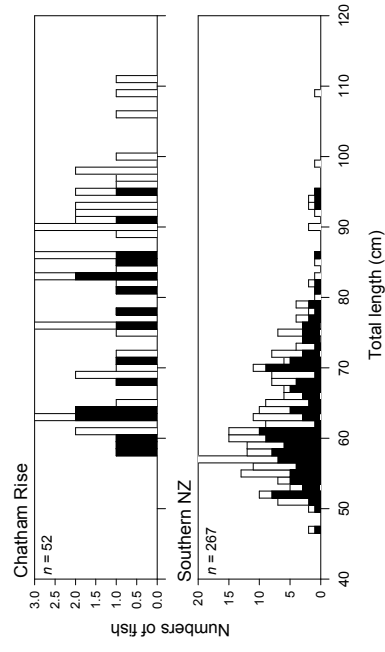


**Figure B17a.** The distribution of all hapuku (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.



**Figure B17b.** The length frequency of hapuku where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

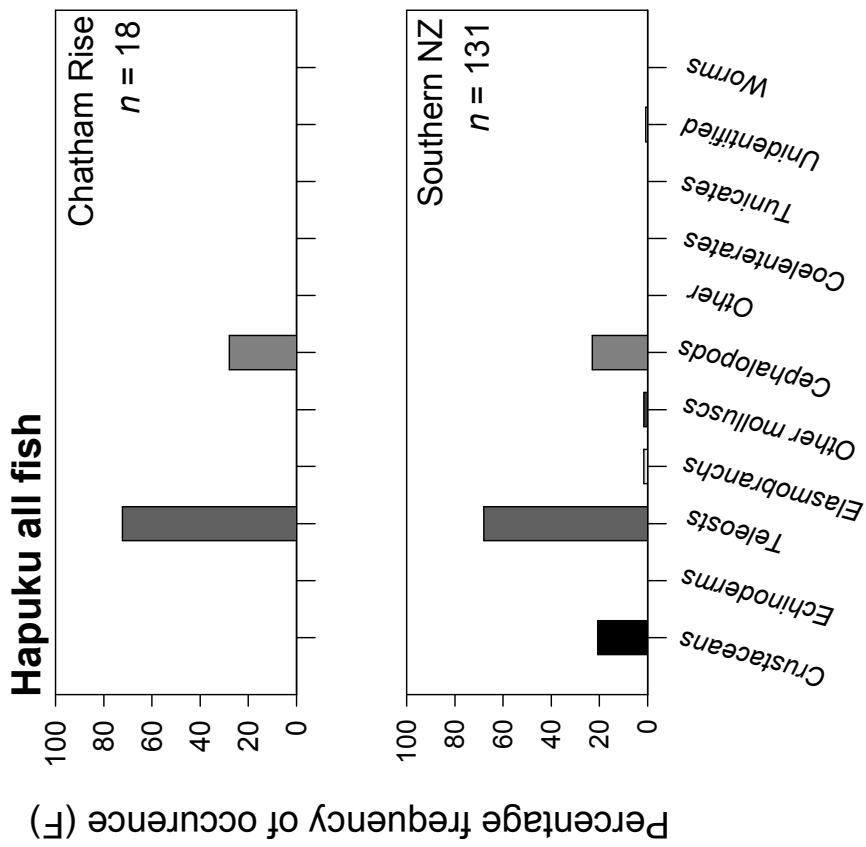


Figure B17c. The importance of major prey groups in the diet of hapuku examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.

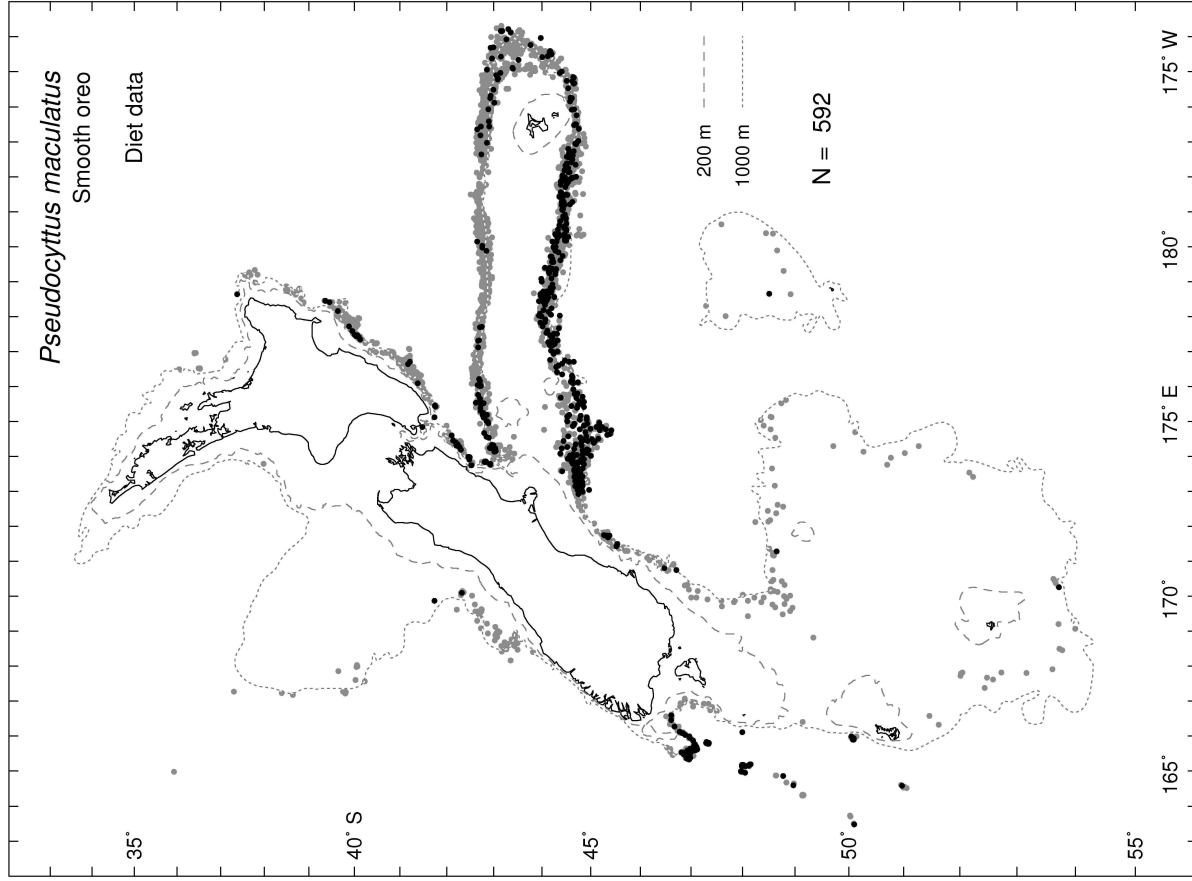


Figure B18a. The distribution of all smooth oreo (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

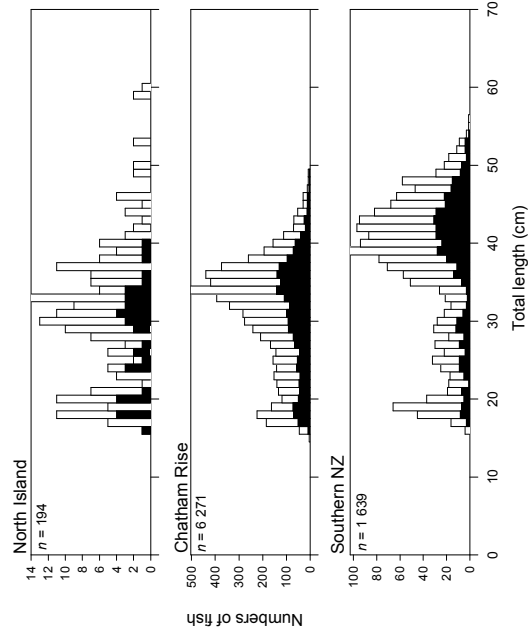


Figure B18b. The length frequency of smooth oreo where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

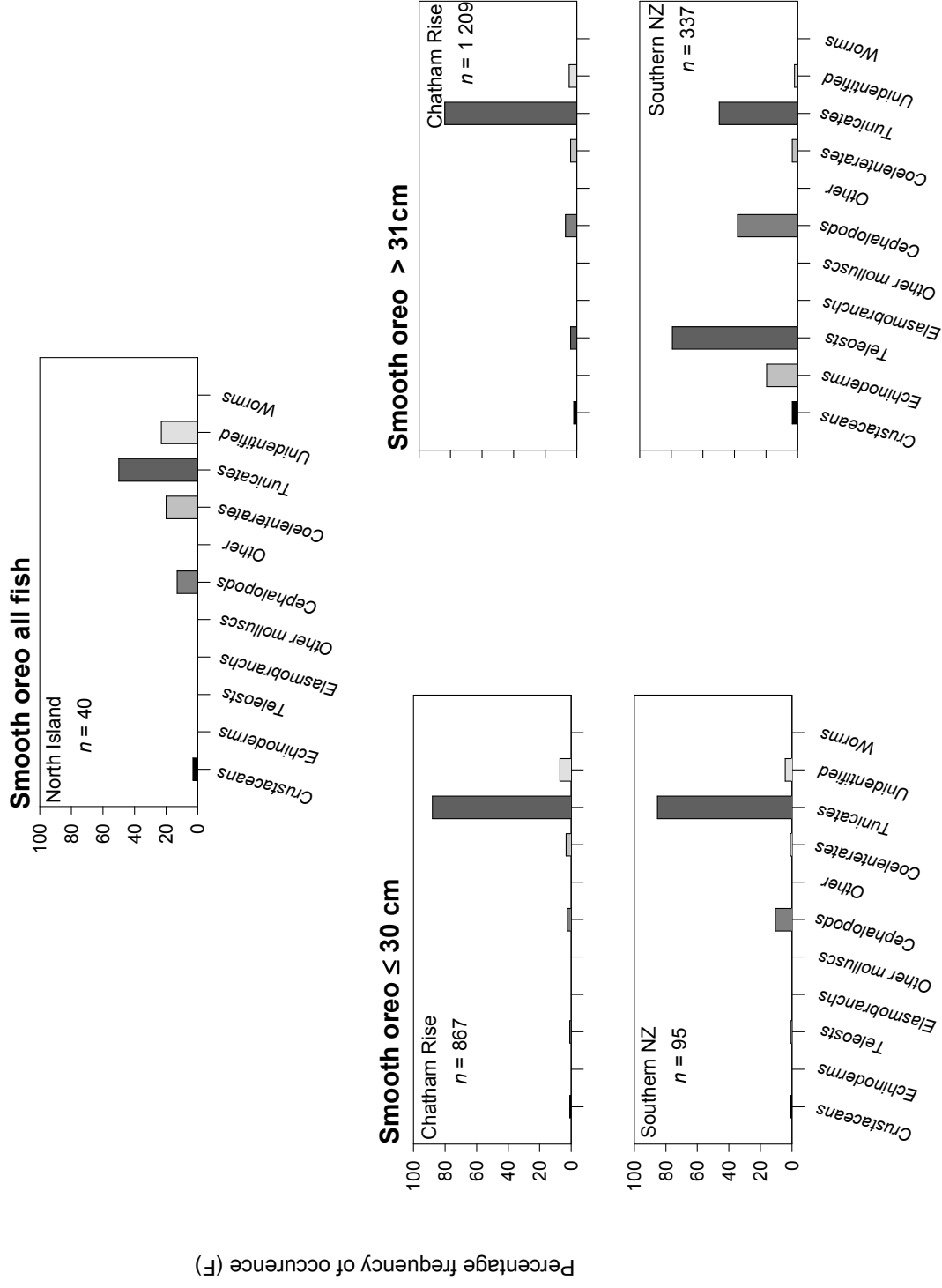


Figure B18c. The importance of major prey groups in the diet of smooth oreo examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.

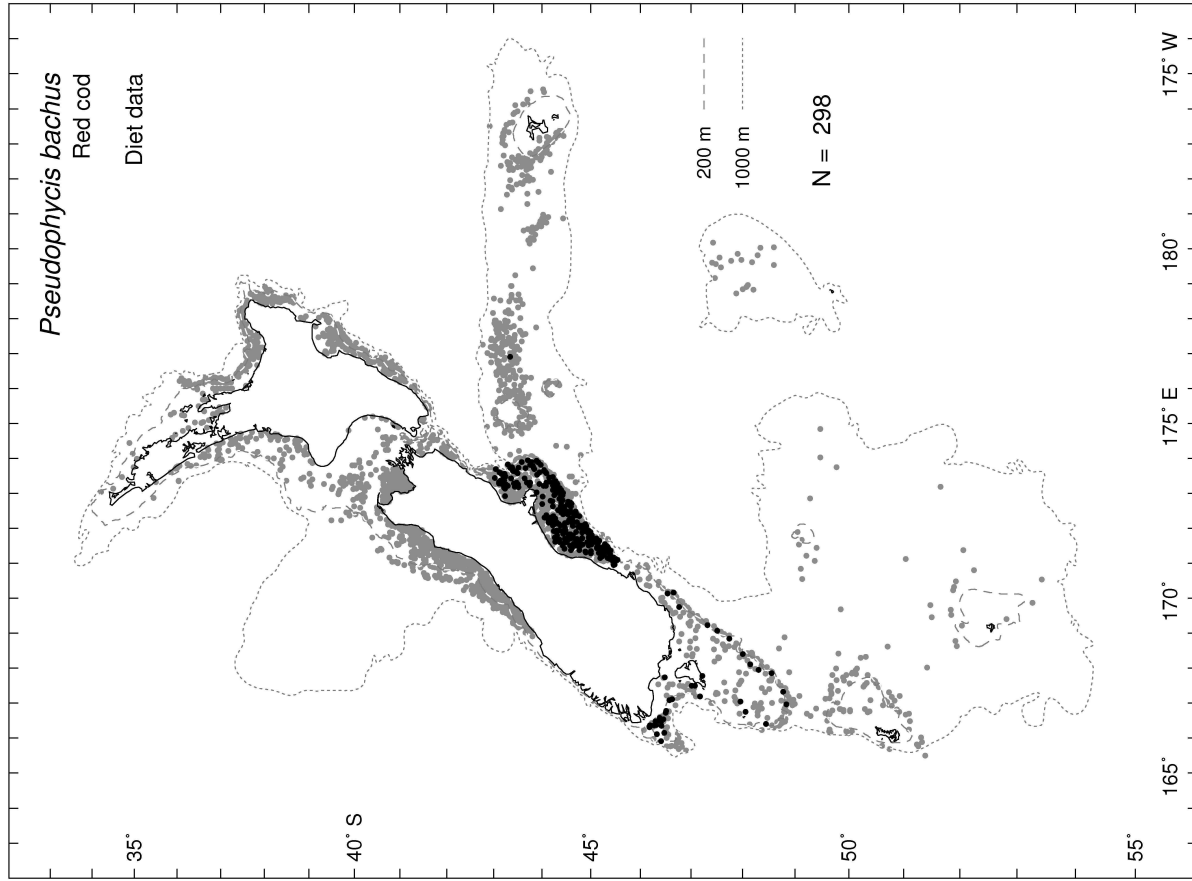


Figure B19a. The distribution of all red cod (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

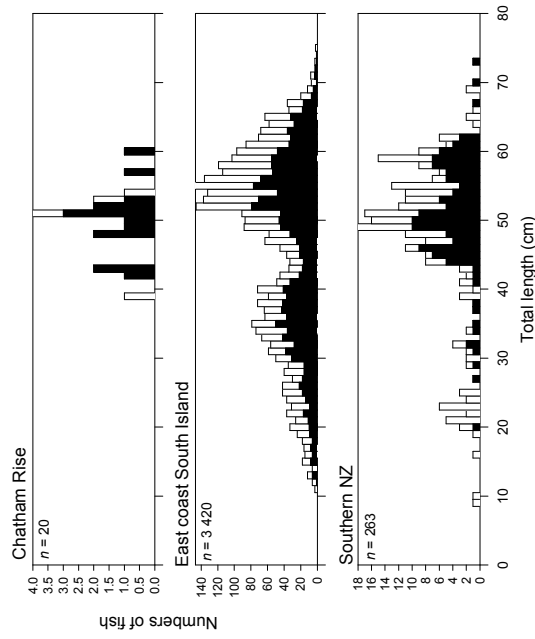


Figure B19b. The length frequency of red cod where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

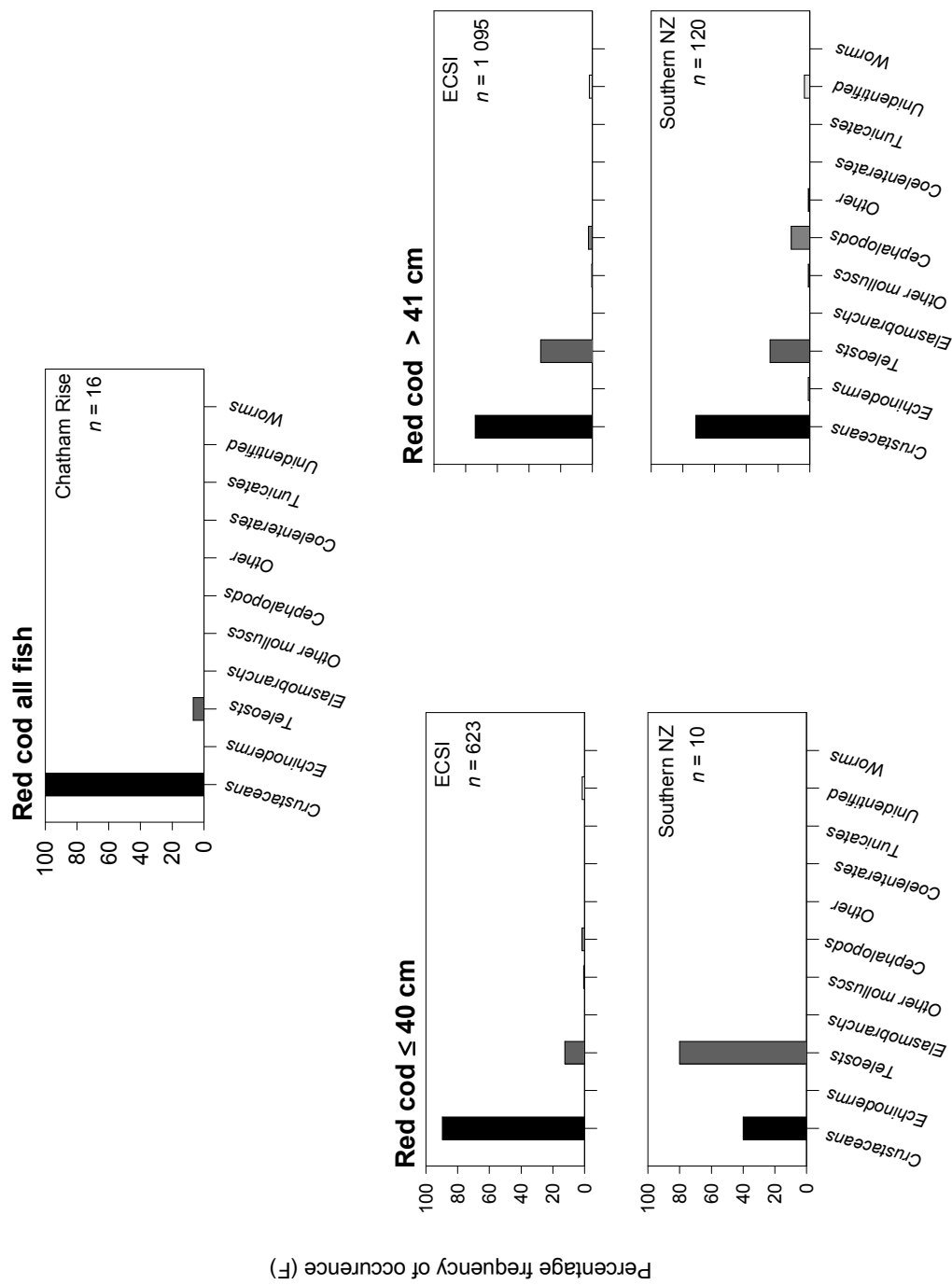
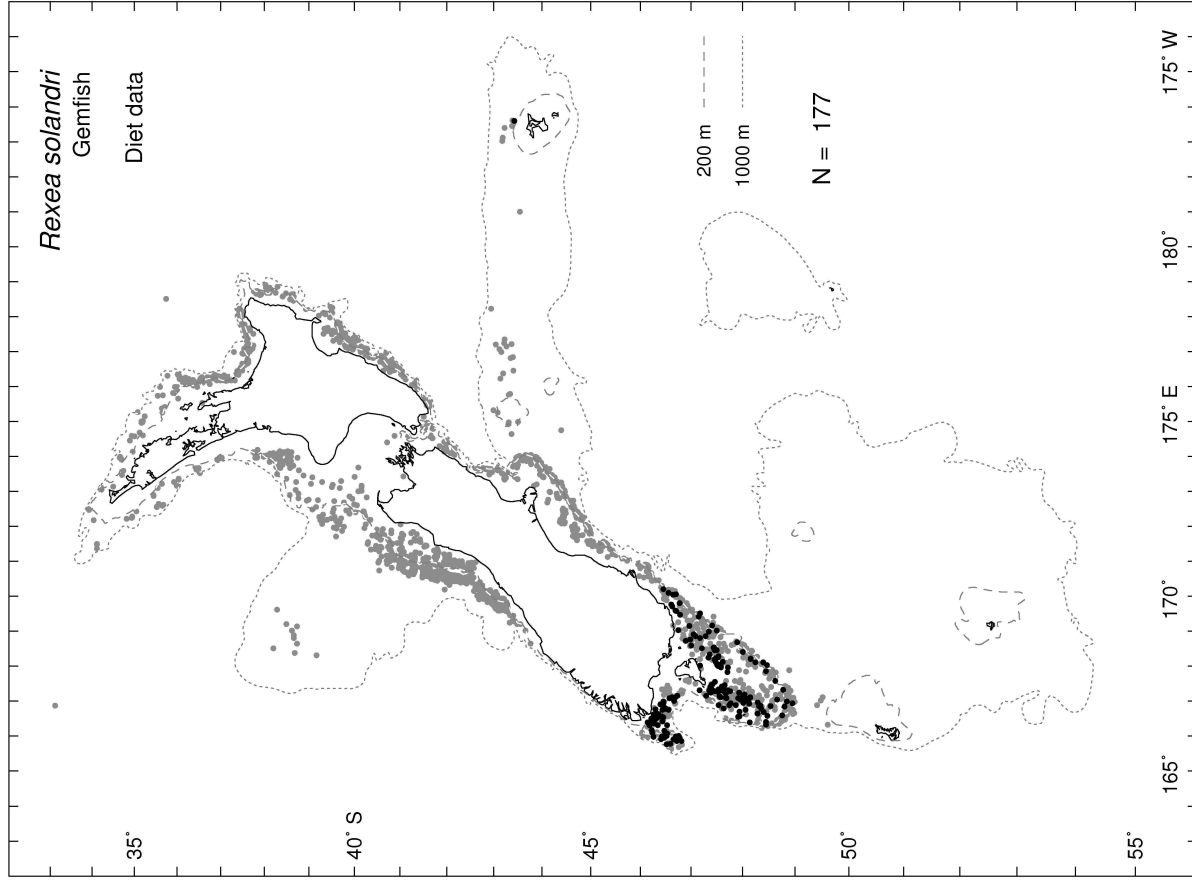
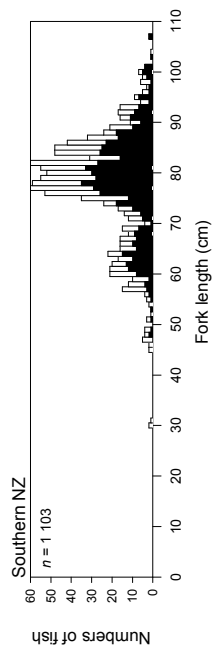


Figure B19c. The importance of major prey groups in the diet of red cod examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.



**Figure B20a.** The distribution of all gemfish (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.



**Figure B20b.** The length frequency of gemfish where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

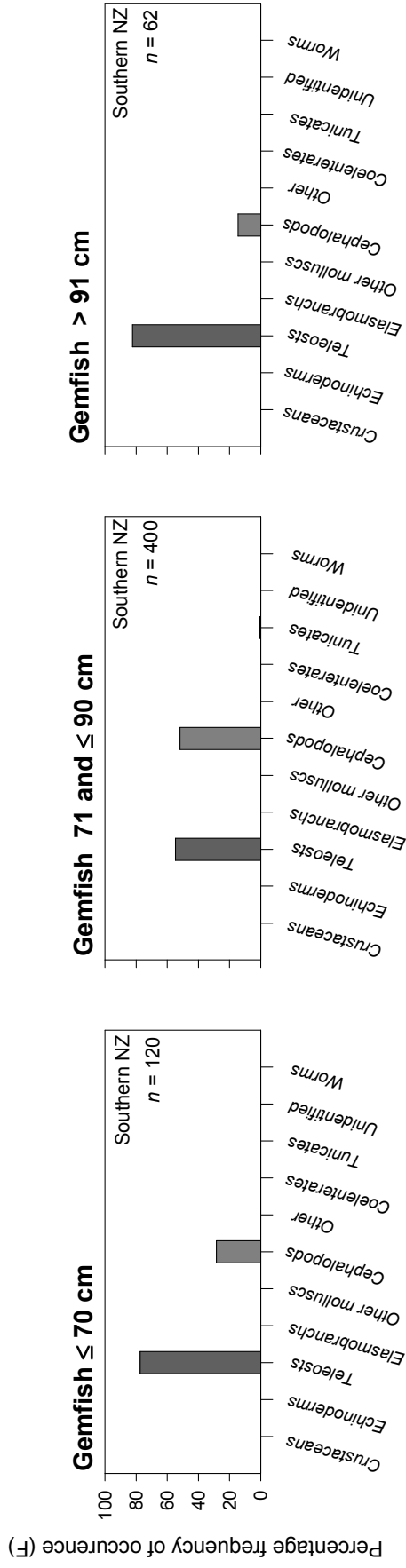


Figure B20c. The importance of major prey groups in the diet of gemfish examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.



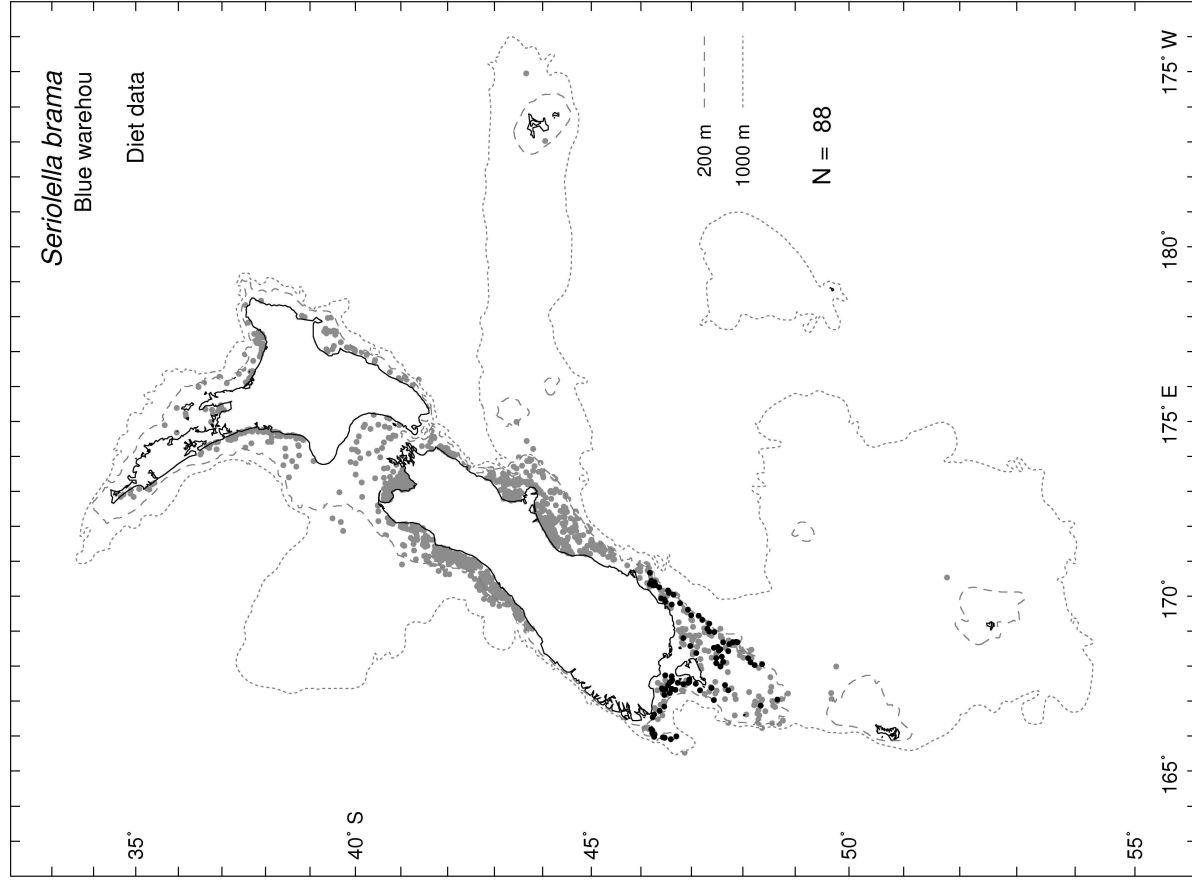


Figure B21a. The distribution of all blue warehou (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

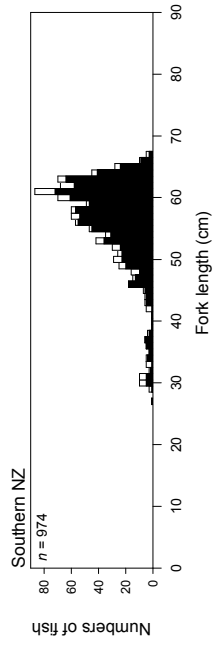


Figure B21b. The length frequency of blue warehou where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

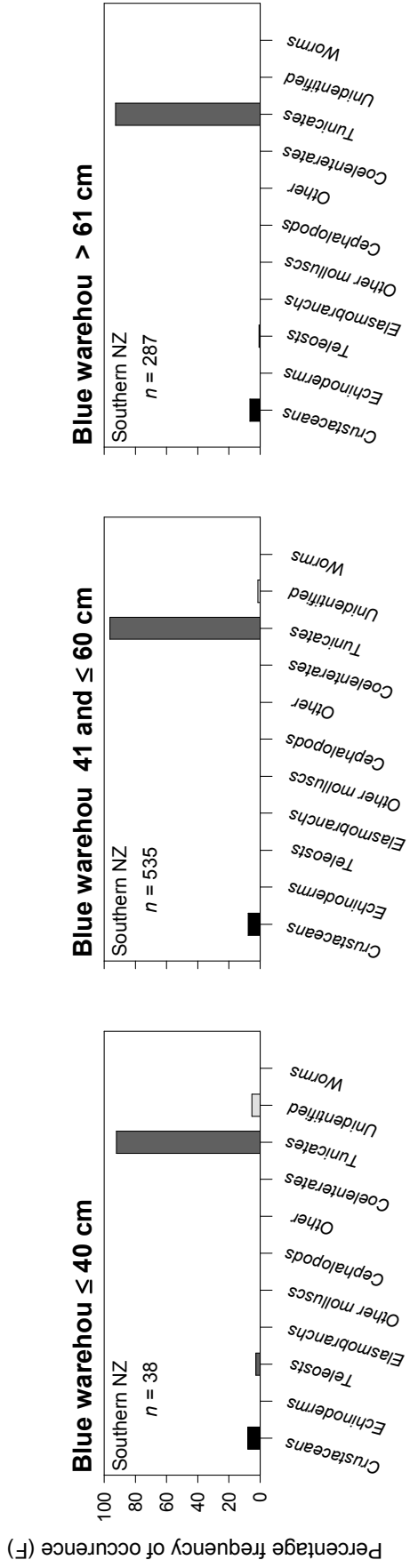


Figure B21c. The importance of major prey groups in the diet of blue warehou examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.

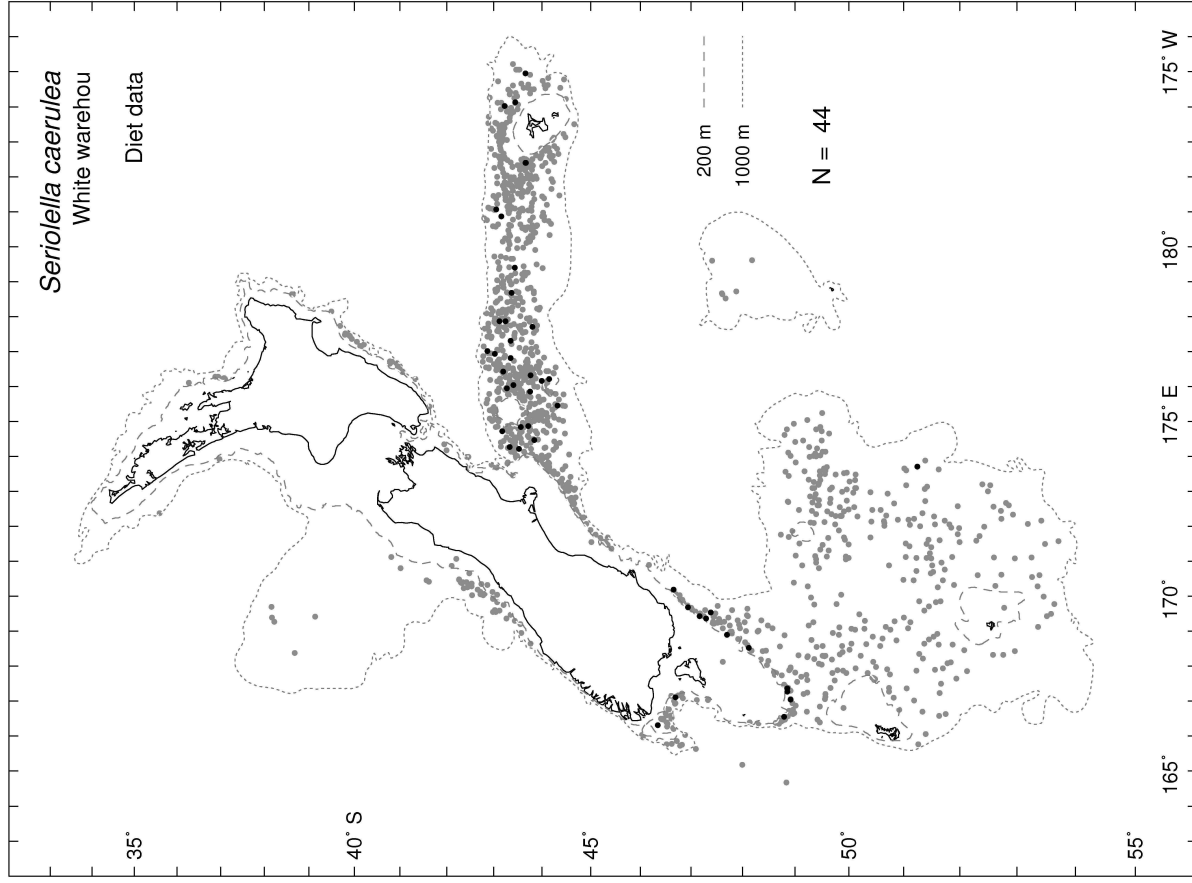


Figure B22a. The distribution of all white warehou (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

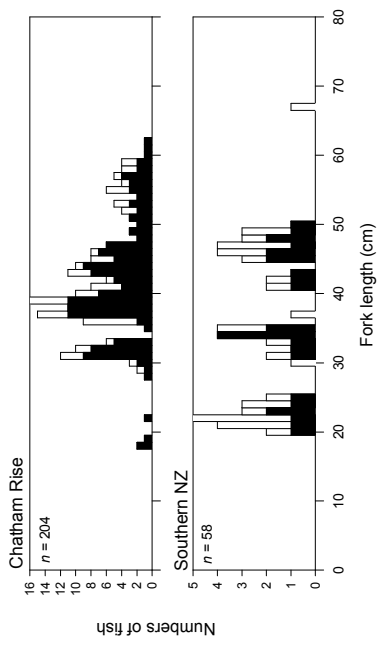


Figure B22b. The length frequency of white warehou where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

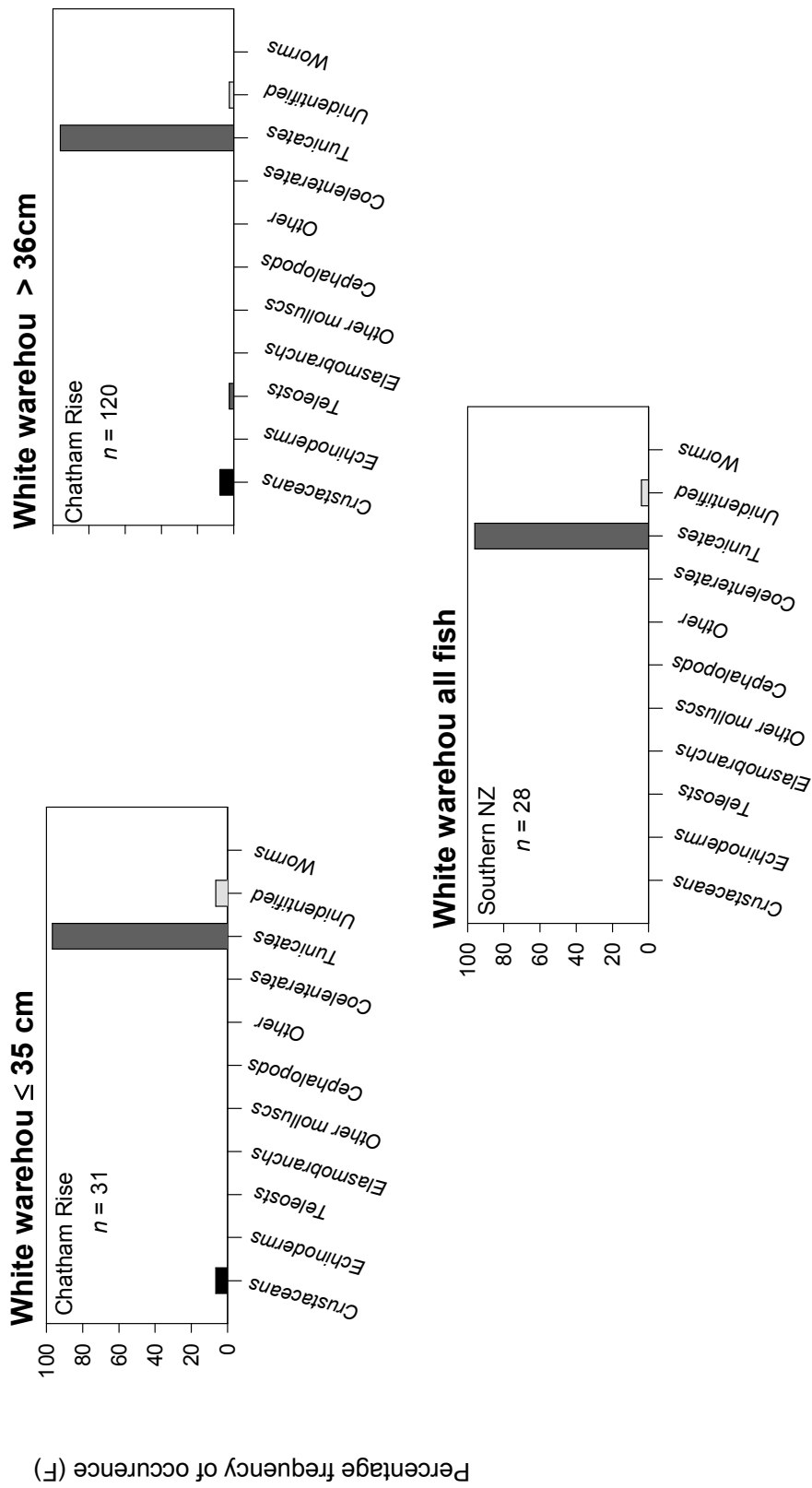


Figure B22c. The importance of major prey groups in the diet of white warehou examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. *n*, number of fish examined for diet.

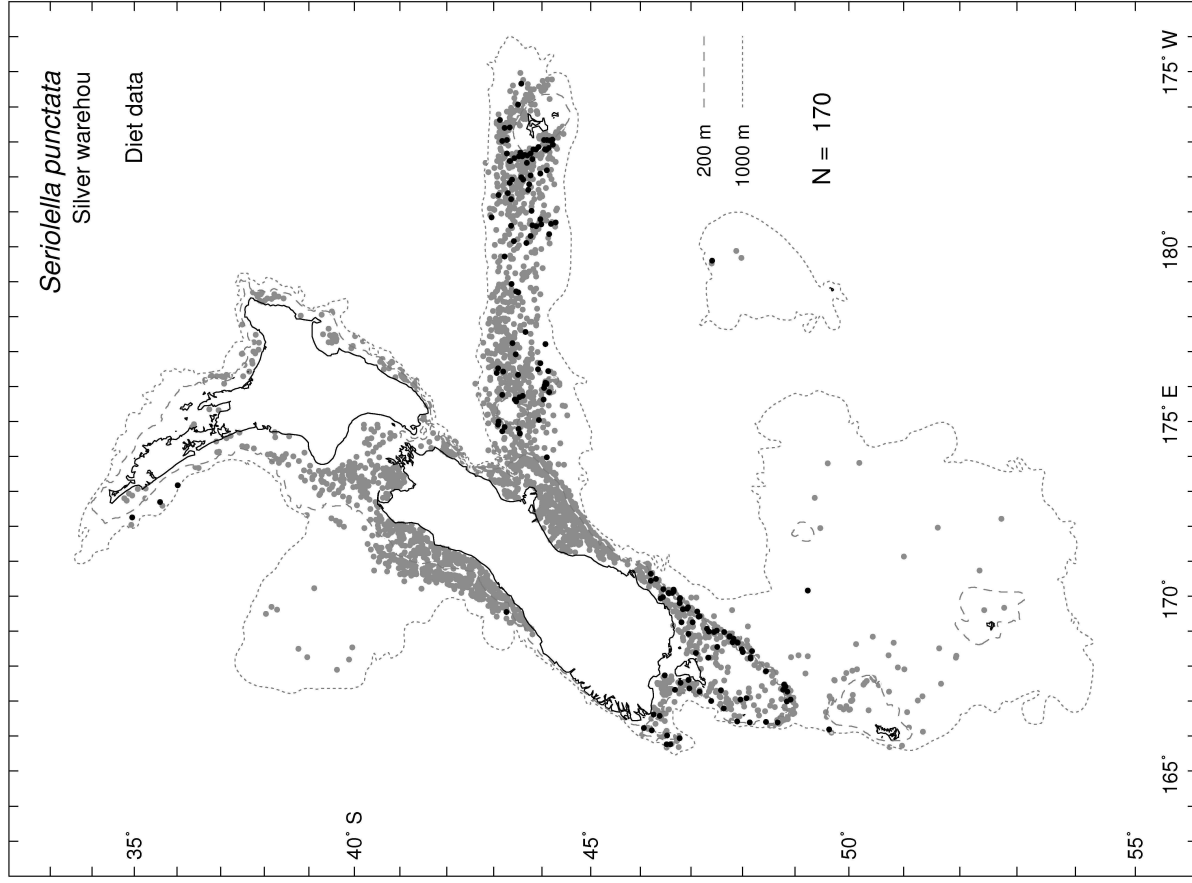


Figure B23a. The distribution of all silver warehou (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

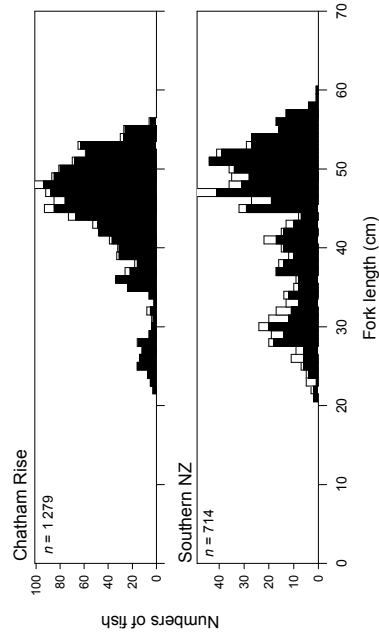


Figure B23b. The length frequency of silver warehou where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

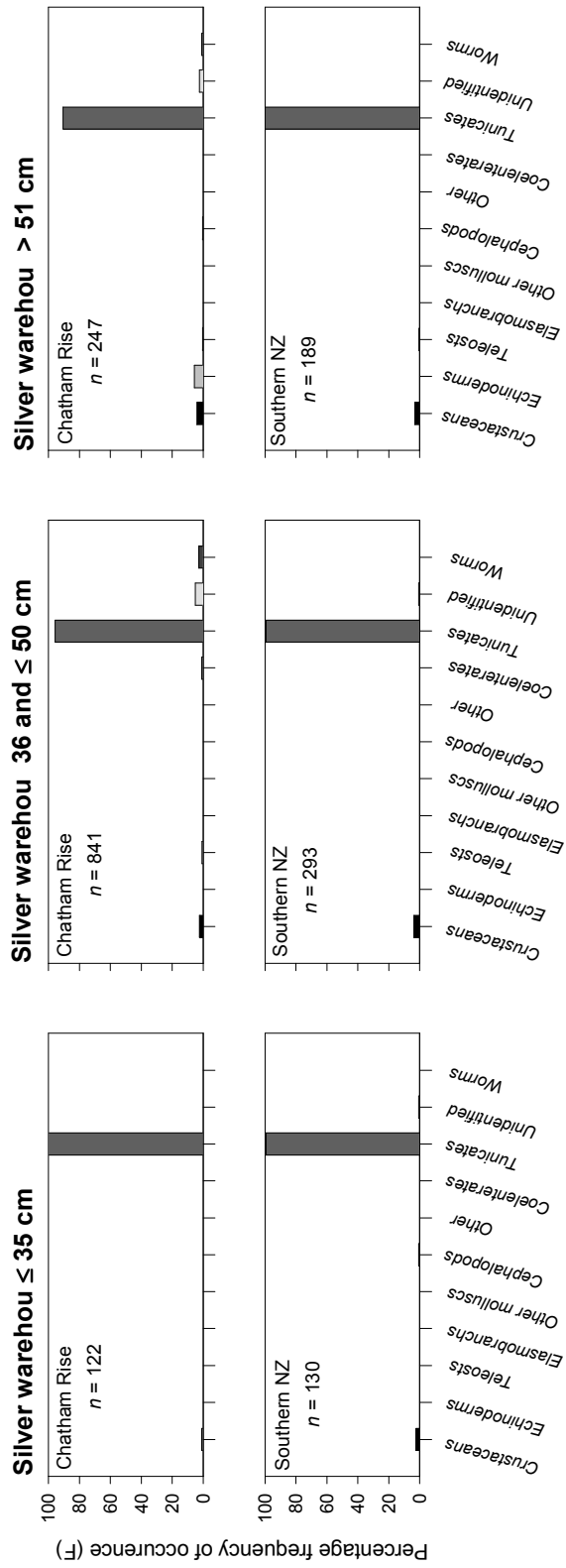


Figure B23c. The importance of major prey groups in the diet of silver warehou examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.

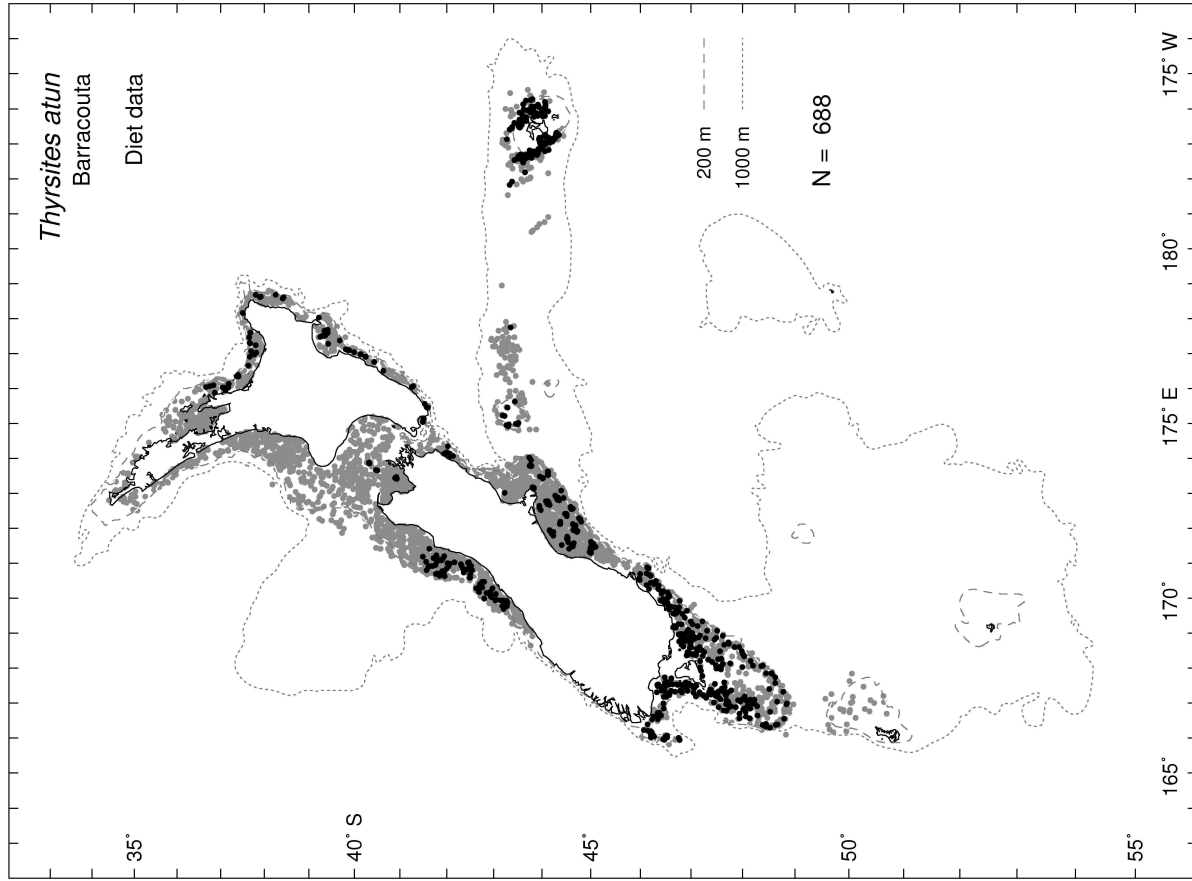


Figure B24a. The distribution of all barracouta (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

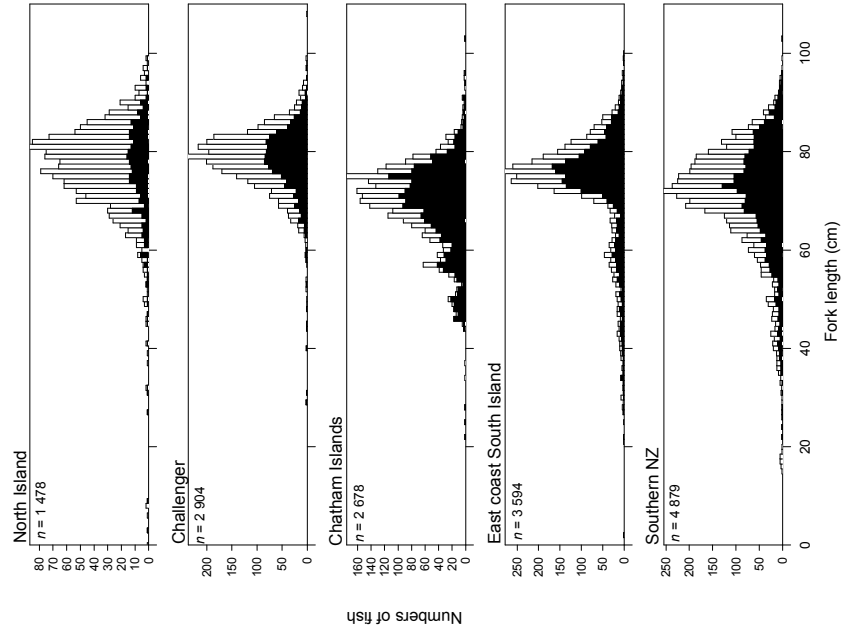


Figure B24b. The length frequency of barracouta where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

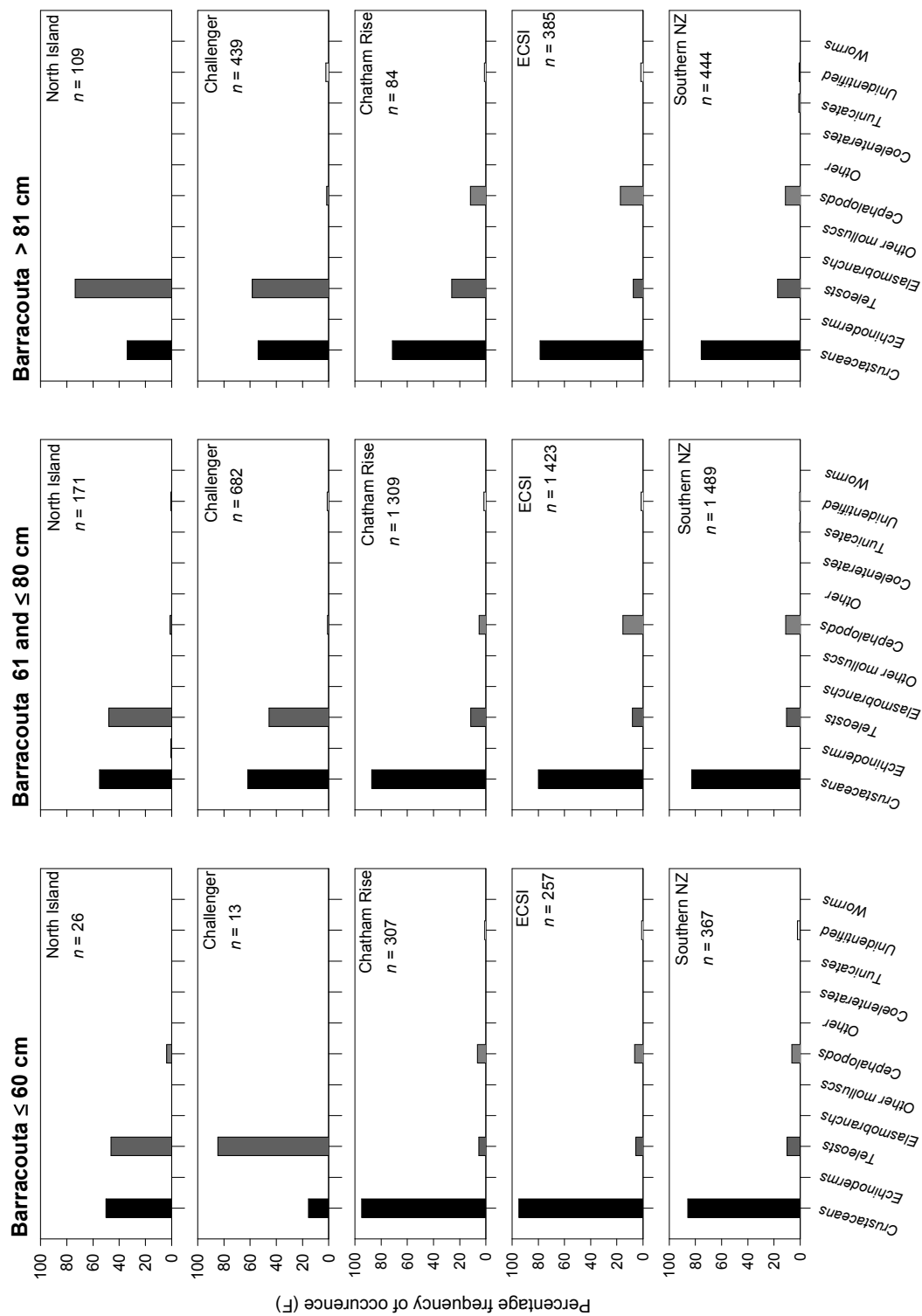


Figure B24c. The importance of major prey groups in the diet of barracouta examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.



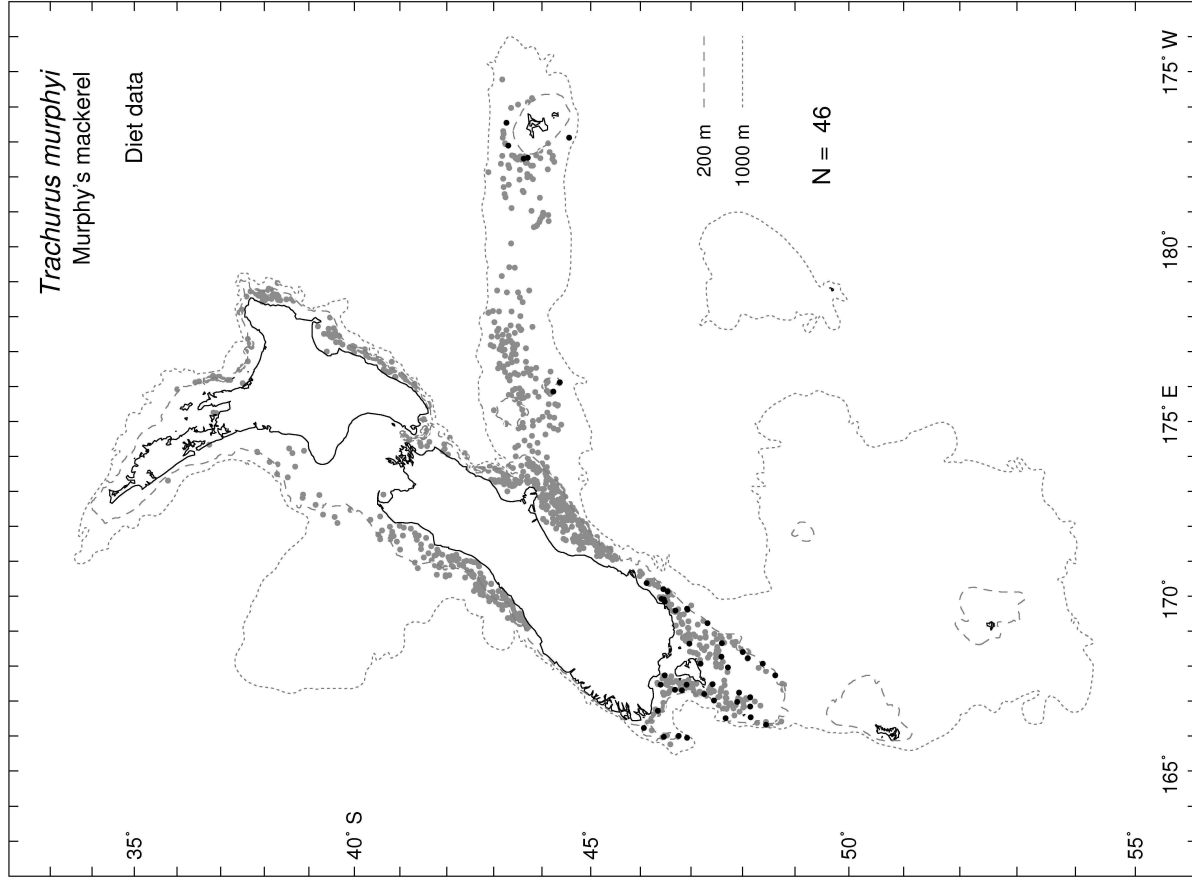


Figure B25a. The distribution of all Murphy's mackerel (left panel) caught (grey dots) and those examined for diet (black dots) in research trawls 1960–2000. N, number of fish examined for diet.

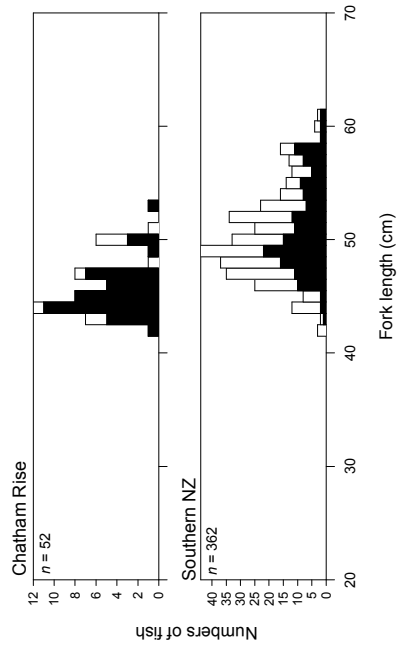


Figure B25b. The length frequency of Murphy's mackerel where feeding data was recorded. Fish with empty stomachs are presented as white bars and fish containing prey items as black bars. Areas are defined on p. 9. n, number of fish examined for diet.

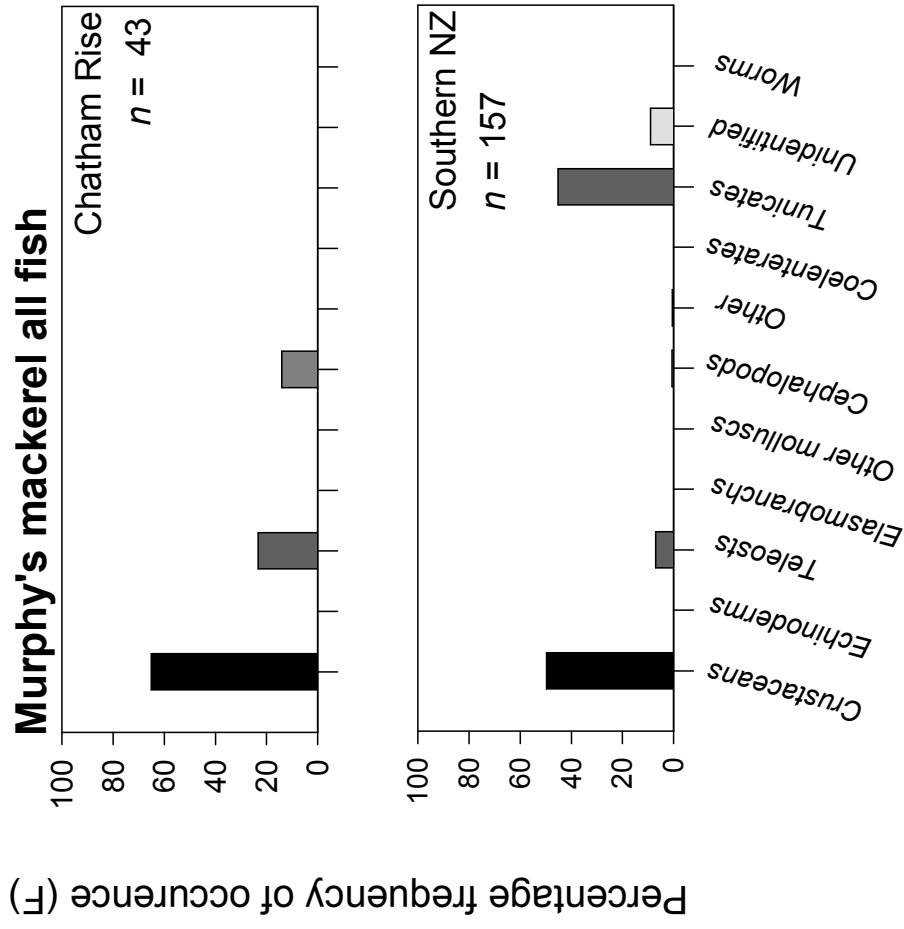


Figure B25c. The importance of major prey groups in the diet of Murphy's mackerel examined on research trawl surveys. Fish size groups are arbitrary designations. Areas are defined on p. 9. n, number of fish examined for diet.



**APPENDIX C: Summaries of stomach content analyses from the MFish Research Trawl Database 1960–2000, for 25 key species.**

**APPENDIX C: Summaries of stomach content analyses from the MFish Research Trawl Database 1960–2000, for 25 key species.**

**Table C1: Diet of black oreo, *Alloctytus niger*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	Chatham		Southern		All areas	
	Rise		N.Z.		20–45	
Total length range (cm)	20–45		25–45		20–45	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Coelenterata</b>	<b>5</b>	<b>0.9</b>			<b>5</b>	<b>0.6</b>
Scyphozoa (jellyfish)	1	0.2			1	0.1
Anthozoa (sea anemones)	4	0.7			4	0.5
<b>Tunicata</b>	<b>176</b>	<b>31.4</b>	<b>31</b>	<b>10.0</b>	<b>207</b>	<b>23.7</b>
Thaliacea (salps)	176	31.4	31	10.0	207	23.7
<b>Crustacea</b>	<b>255</b>	<b>45.5</b>	<b>61</b>	<b>19.6</b>	<b>316</b>	<b>36.2</b>
crustacean (unident.)	33	5.9	22	7.1	55	6.3
Copepoda	3	0.5			3	0.3
Amphipoda	7	1.2	4	1.3	11	1.3
Isopoda	1	0.2			1	0.1
Mysidacea	3	0.5	13	4.2	16	1.8
mysid (unident.)	3	0.5	5	1.6	8	0.9
<i>Neognathophausia</i> sp.			8	2.6	8	0.9
Euphausiacea	37	6.6	5	1.6	42	4.8
Natant decapods	176	31.4	19	6.1	195	22.4
natant decapod (unident.)	158	28.2	12	3.9	170	19.5
natant decapod - pelagic	14	2.5			14	1.6
<i>Acanthephyra</i> spp.	2	0.4	2	0.6	4	0.5
<i>A. pelagica</i>			1	0.3	1	0.1
<i>Pasiphaea</i> spp.	2	0.4	3	1.0	5	0.6
<i>Sergestes</i> spp.	1	0.2	1	0.3	2	0.2
Paguridae	1	0.2			1	0.1
<b>Mollusca</b>	<b>9</b>	<b>1.6</b>	<b>42</b>	<b>13.5</b>	<b>51</b>	<b>5.8</b>
<b>Cephalopoda</b>	<b>9</b>	<b>1.6</b>	<b>42</b>	<b>13.5</b>	<b>51</b>	<b>5.8</b>
Octopoda			1	0.3	1	0.1
octopus (unident.)			1	0.3	1	0.1
Teuthoidea (squid)	9	1.6	41	13.2	50	5.7
squid (unident.)	6	1.1	40	12.9	46	5.3
Cranchiidae	1	0.2	1	0.3	2	0.2
<i>Histioteuthis</i> spp.	2	0.4			2	0.2
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>189</b>	<b>33.7</b>	<b>225</b>	<b>72.3</b>	<b>414</b>	<b>47.5</b>
teleost (unident.)	168	29.9	199	64.0	367	42.1
scales	2	0.4			2	0.2

**Table C1 (continued)**

Area	Chatham		Southern		All areas	
	Rise		N.Z.		20–45	
Fork length range (cm)	20–45		25–45		20–45	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
mesopelagics	18	3.2	28	9.0	46	5.3
Astronesthidae			2	0.6	2	0.2
<i>Avocettina</i> spp.			1	0.3	1	0.1
<i>Bathylagus</i> spp.	1	0.2			1	0.1
<i>Chauliodus sloani</i>	1	0.2	3	1.0	4	0.5
<i>Cyclothone</i> spp.			1	0.3	1	0.1
<i>Lampanyctus</i> spp.			1	0.3	1	0.1
Malacosteidae (unident.)	1	0.2	1	0.3	2	0.2
Melamphaidae (unident.)			3	1.0	3	0.3
Myctophidae (unident.)	7	1.2	12	3.9	19	2.2
<i>Nemichthys scolopaceus</i>	1	0.2			1	0.1
<i>Photichthys argenteus</i>	9	1.6	1	0.3	10	1.1
Sternoptychidae (unident.)	1	0.2	2	0.6	3	0.3
<i>Stomias</i> spp.			3	1.0	3	0.3
other teleosts	3	0.5	4	1.3	7	0.8
Alepocephalidae (unident.)			2	0.6	2	0.2
Macrouridae (unident.)	1	0.2			1	0.1
Platytrichtidae (unident.)			1	0.3	1	0.1
<i>Rosenblattia robusta</i>			1	0.3	1	0.1
<b>Unidentifiable</b>	<b>16</b>	<b>2.9</b>	<b>9</b>	<b>2.9</b>	<b>25</b>	<b>2.9</b>
<b>Unidentified</b>	<b>19</b>	<b>3.4</b>	<b>6</b>	<b>1.9</b>	<b>25</b>	<b>2.9</b>
No. of fish examined	4 944		1 338		6 282	
No. stomachs with food	561		311		872	
% with empty stomachs	18		22		19	
% with everted stomachs	70		55		67	
No. of prey items	677		384		1061	

**Table C2: Diet of alfonsino, *Beryx splendens*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	North Island		Chatham Rise		All areas	
	20–50		30–50		20–50	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Crustacea</b>	<b>106</b>	<b>82.2</b>	<b>6</b>	<b>18.2</b>	<b>112</b>	<b>69.1</b>
crustacean (unident.)			2	6.1	2	1.2
Mysid / euphausiid (unident.)	1	0.8			1	0.6
Mysidacea	3	2.3			3	1.9
Euphausiacea	4	3.1			4	2.5
Natant decapods	104	80.6	5	15.2	109	67.3
natant decapod (unident.)	7	5.4	4	12.1	11	6.8
natant decapod - benthic	1	0.8			1	0.6
natant decapod - pelagic	96	74.4			96	59.3
<i>Lipkius holthuisi</i>			1	3.0	1	0.6
<b>Mollusca</b>	<b>4</b>	<b>3.1</b>	<b>5</b>	<b>15.2</b>	<b>9</b>	<b>5.6</b>
<b>Cephalopoda</b>	<b>4</b>	<b>3.1</b>	<b>5</b>	<b>15.2</b>	<b>9</b>	<b>5.6</b>
Teuthoidea (squid)	4	3.1	5	15.2	9	5.6
squid (unident.)	4	3.1			4	2.5
<i>Onykia (Moroteuthis)</i> spp.			1	3.0	1	0.6
<i>Nototodarus</i> spp.			4	12.1	4	2.5
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>39</b>	<b>30.2</b>	<b>26</b>	<b>78.8</b>	<b>65</b>	<b>40.1</b>
teleost (unident.)	9	7.0	15	45.5	24	14.8
mesopelagics	30	23.3	11	33.3	41	25.3
<i>Maurolicus australis</i>			8	24.2	8	4.9
Myctophidae (unident.)	30	23.3			30	18.5
<i>Photichthys argenteus</i>			3	9.1	3	1.9
<b>Unidentified</b>	<b>3</b>	<b>2.3</b>			<b>3</b>	<b>1.9</b>
No. of fish examined	304		61		365	
No. stomachs with food	129		33		162	
% with empty stomachs	56		46		55	
% with everted stomachs	1		0		1	
% with regurgitated stomachs	0		0		0	
No. of prey items	158		38		196	





**Table C3: Diet of red gurnard, *Cheilidonichthys kumu*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	East Coast South Island		Southern N.Z.		All areas	
	20–55		40		20–55	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Crustacea</b>	<b>169</b>	<b>56.5</b>			<b>169</b>	<b>56.5</b>
crustacean (unident.)	34	11.4			34	11.4
Natant decapod	1	0.3			1	0.3
Galatheidae						
<i>Munida</i> spp.	59	19.7			59	19.7
Crab (Brachyura / Anomura, unident.)	36	12.0			36	12.0
Brachyura						
<i>Ovalipes catharus</i>	53	17.7			53	17.7
<b>Mollusca</b>	<b>4</b>	<b>1.3</b>			<b>4</b>	<b>1.3</b>
mollusc (unident.)	1	0.3			1	0.3
Gastropod						
Whelk	1	0.3			1	0.3
<b>Cephalopoda</b>	<b>2</b>	<b>0.7</b>			<b>2</b>	<b>0.7</b>
Teuthoidea (squid)	2	0.7			2	0.7
<i>Nototodarus</i> spp.	2	0.7			2	0.7
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>129</b>	<b>43.1</b>			<b>129</b>	<b>43.1</b>
teleost (unident.)	99	33.1			99	33.1
other teleosts (i.e., not mesopelagics)	30	10.0			30	10.0
<i>Arnoglossus scapha</i>	2	0.7			2	0.7
<i>Hemerocoetes</i> spp.	4	1.3			4	1.3
<i>Kathetostoma giganteum</i>	4	1.3			4	1.3
<i>Peltorhamphus novaezeelandiae</i>	1	0.3			1	0.3
<i>Pseudophycis bachus</i>	19	6.4			19	6.4
<i>Sprattus</i> spp.	1	0.3			1	0.3
<b>Mud</b>	<b>1</b>	<b>0.3</b>			<b>1</b>	<b>0.3</b>
<b>Unidentifiable</b>	<b>4</b>	<b>1.3</b>			<b>4</b>	<b>1.3</b>
<b>Unidentified</b>	<b>9</b>	<b>3.0</b>			<b>9</b>	<b>3.0</b>
No. of fish examined	986		1		987	
No. stomachs with food	299		0		299	
% with empty stomachs	56		100		56	
% with everted stomachs	13		0		13	
% with regurgitated stomachs	0		0		0	
No. of prey items	331		0		331	



**Table C4: Diet of lookdown dory, *Cyttus traversi*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	15–55		25–40		30–50		30–45		15–55	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Crustacea</b>	<b>154</b>	<b>82.4</b>	<b>2</b>	<b>66.6</b>	<b>7</b>	<b>63.6</b>			<b>163</b>	<b>79.1</b>
Mysid / euphausiid (unident.)	2	1.1							2	1.0
Euphausiacea	3	1.6							3	1.5
Natant decapod	139	74.3	2	66.6	5	45.5			146	70.9
natant decapod (unident.)	10	5.3	2	66.6	5	45.5			17	8.3
natant decapod - benthic	51	27.3							51	24.8
natant decapod - pelagic	79	42.2							79	38.3
Nephropidae										
<i>Metanephrops challengeri</i>	5	2.7							5	2.4
Galatheidae	11	5.9			2	18.2			13	6.3
galatheid (unident.)	11	5.9							11	5.3
<i>Munida</i> spp.					2	18.2			2	1.0
<b>Osteichthyes</b>										
<b>Teleostei</b>	<b>38</b>	<b>20.3</b>			<b>5</b>	<b>45.5</b>	<b>5</b>	<b>100</b>	<b>48</b>	<b>23.3</b>
teleost (unident.)	20	10.7			4	36.4	4	80.0	28	13.6
mesopelagics	4	2.1							4	1.9
Myctophidae (unident.)	4	2.1							4	1.9
other teleosts	15	8.0			1	9.1	1	20.0	17	8.3
<i>Caelorinchus oliverianus</i>	2	1.1							2	1.0
<i>Capromimus abbreviatus</i>	3	1.6							3	1.5
<i>Euclichthys polynemus</i>	1	0.5							1	0.5
<i>Hoplostethus mediterraneus</i>	4	2.1							4	1.9
<i>Lepidorhynchus denticulatus</i>	1	0.5			1	9.1	1	20.0	3	1.5
Paralepididae (unident.)	1	0.5							1	0.5
<i>Paratrachichthys trailli</i>	1	0.5							1	0.5
<i>Rexea solandri</i>	2	1.1							2	1.0
<b>Unidentified</b>	<b>4</b>	<b>2.1</b>	<b>1</b>	<b>33.3</b>					<b>5</b>	<b>2.4</b>
No. of fish examined	509		3		20		17		549	
No. stomachs with food	187		3		11		5		206	
% with empty stomachs	61		0		45		71		60	
% with everted stomachs	3		0		0		0		2	
% with regurgitated stomachs	0		0		0		0		0	
No. of prey items	204		3		12		5		224	



**Table C5: Diet of ling, *Genypterus blacodes*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	50–150		35–150		15–165		35–140		15–165	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Coelenterata</b>							<b>1</b>	<b>0.0</b>	<b>1</b>	<b>0.0</b>
Scyphozoa (jellyfish)							1	0.0	1	0.0
<b>Tunicata</b>					<b>4</b>	<b>0.1</b>	<b>2</b>	<b>0.1</b>	<b>6</b>	<b>0.1</b>
Thaliacea (salps)					4	0.1	2	0.1	6	0.1
<b>Polychaeta</b>					<b>3</b>	<b>0.1</b>	<b>4</b>	<b>0.1</b>	<b>7</b>	<b>0.1</b>
<b>Crustacea</b>	<b>54</b>	<b>47.8</b>	<b>45</b>	<b>39.1</b>	<b>1 501</b>	<b>50.5</b>	<b>1 093</b>	<b>27.4</b>	<b>2 693</b>	<b>37.5</b>
crustacean (unident.)			2	1.7	125	4.2	36	0.9	163	2.3
Copepoda					1	0.0	1	0.0	2	0.0
Amphipoda	3	2.7			2	0.1	8	0.2	13	0.2
Isopoda	1	0.9			22	0.7	156	3.9	179	2.5
Mysidacea					1	0.0			1	0.0
Euphausiacea					60	2.0	71	1.8	131	1.8
Natant decapods	34	30.1	3	2.6	238	8.0	774	19.4	1 049	14.6
natant decapod (unident.)			3	2.6	231	7.8	741	18.6	975	13.6
natant decapod - benthic	9	8.0							9	0.1
natant decapod - pelagic	25	22.1							25	0.3
<i>Camplyonotus rathbonae</i>					1	0.0	31	0.8	32	0.4
<i>Lipkius holthuisi</i>					5	0.2	4	0.1	9	0.1
<i>Pasiphaea</i> spp.							2	0.1	2	0.0
<i>Sergia potens</i>					1	0.0			1	0.0
Nephropidae										
<i>Metanephrops challengeri</i>	12	10.6	14	12.2	143	4.8	7	0.2	176	2.4
Palinuridae										
<i>Jasus edwardsii</i>					5	0.2	1	0.0	6	0.1
Scyllaridae										
<i>Ibacus alticrenatus</i>							4	0.1	4	0.1
Galatheididae	12	10.6	29		992	33.4	50	1.3	1 083	15.1
galatheid (unident.)	12	10.6			23	0.8			35	0.5
<i>Munida</i> spp.			29	25.2	969	32.6	50	1.3	1 049	14.6
Crab (Brachyura / Anomura, unident.)			2	1.7	83	2.8	33	0.8	118	1.6
Brachyura	4	3.5			1	0.0	1	0.0	6	0.1
brachyuran (unident.)	4	3.5			1	0.0			5	0.1
<i>Nectocarcinus antarcticus</i>							1	0.0	1	0.0
<b>Mollusca</b>	<b>4</b>	<b>3.5</b>	<b>4</b>	<b>3.5</b>	<b>100</b>	<b>3.4</b>	<b>123</b>	<b>3.1</b>	<b>231</b>	<b>3.2</b>
mollusc (unident.)					1	0.0	3	0.1	4	0.1
Shell fragments							3	0.1	3	0.0
Bivalva										
Pectinidae (Scallops)					2	0.1	2	0.1	4	0.1

**Table C5 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	50–150		35–150		15–165		35–140		15–165	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Mollusca – continued</b>										
Gastropoda					1	0.0	9	0.2	10	0.1
gastropod (unident.)					1	0.0	5	0.1	6	0.1
sea hare (O. Aplysiomorpha)							4	0.1	4	0.1
<b>Cephalopoda</b>	<b>4</b>	<b>3.5</b>	<b>4</b>	<b>3.5</b>	<b>95</b>	<b>3.2</b>	<b>105</b>	<b>2.6</b>	<b>208</b>	<b>2.9</b>
cephalopod (unident.)		0.0			5	0.2	2	0.1	7	0.1
Octopoda			1	0.9	24	0.8	9	0.2	34	0.5
octopod (unident.)			1	0.9	24	0.8	8	0.2	33	0.5
<i>Graneledone</i> spp.							1	0.0	1	0.0
Teuthoidea (squid)	4	3.5	3	2.6	67	2.3	93	2.3	167	2.3
squid (unident.)	4	3.5	2	1.7	64	2.2	75	1.9	145	2.0
<i>Onykia (Moroteuthis)</i> spp.							1	0.0	1	0.0
<i>O. (M). ingens</i>							1	0.0	1	0.0
<i>Nototodarus</i> spp.			1	0.9	3	0.1	16	0.4	20	0.3
Sepiolidae							1	0.0	1	0.0
<b>Echinodermata</b>							<b>2</b>	<b>0.1</b>	<b>2</b>	<b>0.0</b>
echinoderm (unident.)							1	0.0	1	0.0
Holothuroidea										
<i>Stichopus mollis</i>							1	0.0	1	0.0
<b>Chondrichthyes</b>					<b>14</b>	<b>0.5</b>	<b>2</b>	<b>0.1</b>	<b>16</b>	<b>0.2</b>
egg cases					3	0.1	1	0.0	4	0.1
<b>Elasmobranchii</b>					<b>5</b>	<b>0.2</b>			<b>5</b>	<b>0.1</b>
<i>Echinorhinus cookei</i>					3	0.1			3	0.0
<i>Brochiraja asperula</i>					1	0.0			1	0.0
<i>Squalus acanthias</i>					1	0.0			1	0.0
<b>Holocephali</b>					<b>6</b>	<b>0.2</b>	<b>1</b>	<b>0.0</b>	<b>7</b>	<b>0.1</b>
<i>Hydrolagus bemisi</i>					3	0.1	1	0.0	4	0.1
<i>H. novaezealandiae</i>					3	0.1			3	0.0
<b>Osteichthyes</b>										
<b>Teleostei</b>	<b>63</b>	<b>55.8</b>	<b>74</b>	<b>64.3</b>	<b>1 598</b>	<b>53.8</b>	<b>2 971</b>	<b>74.5</b>	<b>4 706</b>	<b>65.5</b>
teleost (unident.)	18	15.9	59	51.3	1 200	40.4	2 305	57.8	3 583	49.8
fragments, bones					5	0.2	14	0.4	19	0.3
scales					1	0.0	1	0.0	2	0.0
otoliths					1	0.0	1	0.0	2	0.0
fish eggs							3	0.1	3	0.0
mesopelagics					7	0.2	4	0.1	11	0.2
<i>Gonostoma elongatum</i>					1	0.0			1	0.0
<i>Maurolicus australis</i>					3	0.1			3	0.0
Myctophidae (unident.)					2	0.1	3	0.1	5	0.1
Nemichthyidae (unident.)					1	0.0	1	0.0	2	0.0

**Table C5 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	50–150		35–150		15–165		35–140		15–165	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Teleostei – continued</b>										
other teleosts	46	40.7	16	13.9	407	13.7	696	17.4	1 150	16.0
<i>Anguilliformes</i> (unident.)					1	0.0	7	0.2	8	0.1
<i>Alertichthys blacki</i>							4	0.1	4	0.1
<i>Allocyttus niger</i>					4	0.1			4	0.1
<i>Antipodocottus galathea</i>					1	0.0			1	0.0
<i>Argentina elongata</i>					1	0.0	6	0.2	7	0.1
<i>Arnoglossus scapha</i>	1	0.9			4	0.1	3	0.1	8	0.1
<i>Austrophycis marginata</i>					15	0.5	88	2.2	103	1.4
<i>Azygopus pinnifasciatus</i>					2	0.1	5	0.1	7	0.1
<i>Bassanago bulbiceps</i>	2	1.8			1	0.0	2	0.1	5	0.1
<i>B. hirsutus</i>					2	0.1	1	0.0	3	0.0
<i>Benthodesmus</i> spp.	1	0.9	4	3.5	1	0.0			6	0.1
<i>Brama brama</i>					1	0.0			1	0.0
<i>Caelorinchus acanthiger</i>	2	1.8			1	0.0			3	0.0
<i>C. aspercephalus</i>					8	0.3	15	0.4	23	0.3
<i>C. bollonsi</i>					8	0.3	3	0.1	11	0.2
<i>C. fasciatus</i>					8	0.3	65	1.6	73	1.0
<i>C. innotabilis</i>					12	0.4	4	0.1	16	0.2
<i>C. oliverianus</i>			2	1.7	51	1.7	43	1.1	96	1.3
<i>C. parvifasciatus</i>	1	0.9			1	0.0			2	0.0
<i>Centriscops humerosus</i>	1	0.9							1	0.0
<i>Chlorophthalmus nigripinnis</i>	4	3.5							4	0.1
<i>Conger</i> spp.			1	0.9			1	0.0	2	0.0
<i>Coryphaenoides serrulatus</i>	1	0.9							1	0.0
<i>C. subserrulatus</i>							1	0.0	1	0.0
<i>Euclichthys polynemus</i>					4	0.1	6	0.2	10	0.1
<i>Genypterus blacodes</i>					5	0.2			5	0.1
<i>Gnathophis habenatus</i>							3	0.1	3	0.0
<i>Gonorynchus gonorynchus</i>					1	0.0	1	0.0	2	0.0
<i>Helicolenus</i> spp.	1	0.9	2	1.7	2	0.1			5	0.1
<i>Hemerocoetes</i> spp.			1	0.9	12	0.4	18	0.5	31	0.4
<i>Hoplichthys haswelli</i>	2	1.8			4	0.1	1	0.0	7	0.1
<i>Hoplostethus atlanticus</i>					1	0.0			1	0.0
<i>H. mediterraneus</i>	2	1.8							2	0.0
<i>Kathetostoma giganteum</i>					1	0.0			1	0.0
<i>Lepidoperca aurantia</i>					1	0.0			1	0.0
<i>Lepidorhynchus denticulatus</i>	5	4.4			14	0.5	19	0.5	38	0.5
<i>Macrorhamphosodes uradoi</i>					1	0.0			1	0.0
Macrouridae (unident.)	2	1.8	3	2.6	112	3.8	291	7.3	408	5.7
<i>Macruronus novaeseelandiae</i>	18	15.9	3	2.6	105	3.5	77	1.9	203	2.8
<i>Magnisudis prionosa</i>							1	0.0	1	0.0
<i>Micromesistius australis</i>							21	0.5	21	0.3
<i>Mora moro</i>					1	0.0			1	0.0
<i>Neoachirosetta milfordi</i>					1	0.0	7	0.2	8	0.1
<i>Neocyttus rhomboidalis</i>					1	0.0			1	0.0

**Table C5 (continued)**

Area	North Island 50–150		Challenger / WCSI 35–150		Chatham Rise 15–165		Southern N.Z. 35–140		All areas 15–165	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
other teleosts – <i>continued</i>										
<i>Neophrynichthys angustus</i>					1	0.0			1	0.0
<i>Notacanthus sexspinis</i>					4	0.1	3	0.1	7	0.1
Oreosomatidae (unident.)					1	0.0			1	0.0
Paralepididae (unident.)	1	0.9							1	0.0
<i>Paranotothenia</i> spp.							2	0.1	2	0.0
<i>Peltorhamphus latus</i>					2	0.1			2	0.0
Pleuronectiformes (unident.)					3	0.1	10	0.3	13	0.2
<i>Pseudophycis bachus</i>					5	0.2	2	0.1	7	0.1
<i>Regalecus glesne</i>					1	0.0			1	0.0
<i>Rexea solandri</i>	1	0.9							1	0.0
<i>Rhombosolea plebeia</i>							1	0.0	1	0.0
<i>Solegnathus spinosissimus</i>					1	0.0			1	0.0
<i>Trachurus</i> spp.	1	0.9			9	0.3			10	0.1
<i>T. murphyi</i>					7	0.2	1	0.0	8	0.1
<i>Trachyscorpia capensis</i>	1	0.9							1	0.0
<i>Ventrifossa nigromaculata</i>					1	0.0	1	0.0	2	0.0
<b>Mud</b>					<b>1</b>	<b>0.0</b>			<b>1</b>	<b>0.0</b>
<b>Unidentifiable</b>					<b>7</b>	<b>0.2</b>	<b>5</b>	<b>0.1</b>	<b>12</b>	<b>0.2</b>
<b>Unidentified</b>	<b>1</b>	<b>0.9</b>	<b>1</b>	<b>0.9</b>	<b>19</b>	<b>0.6</b>	<b>99</b>	<b>2.5</b>	<b>120</b>	<b>1.7</b>
No. of fish examined		374		238		6 386		11 004		18 002
No. stomachs with food		113		115		2 972		3 989		7 189
% with empty stomachs		69		48		52		63		59
% with everted stomachs		1		1		1		1		1
% with regurgitated stomachs		0		5		0		2		1
No. of prey items		136		130		3 458		4 424		8 148



**Table C6: Diet of sea perch, *Helicolenus percooides*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	Challenger / WCSI 35–40		Chatham Rise 25–45		East Coast South Island 15–40		All areas 15–45	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
Total length range (cm)								
Species or group								
<b>Tunicata</b>			<b>8</b>	<b>44.4</b>	<b>1</b>	<b>0.9</b>	<b>9</b>	<b>7.3</b>
Thaliacea (salps)			8	44.4	1	0.9	9	7.3
<b>Polychaeta</b>					<b>2</b>	<b>1.9</b>	<b>2</b>	<b>1.6</b>
<b>Crustacea</b>			<b>6</b>	<b>33.3</b>	<b>66</b>	<b>62.3</b>	<b>72</b>	<b>58.1</b>
crustacean (unident.)					16	15.1	16	12.9
Nephropidae								
<i>Metanephrops challengeri</i>			2	11.1			2	1.6
Palinuridae								
<i>Jasus edwardsii</i>			4	22.2			4	3.2
Galatheidae								
<i>Munida</i> spp.					44	41.5	44	35.5
Crab (Brachyura / Anomura, unident.)					7	6.6	7	5.6
<b>Mollusca</b>			<b>1</b>	<b>5.6</b>	<b>4</b>	<b>3.8</b>	<b>5</b>	<b>4.0</b>
<b>Cephalopoda</b>			<b>1</b>	<b>5.6</b>	<b>4</b>	<b>3.8</b>	<b>5</b>	<b>4.0</b>
Teuthoidea (squid)			1	5.6	4	3.8	5	4.0
squid (unident.)			1	5.6			1	0.8
<i>Nototodarus</i> spp.					4	3.8	4	3.2
<b>Osteichthyes</b>								
<b>Teleostei</b>			<b>4</b>	<b>22.2</b>	<b>19</b>	<b>17.9</b>	<b>23</b>	<b>18.5</b>
teleost (unident.)			1	5.6	18	17.0	19	15.3
other teleosts			3	16.7	2	1.9	5	4.0
<i>Caelorinchus oliverianus</i>			3	16.7			3	2.4
<i>Thyrsites atun</i>					2	1.9	2	1.6
<b>Unidentifiable</b>					<b>4</b>	<b>3.8</b>	<b>4</b>	<b>3.2</b>
<b>Unidentified</b>					<b>16</b>	<b>15.1</b>	<b>16</b>	<b>12.9</b>
No. of fish examined		2		28		266		296
No. stomachs with food		0		18		106		124
% with empty stomachs		100		36		58		56
% with everted stomachs		0		0		2		2
% with regurgitated stomachs		0		0		0		0
No. of prey items		0		19		114		133



**Table C7: Diet of orange roughy, *Hoplostethus atlanticus*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	10–45		10–45		10–45		10–45		10–45	
Standard length range (cm)										
Species or group	n	F	n	F	n	F	n	F	n	F
<b>Coelenterata</b>	<b>1</b>	<b>0.0</b>			<b>3</b>	<b>0.0</b>	<b>2</b>	<b>0.1</b>	<b>6</b>	<b>0.0</b>
Scyphozoa (jellyfish)	1	0.0			3	0.0	2	0.1	6	0.0
<b>Tunicata</b>	<b>23</b>	<b>0.3</b>	<b>26</b>	<b>0.4</b>	<b>60</b>	<b>0.4</b>	<b>8</b>	<b>0.3</b>	<b>117</b>	<b>0.4</b>
Thaliacea (salps)	23	0.3	26	0.4	60	0.4	8	0.3	117	0.4
<b>Polychaeta</b>	<b>1</b>	<b>0.0</b>			<b>1</b>	<b>0.0</b>			<b>2</b>	<b>0.0</b>
<b>Chaetognatha</b>	<b>1</b>	<b>0.0</b>			<b>1</b>	<b>0.0</b>			<b>2</b>	<b>0.0</b>
<b>Crustacea</b>	<b>4 579</b>	<b>59.4</b>	<b>3 918</b>	<b>62.0</b>	<b>7 582</b>	<b>56.5</b>	<b>1 680</b>	<b>54.9</b>	<b>17 759</b>	<b>58.2</b>
crustacean (unident.)	1 667	21.6	542	8.6	2 296	17.1	280	9.2	4 785	15.7
Ostracoda	2	0.0							2	0.0
Copepoda	12	0.2	3	0.0	25	0.2			40	0.1
Amphipoda	106	1.4	451	7.1	251	1.9	573	18.7	1 381	4.5
amphipod (unident.)	101	1.3	453	7.2	251	1.9	573	18.7	1 275	4.2
amphipod - pelagic	5	0.1	5	0.1					10	0.0
Isopoda	11	0.1	8	0.1	27	0.2	4	0.1	50	0.2
Mysid / euphausiid (unident.)	78	1.0	10	0.2	16	0.1	32	1.0	136	0.4
Mysidacea	223	2.9	250	4.0	135	1.0	85	2.8	693	2.3
mysid (unident.)	189	2.5	131	2.1	110	0.8	46	1.5	476	1.6
mysid - benthic	10	0.1	4	0.1	1	0.0			15	0.0
<i>Neognathophausia</i> sp.	24	0.3	115	1.8	24	0.2	39	1.3	202	0.7
Euphausiacea	369	4.8	64	1.0	870	6.5	204	6.7	1507	4.9
Natant decapods	2 212	28.7	2 795	44.3	4 315	32.2	680	22.2	10 002	32.8
natant decapod (unident.)	1 503	19.5	1 728	27.4	2 667	19.9	414	13.5	6 312	20.7
natant decapod - benthic	14	0.2	2	0.0	48	0.4			64	0.2
natant decapod - pelagic	312	4.0	57	0.9	667	5.0			1 036	3.4
<i>Acanthephyra</i> spp.	14	0.2	157	2.5	42	0.3	107	3.5	320	1.0
<i>A. pelagica</i>	2	0.0	25	0.4	38	0.3	7	0.2	72	0.2
<i>A. quadrispinosa</i>	2	0.0	4	0.1	3	0.0			9	0.0
<i>Aristaeomorpha foliacea</i>	31	0.4	8	0.1					39	0.1
<i>Lipkies holthuisi</i>	6	0.1	19	0.3	64	0.5	3	0.1	92	0.3
<i>Notopandalus magnoculus</i>	1	0.0							1	0.0
<i>Notostomus auriculatus</i>					1	0.0			1	0.0
<i>Oplophorus novaezeelandiae</i>	4	0.1	279	4.4	35	0.3	14	0.5	332	1.1
<i>O. spinosus</i>					1	0.0			1	0.0
<i>Pasiphaea</i> spp.	247	3.2	313	5.0	618	4.6	88	2.9	1 266	4.2
<i>P. aff. tarda</i>	1	0.0			17	0.1	17	0.6	35	0.1
<i>Penaeus</i> spp.			43	0.7					43	0.1
<i>Sergestes</i> spp.	88	1.1	322	5.1	156	1.2	47	1.5	613	2.0
Thalassinioidea					2	0.0			2	0.0

**Table C7 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	10–45		10–45		10–45		10–45		10–45	
Standard length range (cm)										
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Crustacea – continued</b>										
Scyllaridae										
<i>Ibacus alticrenatus</i>	2	0.0	3	0.0					5	0.0
Galatheidae										
<i>Munida</i> spp.					4	0.0			4	0.0
Crab (Brachyura / Anomura, unident.)			1	0.0			1	0.0	2	0.0
Brachyura	1	0.0	23	0.4					24	0.1
brachyuran (unident.)	1	0.0							1	0.0
<i>Nematocarcinus</i> sp.			23	0.4					23	0.1
<b>Mollusca</b>	<b>682</b>	<b>8.8</b>	<b>687</b>	<b>10.9</b>	<b>1 175</b>	<b>8.8</b>	<b>469</b>	<b>15.3</b>	<b>3 013</b>	<b>9.9</b>
Gastropoda										
limpet (unident.)					3	0.0			18	0.1
sea hare (unident.)	15	0.2			1	0.0			1	0.0
					2	0.0			17	0.1
Bivalva										
Mytilidae (Mussels)	4	0.1			54	0.4			58	0.2
Pectinidae (Scallops)	3	0.0							3	0.0
	1	0.0			54	0.4			55	0.2
<b>Cephalopoda</b>	<b>659</b>	<b>8.5</b>	<b>619</b>	<b>9.8</b>	<b>1 093</b>	<b>8.1</b>	<b>468</b>	<b>15.3</b>	<b>2 839</b>	<b>9.3</b>
Octopoda										
octopod (unident.)	1	0.0	1	0.0	7	0.1	1	0.0	10	0.0
<i>Graneledone</i> spp.	1	0.0	1	0.0	4	0.0			6	0.0
<i>Opisthoteuthis</i> spp.					1	0.0			1	0.0
					3	0.0			3	0.0
Teuthoidea (squid)										
squid (unident.)	655	8.5	613	9.7	1 084	8.1	468	15.3	2 820	9.2
Cranchiidae (unident.)	626	8.1	589	9.3	994	7.4	423	13.8	2 632	8.6
<i>Histioteuthis</i> spp.	11	0.1	13	0.2	2	0.0	13	0.4	39	0.1
<i>Onykia (Moroteuthis)</i> spp.	13	0.2	12	0.2	73	0.5	29	0.9	127	0.4
<i>O. (M). ingens</i>	4	0.1			9	0.1	1	0.0	14	0.0
Octopoteuthiidae (unident.)					2	0.0			2	0.0
<i>Ommastrephes bartrami</i>	1	0.0			1	0.0			2	0.0
					3	0.0	2	0.1	5	0.0
Sepiolidae										
<i>Sepioloidea</i> spp.	3	0.0	5	0.1	1	0.0			9	0.0
<i>Spirula spirula</i>					1	0.0			1	0.0
	3	0.0	5	0.1					8	0.0
<b>Echinodermata</b>	<b>1</b>	<b>0.0</b>	<b>1</b>	<b>0.0</b>					<b>2</b>	<b>0.0</b>
echinoderm (unident.)			1	0.0					1	0.0
Ophiuroidea	1	0.0							1	0.0

**Table C7 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	10–45		10–45		10–45		10–45		10–45	
Standard length range (cm)										
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Chondrichthyes</b>										
<b>Elasmobranchii</b>	<b>4</b>	<b>0.1</b>			<b>9</b>	<b>0.1</b>	<b>1</b>	<b>0.0</b>	<b>14</b>	<b>0.0</b>
<i>Centrophorus squamosus</i>	1	0.0			3	0.0	1	0.0	5	0.0
<i>Cirrhigaleus barbifer</i>	1	0.0							1	0.0
<i>Etmopterus baxteri</i>					1	0.0			1	0.0
Squalidae (unident.)					4	0.0			4	0.0
<i>Torpedo fairchildi</i>	2	0.0			1	0.0			3	0.0
<b>Osteichthyes</b>										
<b>Teleostei</b>	<b>3 088</b>	<b>40.1</b>	<b>2 273</b>	<b>36.0</b>	<b>5 602</b>	<b>41.8</b>	<b>1 585</b>	<b>51.8</b>	<b>12 548</b>	<b>41.1</b>
teleost (unident.)	2 570	33.3	1 830	29.0	4 902	36.5	1 292	42.2	10 594	34.7
scales	86	1.1	9	0.1	146	1.1	1	0.0	242	0.8
otoliths	1	0.0							1	0.0
fish oil	1	0.0							1	0.0
mesopelagics	350	4.5	389	6.2	332	2.5	224	7.3	1 295	4.2
<i>Anoplogaster cornuta</i>	1	0.0	1	0.0	3	0.0			5	0.0
<i>Argyropelecus gigas</i>	1	0.0							1	0.0
Astronesthidae	1	0.0			1	0.0	6	0.2	8	0.0
<i>Bathylagus</i> spp.	25	0.3	43	0.7	59	0.4	17	0.6	144	0.5
<i>Ceratoscopelus warmingi</i>	4	0.1							4	0.0
<i>Chauliodus sloani</i>	9	0.1	93	1.5	33	0.2	16	0.5	151	0.5
Chiasmodontidae (unident.)	1	0.0							1	0.0
<i>Cyclothone</i> spp.	6	0.1	6	0.1	2	0.0	10	0.3	24	0.1
<i>Diplophos</i> spp.			1	0.0	2	0.0			3	0.0
<i>Evermanella indica</i>					1	0.0			1	0.0
<i>Gonostoma elongatum</i>	1	0.0	6	0.1					7	0.0
<i>Haplophryne mollis</i>					1	0.0			1	0.0
<i>Idiacanthus</i> spp.	2	0.0	25	0.4	7	0.1	3	0.1	37	0.1
<i>Kali indica</i>	2	0.0							2	0.0
<i>Lampadena</i> spp.	5	0.1							5	0.0
<i>Lampanyctodes hectoris</i>	16	0.2							16	0.1
<i>Lampanyctus</i> spp.	12	0.2	9	0.1	8	0.1	5	0.2	34	0.1
<i>Lampichthys procerus</i>	2	0.0							2	0.0
<i>Linophryne arborifera</i>			2	0.0	2	0.0			4	0.0
<i>Luciosudus</i> spp.					1	0.0			1	0.0
Malacosteidae (unident.)	5	0.1	6	0.1	9	0.1	8	0.3	28	0.1
<i>Maurolicus australis</i>							1	0.0	1	0.0
Melamphaidae (unident.)	30	0.4			19	0.1	10	0.3	59	0.2
<i>Melanonus gracilis</i>	10	0.1	4	0.1	7	0.1	2	0.1	23	0.1
<i>M. zugmayeri</i>					1	0.0			1	0.0
<i>Melanostigma gelatinosum</i>	1	0.0			2	0.0			3	0.0
<i>Melanostomias</i> spp.			1	0.0	1	0.0	1	0.0	3	0.0
Melanostomiidae (unident.)							1	0.0	1	0.0
<i>Microstoma microstoma</i>	1	0.0							1	0.0
Myctophidae (unident.)	157	2.0	181	2.9	154	1.1	117	3.8	609	2.0
<i>Nansenia</i> spp.			2	0.0					2	0.0

**Table C7 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	10–45		10–45		10–45		10–45		10–45	
Standard length range (cm)										
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<i>mesopelagics – continued</i>										
Nemichthyidae (unident.)			1	0.0					1	0.0
<i>Nemichthys scolopaceus</i>			1	0.0					1	0.0
<i>Neoscopelus</i> sp.	1	0.0							1	0.0
<i>Opostomias micripnus</i>					1	0.0			1	0.0
<i>Photichthys argenteus</i>	48	0.6	4	0.1	16	0.1	8	0.3	76	0.2
<i>Poromitra capito</i>					1	0.0			1	0.0
<i>Protomyctophum</i> spp.					1	0.0			1	0.0
<i>Scopelarchus</i> sp.					1	0.0			1	0.0
<i>Scopelosaurus</i> sp.	1	0.0	1	0.0	1	0.0			3	0.0
<i>Serrivomer</i> sp.	3	0.0	2	0.0	1	0.0			6	0.0
Sternoptychidae (unident.)	6	0.1	2	0.0	1	0.0	3	0.1	12	0.0
<i>Stomias</i> spp.	2	0.0	5	0.1	1	0.0	19	0.6	27	0.1
other teleosts	101	1.3	81	1.3	252	1.9	86	2.8	520	1.7
<i>Alepisaurus brevirostris</i>	1	0.0							1	0.0
Alepocephalidae (unident.)	2	0.0	2	0.0	12	0.1	9	0.3	25	0.1
<i>Alepocephalus</i> sp.	2	0.0			2	0.0			4	0.0
<i>A. australis</i>	1	0.0			6	0.0	1	0.0	8	0.0
Anguilliformes (unident.)	1	0.0					1	0.0	2	0.0
<i>Antimora rostrata</i>							2	0.1	2	0.0
<i>Argentina elongata</i>					1	0.0			1	0.0
<i>Bassanago bulbiceps</i>	1	0.0			2	0.0			3	0.0
<i>Benthodesmus</i> spp.	1	0.0							1	0.0
<i>Benthoosema suborbitale</i>							1	0.0	1	0.0
<i>Caelorinchus acanthiger</i>							1	0.0	1	0.0
<i>C. aspercephalus</i>	1	0.0							1	0.0
<i>C. fasciatus</i>					2	0.0	1	0.0	3	0.0
<i>C. innotabilis</i>	1	0.0	10	0.2	15	0.1	3	0.1	29	0.1
<i>C. oliverianus</i>			1	0.0	7	0.1			8	0.0
<i>Capromimus abbreviatus</i>			3	0.0					3	0.0
<i>Coryphaenoides dossenus</i>	1	0.0							1	0.0
<i>C. murrayi</i>			1	0.0					1	0.0
<i>C. serrulatus</i>	1	0.0	2	0.0	2	0.0			5	0.0
<i>C. striaturus</i>					3	0.0			3	0.0
<i>C. subserrulatus</i>	23	0.3	15	0.2	82	0.6	20	0.7	140	0.5
<i>Cubiceps</i> spp.	3	0.0			3	0.0			6	0.0
<i>Diretmus argenteus</i>			1	0.0					1	0.0
<i>Echiodon cryomargarites</i>					4	0.0			4	0.0
<i>Epigonus lenimen</i>					2	0.0			2	0.0
<i>E. robustus</i>					1	0.0			1	0.0
<i>E. telescopus</i>					3	0.0			3	0.0
<i>Gadomus aoteanus</i>					1	0.0			1	0.0
<i>Genypterus blacodes</i>					1	0.0			1	0.0
<i>Gonorynchus gonorynchus</i>					1	0.0			1	0.0
<i>Halargyreus johnsonii</i>							1	0.0	1	0.0

**Table C7 (continued)**

Area	North Island 10–45		Challenger/ WCSI 10–45		Chatham Rise 10–45		Southern N.Z. 10–45		All areas 10–45	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
Species or group										
other teleost – <i>continued</i>										
<i>Helicolenus</i> spp.	1	0.0							1	0.0
<i>Hoplichthys haswelli</i>			1	0.0					1	0.0
<i>Hoplostethus atlanticus</i>	2	0.0			2	0.0			4	0.0
<i>H. mediterraneus</i>	1	0.0							1	0.0
<i>Howella brodiei</i>			1	0.0	1	0.0	1	0.0	3	0.0
<i>Lepidion inosimae</i>							1	0.0	1	0.0
<i>L. microcephalus</i>					1	0.0	1	0.0	2	0.0
<i>Lepidorhynchus denticulatus</i>			6	0.1	3	0.0	11	0.4	20	0.1
<i>Lucigadus nigromaculatus</i>					1	0.0			1	0.0
<i>Macrorhamphosus scolopax</i>	1	0.0							1	0.0
Macrouridae (unident.)	9	0.1	8	0.1	39	0.3	13	0.4	69	0.2
<i>Magnisudis prionosa</i>	1	0.0	6	0.1	12	0.1	1	0.0	20	0.1
<i>Mora moro</i>	1	0.0							1	0.0
Paralepididae (unident.)	21	0.3	15	0.2	20	0.1	2	0.1	58	0.2
<i>Paranotothenia</i> spp.	4	0.1							4	0.0
<i>P. magellanica</i>					3	0.0			3	0.0
<i>Persparsia kopua</i>	4	0.1	2	0.0	1	0.0	7	0.2	14	0.0
Platytroutidae (unident.)							4	0.1	4	0.0
<i>Rosenblattia robusta</i>	8	0.1	1	0.0	6	0.0	2	0.1	17	0.1
<i>Rouleina</i> sp.	1	0.0			1	0.0			2	0.0
<i>Seriolella labyrinthica</i>	1	0.0							1	0.0
<i>Simenchelys parasiticus</i>					1	0.0			1	0.0
Synaphobranchidae (unident.)					1	0.0	4	0.1	5	0.0
<i>Tetragonurus cuvieri</i>			1	0.0					1	0.0
<i>Xenodermichthys</i> spp.	2	0.0	5	0.1	6	0.0			13	0.0
<b>Mud</b>					<b>4</b>	<b>0.0</b>			<b>4</b>	<b>0.0</b>
<b>Unidentifiable</b>	<b>7</b>	<b>0.1</b>	<b>3</b>	<b>0.0</b>	<b>9</b>	<b>0.1</b>	<b>2</b>	<b>0.1</b>	<b>21</b>	<b>0.1</b>
<b>Unidentified</b>	<b>148</b>	<b>1.9</b>	<b>330</b>	<b>5.2</b>	<b>362</b>	<b>2.7</b>	<b>35</b>	<b>1.1</b>	<b>875</b>	<b>2.9</b>
No. of fish examined	24 006		23 034		52 881		6 067		105 988	
No. stomachs with food	7 710		6 316		13 414		3 058		30 498	
% with empty stomachs	68		72		75		49		71	
% with everted stomachs	0		0		0		0		0	
% with regurgitated stomachs	0		0		0		0		0	
No. of prey items	8 667		7 615		15 215		3 999		35 496	





**Table C8: Diet of pale ghost shark, *Hydrolagus bemisi*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	40–100		35–85		30–80		30–100	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>	<b>1</b>	<b>7.7</b>	<b>9</b>	<b>27.3</b>	<b>20</b>	<b>64.5</b>	<b>30</b>	<b>39.0</b>
Thaliacea (salps)	1	7.7	9	27.3	20	64.5	30	39.0
<b>Polychaeta</b>					<b>1</b>	<b>3.2</b>	<b>1</b>	<b>1.3</b>
<b>Crustacea</b>	<b>2</b>	<b>15.4</b>	<b>16</b>	<b>48.5</b>	<b>4</b>	<b>12.9</b>	<b>22</b>	<b>28.6</b>
crustacean (unident.)					4	12.9	4	5.2
Amphipoda								
amphipod - benthic			1	3.0			1	1.3
Isopoda			1	3.0			1	1.3
Natant decapod	1	7.7	1	3.0			2	2.6
Nephropidae								
<i>Metanephrops challengeri</i>			2	6.1			2	2.6
Galatheidae								
<i>Munida</i> spp.			2	6.1			2	2.6
Crab (Brachyura / Anomura, unident.)	1	7.7	9	27.3			10	13.0
<b>Mollusca</b>	<b>5</b>	<b>38.5</b>	<b>5</b>	<b>15.2</b>	<b>2</b>	<b>6.5</b>	<b>12</b>	<b>15.6</b>
mollusc (unident.)	1	7.7	2	6.1			3	3.9
Shell fragments	3	23.1					3	3.9
Gastropoda	1	7.7	3	9.1			4	5.2
<b>Cephalopoda</b>					<b>2</b>	<b>6.5</b>	<b>2</b>	<b>2.6</b>
Teuthoidea (squid)					2	6.5	2	2.6
<b>Echinodermata</b>	<b>11</b>	<b>84.6</b>	<b>7</b>	<b>21.2</b>			<b>18</b>	<b>23.4</b>
echinoderm (unident.)	3	23.1					3	3.9
starfish (Asteroidea / Ophiuroidea)	8	61.5	3	9.1			11	14.3
Echinoidea (sea urchins)			5	15.2			5	6.5
<b>Osteichthyes</b>								
<b>Teleostei</b>			<b>1</b>	<b>3.0</b>			<b>1</b>	<b>1.3</b>
<i>Coryphaenoides</i> sp.			1	3.0			1	1.3
<b>Mud</b>	<b>5</b>	<b>38.5</b>					<b>5</b>	<b>6.5</b>
<b>Unidentified</b>			<b>8</b>	<b>24.2</b>	<b>7</b>	<b>22.6</b>	<b>15</b>	<b>19.5</b>
No. of fish examined		17		45		47		109
No. stomachs with food		13		33		31		77
% with empty stomachs		24		27		32		28
% with everted stomachs		0		0		2		1
% with regurgitated stomachs		0		0		0		0
No. of prey items		24		47		34		105



**Table C9: Diet of dark ghost shark, *Hydrolagus novaezealandiae*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
Chimera length range (cm)	98		40–75		30–75		30–75	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>					<b>6</b>	<b>10.2</b>	<b>6</b>	<b>6.6</b>
Thaliacea (salps)					6	10.2	6	6.6
<b>Polychaeta</b>			<b>6</b>	<b>18.8</b>	<b>1</b>	<b>1.7</b>	<b>7</b>	<b>7.7</b>
<b>Crustacea</b>			<b>21</b>	<b>65.6</b>	<b>31</b>	<b>52.5</b>	<b>52</b>	<b>57.1</b>
crustacean (unident.)					6	10.2	6	6.6
Amphipoda (unident.)					2	3.4	2	2.2
Natant decapod			6	18.8	3	5.1	9	9.9
Galatheidae								
<i>Munida</i> spp.					19	32.2	19	20.9
Crab (Brachyura / Anomura, unident.)			15	46.9	2	3.4	17	18.7
<b>Mollusca</b>			<b>1</b>	<b>3.1</b>	<b>7</b>	<b>11.9</b>	<b>8</b>	<b>8.8</b>
mollusc (unident.)			1	3.1			1	1.1
Shell					3	5.1	3	3.3
Bilvalva								
Pectinidae (Scallops)					3	5.1	3	3.3
<b>Cephalopoda</b>					<b>1</b>	<b>1.7</b>	<b>1</b>	<b>1.1</b>
Octopoda					1	1.7	1	1.1
octopod (unident.)					1	1.7	1	1.1
<b>Echinodermata</b>			<b>7</b>	<b>21.9</b>			<b>7</b>	<b>7.7</b>
echinoderm (unident.)			1	3.1			1	1.1
starfish (Asteroidea / Ophiuroidea)			5	15.6			5	5.5
Echinoidea (sea urchins)			1	3.1			1	1.1
<b>Osteichthyes</b>								
<b>Teleostei</b>			<b>1</b>	<b>3.1</b>	<b>9</b>	<b>15.3</b>	<b>10</b>	<b>11.0</b>
teleost (unident.)			1	3.1	7	11.9	8	8.8
fish eggs					2	3.4	2	2.2
mesopelagics					1	1.7	1	1.1
Myctophidae					1	1.7	1	1.1
<b>Unidentifiable</b>					<b>3</b>	<b>5.1</b>	<b>3</b>	<b>3.3</b>
<b>Unidentified</b>			<b>7</b>	<b>21.9</b>	<b>18</b>	<b>30.5</b>	<b>25</b>	<b>27.5</b>
No. of fish examined	1		50		175		226	
No. stomachs with food	0		32		59		91	
% with empty stomachs	100		36		65		59	
% with everted stomachs	0		0		1		1	
% with regurgitated stomachs	0		0		0		0	
No. of prey items	0		43		77		120	



**Table C10: Diet of bluenose, *Hyperoglyphe antarctica*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island 50–90		Challenger / WCSI 60–80		Chatham Rise 45–95		Southern N.Z. 75–90		All areas 45–95	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Coelenterata</b>	<b>2</b>	<b>4.5</b>							<b>2</b>	<b>3.2</b>
Scyphozoa (jellyfish)	2	4.5							2	3.2
<b>Tunicata</b>	<b>23</b>	<b>52.3</b>			<b>10</b>	<b>58.8</b>	<b>1</b>	<b>100</b>	<b>34</b>	<b>54.8</b>
Thaliacea (salps)	23	52.3			10	58.8	1	100	34	54.8
<b>Crustacea</b>	<b>6</b>	<b>13.6</b>			<b>2</b>	<b>11.8</b>			<b>8</b>	<b>12.9</b>
Natant decapod	6	13.6			2	11.8			8	12.9
natant decapod (unident.)					2	11.8			2	3.2
natant decapod - benthic	4	9.1							4	6.5
natant decapod - pelagic	3	6.8							3	4.8
<b>Mollusca</b>	<b>9</b>	<b>20.5</b>			<b>7</b>	<b>41.2</b>	<b>1</b>	<b>100</b>	<b>17</b>	<b>27.4</b>
<b>Cephalopoda</b>	<b>9</b>	<b>20.5</b>			<b>7</b>	<b>41.2</b>	<b>1</b>	<b>100</b>	<b>17</b>	<b>27.4</b>
Octopoda	1	2.3							1	1.6
octopod (unident.)	1	2.3							1	1.6
Teuthoidea (squid)	8	18.2			7	41.2	1	100	16	25.8
squid (unident.)	5	11.4			5	29.4	1	100	11	17.7
<i>Histioteuthis</i> spp.	2	4.5			2	11.8			4	6.5
<i>Nototodarus</i> spp.	1	2.3							1	1.6
<b>Osteichthyes</b>										
<b>Teleostei</b>	<b>10</b>	<b>22.7</b>			<b>1</b>	<b>5.9</b>			<b>11</b>	<b>17.7</b>
teleost (unident.)	1	2.3			1	5.9			2	3.2
mesopelagics	5	11.4							5	8.1
<i>Idiacanthus</i> spp.	1	2.3							1	1.6
Myctophidae (unident.)	4	9.1							4	6.5
Sternoptychidae	2	4.5							2	3.2
other teleosts	6	13.6							6	9.7
<i>Benthodesmus</i> spp.	2	4.5							2	3.2
<i>Notacanthus sexspinis</i>	1	2.3							1	1.6
Paralepididae (unident.)	3	6.8							3	4.8
<b>Unidentified</b>	<b>2</b>	<b>4.5</b>							<b>2</b>	<b>3.2</b>
No. of fish examined	165		4		52		3		224	
No. stomachs with food	44		0		17		1		62	
% with empty stomachs	66		100		58		33		64	
% with everted stomachs	7		0		10		33		8	
% with regurgitated stomachs	0		0		0		0		0	
No. of prey items	57		0		20		2		79	



**Table C11: Diet of banded stargazer, *Kathetostoma binigrasella*, and giant stargazer, *Kathetostoma giganteum*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	<i>K. binigrasella</i>						<i>K. giganteum</i>			
	Southern N.Z. 20–70		Chatham Rise 40–80		East Coast South Island 10–80		Southern N.Z. 15–80		All areas 15–80	
Species or group	n	F	n	F	n	F	n	F	n	F
<b>Porifera</b>							<b>2</b>	<b>0.1</b>	<b>2</b>	<b>0.1</b>
<b>Coelenterata</b>							<b>4</b>	<b>0.2</b>	<b>4</b>	<b>0.1</b>
Scyphozoa (jellyfish)							4	0.2	4	0.1
<b>Tunicata</b>	<b>11</b>	<b>3.0</b>	<b>1</b>	<b>1.9</b>	<b>26</b>	<b>2.4</b>	<b>96</b>	<b>6.0</b>	<b>123</b>	<b>4.5</b>
Thaliacea (salps)	11	3.0	1	1.9	26	2.4	96	6.0	123	4.5
<b>Polychaeta</b>							<b>5</b>	<b>0.3</b>	<b>5</b>	<b>0.2</b>
<b>Crustacea</b>	<b>8</b>	<b>2.2</b>	<b>2</b>	<b>3.7</b>	<b>88</b>	<b>8.2</b>	<b>239</b>	<b>14.9</b>	<b>329</b>	<b>12.0</b>
crustacean (unident.)			2	3.7	31	2.9	25	1.6	58	2.1
Amphipoda							1	0.1	1	0.0
Isopoda							3	0.2	3	0.1
Euphausiacea							4	0.2	4	0.1
Natant decapod	1	0.3			1	0.1	2	0.1	3	0.1
natant decapod (unident.)					1	0.1	2	0.1	3	0.1
<i>Sergia potens</i>	1	0.3								
Nephropidae										
<i>Metanephrops challenger</i>							1	0.1	1	0.0
Palinuridae										
<i>Jasus edwardsii</i>	1	0.3								
Galatheididae										
<i>Munida</i> spp.					49	4.6	13	0.8	62	2.3
Crab (Brachyura / Anomura, unident.)	6	1.6			5	0.5	175	10.9	180	6.6
Brachyura										
<i>Ovalipes catharus</i>					2	0.2	21	1.3	23	0.8
<b>Mollusca</b>	<b>244</b>	<b>65.9</b>	<b>20</b>	<b>37.0</b>	<b>182</b>	<b>17.0</b>	<b>848</b>	<b>52.8</b>	<b>1 050</b>	<b>38.4</b>
mollusc (unident.)	1	0.3			2	0.2	2	0.1	4	0.1
Gastropoda										
Whelk (unident.)					1	0.1			1	0.0
Bivalva										
Pectinidae (Scallops)							1	0.1	1	0.0
<b>Cephalopoda</b>	<b>243</b>	<b>65.7</b>	<b>20</b>	<b>37.0</b>	<b>180</b>	<b>16.8</b>	<b>845</b>	<b>52.6</b>	<b>1 045</b>	<b>38.2</b>
Octopoda	35	9.5	1	1.9	25	2.3	117	7.3	143	5.2
octopod (unident.)	34	9.2	1	1.9	25	2.3	116	7.2	142	5.2
<i>Graneledone</i> spp.	1	0.3					1	0.1	1	0.0

Table C11 (continued)

Area	<i>K. binigrasella</i>						<i>K. giganteum</i>			
	Southern N.Z. 20–70		Chatham Rise 40–80		East Coast South Island 10–80		Southern N.Z. 15–80		All areas 15–80	
Species or group	n	F	n	F	n	F	n	F	n	F
<b>Cephalopoda – continued</b>										
Teuthoidea (squid)	217	58.6	19	35.2	157	14.6	759	47.2	935	34.2
squid (unident.)	87	23.5	13	24.1	1	0.1	428	26.6	442	16.2
<i>Onykia (Moroteuthis)</i> spp.							1	0.1	1	0.0
<i>Nototodarus</i> spp.	27	7.3	5	9.3	156	14.5	58	3.6	219	8.0
<i>N. sloanii</i>	103	27.8	1	1.9			273	17.0	274	10.0
<b>Echinodermata</b>										
starfish (Asteroidea / Ophiuroidea)					2	0.2	2	0.1	4	0.1
Echinoidea							1	0.1	1	0.0
<b>Holothuroidea</b>										
<i>Stichopus mollis</i>					2	0.2			2	0.1
<b>Chondrichthyes</b>										
<b>Elasmobranchii</b>										
Skate (Rajidae / Arhynchobatidae)					3	0.3	2	0.1	5	0.2
<i>Squalus acanthias</i>					3	0.3			3	0.1
<b>Holocephali</b>										
<i>Callorhynchus milii</i>					1	0.1			1	0.0
<i>Hydrolagus bemisi</i>					5	0.5			5	0.2
<i>H. novaezealandiae</i>					7	0.7	2	0.1	9	0.3
<b>Osteichthyes</b>										
<b>Teleostei</b>										
teleost (unident.)	191	51.6	44	81.5	765	71.3	773	48.1	1 582	57.9
mesopelagics							1	0.1	1	0.0
<i>Maurolicus australis</i>							1	0.1	1	0.0
other teleosts	59	15.9	13	24.1	146	13.6	291	18.1	450	16.5
<i>Argentina elongata</i>	1	0.3					9	0.6	9	0.3
<i>Arnoglossus scapha</i>	6	1.6			15	1.4	10	0.6	25	0.9
<i>Austrophycis marginata</i>							1	0.1	1	0.0
<i>Beryx splendens</i>			1	1.9					1	0.0
Blenniidae (unident.)	1	0.3								
<i>Caelorinchus aspercephalus</i>					1	0.1			1	0.0
<i>C. fasciatus</i>							1	0.1	1	0.0
<i>C. oliverianus</i>			1	1.9					1	0.0
Callionymidae (unident.)							1	0.1	1	0.0
<i>Capromimus abbreviatus</i>							3	0.2	3	0.1
<i>Chelidonichthys kumu</i>					2	0.2	4	0.2	6	0.2
<i>Chlorophthalmus nigripinnis</i>					1	0.1			1	0.0
<i>Conger</i> spp.					1	0.1	6	0.4	7	0.3
<i>Cyttus novaezealandiae</i>			1	1.9			3	0.2	4	0.1



Table C11 (continued)

Area	<i>K. binigrasella</i>						<i>K. giganteum</i>			
	Southern N.Z.		Chatham Rise		East Coast South Island		Southern N.Z.		All areas	
	20–70		40–80		10–80		15–80		15–80	
Species or group	n	F	n	F	n	F	n	F	n	F
other teleosts – <i>continued</i>										
<i>Emmelichthys nitidus</i>					1	0.1	11	0.7	12	0.4
<i>Genypterus blacodes</i>					7	0.7	1	0.1	8	0.3
<i>Gilloblennius</i> sp.							1	0.1	1	0.0
<i>Gnathophis habenatus</i>	5	1.4					60	3.7	60	2.2
<i>Gonorynchus gonorynchus</i>							11	0.7	11	0.4
<i>Helicolenus</i> spp.	4	1.1			7	0.7	1	0.1	8	0.3
<i>Hemerocoetes</i> spp.	24	6.5	1	1.9	26	2.4	67	4.2	94	3.4
<i>Hippocampus abdominalis</i>					2	0.2			2	0.1
<i>Hoplichthys haswelli</i>			1	1.9					1	0.0
<i>Kathetostoma giganteum</i>					2	0.2	4	0.2	6	0.2
<i>Lepidorhynchus denticulatus</i>			2	3.7			2	0.1	4	0.1
<i>Lepidotrigla brachyoptera</i>					2	0.2	13	0.8	15	0.5
Macrouridae (unident.)	1	0.3	4	7.4	18	1.7	12	0.7	34	1.2
<i>Macruronus novaezelandiae</i>			2	3.7	1	0.1	18	1.1	21	0.8
<i>Magnisudis prionosa</i>							1	0.1	1	0.0
<i>Nemadactylus macropterus</i>					14	1.3			14	0.5
<i>Neophrynichthys latus</i>							1	0.1	1	0.0
<i>Notopogon lilliei</i>					5	0.5			5	0.2
<i>Parapercis colias</i>	2	0.5			2	0.2			2	0.1
<i>P. gilliesi</i>	2	0.5					6	0.4	6	0.2
<i>Pelotretis flavilatus</i>					3	0.3			3	0.1
Pleuronectiformes (unident.)	2	0.5			1	0.1	3	0.2	4	0.1
<i>Pseudocyttus maculatus</i>			1	1.9					1	0.0
<i>Pseudophycis bachus</i>	13	3.5	1	1.9	22	2.1	42	2.6	65	2.4
<i>Seriolella punctata</i>					4	0.4	9	0.6	13	0.5
<i>Solegnathus spinosissimus</i>							1	0.1	1	0.0
<i>Sprattus</i> spp.					1	0.1	2	0.1	3	0.1
Syngnathidae					1	0.1	1	0.1	2	0.1
<i>Thyrsites atun</i>					22	2.1	6	0.4	28	1.0
<i>Trachurus</i> spp.	2	0.5			2	0.2	1	0.1	3	0.1
<i>T. murphyi</i>	1	0.3								
<b>Unidentifiable</b>	<b>30</b>	<b>8.1</b>	<b>1</b>	<b>1.9</b>	<b>62</b>	<b>5.8</b>	<b>99</b>	<b>6.2</b>	<b>162</b>	<b>5.9</b>
<b>Unidentified</b>	<b>24</b>	<b>6.5</b>	<b>2</b>	<b>3.7</b>	<b>39</b>	<b>3.6</b>	<b>60</b>	<b>3.7</b>	<b>101</b>	<b>3.7</b>
No. of fish examined	406		78		1 475		1 917		3 470	
No. stomachs with food	370		54		1 073		1 607		2 734	
% with empty stomachs	9		31		27		16		21	
% with everted stomachs	0		0		0		0		0	
% with regurgitated stomachs	0		0		0		0		0	
No. of prey items	529		78		1 221		2 236		3 535	



**Table C12: Diet of hoki, *Macruronus novaezelandiae*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	30–120		30–120		30–120		30–120		30–120	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Coelenterata</b>							<b>4</b>	<b>0.0</b>	<b>4</b>	<b>0.0</b>
Scyphozoa (jellyfish)							4	0.0	4	0.0
<b>Tunicata</b>	<b>8</b>	<b>1.0</b>	<b>4</b>	<b>1.8</b>	<b>89</b>	<b>1.8</b>	<b>284</b>	<b>3.5</b>	<b>385</b>	<b>2.7</b>
Thaliacea (salps)	8	1.0	4	1.8	89	1.8	284	3.5	385	2.7
<b>Polychaeta</b>					<b>1</b>	<b>0.0</b>	<b>1</b>	<b>0.0</b>	<b>2</b>	<b>0.0</b>
<b>Crustacea</b>	<b>281</b>	<b>34.6</b>	<b>62</b>	<b>27.9</b>	<b>2 466</b>	<b>49.7</b>	<b>3 210</b>	<b>39.3</b>	<b>6 019</b>	<b>42.5</b>
crustacean (unident.)	1	0.1	1	0.5	83	1.7	241	2.9	326	2.3
Copepoda					1	0.0	1	0.0	2	0.0
Amphipoda	6	0.7			73	1.5	205	2.5	284	2.0
amphipod (unident.)	5	0.6			73	1.5	205	2.5	283	2.0
amphipod - pelagic	1	0.1							1	0.0
Isopoda					1	0.0	4	0.0	5	0.0
Mysid / euphausiid (unident.)	3	0.4					1	0.0	4	0.0
Mysidacea	14	1.7	5	2.3	21	0.4			40	0.3
Euphausiacea	27	3.3	1	0.5	1 005	20.2	683	8.4	1 716	12.1
Natant decapods	232	28.5	55	24.8	1 329	26.8	2 186	26.8	3 802	26.8
natant decapod (unident.)	34	4.2	46	20.7	1 318	26.5	2 162	26.5	3 560	25.1
natant decapod - benthic	22	2.7	2	0.9					24	0.2
natant decapod - pelagic	177	21.8	7	3.2					184	1.3
<i>Acantheephyra</i> spp.			2	0.9			1	0.0	3	0.0
<i>Lipkius holthuisi</i>					3	0.1	3	0.0	6	0.0
<i>Oplophorus novaezeelandiae</i>					1	0.0	1	0.0	2	0.0
<i>Pasiphaea</i> spp.					7	0.1	14	0.2	21	0.1
<i>P. aff. tarda</i>							1	0.0	1	0.0
<i>Sergia potens</i>							5	0.1	5	0.0
<i>Sergestes</i> spp.							2	0.0	2	0.0
Nephropidae										
<i>Metanephrops challengeri</i>					1	0.0			1	0.0
Galatheidae										
<i>Munida</i> spp.	2	0.2					1	0.0	3	0.0
Crab (Brachyura / Anomura unident.)					2	0.0			2	0.0
<b>Mollusca</b>	<b>42</b>	<b>5.2</b>	<b>14</b>	<b>6.3</b>	<b>176</b>	<b>3.5</b>	<b>474</b>	<b>5.8</b>	<b>706</b>	<b>5.0</b>
Gastropoda										
sea hare (O. Aplysiomorpha)							2	0.0	2	0.0
<b>Cephalopoda</b>	<b>42</b>	<b>5.2</b>	<b>14</b>	<b>6.3</b>	<b>176</b>	<b>3.5</b>	<b>473</b>	<b>5.8</b>	<b>705</b>	<b>5.0</b>
cephalopod (unident.)					4	0.1	6	0.1	10	0.1

**Table C12 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	30–120		30–120		30–120		30–120		30–120	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Cephalopoda – continued</b>										
Octopoda					6	0.1	19	0.2	25	0.2
octopod (unident.)					6	0.1	19	0.2	25	0.2
Teuthoidea (squid)	42	5.2	11	5.0	163	3.3	397	4.9	616	4.3
squid (unident.)	38	4.7	2	0.9	139	2.8	303	3.7	482	3.4
Cranchiidae (unident.)					1	0.0	1	0.0	2	0.0
<i>Enoploteuthis</i> spp.							1	0.0	1	0.0
<i>Histioteuthis</i> spp.	4	0.5			1	0.0	7	0.1	12	0.1
<i>Mastigoteuthis</i> sp.					1	0.0			1	0.0
<i>Onykia (Moroteuthis)</i> spp. (unident.)					4	0.1	7	0.1	11	0.1
<i>M. (O.) ingens</i>					1	0.0	4	0.0	5	0.0
<i>Nototodarus</i> spp. (unident.)			9	4.1	11	0.2	58	0.7	78	0.6
<i>N. sloanii</i>					5	0.1	17	0.2	22	0.2
Sepiolidae			3	1.4	3	0.1	51	0.6	57	0.4
<b>Osteichthyes</b>										
<b>Teleostei</b>	<b>562</b>	<b>69.1</b>	<b>151</b>	<b>68.0</b>	<b>2 738</b>	<b>55.1</b>	<b>5 089</b>	<b>62.3</b>	<b>8 540</b>	<b>60.3</b>
teleost (unident.)	224	27.6	96	43.2	1 841	37.1	4 047	49.5	6 208	43.8
fragments, bones							2	0.0	2	0.0
scales					5	0.1	5	0.1	10	0.1
otoliths					5	0.1	3	0.0	8	0.1
fish eggs			1	0.5					1	0.0
mesopelagics	291	35.8	33	14.9	846	17.0	904	11.1	2 074	14.6
<i>Anotopterus pharao</i>							2	0.0	2	0.0
<i>Argyropelecus hemigymnus</i>							8	0.1	8	0.1
Astronesthidae (unident.)							1	0.0	1	0.0
<i>Bathylagus</i> spp.	1	0.1					1	0.0	2	0.0
<i>Chauliodus sloani</i>			4	1.8	3	0.1	7	0.1	14	0.1
<i>Chiasmodon niger</i>					2	0.0			2	0.0
<i>Eurypharynx pelecanoioides</i>							4	0.0	4	0.0
<i>Gonostoma elongatum</i>					3	0.1	25	0.3	28	0.2
Gonostomatidae (unident.)							1	0.0	1	0.0
<i>Idiacanthus</i> spp.	2	0.2							2	0.0
<i>Lampanyctodes hectoris</i>					36	0.7	13	0.2	49	0.3
Malacosteidae (unident.)					6	0.1	5	0.1	11	0.1
<i>Maurolicus australis</i>					44	0.9	22	0.3	66	0.5
Melamphaidae (unident.)							3	0.0	3	0.0
<i>Melanonus gracilis</i>							1	0.0	1	0.0
Myctophidae (unident.)	272	33.5	29	13.1	732	14.7	784	9.6	1 817	12.8
<i>Myctophum</i> spp.					3	0.1			3	0.0
Nemichthyidae (unident.)							1	0.0	1	0.0
<i>Photichthys argenteus</i>	17	2.1			14	0.3	27	0.3	58	0.4
<i>Serrivomer</i> sp.					1	0.0	1	0.0	2	0.0
Sternoptychidae (unident.)	2	0.2			7	0.1	9	0.1	18	0.1
<i>Stomias</i> spp.	1	0.1	1	0.5			1	0.0	3	0.0

**Table C12 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	30–120		30–120		30–120		30–120		30–120	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Teleostei – continued</b>										
other teleosts	56	6.9	26	11.7	58	1.2	183	2.2	323	2.3
<i>Alepisaurus ferox</i>							1	0.0	1	0.0
Anguilliformes (unident.)							1	0.0	1	0.0
<i>Argentina elongata</i>			11	5.0	4	0.1	19	0.2	34	0.2
<i>Austrophycis marginata</i>							34	0.4	34	0.2
<i>Azygopus pinnifasciatus</i>					1	0.0			1	0.0
<i>Benthodesmus</i> spp.	17	2.1	6	2.7			2	0.0	25	0.2
<i>Caelorinchus aspercephalus</i>							1	0.0	1	0.0
<i>C. fasciatus</i>							5	0.1	5	0.0
<i>C. oliverianus</i>	2	0.2	2	0.9	14	0.3	16	0.2	34	0.2
<i>Chlorophthalmus nigripinnis</i>	1	0.1							1	0.0
<i>Conger</i> spp.							1	0.0	1	0.0
<i>Coryphaenoides subserrulatus</i>					1	0.0			1	0.0
<i>Cubiceps</i> spp.					1	0.0			1	0.0
<i>Cyttus novaezealandiae</i>			1	0.5					1	0.0
<i>Diretmus argenteus</i>							2	0.0	2	0.0
<i>Emmelichthys nitidus</i>							1	0.0	1	0.0
<i>Euclichthys polynemus</i>							1	0.0	1	0.0
<i>Genypterus blacodes</i>							1	0.0	1	0.0
<i>Gonorynchus gonorynchus</i>					2	0.0	4	0.0	6	0.0
<i>Hemerocoetes</i> spp.							2	0.0	2	0.0
<i>Hoplichthys haswelli</i>					1	0.0			1	0.0
<i>Hoplostethus mediterraneus</i>	7	0.9							7	0.0
<i>Lepidocybium flavobrunneum</i>					1	0.0			1	0.0
<i>Lepidopus caudatus</i>	1	0.1					1	0.0	2	0.0
<i>Lepidorhynchus denticulatus</i>	5	0.6			13	0.3	31	0.4	49	0.3
Macrouridae (unident.)	2	0.2			11	0.2	27	0.3	40	0.3
<i>Macruronus novaezealandiae</i>			4	1.8	7	0.1	5	0.1	16	0.1
<i>Magnisudis prionosa</i>							2	0.0	2	0.0
<i>Merluccius australis</i>							1	0.0	1	0.0
<i>Micromesistius australis</i>							17	0.2	17	0.1
<i>Neophrynichthys angustus</i>							2	0.0	2	0.0
<i>Paradiplospinus gracilis</i>							1	0.0	1	0.0
Paralepididae (unident.)	18	2.2	1	0.5			3	0.0	22	0.2
<i>Paratrachichthys trailli</i>	1	0.1							1	0.0
<i>Persparsia kopua</i>	3	0.4			1	0.0			4	0.0
Pleuronectiformes (unident.)							2	0.0	2	0.0
<i>Trachipterus trachypterus</i>			1	0.5					1	0.0
<i>Xenodermichthys</i> spp.					1	0.0			1	0.0
<b>Unidentifiable</b>					<b>24</b>	<b>0.5</b>	<b>37</b>	<b>0.5</b>	<b>61</b>	<b>0.4</b>
<b>Unidentified</b>	<b>31</b>	<b>3.8</b>	<b>11</b>	<b>5.0</b>	<b>89</b>	<b>1.8</b>	<b>176</b>	<b>2.2</b>	<b>307</b>	<b>2.2</b>
No. of fish examined	3 202		1 198		11 267		18 078		33 745	
No. stomachs with food	813		222		4 965		8 170		14 170	
% with empty stomachs	69		80		54		52		56	
% with everted stomachs	6		2		2		3		2	
% with regurgitated stomachs	0		0		0		0		0	
No. of prey items	943		250		5 655		9 459		16 307	



**Table C13: Diet of hake, *Merluccius australis*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	70–90		30–120		40–130		40–130		30–130	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Seaweed</b>							<b>1</b>	<b>0.1</b>	<b>1</b>	<b>0.0</b>
<b>Porifera</b>					<b>1</b>	<b>0.1</b>	<b>1</b>	<b>0.1</b>	<b>2</b>	<b>0.1</b>
<b>Tunicata</b>			<b>3</b>	<b>1.0</b>	<b>1</b>	<b>0.1</b>	<b>2</b>	<b>0.2</b>	<b>6</b>	<b>0.3</b>
Thaliacea (salps)			3	1.0	1	0.1	2	0.2	6	0.3
<b>Crustacea</b>			<b>21</b>	<b>7.0</b>	<b>97</b>	<b>9.1</b>	<b>30</b>	<b>3.2</b>	<b>148</b>	<b>6.4</b>
crustacean (unident.)			1	0.3	3	0.3	3	0.3	7	0.3
Mysidacea					2	0.2			2	0.1
Euphausiacea			1	0.3	16	1.5			17	0.7
Natant decapods			19	6.3	76	7.1	27	2.9	122	5.3
natant decapod (unident.)			15	5.0	73	6.9	26	2.7	114	4.9
<i>Lipkius holthuisi</i>					2	0.2			2	0.1
<i>Pasiphaea</i> aff. <i>tarda</i>							1	0.1	1	0.0
<i>Sergestes</i> spp.			4	1.3					4	0.2
<i>Sergia potens</i>					1	0.1			1	0.0
<b>Mollusca</b>			<b>14</b>	<b>4.7</b>	<b>71</b>	<b>6.7</b>	<b>134</b>	<b>14.1</b>	<b>219</b>	<b>9.5</b>
<b>Cephalopoda</b>			<b>14</b>	<b>4.7</b>	<b>71</b>	<b>6.7</b>	<b>134</b>	<b>14.1</b>	<b>219</b>	<b>9.5</b>
cephalopod (unident.)							2	0.2	2	0.1
Octopoda										
octopod (unident.)					1	0.1	3	0.3	4	0.2
Teuthoidea (squid)			14	4.7	70	6.6	129	13.6	213	9.2
squid (unident.)			2	0.7	50	4.7	75	7.9	127	5.5
<i>Histioteuthis</i> spp			1	0.3			3	0.3	4	0.2
<i>Onykia</i> ( <i>Moroteuthis</i> ) spp. (unident.)					3	0.3	11	1.2	14	0.6
<i>M. (O.) ingens</i>					2	0.2	7	0.7	9	0.4
<i>Nototodarus</i> spp. (unident.)			11	3.7	10	0.9	2	0.2	23	1.0
<i>N. sloanii</i>					4	0.4	30	3.2	34	1.5
<i>Ommastrephes bartrami</i>					1	0.1	1	0.1	2	0.1
<i>Todarodes filippovae</i>					1	0.1			1	0.0
<b>Echinodermata</b>					<b>2</b>	<b>0.2</b>			<b>2</b>	<b>0.1</b>
Echinoidea (sea urchins)					2	0.2			2	0.1
echinoid (unident.)					2	0.2			2	0.1
<b>Chondrichthyes</b>										
<b>Elasmobranchii</b>			<b>1</b>	<b>0.3</b>			<b>2</b>	<b>0.2</b>	<b>3</b>	<b>0.1</b>
<i>Etmopterus lucifer</i>			1	0.3			1	0.1	2	0.1
<i>Brochiraja asperula</i>							1	0.1	1	0.0

**Table C13 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	70–90		30–120		40–130		40–130		30–130	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Osteichthyes</b>										
<b>Teleostei</b>	<b>4</b>	<b>100</b>	<b>267</b>	<b>89.0</b>	<b>901</b>	<b>84.7</b>	<b>803</b>	<b>84.8</b>	<b>1 975</b>	<b>85.3</b>
teleost (unident.)	2	50.0	121	40.3	486	45.7	394	41.6	1 003	43.3
fragments, bones					1	0.1	2	0.2	3	0.1
scales					1	0.1			1	0.0
otoliths					1	0.1			1	0.0
fish offal			2	0.7					2	0.1
fish eggs			1	0.3					1	0.0
mesopelagics			13	4.3	15	1.4	11	1.2	39	1.7
<i>Bathylagus</i> spp.							1	0.1	1	0.0
Gonostomatidae (unident.)							1	0.1	1	0.0
<i>Lampanyctodes hectoris</i>					1	0.1			1	0.0
Malacosteidae (unident.)					1	0.1			1	0.0
<i>Melanostomias</i> spp.			1	0.3					1	0.0
Myctophidae (unident.)			12	4.0	9	0.8	8	0.8	29	1.3
<i>Photichthys argenteus</i>					3	0.3			3	0.1
<i>Scopelarchus</i> sp.					1	0.1	1	0.1	2	0.1
other teleosts	2	50.0	133	44.3	410	38.5	419	44.2	964	41.6
Anguilliformes (unident.)							1	0.1	1	0.0
<i>Argentina elongata</i>			2	0.7	2	0.2	20	2.1	24	1.0
<i>Austrophycis marginata</i>							1	0.1	1	0.0
<i>Benthodesmus</i> spp.			1	0.3					1	0.0
<i>Beryx</i> spp. (unident.)					2	0.2			2	0.1
<i>B. splendens</i>					1	0.1			1	0.0
<i>Caelorinchus aspercephalus</i>							6	0.6	6	0.3
<i>C. bollonsi</i>					4	0.4	1	0.1	5	0.2
<i>C. fasciatus</i>							7	0.7	7	0.3
<i>C. innotabilis</i>					2	0.2			2	0.1
<i>C. oliverianus</i>					15	1.4	27	2.9	42	1.8
<i>Centriscops humerosus</i>					1	0.1			1	0.0
<i>Centrolophus niger</i>					1	0.1	1	0.1	2	0.1
<i>Coryphaenoides serrulatus</i>							1	0.1	1	0.0
<i>C. subserrulatus</i>							7	0.7	7	0.3
<i>Epigonus lenimen</i>					2	0.2			2	0.1
<i>E. robustus</i>					2	0.2			2	0.1
<i>E. telescopus</i>					1	0.1			1	0.0
<i>Euclichthys polynemus</i>					1	0.1			1	0.0
<i>Halargyreus johnsonii</i>					1	0.1	1	0.1	2	0.1
<i>Halosaurus pectoralis</i>	1	25.0			1	0.1			2	0.1
<i>Helicolenus</i> spp.			3	1.0	4	0.4			7	0.3
<i>Holtbyrnia</i> sp.							1	0.1	1	0.0
<i>Lepidopus caudatus</i>			1	0.3					1	0.0
<i>Lepidorhynchus denticulatus</i>			11	3.7	104	9.8	182	19.2	297	12.8
Macrouridae (unident.)			7	2.3	13	1.2	45	4.8	65	2.8



**Table C13 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	70–90		30–120		40–130		40–130		30–130	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
other teleosts – <i>continued</i>										
<i>Macruronus novaezelandiae</i>			105	35.0	268	25.2	140	14.8	513	22.2
<i>Merluccius australis</i>			3	1.0			1	0.1	4	0.2
<i>Micromesistius australis</i>							9	1.0	9	0.4
Moridae (unident.)			1	0.3					1	0.0
<i>Notacanthus sexspinis</i>							1	0.1	1	0.0
<i>Persparia kopua</i>							2	0.2	2	0.1
<i>Rosenblattia robusta</i>					1	0.1			1	0.0
<i>Sprattus</i> spp.			1	0.3					1	0.0
<i>Trachurus murphyi</i>					1	0.1			1	0.0
<i>Ventrifossa nigromaculata</i>					1	0.1			1	0.0
<i>Xenodermichthys</i> spp.	1	25.0			3	0.3			4	0.2
<b>Unidentifiable</b>					<b>5</b>	<b>0.5</b>	<b>1</b>	<b>0.1</b>	<b>6</b>	<b>0.3</b>
<b>Unidentified</b>			<b>8</b>	<b>2.7</b>	<b>19</b>	<b>1.8</b>	<b>13</b>	<b>1.4</b>	<b>40</b>	<b>1.7</b>
No. of fish examined		11		1 265		3 492		2 684		7 452
No. stomachs with food		4		300		1 064		947		2 315
% with empty stomachs		55		74		67		60		66
% with everted stomachs		9		2		2		5		3
% with regurgitated stomachs		0		0		0		1		0
No. of prey items		4		319		1 132		1 045		2500



**Table C14: Diet of southern blue whiting, *Micromesistius australis*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	Chatham Rise		Southern N.Z.		All areas	
	30–50		15–60		15–60	
Fork length range (cm)						
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>			<b>157</b>	<b>6.7</b>	<b>157</b>	<b>6.7</b>
Thaliacea (salps)			157	6.7	157	6.7
<b>Polychaeta</b>			<b>2</b>	<b>0.1</b>	<b>2</b>	<b>0.1</b>
<b>Crustacea</b>	<b>3</b>	<b>42.9</b>	<b>1 658</b>	<b>70.5</b>	<b>1 661</b>	<b>70.4</b>
crustacean (unident.)			26	1.1	26	1.1
Copepoda			23	1.0	23	1.0
Amphipoda			343	14.6	343	14.5
Isopoda			2	0.1	2	0.1
Euphausiacea			861	36.6	861	36.5
Natant decapods	3	42.9	563	23.9	566	24.0
natant decapod (unident.)	3	42.9	562	23.9	565	24.0
<i>Pasiphaea</i> spp.			2	0.1	2	0.1
<b>Mollusca</b>			<b>43</b>	<b>1.8</b>	<b>43</b>	<b>1.8</b>
<b>Cephalopoda</b>			<b>43</b>	<b>1.8</b>	<b>43</b>	<b>1.8</b>
Octopoda			2	0.1	2	0.1
octopod (unident.)			2	0.1	2	0.1
Teuthoidea (squid)			27	1.1	27	1.1
squid (unident.)			24	1.0	24	1.0
<i>Nototodarus</i> spp.			3	0.1	3	0.1
Sepiolidae			14	0.6	14	0.6
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>3</b>	<b>42.9</b>	<b>746</b>	<b>31.7</b>	<b>749</b>	<b>31.8</b>
teleost (unident.)	2	28.6	495	21.1	497	21.1
otoliths			3	0.1	3	0.1
fish eggs			9	0.4	9	0.4
mesopelagics			239	10.2	239	10.1
<i>Argyropelecus hemigymnus</i>			1	0.0	1	0.0
<i>Gonostoma elongatum</i>			1	0.0	1	0.0
Gonostomatidae (unident.)			5	0.2	5	0.2
<i>Lampanyctodes hectoris</i>			1	0.0	1	0.0
<i>Maurolicus australis</i>			4	0.2	4	0.2
Myctophidae (unident.)			226	9.6	226	9.6
Sternoptychidae (unident.)			1	0.0	1	0.0
other teleosts	1	14.3	8	0.3	9	0.4
<i>Austrophycis marginata</i>			3	0.1	3	0.1
<i>Genypterus blacodes</i>			1	0.0	1	0.0
<i>Hemerocoetes</i> spp.			1	0.0	1	0.0
<i>Lepidorhynchus denticulatus</i>	1	14.3	1	0.0	2	0.1
<i>Macrorhamphosus scolopax</i>			1	0.0	1	0.0
Macrouridae (unident.)			1	0.0	1	0.0

**Table C14 (continued)**

Area	Chatham		Southern		All areas	
	Rise		N.Z.			
Fork length range (cm)	30–50		15–60		15–60	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Unidentifiable</b>			<b>3</b>	<b>0.13</b>	<b>3</b>	<b>0.13</b>
<b>Unidentified</b>	<b>1</b>	<b>14.3</b>	<b>67</b>	<b>2.85</b>	<b>68</b>	<b>2.88</b>
No. of fish examined		43		5 814		5 857
No. stomachs with food		7		2 351		2 358
% with empty stomachs		81		43		44
% with everted stomachs		14		16		16
% with regurgitated stomachs		0		0		0
No. of prey items		7		2 845		2 852

**Table C15: Diet of blue cod, *Parapercis colias*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	East Coast South Island		Southern N.Z.		All areas	
	25–55		25–55		25–55	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>			<b>10</b>	<b>55.6</b>	<b>10</b>	<b>16.7</b>
Thaliacea (salps)			10	55.6	10	16.7
<b>Crustacea</b>	<b>13</b>	<b>31.0</b>	<b>1</b>	<b>5.6</b>	<b>14</b>	<b>23.3</b>
crustacean (unident.)	3	7.1			3	5.0
Natant decapod	1	2.4			1	1.7
Galatheidae						
<i>Munida</i> spp.	6	14.3	1	5.6	7	11.7
Crab (Brachyura / Anomura, unident.)	1	2.4			1	1.7
Brachyura						
<i>Ovalipes catharus</i>	2	4.8			2	3.3
<b>Mollusca</b>	<b>1</b>	<b>2.4</b>			<b>1</b>	<b>1.7</b>
Bivalva						
Pectinidae (Scallops)	1	2.4			1	1.7
<b>Cephalopoda</b>	<b>1</b>	<b>2.4</b>			<b>1</b>	<b>1.7</b>
Octopoda	1	2.4			1	1.7
octopod (unident.)	1	2.4			1	1.7
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>21</b>	<b>50.0</b>	<b>7</b>	<b>38.9</b>	<b>28</b>	<b>46.7</b>
teleost (unident.)	19	45.2	4	22.2	23	38.3
other teleosts	2	4.8	3	16.7	5	8.3
<i>Conger</i> spp.	1	2.4			1	1.7
<i>Hemerocoetes</i> spp.			2	11.1	2	3.3
<i>Kathetostoma giganteum</i>			1	5.6	1	1.7
<i>Macruronus novaezelandiae</i>	1	2.4			1	1.7
<b>Unidentifiable</b>	<b>5</b>	<b>11.9</b>			<b>5</b>	<b>8.3</b>
<b>Unidentified</b>	<b>4</b>	<b>9.5</b>	<b>3</b>	<b>16.7</b>	<b>7</b>	<b>11.7</b>
No. of fish examined		92		39		131
No. stomachs with food		42		18		60
% with empty stomachs		57		54		54
% with everted stomachs		0		0		0
% with regurgitated stomachs		0		0		0
No. of prey items		45		21		66



**Table C16: Diet of hapuku, *Polyprion oxygeneios*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	Chatham Rise 60–110		Southern N.Z. 50–100		All areas 50–110	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Crustacea</b>			<b>27</b>	<b>20.6</b>	<b>27</b>	<b>18.1</b>
Amphipoda			1	0.8	1	0.7
Galatheidae						
<i>Munida</i> spp.			11	8.4	11	7.4
Crab (Brachyura / Anomura, unident.)			15	11.5	15	10.1
Brachyura						
<i>Nectocarcinus antarcticus</i>			1	0.8	1	0.7
<b>Mollusca</b>	<b>5</b>	<b>27.8</b>	<b>32</b>	<b>24.4</b>	<b>37</b>	<b>24.8</b>
Shell			1	0.8	1	0.7
Bivalva						
Pectinidae (Scallops)			1	0.8	1	0.7
<b>Cephalopoda</b>	<b>5</b>	<b>27.8</b>	<b>30</b>	<b>22.9</b>	<b>35</b>	<b>23.5</b>
Octopoda			4	3.1	4	2.7
octopod (unident.)			4	3.1	4	2.7
Teuthoidea (squid)	5	27.8	26	19.8	31	20.8
squid (unident.)	4	22.2	7	5.3	11	7.4
<i>Nototodarus sloanii</i>			12	9.2	12	8.1
<i>Nototodarus</i> spp.	1	5.6	7	5.3	8	5.4
<b>Chondrichthyes</b>			<b>2</b>	<b>1.5</b>	<b>2</b>	<b>1.3</b>
egg cases			1	0.8	1	0.7
<b>Elasmobranchii</b>			<b>1</b>	<b>0.8</b>	<b>1</b>	<b>0.7</b>
<i>Squalus acanthias</i>			1	0.8	1	0.7
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>13</b>	<b>72.2</b>	<b>89</b>	<b>67.9</b>	<b>102</b>	<b>68.5</b>
teleost (unident.)	12	66.7	50	38.2	62	41.6
other teleosts	1	5.6	47	35.9	48	32.2
<i>Argentina elongata</i>			1	0.8	1	0.7
<i>Arnoglossus scapha</i>			2	1.5	2	1.3
<i>Caelorinchus aspercephalus</i>			5	3.8	5	3.4
<i>Caesioperca lepidoptera</i>			1	0.8	1	0.7
<i>Centriscops humerosus</i>			2	1.5	2	1.3
<i>Emmelichthys nitidus</i>			1	0.8	1	0.7
<i>Gnathophis habenatus</i>			3	2.3	3	2.0
<i>Gonorynchus gonorynchus</i>			1	0.8	1	0.7
<i>Hemerocoetes</i> spp.			1	0.8	1	0.7
<i>Kathetostoma giganteum</i>			3	2.3	3	2.0
Macrouridae (unident.)			2	1.5	2	1.3
<i>Macruronus novaezelandiae</i>	1	5.6			1	0.7
<i>Parapercis gilliesi</i>			1	0.8	1	0.7
Pleuronectiformes (unident.)			1	0.8	1	0.7
<i>Pseudophycis bachus</i>			27	20.6	27	18.1

**Table C16 (continued)**

Area	Chatham Rise 60–110		Southern N.Z. 50–100		All areas 50–110	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
Species or group						
<b>Unidentified</b>			<b>1</b>	<b>0.8</b>	<b>1</b>	<b>0.7</b>
No. of fish examined		52		267		319
No. stomachs with food		18		131		149
% with empty stomachs		48		47		47
% with everted stomachs		17		4		6
% with regurgitated stomachs		0		0		0
No. of prey items		18		164		182



**Table C17: Diet of smooth oreo, *Pseudocyttus maculatus*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island 15–60		Challenger / WCSI 30–60		Chatham Rise 15–50		Southern N.Z. 15–55		All areas 15–60	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Coelenterata</b>	<b>8</b>	<b>20.0</b>			<b>74</b>	<b>3.6</b>	<b>12</b>	<b>2.8</b>	<b>94</b>	<b>3.7</b>
Scyphozoa (jellyfish)	8	20.0			58	2.8	12	2.8	78	3.1
Anthozoa (sea anemones)					16	0.8			16	0.6
<b>Tunicata</b>	<b>20</b>	<b>50.0</b>	<b>1</b>	<b>12.5</b>	<b>1 774</b>	<b>85.4</b>	<b>248</b>	<b>57.4</b>	<b>2 043</b>	<b>79.9</b>
Thaliacea (salps)	20	50.0	1	12.5	1 774	85.4	248	57.4	2 043	79.9
<b>Crustacea</b>	<b>1</b>	<b>2.5</b>			<b>53</b>	<b>2.6</b>	<b>12</b>	<b>2.8</b>	<b>66</b>	<b>2.6</b>
crustacean (unident.)	1	2.5			6	0.3	2	0.5	9	0.4
Copepoda					2	0.1			2	0.1
Amphipoda					33	1.6	3	0.7	36	1.4
Euphausiacea					1	0.0	1	0.2	2	0.1
Natant decapods					14	0.7	6	1.4	20	0.8
natant decapod (unident.)					13	0.6	4	0.9	17	0.7
<i>Sergestes</i> spp.					1	0.0	2	0.5	3	0.1
<b>Mollusca</b>	<b>5</b>	<b>12.5</b>	<b>1</b>	<b>12.5</b>	<b>87</b>	<b>4.2</b>	<b>138</b>	<b>31.9</b>	<b>231</b>	<b>9.0</b>
Bivalva			1	12.5	1	0.0			1	0.0
Pectinidae (Scallops)					1	0.0			1	0.0
<b>Cephalopoda</b>	<b>5</b>	<b>12.5</b>	<b>1</b>	<b>12.5</b>	<b>86</b>	<b>4.1</b>	<b>138</b>	<b>31.9</b>	<b>230</b>	<b>9.0</b>
Octopoda					28	1.3	8	1.9	36	1.4
octopod (unident.)					28	1.3	4	0.9	32	1.5
<i>Graneledone</i> spp.							4	0.9	4	0.2
Teuthoidea (squid)	5	12.5	1	12.5	58	2.8	132	30.6	196	7.7
squid (unident.)	4	10.0			53	2.6	127	29.4	184	7.2
Cranchiidae	1	2.5					1	0.2	2	0.1
<i>Histioteuthis</i> spp.			1	12.5	5	0.2	4	0.9	10	0.4
<i>Ommastrephes bartramii</i>							1	0.2	1	0.0
<b>Echinodermata</b>					<b>3</b>	<b>0.1</b>			<b>3</b>	<b>0.1</b>
<b>Osteichthyes</b>										
<b>Teleostei</b>			<b>4</b>	<b>50.0</b>	<b>56</b>	<b>2.7</b>	<b>67</b>	<b>15.5</b>	<b>127</b>	<b>5.0</b>
teleost (unident.)			1	12.5	36	1.7	45	10.4	82	3.2
scales					2	0.1			2	0.1
fish eggs					1	0.0			1	0.0
mesopelagics			3	37.5	3	0.1	16	3.7	22	0.9
Astronesthidae							2	0.5	2	0.1
<i>Chauliodus sloani</i>							3	0.7	3	0.1
<i>Cryptopsaras couesi</i>			3	37.5			1	0.2	4	0.2
Gonostomatidae							1	0.2	1	0.0
<i>Idiacanthus</i> spp.							2	0.5	2	0.1
<i>Linophryne arborifera</i>					1	0.0			1	0.0

**Table C17 (continued)**

Area	North Island		Challenger / WCSI		Chatham Rise		Southern N.Z.		All areas	
	15–60		30–60		15–50		15–55		15–60	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<i>mesopelagics – continued</i>										
Malacosteidae (unident.)							2	0.5	2	0.1
Melamphaidae					1	0.0	1	0.2	2	0.1
<i>Photichthys argenteus</i>					1	0.0	1	0.2	2	0.1
<i>Stomias</i> spp.							3	0.7	3	0.1
other teleosts					16	0.8	8	1.9	24	0.9
<i>Holtbyrnia</i> sp.					16	0.8	8	1.9	24	0.9
<b>Mud</b>							<b>1</b>	<b>0.2</b>	<b>1</b>	<b>0.0</b>
<b>Unidentifiable</b>	<b>3</b>	<b>7.5</b>			<b>54</b>	<b>2.6</b>	<b>4</b>	<b>0.9</b>	<b>61</b>	<b>2.4</b>
<b>Unidentified</b>	<b>6</b>	<b>15.0</b>	<b>2</b>	<b>25.0</b>	<b>65</b>	<b>3.1</b>	<b>6</b>	<b>1.4</b>	<b>79</b>	<b>3.1</b>
No. of fish examined		194		21		6 271		1 639		8 125
No. stomachs with food		40		8		2 077		432		2 557
% with empty stomachs		54		52		39		53		42
% with everted stomachs		25		10		28		21		26
% with regurgitated stomachs		0		0		0		0		0
No. of prey items		43		8		2 169		493		2 713

**Table C18: Diet of red cod, *Pseudophycis bachus*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	Chatham Rise		East Coast South Island		Southern N.Z.		All areas	
	40–60		10–75		10–75		10–75	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Seaweed</b>			<b>1</b>	<b>0.1</b>			<b>1</b>	<b>0.1</b>
<i>Undaria pinnatifida</i>			1	0.1			1	0.1
<b>Crustacea</b>	<b>16</b>	<b>100</b>	<b>1 366</b>	<b>79.5</b>	<b>89</b>	<b>68.5</b>	<b>1 471</b>	<b>78.9</b>
crustacean (unident.)			213	12.4	5	3.8	218	11.7
Amphipoda					2	1.5	2	0.1
Isopoda			1	0.1			1	0.1
Euphausiacea			2	0.1	8	6.2	10	0.5
Natant decapod	10	62.5	8	0.5			18	1.0
Palinuridae								
<i>Jasus edwardsii</i>	1	6.3					1	0.1
Galatheidae								
<i>Munida</i> spp.	12	75.0	1 092	63.6	29	22.3	1 133	60.8
Crab (Brachyura / Anomura, unident.)			45	2.6	31	23.8	76	4.1
Brachyura								
<i>Ovalipes catharus</i>			42	2.4	19	14.6	61	3.3
<b>Mollusca</b>			<b>45</b>	<b>2.6</b>	<b>15</b>	<b>11.5</b>	<b>60</b>	<b>3.2</b>
mollusc (unident.)			4	0.2			4	0.2
Gastropoda			3	0.2			3	0.2
<i>Scutus breviculus</i>			1	0.1			1	0.1
Whelk (unident.)			2	0.1			2	0.1
Bilvalva			2	0.1	1	0.8	3	0.2
<i>Austrovenus stutchburyi</i>			2	0.1			2	0.1
Pectinidae (Scallops)					1	0.8	1	0.1
<b>Cephalopoda</b>			<b>37</b>	<b>2.2</b>	<b>14</b>	<b>10.8</b>	<b>51</b>	<b>2.7</b>
Octopoda			2	0.1			2	0.1
octopod (unident.)			2	0.1			2	0.1
Teuthoidea (squid)			35	2.0	14	10.8	49	2.6
squid (unident.)					6	4.6	6	0.3
<i>Nototodarus</i> spp. (unident.)			35	2.0			35	1.9
<i>N. sloanii</i>					8	6.2	8	0.4
<b>Echinodermata</b>					<b>1</b>	<b>0.8</b>	<b>1</b>	<b>0.1</b>
Holothuroidea								
<i>Stichopus mollis</i>					1	0.8	1	0.1
<b>Chondrichthyes</b>								
<b>Holocephali</b>			<b>1</b>	<b>0.1</b>			<b>1</b>	<b>0.1</b>
<i>Hydrolagus bemisi</i>			1	0.1			1	0.1

**Table C18 (continued)**

Area	Chatham Rise		East Coast Sth. Island		Southern N.Z.		All areas	
	40–60		10–75		10–75		10–75	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Osteichthyes</b>								
<b>Teleostei</b>	<b>1</b>	<b>6.3</b>	<b>435</b>	<b>25.3</b>	<b>37</b>	<b>28.5</b>	<b>473</b>	<b>25.4</b>
teleost (unident.)			339	19.7	31	23.8	370	19.8
other teleosts	1	6.3	105	6.1	7	5.4	113	6.1
<i>Argentina elongata</i>			1	0.1	1	0.8	2	0.1
<i>Arnoglossus scapha</i>			12	0.7			12	0.6
<i>Caelorinchus aspercephalus</i>			1	0.1			1	0.1
<i>Chelidonichthys kumu</i>			4	0.2			4	0.2
<i>Emmelichthys nitidus</i>			1	0.1			1	0.1
<i>Genypterus blacodes</i>			1	0.1			1	0.1
<i>Gnathophis habenatus</i>					1	0.8	1	0.1
<i>Helicolenus</i> spp.			5	0.3			5	0.3
<i>Hemerocoetes</i> spp.			10	0.6	2	1.5	12	0.6
<i>Hippocampus abdominalis</i>			1	0.1			1	0.1
<i>Kathetostoma giganteum</i>			18	1.0			18	1.0
<i>Latridopsis ciliaris</i>			1	0.1			1	0.1
<i>Lepidorhynchus denticulatus</i>			1	0.1			1	0.1
Macrouridae (unident.)			7	0.4			7	0.4
<i>Macruronus novaezealandiae</i>					1	0.8	1	0.1
<i>Merluccius australis</i>	1	6.3					1	0.1
<i>Nemadactylus macropterus</i>			13	0.8			13	0.7
<i>Notopogon lilliei</i>			3	0.2	2	1.5	5	0.3
<i>Parapercis colias</i>			1	0.1			1	0.1
Pleuronectiformes (unident.)			1	0.1			1	0.1
<i>Pseudophycis bachus</i>			23	1.3			23	1.2
<i>Sprattus</i> spp.			4	0.2			4	0.2
<i>Thyrsites atun</i>			7	0.4			7	0.4
<b>Mud</b>			<b>1</b>	<b>0.1</b>			<b>1</b>	<b>0.1</b>
<b>Sea bird</b>					<b>1</b>	<b>0.8</b>	<b>1</b>	<b>0.1</b>
<b>Unidentifiable</b>			<b>19</b>	<b>1.1</b>	<b>4</b>	<b>3.1</b>	<b>23</b>	<b>1.2</b>
<b>Unidentified</b>			<b>10</b>	<b>0.6</b>			<b>10</b>	<b>0.5</b>
No. of fish examined		20		3 420		263		3 703
No. stomachs with food		16		1 718		130		1 864
% with empty stomachs		5		45		38		44
% with everted stomachs		15		6		12		6
% with regurgitated stomachs		0		0		0		0
No. of prey items		24		1 935		153		2 112

**Table C19: Diet of gemfish, *Rexea solandri*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	Chatham Rise		Southern N.Z.		All areas	
	85–105		30–105		30–105	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>			<b>2</b>	<b>0.3</b>	<b>2</b>	<b>0.3</b>
Thaliacea (salps)			2	0.3	2	0.3
<b>Crustacea</b>			<b>1</b>	<b>0.2</b>	<b>1</b>	<b>0.2</b>
Euphausiacea			1	0.2	1	0.2
<b>Mollusca</b>			<b>250</b>	<b>43.4</b>	<b>250</b>	<b>43.0</b>
<b>Cephalopoda</b>			<b>250</b>	<b>43.4</b>	<b>250</b>	<b>43.0</b>
Teuthoidea (squid)			250	43.4	250	43.0
squid (unident.)			82	14.2	82	14.1
<i>Nototodarus</i> spp. (unident.)			12	2.1	12	2.1
<i>N. sloanii</i>			156	27.1	156	26.9
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>5</b>	<b>100</b>	<b>363</b>	<b>63.0</b>	<b>368</b>	<b>63.3</b>
teleost (unident.)	1	20.0	225	39.1	226	38.9
mesopelagics			10	1.7	10	1.7
Myctophidae (unident.)			10	1.7	10	1.7
other teleosts	4	80.0	134	23.3	138	23.8
<i>Argentina elongata</i>			4	0.7	4	0.7
<i>Bassanago bulbiceps</i>			5	0.9	5	0.9
<i>Brama brama</i>			2	0.3	2	0.3
<i>Cyttus novaezealandiae</i>			1	0.2	1	0.2
<i>Emmelichthys nitidus</i>			6	1.0	6	1.0
<i>Gonorynchus gonorynchus</i>			10	1.7	10	1.7
<i>Hemerocoetes</i> spp.			1	0.2	1	0.2
<i>Kathetostoma giganteum</i>			2	0.3	2	0.3
<i>Lepidorhynchus denticulatus</i>			3	0.5	3	0.5
Macrouridae (unident.)			2	0.3	2	0.3
<i>Macruronus novaezealandiae</i>	3	60.0	19	3.3	22	3.8
<i>Mendosoma lineatum</i>			1	0.2	1	0.2
<i>Mora moro</i>			1	0.2	1	0.2
<i>Nemadactylus macropterus</i>			1	0.2	1	0.2
<i>Parapercis colias</i>			2	0.3	2	0.3
<i>Paratrachichthys trailli</i>	1	20.0	2	0.3	3	0.5
<i>Pseudophycis bachus</i>			8	1.4	8	1.4
<i>Seriolella punctata</i>			5	0.9	5	0.9
<i>Thyrsites atun</i>			8	1.4	8	1.4
<i>Trachurus</i> spp. (unident.)			17	3.0	17	2.9
<i>T. declivis</i>			1	0.2	1	0.2
<i>T. murphyi</i>			36	6.3	36	6.2
<b>Unidentified</b>			<b>1</b>	<b>0.2</b>	<b>1</b>	<b>0.2</b>
No. of fish examined	6		1 103		1 109	
No. stomachs with food	5		576		581	
% with empty stomachs	17		48		48	
% with everted stomachs	0		0		0	
% with regurgitated stomachs	0		0		0	
No. of prey items	5		626		631	



**Table C20: Diet of blue warehou, *Seriolella brama*, and white warehou, *S. caerulea*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	<i>S. brama</i>				<i>S. caerulea</i>			
	Southern N.Z. 25–65		Chatham Rise 20–60		Southern N.Z. 20–50		All areas 20–50	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>	<b>817</b>	<b>96.8</b>	<b>145</b>	<b>96.0</b>	<b>27</b>	<b>96.4</b>	<b>172</b>	<b>96.1</b>
Thaliacea (salps)	817	96.8	145	96.0	27	96.4	172	96.1
<b>Crustacea</b>	<b>64</b>	<b>7.6</b>	<b>11</b>	<b>7.3</b>			<b>11</b>	<b>6.1</b>
crustacean (unident.)	1	0.1	2	1.3			1	0.6
Amphipoda	1	0.1	6	4.0			7	3.9
Isopoda	2	0.2						
Euphausiacea	59	7.0	3	2.0			3	1.7
Galatheidae								
<i>Munida</i> spp.	1	0.1						
Crab (Brachyura / Anomura, unident.)	1	0.1						
<b>Osteichthyes</b>								
<b>Teleostei</b>	<b>3</b>	<b>0.4</b>	<b>3</b>	<b>2.0</b>			<b>3</b>	<b>1.7</b>
teleost (unident.)	3	0.4	2	1.3			2	1.1
other teleosts			1	0.7			1	0.6
<i>Pseudophycis bachus</i>			1	0.7			1	0.6
<b>Unidentifiable</b>	<b>1</b>	<b>0.1</b>						
<b>Unidentified</b>	<b>8</b>	<b>0.9</b>	<b>5</b>	<b>3.3</b>	<b>1</b>	<b>3.6</b>	<b>6</b>	<b>3.4</b>
No. of fish examined	974		204		58		262	
No. stomachs with food	844		151		28		179	
% with empty stomachs	13		26		52		32	
% with everted stomachs	0		0		0		0	
% with regurgitated stomachs	0		0		0		0	
No. of prey items	894		164		28		192	





**Table C21: Diet of silver warehou, *Seriolella punctata*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island 48–55		Challenger/ WCSI 53		Chatham Rise 20–55		Southern N.Z. 20–60		All areas 20–60	
	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Coelenterata</b>	<b>1</b>	<b>50.0</b>			<b>7</b>	<b>0.6</b>			<b>8</b>	<b>0.4</b>
Scyphozoa (jellyfish)	1	50.0			7	0.6			8	0.4
<b>Tunicata</b>	<b>1</b>	<b>50.0</b>			<b>1 151</b>	<b>95.1</b>	<b>609</b>	<b>99.5</b>	<b>1 761</b>	<b>96.5</b>
Thaliacea (salps)	1	50.0			1 151	95.1	609	99.5	1 761	96.5
<b>Polychaeta</b>					<b>26</b>	<b>2.1</b>			<b>26</b>	<b>1.4</b>
<b>Crustacea</b>					<b>33</b>	<b>2.7</b>	<b>20</b>	<b>3.3</b>	<b>53</b>	<b>2.9</b>
Amphipoda					15	1.2			15	0.8
Isopoda					3	0.2			3	0.2
Euphausiacea					11	0.9	20	3.3	31	1.7
Natant decapods					7	0.6			7	0.4
<b>Mollusca</b>					<b>1</b>	<b>0.1</b>	<b>1</b>	<b>0.2</b>	<b>2</b>	<b>0.2</b>
<b>Cephalopoda</b>					<b>1</b>	<b>0.1</b>	<b>1</b>	<b>0.2</b>	<b>2</b>	<b>0.2</b>
Octopoda					1	0.1			1	0.1
<i>Graneledone</i> spp.					1	0.1			1	0.1
Teuthoidea (squid)							1	0.2	1	0.1
<b>Echinodermata</b>					<b>14</b>	<b>1.2</b>			<b>14</b>	<b>0.8</b>
<b>Osteichthyes</b>										
<b>Teleostei</b>					<b>7</b>	<b>0.6</b>	<b>1</b>	<b>0.2</b>	<b>8</b>	<b>0.4</b>
teleost (unident.)					6	0.5	1	0.2	7	0.4
other teleosts					1	0.1			1	0.1
<i>Seriolella punctata</i>					1	0.1			1	0.1
<b>Unidentifiable</b>					<b>34</b>	<b>2.8</b>			<b>34</b>	<b>1.9</b>
<b>Unidentified</b>					<b>15</b>	<b>1.2</b>	<b>3</b>	<b>0.5</b>	<b>18</b>	<b>1.0</b>
No. of fish examined	28		1		1 279		714		2 022	
No. stomachs with food	2		0		1 210		612		1 824	
% with empty stomachs	93		100		5		14		10	
% with everted stomachs	0		0		0		0		0	
% with regurgitated stomachs	0		0		0		0		0	
No. of prey items	2		0		1 291		634		1 927	



**Table C22: Diet of barracouta, *Thyrsites atun*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food; WCSI, west coast South Island**

Area	North Island 40–100		Challenger / WCSI 50–100		Chatham Islands 50–90		East Coast South Island 2–100		Southern N.Z. 30–100		All areas 30–100	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Seaweed</b>					<b>1</b>	<b>0.1</b>					<b>1</b>	<b>0.0</b>
<b>Tunicata</b>									<b>13</b>	<b>0.6</b>	<b>13</b>	<b>0.2</b>
Thaliacea (salps)									13	0.6	13	0.2
<b>Crustacea</b>	<b>142</b>	<b>46.4</b>	<b>661</b>	<b>58.3</b>	<b>1 488</b>	<b>87.5</b>	<b>1 629</b>	<b>78.9</b>	<b>1 883</b>	<b>81.9</b>	<b>5 803</b>	<b>77.3</b>
crustacean (unident.)							1	0.0	7	0.3	8	0.1
Amphipoda			1	0.1	6	0.4			15	0.7	22	0.3
Isopoda					3	0.2					3	0.0
Euphausiacea	133	43.5	658	58.0	1 482	87.2	1 451	70.3	1 799	78.2	5 523	73.6
Natant decapod	11	3.6			2	0.1	1	0.0	2	0.1	16	0.2
Galatheidæ												
<i>Munida</i> spp.			2	0.2			188	9.1	75	3.3	265	3.5
<b>Mollusca</b>	<b>3</b>	<b>1.0</b>	<b>13</b>	<b>1.1</b>	<b>97</b>	<b>5.7</b>	<b>310</b>	<b>15.0</b>	<b>222</b>	<b>9.7</b>	<b>645</b>	<b>8.6</b>
<b>Cephalopoda</b>	<b>3</b>	<b>1.0</b>	<b>13</b>	<b>1.1</b>	<b>97</b>	<b>5.7</b>	<b>310</b>	<b>15.0</b>	<b>222</b>	<b>9.7</b>	<b>645</b>	<b>8.6</b>
Teuthoidea (squid)	3	1.0	13	1.1	97	5.7	310	15.0	222	9.7	645	8.6
squid (unident.)			3	0.3	4	0.2	151	7.3	89	3.9	247	3.3
<i>Nototodar</i> spp. (uniden)	3	1.0	10	0.9	92	5.4	160	7.7	31	1.3	296	3.9
<i>N. sloanii</i>					1	0.1			103	4.5	104	1.4
<b>Echinodermata</b>	<b>1</b>	<b>0.3</b>									<b>1</b>	<b>0.0</b>
<b>Chondrichthyes</b>												
<b>Elasmobranchii</b>									<b>1</b>	<b>0.0</b>	<b>1</b>	<b>0.0</b>
<i>Galeorhinus galeus</i>									1	0.0	1	0.0
<b>Osteichthyes</b>												
<b>Teleostei</b>	<b>170</b>	<b>55.6</b>	<b>544</b>	<b>48.0</b>	<b>177</b>	<b>10.4</b>	<b>182</b>	<b>8.8</b>	<b>265</b>	<b>11.5</b>	<b>1 338</b>	<b>17.8</b>
teleost (unident.)	126	41.2	215	19.0	106	6.2	149	7.2	129	5.6	725	9.7
mesopelagics	8	2.6	3	0.3	11	0.6	5	0.2	84	3.7	111	1.5
<i>Maurolicus australis</i>	7	2.3	2	0.2					19	0.8	28	0.4
Myctophidae (unident.)	1	0.3	1	0.1	11	0.6	5	0.2	67	2.9	85	1.1
other teleosts	39	12.7	349	30.8	72	4.2	29	1.4	56	2.4	545	7.3
<i>Argentina elongata</i>			3	0.3	18	1.1			6	0.3	27	0.4
<i>Caelorinchus aspercepha.</i>	1	0.3									1	0.0
<i>Capromimus abbreviatus</i>			44	3.9							44	0.6
<i>Cepola aotea</i>	1	0.3									1	0.0
<i>Chlorophthalmus nigripinnis</i>			2	0.2							2	0.0
<i>Cyttus novaezealandiae</i>					1	0.1			2	0.1	3	0.0
<i>Emmelichthys nitidus</i>					39	2.3			6	0.3	45	0.6
<i>Engraulis australis</i>	2	0.7	12	1.1							14	0.2
<i>Helicolenus</i> spp.									1	0.0	1	0.0
<i>Hemerocoetes</i> spp.					1	0.1			11	0.5	12	0.2

**Table C22 (continued)**

Area	North Island		Challenger / WCSI		Chatham Islands		East Coast South Island		Southern N.Z.		All areas	
	40–100		50–100		50–90		2–100		30–100		30–100	
Fork length range (cm)												
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<i>other teleosts – continued</i>												
<i>Lepidopus caudatus</i>	1	0.3	2	0.2							3	0.0
<i>Lepidotrigla brachyoptera</i>			4	0.4	1	0.1					5	0.1
Lethrinidae (unident.)							1	0.0			1	0.0
<i>Macruronus novaezelandiae</i>			270	23.8	2	0.1			2	0.1	274	3.7
<i>Merluccius australis</i>			1	0.1							1	0.0
Moridae (unident.)					1	0.1					1	0.0
<i>Pseudophycis bachus</i>	1	0.3	1	0.1	1	0.1	5	0.2	8	0.3	16	0.2
<i>Rexea solandri</i>			2	0.2							2	0.0
<i>Sardinops neopilchardus</i>	14	4.6									14	0.2
<i>Scomberesox saurus</i>					5	0.3					5	0.1
<i>Seriolella punctata</i>			1	0.1	1	0.1					2	0.0
<i>Sprattus spp</i>			16	1.4			23	1.1	9	0.4	48	0.6
<i>Thyrsites atun</i>			1	0.1	3	0.2			10	0.4	14	0.2
<i>Trachurus spp.</i> (unident.)	20	6.5	1	0.1							21	0.3
<i>T. murphyi</i>									1	0.0	1	0.0
<b>Rubbish (non fish)</b>			<b>1</b>	<b>0.1</b>	<b>1</b>	<b>0.1</b>					<b>2</b>	<b>0.0</b>
<b>Unidentifiable</b>			<b>1</b>	<b>0.1</b>	<b>3</b>	<b>0.2</b>	<b>1</b>	<b>0.0</b>	<b>12</b>	<b>0.5</b>	<b>17</b>	<b>0.2</b>
<b>Unidentified</b>	<b>1</b>	<b>0.3</b>	<b>17</b>	<b>1.5</b>	<b>21</b>	<b>1.2</b>	<b>34</b>	<b>1.6</b>	<b>8</b>	<b>0.3</b>	<b>81</b>	<b>1.1</b>
No. of fish examined	1 487		2 904		2 678		3 594		4 879		15 542	
No. stomachs with food	306		1 134		1 700		2 065		2 300		7 505	
% with empty stomachs	79		61		37		43		53		52	
% with everted stomachs	0		0		0		0		0		0	
% with regurgitated stomachs	0		0		0		0		0		0	
No. of prey items	323		1 271		1 806		2 170		2 426		7 996	

**Table C23: Diet of Murphy's mackerel, *Trachurus murphyi*, from research trawls. n, number of stomachs with each prey item or group; F, percent occurrence in stomachs with food**

Area	Chatham		Southern		All areas	
	Rise		N.Z.			
Fork length range (cm)	40–55		40–60		40–60	
Species or group	<i>n</i>	F	<i>n</i>	F	<i>n</i>	F
<b>Tunicata</b>			<b>71</b>	<b>45.2</b>	<b>71</b>	<b>35.5</b>
Thaliacea (salps)			71	45.2	71	35.5
<b>Crustacea</b>	<b>33</b>	<b>76.7</b>	<b>78</b>	<b>49.7</b>	<b>111</b>	<b>55.5</b>
crustacean (unident.)			2	1.3	2	1.0
Copepoda			1	0.6	1	0.5
Amphipoda	5	11.6	20	12.7	25	12.5
Euphausiacea	28	65.1	47	29.9	75	37.5
Natant decapods			1	0.6	1	0.5
<i>Pasiphaea</i> spp.			1	0.6	1	0.5
Galatheidae						
<i>Munida</i> spp.			12	7.6	12	6.0
<b>Mollusca</b>	<b>1</b>	<b>2.3</b>	<b>1</b>	<b>0.6</b>	<b>2</b>	<b>1.0</b>
<b>Cephalopoda</b>	<b>1</b>	<b>2.3</b>	<b>1</b>	<b>0.6</b>	<b>2</b>	<b>1.0</b>
Teuthoidea (squid)	1	2.3	1	0.6	2	1.0
squid (unident.)	1	2.3			1	0.5
<i>Enoploteuthis</i> spp.			1	0.6	1	0.5
<b>Osteichthyes</b>						
<b>Teleostei</b>	<b>10</b>	<b>23.3</b>	<b>11</b>	<b>7.0</b>	<b>21</b>	<b>10.5</b>
teleost (unident.)	10	23.3	9	5.7	19	9.5
scales			1	0.6	1	0.5
mesopelagics			1	0.6	1	0.5
Myctophidae (unident.)			1	0.6	1	0.5
<b>Unidentifiable</b>			<b>7</b>	<b>4.5</b>	<b>7</b>	<b>3.5</b>
<b>Unidentified</b>			<b>8</b>	<b>5.1</b>	<b>8</b>	<b>4.0</b>
No. of fish examined	52		362		414	
No. stomachs with food	43		157		200	
% with empty stomachs	17		57		52	
% with everted stomachs	0		0		0	
% with regurgitated stomachs	0		0		0	
No. of prey items	44		181		225	









