

Supplementary Material

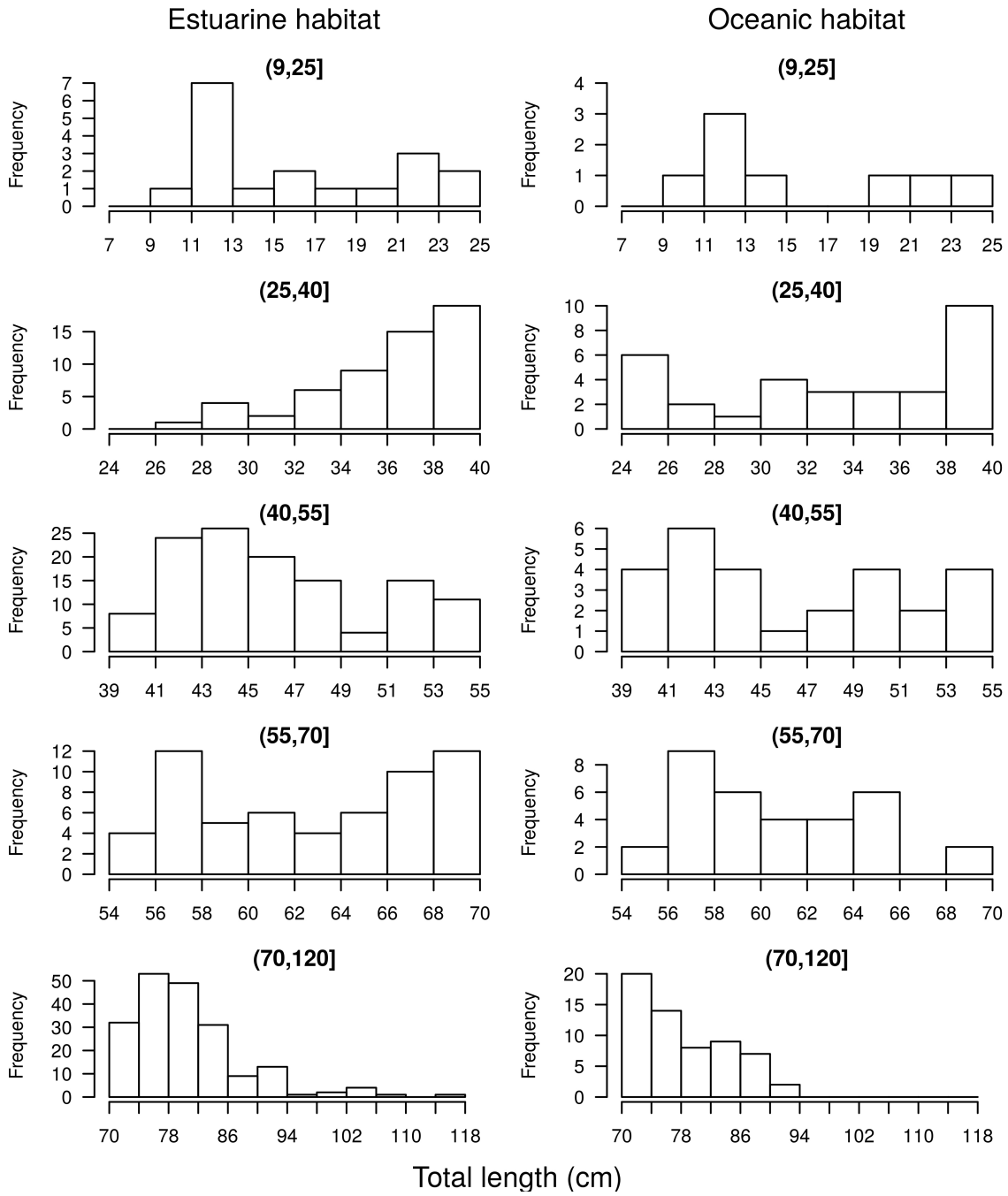


Figure SM1: Size frequency of *Merluccius australis* by size-class and habitat.

Table SM1-1: Mixing model priors ($\hat{p}$) and isotopic baselines ($\delta^{13}\text{C}$ & $\delta^{15}\text{N}$) for putative preys of *Merluccius australis* in estuarine habitats, by size-class. Prey selected and priors estimated by pooling and averaging gravimetric proportions derived from stomach content analyses or SIA by several authors, (Payá, 1992; Lillo *et al.*, 1995, 2004, 2006, 2008a, 2008b, 2009, 2010, 2012, 2013, 2015; Pool *et al.*, 1997; Neira *et al.*, 2014; Klarian *et al.*, 2016). Only taxa with $\hat{p} > 0.001$ are shown.

Size class	Prey	Diet prior		$\delta^{13}\text{C}$		$\delta^{15}\text{N}$	
		$\hat{p}$	SE	Mean	SD	Mean	SD
(0,25]	Cephalopoda	0.005	0.0011	-16.65	0.564	15.04	0.754
	<i>Macruronus magellanicus</i>	0.032	0.0047	-16.33	0.004	15.42	0.006
	<i>Sprattus fuegensis</i>	0.039	0.0052	-16.44	0.060	15.03	0.137
	Mesopelagic fishes	0.095	0.0041	-16.95	0.087	13.82	0.413
	<i>Pasiphaea</i>	0.175	0.0122	-17.16	0.162	13.76	0.178
	Euphausiidae	0.389	0.0171	-17.41	0.052	11.08	0.101
(25,40]	<i>Merluccius gayi</i>	0.001	0.0013	-15.80	0.060	15.99	0.092
	Cephalopoda	0.003	0.0010	-16.65	0.564	15.04	0.754
	Mesopelagic fishes	0.057	0.0041	-16.95	0.087	13.82	0.413
	Euphausiidae	0.063	0.0063	-17.41	0.052	11.08	0.101
	<i>Sprattus fuegensis</i>	0.091	0.0103	-16.44	0.060	15.03	0.137
	<i>Pasiphaea</i>	0.121	0.0104	-17.16	0.162	13.76	0.178
	<i>Macruronus magellanicus</i>	0.305	0.0167	-16.33	0.004	15.42	0.006
(40,55]	Cephalopoda	0.002	0.0009	-16.65	0.564	15.04	0.754
	<i>Merluccius gayi</i>	0.004	0.0024	-15.80	0.060	15.99	0.092
	Euphausiidae	0.019	0.0028	-17.41	0.052	11.08	0.101
	Mesopelagic fishes	0.048	0.0040	-16.95	0.087	13.82	0.413
	<i>Pasiphaea</i>	0.071	0.0087	-17.16	0.162	13.76	0.178
	<i>Sprattus fuegensis</i>	0.080	0.0103	-16.44	0.060	15.03	0.137
	<i>Macruronus magellanicus</i>	0.511	0.0191	-16.33	0.004	15.42	0.006
(55,70]	Cephalopoda	0.001	0.0007	-16.65	0.564	15.04	0.754
	Euphausiidae	0.002	0.0005	-17.41	0.052	11.08	0.101
	<i>Merluccius gayi</i>	0.015	0.0048	-15.80	0.060	15.99	0.092
	<i>Pasiphaea</i>	0.021	0.0049	-17.16	0.162	13.76	0.178
	Mesopelagic fishes	0.023	0.0029	-16.95	0.087	13.82	0.413
	<i>Sprattus fuegensis</i>	0.040	0.0077	-16.44	0.060	15.03	0.137
	<i>Macruronus magellanicus</i>	0.794	0.0160	-16.33	0.004	15.42	0.006
(70,120]	<i>Pasiphaea</i>	0.004	0.0022	-17.16	0.162	13.76	0.178
	Mesopelagic fishes	0.008	0.0017	-16.95	0.087	13.82	0.413
	<i>Sprattus fuegensis</i>	0.014	0.0046	-16.44	0.060	15.03	0.137
	<i>Merluccius gayi</i>	0.045	0.0083	-15.80	0.060	15.99	0.092
	<i>Macruronus magellanicus</i>	0.897	0.0121	-16.33	0.004	15.42	0.006

Table SM1-2: Mixing model priors ($\hat{p}$) and isotopic baselines ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) for putative preys of *Merluccius australis* in oceanic habitats by size-class. Prey selected and priors estimated by pooling and averaging gravimetric proportions derived from stomach content analyses or SIA by several authors, (Pool *et al.*, 1997; Lillo *et al.*, 2004a, 2006, 2008b, 2008a, 2009b, 2010, 2012, 2013, 2015; Neira *et al.*, 2014; Klarian *et al.*, 2016). Only taxa with $\hat{p} > 0.001$ are shown.

Size class	Prey	Diet prior		$\delta^{13}\text{C}$		$\delta^{15}\text{N}$	
		$\hat{p}$	SE	Mean	SD	Mean	SD
(0,25]	Micromesistius australis	0.002	0.0006	-17.92	0.251	15.54	0.556
	Cephalopoda	0.007	0.0013	-17.64	0.397	14.61	0.892
	Macruronus magellanicus	0.012	0.0020	-17.86	0.142	15.26	0.193
	Decapoda	0.028	0.0061	-16.63	0.124	16.42	0.395
	Sergestes	0.048	0.0079	-17.86	0.135	15.88	0.200
	Mesopelagic fishes	0.122	0.0055	-18.17	0.110	16.51	0.230
	Euphausiidae	0.194	0.0147	-18.70	0.174	10.14	0.406
	Pasiphaea	0.583	0.0186	-18.09	0.149	15.47	0.200
(25,40]	Macrouridae	0.006	0.0021	-15.30	0.411	20.67	1.055
	Cephalopoda	0.018	0.0017	-17.64	0.397	14.61	0.892
	Micromesistius australis	0.022	0.0041	-17.92	0.251	15.54	0.556
	Decapoda	0.022	0.0042	-16.63	0.124	16.42	0.395
	Sergestes	0.036	0.0054	-17.86	0.135	15.88	0.200
	Euphausiidae	0.126	0.0101	-18.70	0.174	10.14	0.406
	Macruronus magellanicus	0.208	0.0129	-17.86	0.142	15.26	0.193
	Mesopelagic fishes	0.228	0.0067	-18.17	0.110	16.51	0.230
	Pasiphaea	0.329	0.0162	-18.09	0.149	15.47	0.200
(40,55]	Merluccius gayi	0.001	0.0011	-15.35	0.098	19.59	0.476
	Decapoda	0.011	0.0021	-16.63	0.124	16.42	0.395
	Macrouridae	0.017	0.0045	-15.30	0.411	20.67	1.055
	Sergestes	0.018	0.0028	-17.86	0.135	15.88	0.200
	Cephalopoda	0.023	0.0020	-17.64	0.397	14.61	0.892
	Micromesistius australis	0.050	0.0076	-17.92	0.251	15.54	0.556
	Euphausiidae	0.057	0.0057	-18.70	0.174	10.14	0.406
	Mesopelagic fishes	0.117	0.0058	-18.17	0.110	16.51	0.230
	Pasiphaea	0.132	0.0109	-18.09	0.149	15.47	0.200
	Macruronus magellanicus	0.562	0.0184	-17.86	0.142	15.26	0.193
(55,70]	Merluccius gayi	0.002	0.0016	-15.35	0.098	19.59	0.476
	Decapoda	0.004	0.0008	-16.63	0.124	16.42	0.395
	Sergestes	0.006	0.0012	-17.86	0.135	15.88	0.200
	Euphausiidae	0.016	0.0028	-18.70	0.174	10.14	0.406
	Cephalopoda	0.022	0.0020	-17.64	0.397	14.61	0.892
	Macrouridae	0.025	0.0060	-15.30	0.411	20.67	1.055
	Mesopelagic fishes	0.028	0.0032	-18.17	0.110	16.51	0.230
	Pasiphaea	0.034	0.0055	-18.09	0.149	15.47	0.200
	Micromesistius australis	0.058	0.0090	-17.92	0.251	15.54	0.556
	Macruronus magellanicus	0.789	0.0159	-17.86	0.142	15.26	0.193

Size class	Prey	Diet prior		$\delta^{13}\text{C}$		$\delta^{15}\text{N}$	
		$\hat{p}$	SE	Mean	SD	Mean	SD
(70,120]	Merluccius gayi	0.002	0.0016	-15.35	0.098	19.59	0.476
	Decapoda	0.004	0.0008	-16.63	0.124	16.42	0.395
	Sergestes	0.006	0.0012	-17.86	0.135	15.88	0.200
	Euphausiidae	0.016	0.0028	-18.70	0.174	10.14	0.406
	Cephalopoda	0.022	0.0020	-17.64	0.397	14.61	0.892
	Macrouridae	0.025	0.0060	-15.30	0.411	20.67	1.055
	Mesopelagic fishes	0.028	0.0032	-18.17	0.110	16.51	0.230
	Pasiphaea	0.034	0.0055	-18.09	0.149	15.47	0.200
	Micromesistius australis	0.058	0.0090	-17.92	0.251	15.54	0.556
	Macruronus magellanicus	0.789	0.0159	-17.86	0.142	15.26	0.193

Table SM1-3: Credibility quantiles of prey contributions to the diet of different size-class of *Merluccius australis* in estuarine habitats off NW Patagonia. Only taxa reaching 0.95 quantiles>0.01 are shown.

Class Size	Prey	Credibility quantiles				
		0.025	0.25	0.50	0.75	0.975
(0,25]	Euphausiidae	0.58	0.60	0.61	0.62	0.64
	<i>Macruronus magellanicus</i>	0.03	0.03	0.04	0.04	0.05
	Mesopelagic fishes	0.10	0.11	0.11	0.12	0.12
	<i>Pasiphaea</i>	0.17	0.19	0.20	0.21	0.23
	<i>Sprattus fuegensis</i>	0.03	0.04	0.04	0.05	0.05
(25,40]	Euphausiidae	0.08	0.09	0.09	0.10	0.11
	<i>Macruronus magellanicus</i>	0.48	0.50	0.52	0.53	0.56
	Mesopelagic fishes	0.07	0.08	0.08	0.08	0.09
	<i>Pasiphaea</i>	0.16	0.18	0.19	0.19	0.21
	<i>Sprattus fuegensis</i>	0.10	0.11	0.12	0.13	0.15
(40,55]	Euphausiidae	0.01	0.01	0.02	0.02	0.02
	<i>Macruronus magellanicus</i>	0.60	0.63	0.65	0.66	0.69
	<i>Merluccius australis</i>	0.12	0.14	0.14	0.15	0.17
	Mesopelagic fishes	0.03	0.04	0.04	0.04	0.05
	<i>Pasiphaea</i>	0.07	0.08	0.09	0.10	0.11
	<i>Sprattus fuegensis</i>	0.05	0.06	0.07	0.07	0.09
(55,70]	<i>Macruronus magellanicus</i>	0.75	0.88	0.89	0.91	0.93
	<i>Merluccius australis</i>	0.03	0.04	0.04	0.05	0.06
	<i>Merluccius gayi</i>	0.00	0.01	0.01	0.01	0.02
	Mesopelagic fishes	0.01	0.01	0.01	0.01	0.02
	<i>Pasiphaea</i>	0.01	0.01	0.02	0.03	0.18
	<i>Sprattus fuegensis</i>	0.01	0.01	0.02	0.03	0.06
(70,120]	<i>Macruronus magellanicus</i>	0.91	0.94	0.95	0.96	0.97
	<i>Merluccius australis</i>	0.01	0.01	0.01	0.02	0.03
	<i>Merluccius gayi</i>	0.02	0.02	0.03	0.03	0.05
	<i>Sprattus fuegensis</i>	0.00	0.00	0.01	0.01	0.04

Table SM1-4: Credibility quantiles of prey contributions to the diet of different size-class of *Merluccius australis* in oceanic habitats off NW Patagonia. Only taxa reaching 0.95 quantiles>0.01 are shown.

Class Size	Prey	Credibility quantiles				
		0.025	0.25	0.50	0.75	0.975
(0,25]	Decapoda	0.01	0.02	0.02	0.02	0.03
	Euphausiidae	0.15	0.17	0.18	0.19	0.21
	Macrurus magellanicus	0.01	0.01	0.01	0.01	0.02
	Mesopelagic fishes	0.10	0.11	0.11	0.11	0.12
	Pasiphaea	0.61	0.63	0.64	0.66	0.68
	Sergestes	0.02	0.03	0.04	0.04	0.05
(25,40]	Cephalopoda	0.01	0.01	0.01	0.01	0.02
	Decapoda	0.02	0.02	0.02	0.03	0.03
	Euphausiidae	0.09	0.10	0.10	0.11	0.12
	Macrurus magellanicus	0.25	0.27	0.28	0.29	0.31
	Mesopelagic fishes	0.22	0.23	0.23	0.24	0.25
	Micromesistius australis	0.01	0.01	0.02	0.02	0.03
	Pasiphaea	0.27	0.29	0.30	0.31	0.33
	Sergestes	0.02	0.02	0.03	0.03	0.05
(40,55]	Cephalopoda	0.01	0.01	0.02	0.02	0.02
	Decapoda	0.00	0.01	0.01	0.01	0.01
	Euphausiidae	0.04	0.04	0.04	0.05	0.05
	Macrouridae	0.01	0.01	0.01	0.02	0.03
	Macrurus magellanicus	0.63	0.65	0.66	0.67	0.68
	Mesopelagic fishes	0.08	0.08	0.09	0.09	0.10
	Micromesistius australis	0.02	0.03	0.04	0.05	0.07
	Pasiphaea	0.09	0.10	0.11	0.12	0.14
	Sergestes	0.01	0.02	0.02	0.02	0.03
(55,70]	Cephalopoda	0.01	0.01	0.01	0.01	0.02
	Euphausiidae	0.00	0.01	0.01	0.01	0.02
	Macrouridae	0.01	0.01	0.01	0.02	0.03
	Macrurus magellanicus	0.85	0.88	0.89	0.90	0.92
	Merluccius australis	0.00	0.00	0.01	0.01	0.01
	Mesopelagic fishes	0.01	0.01	0.01	0.01	0.02
	Micromesistius australis	0.02	0.03	0.04	0.05	0.06
	Pasiphaea	0.01	0.02	0.02	0.02	0.03
(70,120]	Cephalopoda	0.01	0.01	0.01	0.01	0.01
	Macrouridae	0.02	0.04	0.05	0.06	0.09
	Macrurus magellanicus	0.85	0.88	0.90	0.92	0.94
	Merluccius australis	0.00	0.01	0.01	0.01	0.03
	Micromesistius australis	0.02	0.02	0.03	0.04	0.05

References Supplementary Material

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