerulea</i>	White warehou	862	471	486	250 (7)	722 (35)
13		<i>Serirolella punctata</i>	Silver warehou	844	523	478	217 (4)	740 (48)
14	Cheilodactylidae	<i>Nemadactylus macropterus</i>	Tarakihi	105	172	304	218 (6)	390 (53)
15	Chimaeridae	<i>Hydrolagus bemisi</i> *	Pale ghost shark	1098	466	557	323 (47)	790 (3)

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ID	Family	Species	Common name	No. trawls captured in	Rarified Ranges			
					Mean range width (m)	Mean range mid-point	Mean range min (sd)	Mean range max (sd)
16		<i>Hydrolagus novaezealandiae</i>	Dark ghost shark	852	423	427	215 (6)	638 (85)
17	Cyttidae	<i>Cyttus traversi</i>	Lookdown dory	1668	556	509	231 (15)	787 (4)
18	Dalatiidae	<i>Centroscymnus crepidater</i>	Longnosed velvet dogfish	57	220	677	567 (57)	787 (8)
19		<i>Centroscymnus owstonii</i>	Smooth skin dogfish	21	108	725	671 (38)	779 (18)
20		<i>Centroscymnus plunketi</i> *	Plunket's shark	36	199	657	558 (51)	757 (30)
21		<i>Dalatias licha</i>	Seal shark	109	332	616	450 (40)	782 (20)
22		<i>Etmopterus baxteri</i>	Baxter's dogfish	66	274	642	505 (58)	779 (7)
23		<i>Etmopterus lucifer</i>	Lucifer dogfish	143	387	557	363 (73)	751 (30)
24	Emmelichthyidae	<i>Emmelichthys nitidus</i>	Redbait	65	197	318	220 (9)	417 (122)
25		<i>Plagiogeneion rubiginosus</i>	Rubyfish	18	191	391	295 (110)	486 (210)
26	Epigonidae	<i>Epigonus telescopus</i> *	Black cardinalfish	75	303	615	463 (48)	766 (28)
27	Gadidae	<i>Micromesistius australis</i> *	Southern blue whiting	45	87	334	291 (29)	377 (46)
28	Gempylidae	<i>Thyrsites atun</i>	Barracouta	184	165	301	219 (5)	383 (29)
29	Macrouridae	<i>Caelorinchus aspercephalus</i>	Oblique-banded rattail	150	339	404	235 (20)	574 (112)
30		<i>Caelorinchus bollonsi</i>	Big-eyed rattail	375	473	538	302 (30)	775 (18)
31		<i>Caelorinchus oliverianus</i> *	Oliver's rattail	202	364	587	405 (22)	769 (18)
32		<i>Lepidorhynchus denticulatus</i> *	Javelinfinch	426	517	528	270 (16)	786 (8)

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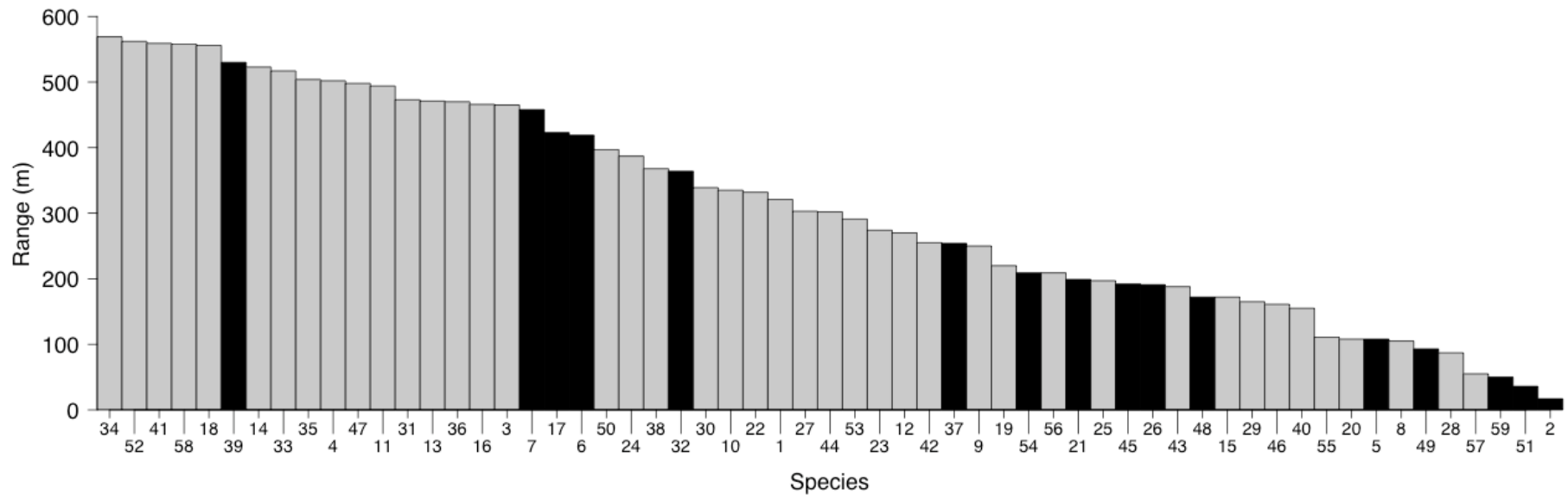
ID	Family	Species	Common name	No. trawls captured in	Rarified Ranges			
					Mean range width (m)	Mean range mid-point	Mean range min (sd)	Mean range max (sd)
33	Merlucciidae	<i>Macruronus novaezelandiae</i> *	Hoki	1842	569	505	220 (12)	790 (3)
34		<i>Merluccius australis</i>	Hake	1162	504	535	284 (25)	787 (5)
35	Moridae	<i>Mora moro</i>	Ribaldo	543	470	554	319 (105)	789 (4)
36		<i>Pseudophycis bachus</i> *	Red cod	444	254	343	216 (6)	470 (54)
37	Nephropidae	<i>Metanephrops challengeri</i>	Scampi	507	368	460	276 (18)	644 (26)
38	Ommastrephidae	<i>Nototodarus sloanii</i>	Southern arrow squid	909	530	480	215 (5)	745 (32)
39		<i>Todarodes filippovae</i> *	Antarctic flying squid	21	155	540	462 (98)	618 (123)
40	Ophidiidae	<i>Genypterus blacodes</i> *	Ling	1744	559	507	228 (13)	787 (6)
41	Oreosomatidae	<i>Allocyttus niger</i>	Black oreo	160	255	657	530 (30)	785 (6)
42		<i>Neocyttus rhomboidalis</i> *	Spiky oreo	140	188	694	600 (32)	788 (3)
43		<i>Pseudocyttus maculatus</i>	Smooth oreo	212	302	637	486 (45)	788 (6)
44	Pleuronectidae	<i>Pelotretis flavilatus</i>	Lemon sole	198	192	345	249 (24)	441 (27)
45	Polyprionidae	<i>Polyprion oxygeneios</i>	Hapuku	117	161	298	217 (5)	378 (54)
46	Rajidae	<i>Dipturus innominatus</i>	Smooth skate	381	498	494	244 (25)	743 (47)
47		<i>Dipturus nasutus</i>	Rough skate	28	172	377	291 (81)	463 (98)
48		<i>Pavoraja arperula</i>	Smooth blunt-nosed skate	11	93	507	460 (117)	554 (100)
49	Rhinochimaeridae	<i>Harriotta raleighana</i>	Longnose chimaera	217	397	584	385 (53)	782 (9)

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Rarified Ranges

ID	Family	Species	Common name	No. trawls captured in	Mean range width (m)	Mean range mid-point	Mean range min (sd)	Mean range max (sd)
50	Scombridae	<i>Scomber australasicus</i>	Blue mackerel	10	36	316	298 (52)	334 (76)
51	Sebastidae	<i>Helicolenus spp.</i>	Sea perch	1315	562	498	217 (9)	779 (13)
52	Serranidae	<i>Lepidoperca aurantia</i>	Orange perch	129	291	366	221 (13)	512 (145)
53	Squalidae	<i>Squalus acanthias</i>	Spiny dogfish	1000	494	462	215 (5)	709 (42)
54		<i>Squalus mitsukurii</i>	Northern spiny dogfish	54	209	350	246 (35)	455 (97)
55	Trachichthyidae	<i>Hoplostethus atlanticus</i>	Orange roughy	40	111	731	676 (30)	787 (5)
56	Triakidae	<i>Galeorhinus galeus</i>	School shark	116	209	322	218 (9)	426 (86)
57	Trichiuridae	<i>Lepidopus caudatus</i>	Frostfish	16	55	256	228 (23)	284 (36)
58	Uranoscopidae	<i>Kathetostoma giganteum</i>	Giant stargazer	1050	558	494	215 (5)	773 (12)
59		<i>Kathetostoma spp</i>	Banded giant stargazer	16	50	280	255 (36)	305 (56)



Appendix 2 Species range curve for fishes collected in 1,891 trawls made between 200-800 m below sea level on the Chatham Rise, New Zealand, between 1991 and 2006. Only the 59 species that were sampled in ten or more trawls are shown (of a total 97 species sampled). Black bars indicate the 16 species in the reduced dataset whose ranges commonly occur between 200 – 800 m. Species ID's are explained in Electronic Supplement 1.