

Supplementary material

Comparing indicators of recreational fishing in Port Phillip Bay, Australia, from 2008 to 2011 with variability from a background period (2003–07)

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Table S1. Number of survey days used for analysis for individual and combined species for each year and season from 2008 to 2011 for three regions and Port Phillip Bay

Year	Season	Species	Bellarine	Melbourne	Mornington	PPB
2008	January–April	Snapper	16	14	14	44
2008	January–April	King George whiting	18	13	23	54
2008	January–April	Flathead	13	7	14	34
2008	January–April	Combined	18	14	26	58
2008	May–September	Snapper	4	6	3	13
2008	May–September	King George whiting	9	4	4	17
2008	May–September	Flathead	6	9	7	22
2008	May–September	Combined	11	11	8	30
2008	October–December	Snapper	24	12	13	49
2008	October–December	King George whiting	25	2	4	31
2008	October–December	Flathead	29	11	13	53
2008	October–December	Snapper	28	12	13	53
2008	October–December	King George whiting	24	1	5	30
2008	October–December	Flathead	19	4	4	27
2008	October–December	Combined	30	12	13	55
2009	January–April	Snapper	21	23	27	71
2009	January–April	King George whiting	25	23	26	74
2009	January–April	Flathead	21	14	20	55
2009	January–April	Combined	25	23	29	77
2009	May–September	Snapper	11	13	13	37
2009	May–September	King George whiting	12	8	7	27
2009	May–September	Flathead	3	10	0	13
2009	May–September	Combined	14	18	14	46
2009	October–December	Snapper	21	14	12	47
2009	October–December	King George whiting	20	4	3	27
2009	October–December	Flathead	21	6	7	34
2009	October–December	Combined	21	14	12	47
2010	January–April	Snapper	20	19	17	56
2010	January–April	King George whiting	22	18	18	58
2010	January–April	Flathead	19	16	17	52
2010	January–April	Combined	22	20	20	62
2010	May–September	Snapper	6	9	9	24
2010	May–September	King George whiting	10	5	4	19
2010	May–September	Flathead	8	11	7	26
2010	May–September	Combined	10	11	11	32

2010	October–December	Snapper	18	12	14	44
2010	October–December	King George whiting	12	3	3	18
2010	October–December	Flathead	10	6	3	19
2010	October–December	Combined	18	12	14	44
2011	January–April	Snapper	18	12	15	45
2011	January–April	King George whiting	22	12	10	44
2011	January–April	Flathead	18	7	6	31
2011	January–April	Combined	22	12	16	50
2011	May–September	Snapper	8	9	8	25
2011	May–September	King George whiting	9	5	6	20
2011	May–September	Flathead	3	6	2	11
2011	May–September	Combined	10	10	10	30
2011	October–December	Snapper	20	12	16	48
2011	October–December	King George whiting	20	4	6	30
2011	October–December	Flathead	15	7	10	32
2011	October–December	Combined	22	12	16	50

Table S2. Restricted Maximum Likelihood (REML) estimate (t_0) and 95% confidence limits (Lower and Upper) comparing harvest rate for individual and combined species for each year and season from 2008 to 2011 with background period (2003–07) for three regions and Port Phillip Bay

A confidence interval range that excludes 1 indicates significant difference between year and background. Significant probabilities ($P < 0.05$) are highlighted in bold. An estimate lower than 1 indicates the harvest rate is lower than the background period. Small sample size (interviews and survey days) can produce unreliable estimates (in italic, see Table S1)

Species	Region	Year	January–April			May–September			October–December		
			t_0	Lower	Upper	t_0	Lower	Upper	t_0	Lower	Upper
Snapper	Bellarine	2008	1.121	0.690	1.848				1.061	1.010	1.116
Snapper	Bellarine	2009	1.020	0.690	1.525	2.172	0.950	5.011	0.975	0.714	1.351
Snapper	Bellarine	2010	1.194	0.775	1.783	0.549	0.349	0.806	1.651	1.137	2.387
Snapper	Bellarine	2011	1.009	0.666	1.544	0.953	0.536	1.801	0.953	0.696	1.323
Snapper	Melbourne	2008	0.715	0.332	1.646				1.065	1.013	1.126
Snapper	Melbourne	2009	1.287	0.826	2.122	0.649	0.335	1.293	1.228	0.912	1.627
Snapper	Melbourne	2010	1.209	0.783	1.934	0.848	0.457	1.667	2.232	1.555	3.137
Snapper	Melbourne	2011	1.699	1.032	3.004	0.869	0.476	1.623	1.392	1.019	1.936
Snapper	Mornington	2008	0.750	0.374	1.617				0.979	0.910	1.056
Snapper	Mornington	2009	0.846	0.524	1.361	0.694	0.322	1.588	0.847	0.546	1.284
Snapper	Mornington	2010	0.751	0.441	1.269	0.839	0.491	1.377	1.779	1.178	2.699
Snapper	Mornington	2011	1.158	0.702	1.990	0.722	0.404	1.438	1.081	0.741	1.569
Snapper	PPB	2008	0.840	0.570	1.280				1.031	0.996	1.071
Snapper	PPB	2009	1.038	0.794	1.332	0.914	0.568	1.434	0.955	0.781	1.177
Snapper	PPB	2010	1.050	0.786	1.331	0.742	0.533	1.060	1.768	1.418	2.213
Snapper	PPB	2011	1.238	0.940	1.657	0.826	0.579	1.205	1.058	0.859	1.299
King George whiting	Bellarine	2008	0.409	0.239	0.749				1.018	0.946	1.103
King George whiting	Bellarine	2009	1.474	0.942	2.150	0.788	0.370	1.705	0.604	0.366	1.011
King George whiting	Bellarine	2010	1.333	0.894	2.048	1.330	0.591	2.440	2.250	1.223	4.169
King George whiting	Bellarine	2011	2.191	1.482	3.240	0.726	0.365	1.407	1.110	0.673	1.858
King George whiting	Melbourne	2008	1.576	0.773	3.341				1.046	0.914	1.247
King George whiting	Melbourne	2009	0.937	0.594	1.570	1.187	0.509	2.571	3.159	1.313	9.379
King George whiting	Melbourne	2010	0.902	0.558	1.547	0.789	0.474	1.327	13.842	5.522	49.224
King George whiting	Melbourne	2011	0.841	0.477	1.523	2.166	0.969	5.766	4.337	1.613	13.879
King George whiting	Mornington	2008	0.779	0.314	1.999				0.960	0.842	1.091
King George whiting	Mornington	2009	1.300	0.656	2.473	0.769	0.232	2.812	0.582	0.241	1.602
King George whiting	Mornington	2010	1.130	0.580	2.084	1.742	0.612	4.911	2.883	1.232	8.464

Species	Region	Year	January–April			May–September			October–December		
			<i>t</i> ₀	Lower	Upper	<i>t</i> ₀	Lower	Upper	<i>t</i> ₀	Lower	Upper
King George whiting	Mornington	2011	0.714	0.335	1.505	0.920	0.347	2.524	2.103	0.999	4.414
King George whiting	PPB	2008	0.739	0.453	1.211				1.015	0.955	1.084
King George whiting	PPB	2009	1.288	0.950	1.722	0.849	0.485	1.478	0.823	0.537	1.277
King George whiting	PPB	2010	1.177	0.863	1.585	1.221	0.709	2.001	3.466	2.105	5.828
King George whiting	PPB	2011	1.331	0.967	1.845	1.006	0.614	1.668	1.707	1.111	2.644
Flathead	Bellarine	2008	1.167	0.442	3.073				1.038	0.965	1.123
Flathead	Bellarine	2009	1.038	0.638	1.766	0.930	0.257	3.059	0.819	0.511	1.283
Flathead	Bellarine	2010	0.752	0.437	1.274	0.871	0.421	1.737	1.525	0.821	2.722
Flathead	Bellarine	2011	0.876	0.531	1.440	0.272	0.101	0.707	0.656	0.406	1.061
Flathead	Melbourne	2008	0.814	0.246	3.495				0.878	0.785	0.972
Flathead	Melbourne	2009	0.541	0.307	0.884	0.923	0.352	2.626	0.601	0.289	1.188
Flathead	Melbourne	2010	0.657	0.402	1.050	1.042	0.560	1.981	0.422	0.201	0.864
Flathead	Melbourne	2011	0.664	0.340	1.214	0.651	0.258	1.747	0.661	0.322	1.385
Flathead	Mornington	2008	1.446	0.508	2.420				0.990	0.795	1.214
Flathead	Mornington	2009	0.514	0.304	0.823				0.679	0.218	1.887
Flathead	Mornington	2010	0.606	0.372	0.997	0.511	0.234	1.463	0.602	0.133	2.429
Flathead	Mornington	2011	0.754	0.333	1.645	0.235	0.076	1.047	0.541	0.215	1.301
Flathead	PPB	2008	0.930	0.567	1.903				0.977	0.909	1.044
Flathead	PPB	2009	0.696	0.513	0.953	0.925	0.430	1.924	0.669	0.450	0.988
Flathead	PPB	2010	0.684	0.508	0.920	0.850	0.516	1.358	0.803	0.493	1.262
Flathead	PPB	2011	0.785	0.542	1.126	0.407	0.215	0.777	0.568	0.387	0.828
Combined	Bellarine	2008	0.627	0.440	0.837				1.008	0.958	1.062
Combined	Bellarine	2009	1.309	0.956	1.802	1.093	0.594	1.994	0.760	0.551	1.050
Combined	Bellarine	2010	1.107	0.786	1.507	1.475	0.957	2.289	1.137	0.783	1.667
Combined	Bellarine	2011	1.525	1.122	2.093	0.767	0.448	1.312	0.684	0.479	0.968
Combined	Melbourne	2008	1.114	0.797	1.635				0.969	0.936	1.004
Combined	Melbourne	2009	0.881	0.656	1.163	0.963	0.544	1.640	0.636	0.506	0.798
Combined	Melbourne	2010	0.824	0.554	1.126	0.878	0.543	1.471	1.196	0.912	1.550
Combined	Melbourne	2011	1.084	0.733	1.571	0.976	0.560	1.709	0.742	0.559	0.962
Combined	Mornington	2008	0.899	0.556	1.358				0.953	0.895	1.020
Combined	Mornington	2009	0.882	0.616	1.213	0.961	0.567	1.558	0.654	0.464	0.977
Combined	Mornington	2010	0.633	0.453	0.921	1.174	0.760	1.949	1.238	0.868	1.769
Combined	Mornington	2011	0.626	0.438	0.901	0.957	0.588	1.694	0.874	0.639	1.204
Combined	PPB	2008	0.882	0.709	1.112				0.980	0.949	1.014
Combined	PPB	2009	1.040	0.853	1.266	0.999	0.717	1.369	0.674	0.553	0.804
Combined	PPB	2010	0.859	0.703	1.040	1.137	0.835	1.467	1.155	0.944	1.422
Combined	PPB	2011	1.065	0.864	1.309	0.894	0.661	1.246	0.735	0.606	0.897

Table S3. Two-stage Generalised Linear Model comparing harvest rate for individual and combined species for each year and season from 2008–11 with background period (2003–07) for three regions and Port Phillip Bay

‘Mean’ refers to the change in non-zero harvest rate indicating at least one fish (i.e. non-zero) has been caught. The two-stage GLM includes year as a fixed effect with results significant at $P < 0.05$ (in bold). A negative z -value indicates the probability of a catch or non-zero harvest rate is lower than the background period. Small sample size (interviews and survey days) can produce unreliable estimates (in italic, see Table S1)

Species	Region	Year	Indicator	Estimate	January–April			May–September			October–December				
					s.e.	z -value	P -value	Estimate	s.e.	z -value	P -value	Estimate	s.e.	z -value	P -value
Snapper	Bellarine	2008	Probability	-0.109	0.614	-0.177	0.859					0.130	0.041	3.062	0.002
Snapper	Bellarine	2008	Mean	-0.069	0.975	-0.070	0.944					0.400	0.591	0.679	0.499
Snapper	Bellarine	2009	Probability	0.190	0.316	0.602	0.547	-0.565	0.623	-0.908	0.364	0.497	0.274	1.813	0.070
Snapper	Bellarine	2009	Mean	-0.035	0.436	-0.081	0.936	-0.567	1.626	-0.349	0.727	-0.391	0.445	-0.879	0.379
Snapper	Bellarine	2010	Probability	0.112	0.394	0.283	0.777	<i>-17.756</i>	<i>2421.0</i>	<i>-0.007</i>	<i>0.994</i>	0.950	0.327	2.901	0.004
Snapper	Bellarine	2010	Mean	-0.088	0.459	-0.191	0.849	1.135	3.251	0.349	0.727	1.076	0.334	3.223	0.001
Snapper	Bellarine	2011	Probability	0.188	0.359	0.522	0.602	<i>5.171</i>	<i>766.0</i>	<i>0.007</i>	<i>0.995</i>	0.154	0.293	0.525	0.599
Snapper	Bellarine	2011	Mean	-0.266	0.410	-0.650	0.516	<i>-18.082</i>	<i>9195.0</i>	<i>-0.002</i>	<i>0.998</i>	-0.297	0.436	-0.681	0.496
Snapper	Melbourne	2008	Probability	-1.307	0.482	-2.712	0.007					0.090	0.028	3.195	0.001
Snapper	Melbourne	2008	Mean	-0.173	0.442	-0.391	0.696					0.110	0.198	0.577	0.564
Snapper	Melbourne	2009	Probability	0.265	0.242	1.092	0.275	0.715	0.343	2.083	0.037	0.289	0.171	1.690	0.091
Snapper	Melbourne	2009	Mean	0.278	0.460	0.603	0.547	0.865	0.585	1.478	0.139	0.113	0.151	0.748	0.454
Snapper	Melbourne	2010	Probability	0.358	0.263	1.358	0.174	-0.216	0.684	-0.316	0.752	0.836	0.197	4.235	<0.001
Snapper	Melbourne	2010	Mean	0.441	0.424	1.041	0.298	-0.711	0.830	-0.856	0.392	1.198	0.118	10.134	<0.001
Snapper	Melbourne	2011	Probability	1.071	0.320	3.348	0.001	0.179	0.585	0.305	0.760	0.759	0.195	3.891	<0.001
Snapper	Melbourne	2011	Mean	0.315	0.449	0.702	0.483	-0.304	1.000	-0.304	0.761	0.276	0.150	1.839	0.066
Snapper	Mornington	2008	Probability	-0.997	0.638	-1.564	0.118					-0.010	0.029	-0.179	0.858
Snapper	Mornington	2008	Mean	-1.466	1.196	-1.226	0.222					0.130	0.280	0.477	0.634
Snapper	Mornington	2009	Probability	-0.662	0.221	-3.001	0.003	-0.566	0.332	-1.705	0.088	-0.273	0.185	-1.474	0.140
Snapper	Mornington	2009	Mean	0.035	0.367	0.095	0.924	1.101	0.421	2.618	0.009	0.023	0.179	0.127	0.899
Snapper	Mornington	2010	Probability	-1.466	0.371	-3.949	<0.001	-0.639	0.900	-0.710	0.478	0.259	0.207	1.254	0.210
Snapper	Mornington	2010	Mean	-0.346	0.720	-0.481	0.630	-0.341	1.308	-0.260	0.795	1.175	0.134	8.752	<0.001
Snapper	Mornington	2011	Probability	0.409	0.270	1.517	0.129	0.460	0.608	0.756	0.450	0.516	0.180	2.861	0.004
Snapper	Mornington	2011	Mean	-0.101	0.311	-0.323	0.747	-1.212	1.671	-0.725	0.468	0.330	0.143	2.319	0.020
Snapper	PPB	2008	Probability	-0.838	0.309	-2.713	0.007					0.070	0.018	3.638	0.000
Snapper	PPB	2008	Mean	-0.440	0.388	-1.132	0.258					0.020	0.018	1.098	0.273
Snapper	PPB	2009	Probability	-0.158	0.141	-1.123	0.261	-0.049	0.216	-0.226	0.822	0.138	0.113	1.223	0.221
Snapper	PPB	2009	Mean	0.186	0.209	0.887	0.376	0.683	0.299	2.289	0.022	0.003	0.115	0.026	0.979

Species	Region	Year	Indicator	Estimate	January–April			Estimate	May–September			Estimate	October–December		
					s.e.	z-value	P-value		s.e.	z-value	P-value		s.e.	z-value	P-value
Snapper	PPB	2010	Probability	-0.310	0.173	-1.792	0.073	-0.611	0.483	-1.266	0.205	0.651	0.130	5.013	<0.001
Snapper	PPB	2010	Mean	0.302	0.217	1.391	0.164	0.993	0.956	1.038	0.299	1.151	0.087	13.240	<0.001
Snapper	PPB	2011	Probability	0.581	0.172	3.373	0.001	0.191	0.394	0.487	0.627	0.571	0.117	4.880	<0.001
Snapper	PPB	2011	Mean	0.048	0.200	0.243	0.808	-0.851	0.863	-0.986	0.324	0.246	0.103	2.395	0.017
King George whiting	Bellarine	2008	Probability	0.177	0.700	0.253	0.800					-0.020	0.053	-0.306	0.760
King George whiting	Bellarine	2008	Mean	-0.160	0.291	-0.550	0.583					0.310	0.399	0.768	0.444
King George whiting	Bellarine	2009	Probability	0.435	0.229	1.899	0.058	0.055	0.271	0.203	0.839	-0.700	0.392	-1.787	0.074
King George whiting	Bellarine	2009	Mean	0.164	0.170	0.969	0.333	-0.055	0.184	-0.301	0.764	0.118	0.548	0.216	0.829
King George whiting	Bellarine	2010	Probability	0.117	0.240	0.487	0.626	0.232	0.506	0.458	0.647	-0.015	0.467	-0.032	0.974
King George whiting	Bellarine	2010	Mean	0.042	0.168	0.251	0.802	0.420	0.289	1.454	0.146	1.461	0.490	2.979	0.003
King George whiting	Bellarine	2011	Probability	0.625	0.238	2.625	0.009	-0.538	0.441	-1.218	0.223	-0.200	0.407	-0.490	0.624
King George whiting	Bellarine	2011	Mean	0.259	0.133	1.949	0.051	-0.237	0.259	-0.915	0.360	0.810	0.476	1.703	0.089
King George whiting	Melbourne	2008	Probability	0.712	0.771	0.924	0.356					-2.340	515.6	-0.005	0.996
King George whiting	Melbourne	2008	Mean	0.516	0.657	0.785	0.434					-2.640	3.823	-0.690	0.503
King George whiting	Melbourne	2009	Probability	0.014	0.320	0.044	0.965	0.006	0.551	0.012	0.991	0.692	1.103	0.627	0.530
King George whiting	Melbourne	2009	Mean	-0.185	0.247	-0.752	0.453	0.177	0.855	0.207	0.836	2.453	1.367	1.794	0.073
King George whiting	Melbourne	2010	Probability	-0.134	0.329	-0.409	0.683	0.520	0.970	0.536	0.592	4.614	461.5	0.010	0.992
King George whiting	Melbourne	2010	Mean	-0.163	0.260	-0.624	0.533	-1.570	2.648	-0.593	0.553	2.265	1.282	1.767	0.077
King George whiting	Melbourne	2011	Probability	0.276	0.394	0.702	0.483	1.301	0.794	1.639	0.101	3.368	503.9	0.007	0.995
King George whiting	Melbourne	2011	Mean	-0.367	0.347	-1.056	0.291	0.761	2.081	0.366	0.715	2.671	1.268	2.106	0.035
King George whiting	Mornington	2008	Probability	-0.329	0.640	-0.515	0.607					0.580	79.985	0.007	0.994
King George whiting	Mornington	2008	Mean	0.307	0.384	0.801	0.426					-2.080	0.841	-2.478	0.038
King George whiting	Mornington	2009	Probability	-0.383	0.405	-0.944	0.345	-0.434	0.510	-0.850	0.395	-0.965	1.448	-0.667	0.505
King George whiting	Mornington	2009	Mean	0.489	0.397	1.231	0.221	0.273	0.361	0.757	0.449	-1.439	2.195	-0.656	0.512
King George whiting	Mornington	2010	Probability	-0.794	0.470	-1.688	0.091	-0.435	1.373	-0.317	0.751	4.380	520.6	0.008	0.993
King George whiting	Mornington	2010	Mean	0.279	0.433	0.645	0.519	0.606	0.904	0.671	0.502	1.082	0.802	1.350	0.177
King George whiting	Mornington	2011	Probability	-0.872	0.580	-1.504	0.133	0.234	0.995	0.235	0.814	3.799	315.8	0.012	0.990
King George whiting	Mornington	2011	Mean	-0.035	0.552	-0.064	0.949	-0.940	0.804	-1.169	0.243	0.307	0.658	0.466	0.641
King George whiting	PPB	2008	Probability	0.015	0.378	0.040	0.968					-0.030	0.047	-0.645	0.519
King George whiting	PPB	2008	Mean	-0.020	0.223	-0.092	0.927					0.040	0.050	0.844	0.400
King George whiting	PPB	2009	Probability	0.177	0.150	1.181	0.238	-0.090	0.218	-0.412	0.681	-0.691	0.343	-2.011	0.044
King George whiting	PPB	2009	Mean	0.078	0.120	0.649	0.517	0.031	0.159	0.195	0.845	0.096	0.353	0.272	0.786
King George whiting	PPB	2010	Probability	-0.083	0.160	-0.516	0.606	0.120	0.425	0.281	0.778	0.271	0.384	0.707	0.480
King George whiting	PPB	2010	Mean	-0.005	0.123	-0.039	0.969	0.442	0.261	1.695	0.090	1.289	0.262	4.920	<0.001
King George whiting	PPB	2011	Probability	0.347	0.180	1.933	0.053	-0.114	0.361	-0.315	0.752	-0.041	0.334	-0.122	0.903
King George whiting	PPB	2011	Mean	0.140	0.115	1.223	0.221	-0.261	0.246	-1.064	0.287	0.716	0.264	2.713	0.007
Flathead	Bellarine	2008	Probability	-1.566	1.104	-1.419	0.156					0.070	0.078	0.934	0.350

Species	Region	Year	Indicator	Estimate	January–April			Estimate	May–September			Estimate	October–December		
					s.e.	z-value	P-value		s.e.	z-value	P-value		s.e.	z-value	P-value
Flathead	Bellarine	2008	Mean	-0.173	0.871	-0.199	0.843					0.420	0.745	0.565	0.574
Flathead	Bellarine	2009	Probability	0.042	0.376	0.112	0.910	0.451	0.730	0.618	0.536	-0.199	0.473	-0.421	0.674
Flathead	Bellarine	2009	Mean	-0.222	0.247	-0.901	0.369	-0.245	0.425	-0.577	0.564	0.013	0.337	0.039	0.969
Flathead	Bellarine	2010	Probability	-0.710	0.394	-1.803	0.071	-0.047	0.856	-0.055	0.956	-0.558	0.611	-0.914	0.361
Flathead	Bellarine	2010	Mean	-0.248	0.275	-0.903	0.366	-0.054	0.622	-0.086	0.931	0.708	0.369	1.920	0.055
Flathead	Bellarine	2011	Probability	-0.153	0.448	-0.343	0.732	-1.182	1.342	-0.881	0.379	0.807	0.663	1.218	0.223
Flathead	Bellarine	2011	Mean	-0.459	0.260	-1.762	0.078	-17.520	5283.0	-0.003	0.997	-0.767	0.480	-1.599	0.110
Flathead	Melbourne	2008	Probability	-1.303	1.206	-1.080	0.280					-0.710	65.041	-0.011	0.991
Flathead	Melbourne	2008	Mean	-0.638	0.629	-1.015	0.313					-0.560	0.474	-1.182	0.242
Flathead	Melbourne	2009	Probability	-0.769	0.515	-1.494	0.135	-0.200	0.324	-0.618	0.537	-3.755	225.6	-0.017	0.987
Flathead	Melbourne	2009	Mean	-0.153	0.291	-0.526	0.600	-0.201	0.249	-0.809	0.418	-0.114	0.381	-0.299	0.765
Flathead	Melbourne	2010	Probability	-0.359	0.426	-0.842	0.400	0.639	0.519	1.232	0.218	-3.822	230.2	-0.017	0.987
Flathead	Melbourne	2010	Mean	-0.528	0.245	-2.157	0.031	-0.356	0.380	-0.936	0.349	-0.638	0.527	-1.210	0.226
Flathead	Melbourne	2011	Probability	-0.560	0.492	-1.138	0.255	-0.087	0.619	-0.140	0.889	-2.716	231.7	-0.012	0.991
Flathead	Melbourne	2011	Mean	-0.152	0.239	-0.635	0.525	-0.053	0.423	-0.126	0.900	-0.056	0.326	-0.173	0.863
Flathead	Mornington	2008	Probability	-0.123	0.877	-0.141	0.888					0.020	0.161	0.107	0.915
Flathead	Mornington	2008	Mean	-0.313	0.583	-0.537	0.593					-0.350	0.544	-0.634	0.531
Flathead	Mornington	2009	Probability	-3.575	227.1	-0.016	0.987					1.024	1.381	0.742	0.458
Flathead	Mornington	2009	Mean	-0.556	0.266	-2.093	0.039					-0.913	0.636	-1.435	0.151
Flathead	Mornington	2010	Probability	-3.910	223.7	-0.017	0.986	-0.471	0.830	-0.568	0.570	0.462	1.432	0.322	0.747
Flathead	Mornington	2010	Mean	-0.380	0.259	-1.467	0.142	0.406	0.330	1.228	0.219	-0.848	0.881	-0.962	0.336
Flathead	Mornington	2011	Probability	-3.492	226.3	-0.015	0.988	-17.800	2610.0	-0.007	0.995	0.724	1.051	0.689	0.491
Flathead	Mornington	2011	Mean	0.189	0.298	0.633	0.527	0.406	0.330	1.228	0.219	-0.771	0.443	-1.742	0.082
Flathead	PPB	2008	Probability	-0.826	0.582	-1.420	0.156					-0.010	0.056	-0.196	0.844
Flathead	PPB	2008	Mean	-0.421	0.428	-0.985	0.326					-0.050	0.035	-1.504	0.134
Flathead	PPB	2009	Probability	-0.250	0.254	-0.984	0.325	-0.068	0.293	-0.233	0.815	-0.276	0.344	-0.801	0.423
Flathead	PPB	2009	Mean	-0.368	0.157	-2.346	0.019	-0.207	0.192	-1.075	0.282	-0.436	0.203	-2.151	0.031
Flathead	PPB	2010	Probability	-0.559	0.238	-2.348	0.019	0.245	0.555	0.441	0.660	-0.518	0.441	-1.176	0.240
Flathead	PPB	2010	Mean	-0.442	0.154	-2.865	0.004	-0.686	0.362	-1.897	0.058	-0.100	0.246	-0.405	0.685
Flathead	PPB	2011	Probability	-0.292	0.294	-0.995	0.320	-0.575	0.525	-1.096	0.273	0.621	0.452	1.375	0.169
Flathead	PPB	2011	Mean	-0.323	0.156	-2.074	0.038	-0.138	0.378	-0.365	0.715	-0.760	0.215	-3.526	<0.001
Combined	Bellarine	2008	Probability	-0.250	0.315	-0.792	0.428					0.050	0.028	1.879	0.060
Combined	Bellarine	2008	Mean	-0.276	0.211	-1.306	0.192					0.050	0.231	0.213	0.831
Combined	Bellarine	2009	Probability	0.415	0.178	2.333	0.020	-0.004	0.163	-0.027	0.978	-0.098	0.186	-0.531	0.596
Combined	Bellarine	2009	Mean	0.174	0.109	1.594	0.111	-0.095	0.135	-0.704	0.481	-0.166	0.158	-1.054	0.292
Combined	Bellarine	2010	Probability	-0.214	0.182	-1.179	0.239	0.381	0.335	1.138	0.255	-0.245	0.219	-1.119	0.263
Combined	Bellarine	2010	Mean	0.050	0.122	0.411	0.681	0.108	0.234	0.461	0.645	0.650	0.144	4.511	<0.001

Species	Region	Year	Indicator	Estimate	January–April			Estimate	May–September			Estimate	October–December		
					s.e.	z-value	P-value		s.e.	z-value	P-value		s.e.	z-value	P-value
Combined	Bellarine	2011	Probability	0.635	0.205	3.090	0.002	-0.406	0.276	-1.472	0.141	-0.277	0.188	-1.470	0.142
Combined	Bellarine	2011	Mean	0.229	0.096	2.398	0.016	-0.434	0.221	-1.964	0.050	-0.200	0.164	-1.218	0.223
Combined	Melbourne	2008	Probability	-0.451	0.352	-1.280	0.200					-0.040	0.028	-1.478	0.139
Combined	Melbourne	2008	Mean	0.175	0.223	0.787	0.432					-0.550	0.140	-3.883	0.000
Combined	Melbourne	2009	Probability	-0.123	0.159	-0.774	0.439	-0.038	0.139	-0.273	0.785	-0.347	0.172	-2.010	0.044
Combined	Melbourne	2009	Mean	-0.176	0.133	-1.323	0.186	0.029	0.112	0.259	0.795	-0.538	0.134	-4.007	0.000
Combined	Melbourne	2010	Probability	-0.277	0.164	-1.694	0.090	-0.166	0.280	-0.592	0.554	-0.103	0.199	-0.516	0.606
Combined	Melbourne	2010	Mean	-0.086	0.132	-0.649	0.516	-0.150	0.241	-0.621	0.534	0.347	0.103	3.382	<0.001
Combined	Melbourne	2011	Probability	0.502	0.233	2.152	0.031	0.483	0.257	1.878	0.060	-0.019	0.199	-0.094	0.925
Combined	Melbourne	2011	Mean	0.023	0.154	0.148	0.882	-0.175	0.200	-0.873	0.382	-0.333	0.133	-2.491	0.013
Combined	Mornington	2008	Probability	-0.168	0.282	-0.596	0.551					-0.040	0.027	-1.485	0.138
Combined	Mornington	2008	Mean	-0.234	0.276	-0.850	0.396					-0.440	0.253	-1.757	0.079
Combined	Mornington	2009	Probability	-0.662	0.146	-4.550	0.000	-0.476	0.178	-2.675	0.007	-0.607	0.176	-3.455	0.001
Combined	Mornington	2009	Mean	-0.151	0.148	-1.017	0.309	0.388	0.188	2.069	0.039	-0.415	0.231	-1.794	0.073
Combined	Mornington	2010	Probability	-1.068	0.172	-6.200	<0.001	-0.540	0.393	-1.372	0.170	-0.043	0.194	-0.220	0.826
Combined	Mornington	2010	Mean	-0.128	0.182	-0.701	0.484	0.582	0.443	1.314	0.189	0.512	0.172	2.967	0.003
Combined	Mornington	2011	Probability	-0.396	0.192	-2.062	0.039	-0.083	0.301	-0.274	0.784	0.320	0.173	1.853	0.064
Combined	Mornington	2011	Mean	-0.410	0.194	-2.110	0.035	-0.123	0.333	-0.371	0.711	-0.082	0.171	-0.482	0.630
Combined	PPB	2008	Probability	-0.232	0.178	-1.306	0.192					-0.010	0.016	-0.569	0.569
Combined	PPB	2008	Mean	-0.133	0.133	-0.994	0.321					-0.030	0.015	-2.372	0.018
Combined	PPB	2009	Probability	-0.191	0.089	-2.159	0.031	-0.160	0.091	-1.761	0.078	-0.359	0.101	-3.542	0.000
Combined	PPB	2009	Mean	-0.042	0.070	-0.597	0.550	0.046	0.077	0.595	0.552	-0.398	0.097	-4.091	0.000
Combined	PPB	2010	Probability	-0.529	0.096	-5.518	<0.001	-0.101	0.187	-0.542	0.588	-0.115	0.116	-0.991	0.322
Combined	PPB	2010	Mean	-0.047	0.076	-0.625	0.532	0.087	0.152	0.573	0.567	0.461	0.078	5.896	<0.001
Combined	PPB	2011	Probability	0.216	0.116	1.864	0.062	0.030	0.158	0.192	0.848	0.032	0.106	0.304	0.761
Combined	PPB	2011	Mean	0.053	0.071	0.746	0.456	-0.266	0.133	-1.993	0.046	-0.237	0.089	-2.652	0.008

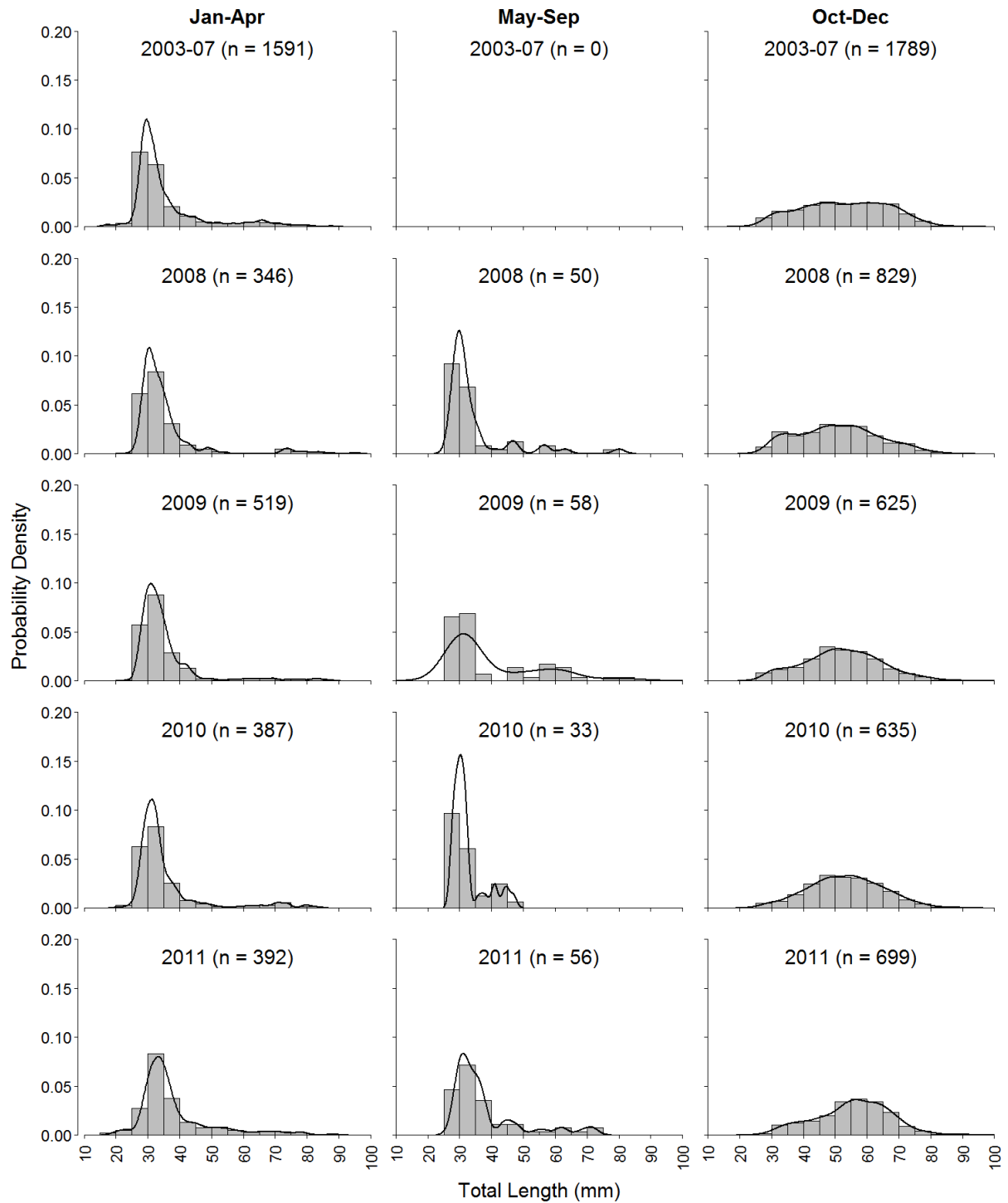


Fig. S1. Probability density distributions of total length (mm) of snapper retained by boat-based fishers in Port Phillip Bay during 2003–07, 2008, 2009, 2010 and 2011 (*n*, number of fish measured).

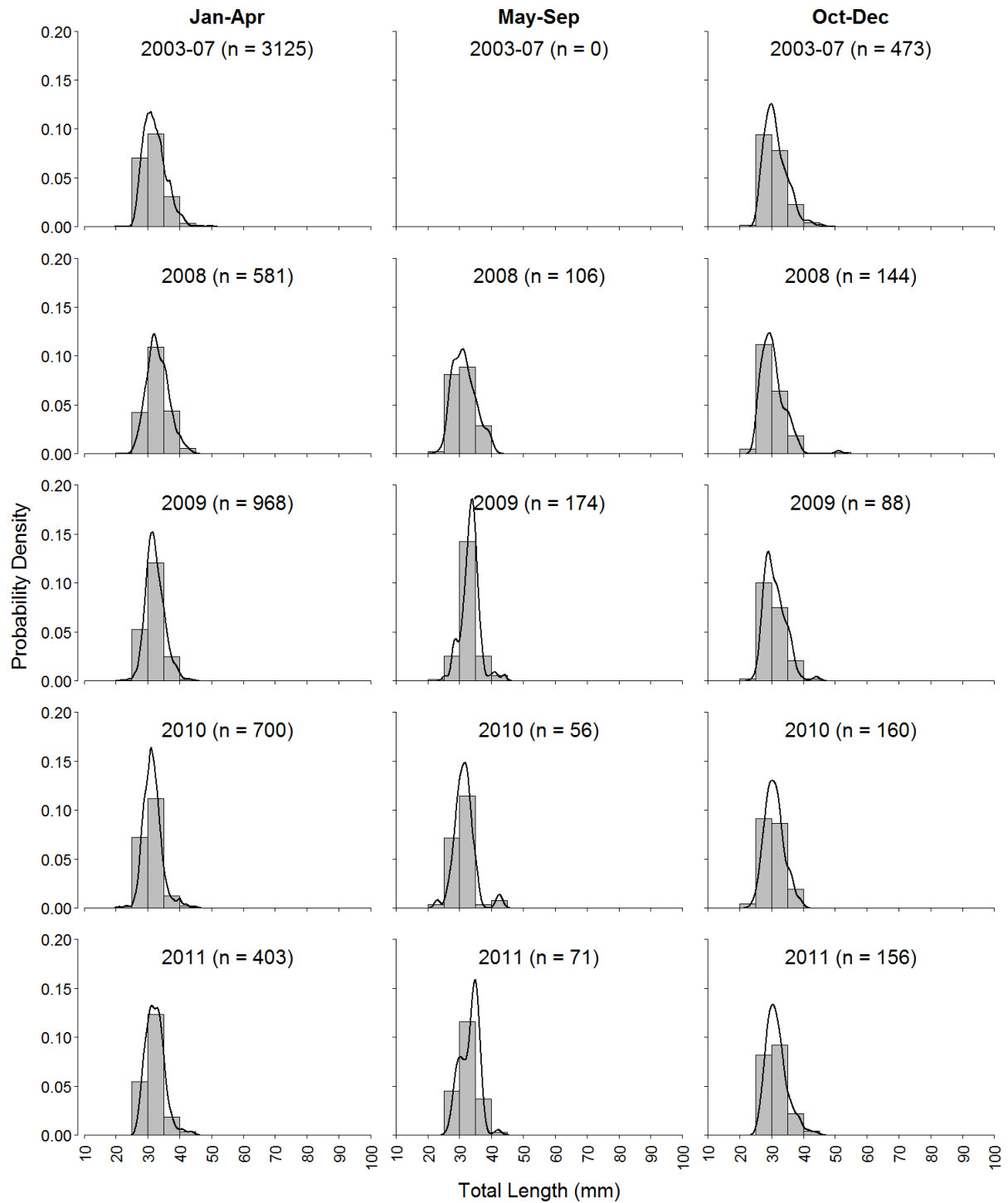


Fig. S2. Probability density distributions of total length (mm) of King George whiting retained by boat-based fishers in Port Phillip Bay during 2003–07, 2008, 2009, 2010 and 2011 (n , number of fish measured).

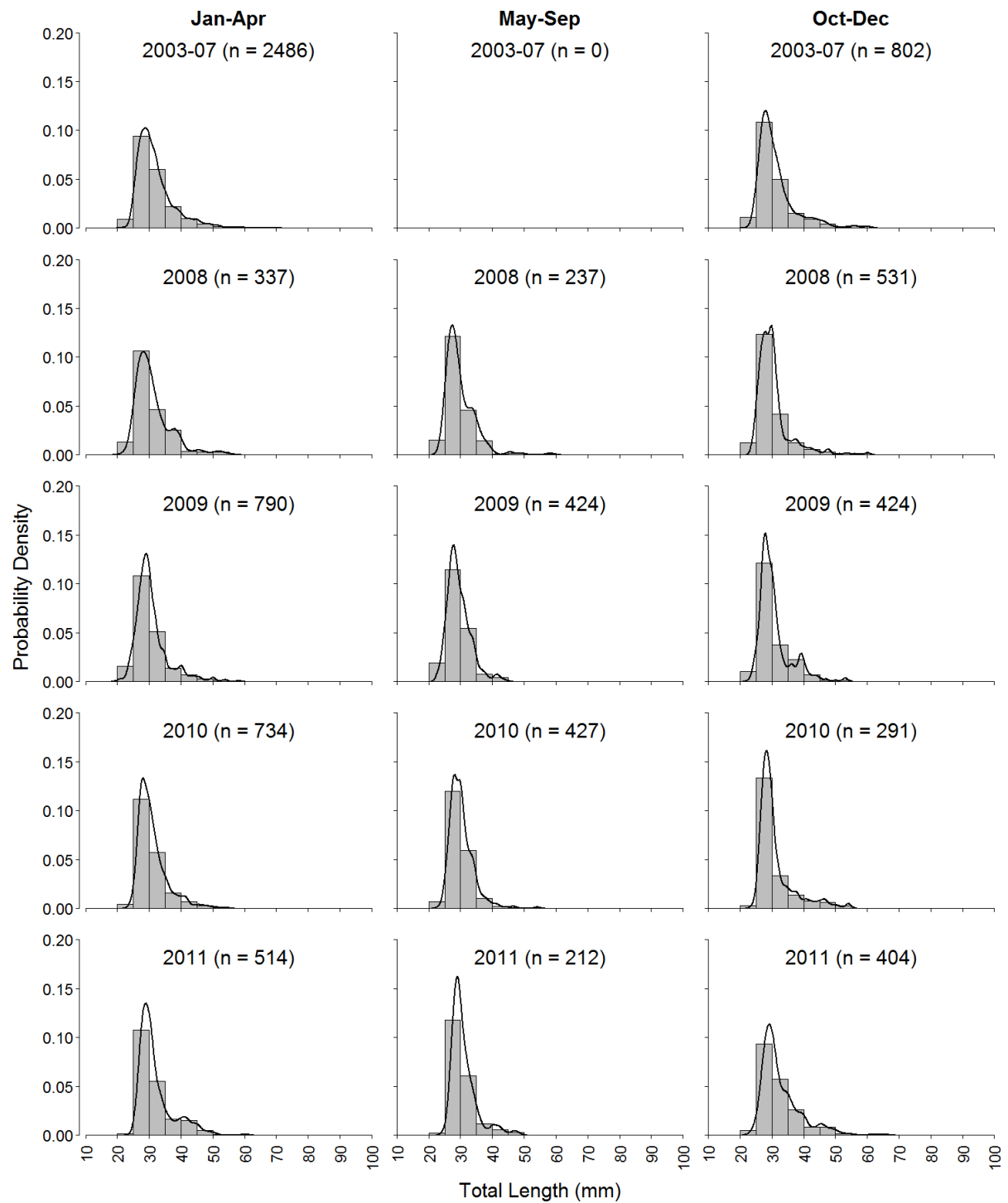


Fig. S3. Probability density distributions of total length (mm) of flathead retained by boat-based fishers in Port Phillip Bay during 2003–07, 2008, 2009, 2010 and 2011 (*n*, number of fish measured).