

## RESEARCH

## Appendix A: Supplemental Tables and Figures

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**Table A1** Average monthly values of six environmental variables over 27 years for abundant (5) and non-abundant (12) sampling sites

	Count	Time (min)	CPUE (count min <sup>-1</sup> )	Salinity (ppt)	Water temp (°C)	Specific conductance	Secchi depth (cm)	DO (mgL <sup>-1</sup> )
<b>Abundant</b>								
Jan	8222	3107.50	2.65	3.14	9.26	5023.36	26.54	9.20
Feb	7556	3066.75	2.46	2.54	11.56	4122.51	22.56	8.15
March	17785	3262.75	5.45	2.04	14.52	3459.11	20.37	7.69
April	38693	3247.75	11.92	2.13	16.98	3685.37	20.09	7.57
May	27934	3091.25	9.04	2.58	19.39	4473.58	18.90	8.09
June	45040	3202.00	14.07	3.39	21.12	5849.31	21.44	6.94
July	87436	3185.00	27.45	4.83	21.78	8253.28	24.98	7.23
Aug	58714	3169.00	18.53	5.59	21.40	9580.57	26.27	7.19
Sept	41649	3218.00	12.94	6.16	20.16	10428.95	29.73	7.31
Oct	23141	3124.50	7.41	6.72	17.61	11336.42	31.51	6.63
Nov	28128	3134.50	8.97	6.56	13.99	10662.69	30.64	6.81
Dec	12821	3195.00	4.01	5.05	9.89	8078.68	30.02	8.24
<b>Non-Abundant</b>								
Jan	105	1907.50	0.06	2.94	9.28	4746.80	27.30	8.11
Feb	88	1862.50	0.05	2.42	11.58	3953.88	23.01	7.61
March	104	1962.75	0.05	2.01	14.56	3405.25	20.74	7.30
April	43	1980.50	0.02	1.97	16.95	3457.28	20.56	6.75
May	60	1861.75	0.03	2.37	19.40	4113.37	19.01	6.28
June	51	1927.00	0.03	3.06	21.13	5325.58	20.91	5.97
July	41	1925.00	0.02	4.40	21.73	7514.71	24.33	6.10
Aug	72	1939.00	0.04	5.16	21.37	8897.02	26.13	6.56
Sept	81	1945.00	0.04	5.73	20.14	9731.17	28.98	6.55
Oct	51	1904.50	0.03	6.27	17.66	10630.17	31.00	5.63
Nov	57	1909.50	0.03	5.97	13.94	9722.32	29.63	6.20
Dec	93	1953.00	0.05	4.62	9.81	7398.86	29.83	7.80

**Table A2** Average monthly catch per unit effort (CPUE) values over 27 years of otter trawls at the five most abundant sampling sites

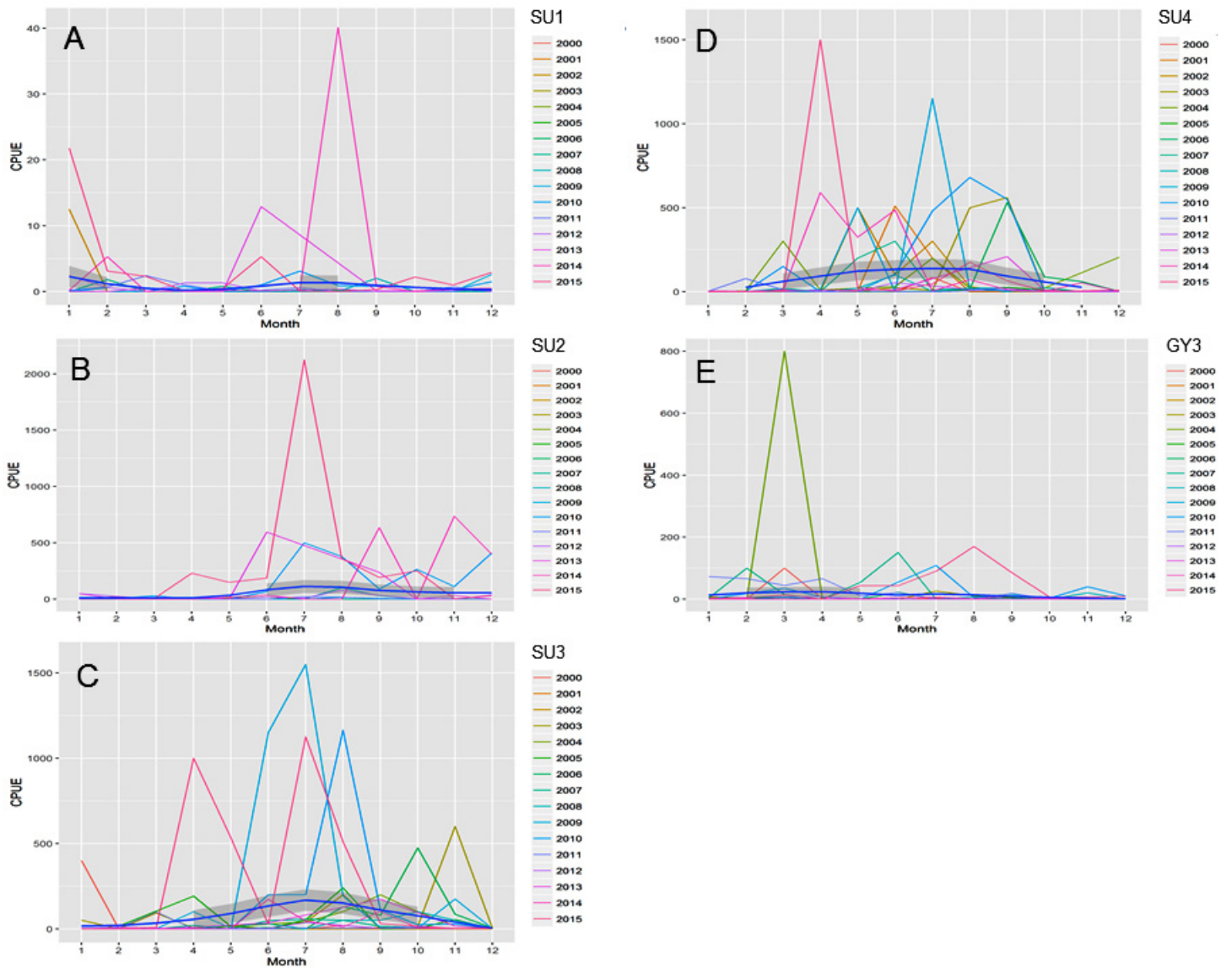
CPUE	GY3	SU1	SU2	SU3	SU4
<b>Jan</b>	3.48	1.38	4.08	22.31	1.07
<b>Feb</b>	6.41	0.46	2.86	6.51	15.21
<b>March</b>	34.32	0.19	1.50	8.28	33.02
<b>April</b>	2.73	0.12	9.20	48.36	79.22
<b>May</b>	3.86	0.11	6.66	24.26	71.71
<b>June</b>	9.87	0.71	32.93	60.05	59.59
<b>July</b>	7.92	0.19	99.20	112.91	95.11
<b>Aug</b>	6.89	1.54	34.02	104.93	71.87
<b>Sept</b>	5.17	0.14	44.60	27.90	74.67
<b>Oct</b>	0.72	0.09	19.32	59.20	6.51
<b>Nov</b>	2.37	0.11	32.91	53.21	16.46
<b>Dec</b>	0.98	0.34	32.32	4.88	9.09

**Table A3** Average monthly salinity values over 27 years of otter trawls at the five most abundant sampling sites.

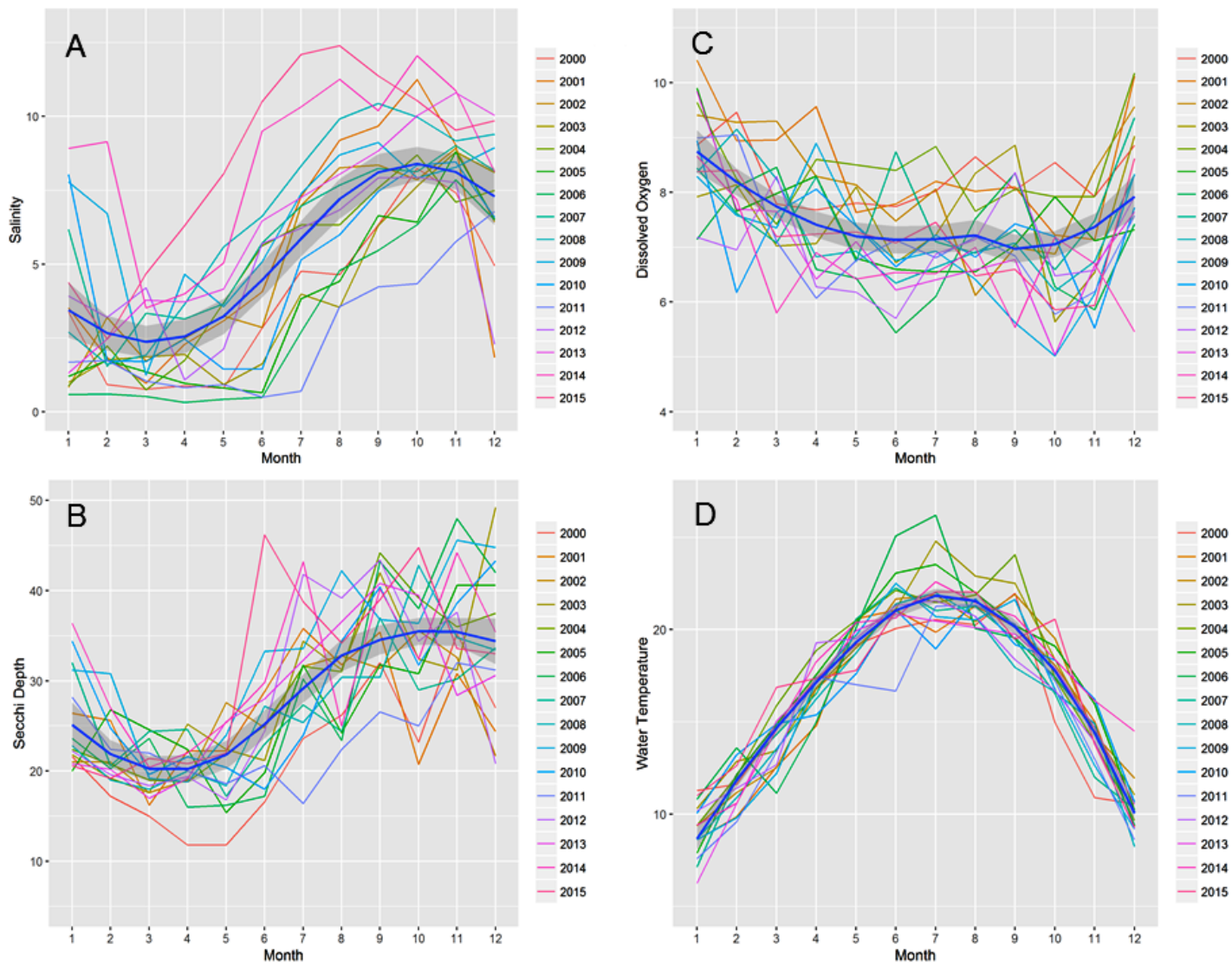
Salinity	GY3	SU1	SU2	SU3	SU4
<b>Jan</b>	4.53	2.33	2.60	4.32	4.30
<b>Feb</b>	3.56	2.08	2.33	3.01	3.20
<b>March</b>	2.66	1.59	1.82	2.20	2.27
<b>April</b>	3.16	1.73	1.75	2.85	2.99
<b>May</b>	3.84	1.94	2.22	3.50	3.92
<b>June</b>	4.99	2.76	2.95	5.04	5.14
<b>July</b>	6.88	3.76	4.57	6.96	6.94
<b>Aug</b>	7.69	5.09	5.22	7.53	7.71
<b>Sept</b>	8.21	5.4	5.99	7.97	8.14
<b>Oct</b>	9.00	5.81	6.64	8.63	8.82
<b>Nov</b>	9.30	5.74	6.48	9.13	9.42
<b>Dec</b>	7.23	4.00	4.69	7.17	7.56

**Table A4** Average (A) and standard deviation (SD) of environmental measures for salinity (S) and temperature (T), by year, for sites with high (GY3, SU4, SU4), moderate (SU1, SU2) and low (all others) abundance of clams.

Year	High abundance				Moderate abundance				Low abundance				Total			
	S-A	S-SD	T-A	T-SD	S-A	S-SD	T-A	T-SD	S-A	S-SD	T-A	T-SD	S-A	S-SD	T-A	T-SD
1988	5.28	2.13	16.19	5.69	3.55	1.37	15.28	5.60	4.17	1.65	15.64	5.33	4.28	1.77	15.70	5.40
1989	6.02	2.55	17.61	5.06	4.46	2.08	16.71	4.50	4.25	2.29	17.37	4.82	4.61	2.40	17.34	4.80
1990	8.85	2.08	16.90	5.51	5.28	2.11	16.69	5.18	5.35	2.70	16.33	5.38	5.95	2.86	16.47	5.35
1991	9.66	2.91	15.83	4.52	6.40	2.38	15.58	4.48	6.57	2.70	15.44	4.52	7.09	2.94	15.52	4.50
1992	8.61	3.09	17.67	5.26	5.66	2.99	16.65	4.12	6.07	3.38	16.91	4.94	6.47	3.42	17.01	4.90
1993	3.60	2.86	17.33	4.74	2.06	1.13	16.90	5.00	2.21	1.88	17.45	5.05	2.44	2.09	17.36	4.97
1994	7.19	3.37	17.08	5.46	3.68	2.16	15.65	4.58	3.68	2.74	16.35	4.77	4.26	3.08	16.39	4.86
1995	1.46	2.34	16.98	4.55	0.90	0.71	16.47	4.12	1.06	1.39	16.87	4.70	1.12	1.55	16.84	4.59
1996	3.29	3.29	16.84	3.65	1.98	1.58	16.62	3.47	2.14	2.11	16.64	3.86	2.33	2.34	16.67	3.76
1997	4.95	3.04	17.13	4.50	3.13	2.08	17.41	4.61	3.31	2.41	17.10	4.46	3.58	2.57	17.14	4.47
1998	1.32	1.47	16.53	4.36	1.04	0.21	16.40	4.31	1.07	0.84	16.35	4.40	1.11	0.95	16.39	4.36
1999	3.59	3.18	15.48	4.84	2.20	1.67	15.80	4.61	2.20	2.01	15.83	4.93	2.45	2.28	15.76	4.85
2000	4.55	3.18	16.17	4.19	2.73	1.94	16.02	4.23	2.89	2.38	16.24	4.28	3.16	2.56	16.20	4.24
2001	6.27	3.95	16.15	4.86	3.62	2.97	15.50	4.76	3.80	3.18	16.18	4.92	4.22	3.43	16.10	4.87
2002	6.10	3.52	16.65	4.56	3.59	2.44	16.73	4.56	3.84	2.79	16.56	4.59	4.21	3.01	16.59	4.56
2003	4.55	3.50	17.57	4.94	2.85	1.86	16.88	4.58	3.20	2.53	17.11	4.76	3.40	2.71	17.16	4.75
2004	5.82	3.49	17.00	5.16	3.75	2.24	16.97	4.93	3.81	2.71	17.25	4.73	4.14	2.89	17.17	4.80
2005	4.72	3.54	17.91	4.80	2.93	1.99	17.89	4.12	3.00	2.37	17.62	4.56	3.29	2.64	17.70	4.54
2006	3.66	3.62	17.09	5.56	2.13	1.81	16.69	5.03	2.44	2.31	16.67	5.13	2.62	2.57	16.75	5.17
2007	7.00	2.73	16.37	4.87	4.58	2.09	15.91	4.86	4.63	2.86	15.95	4.87	5.04	2.89	16.02	4.85
2008	7.67	3.80	15.94	4.75	5.02	2.74	15.64	4.51	5.64	3.84	15.91	4.75	5.92	3.80	15.88	4.70
2009	7.89	2.79	16.04	5.27	4.62	2.12	15.76	4.82	5.07	2.88	15.78	4.76	5.52	2.99	15.83	4.83
2010	5.74	3.50	16.42	3.58	3.74	2.12	16.28	3.77	3.96	3.00	16.76	3.66	4.27	3.08	16.64	3.65
2011	3.15	2.65	15.74	4.70	2.09	1.33	15.16	4.79	2.07	1.69	15.48	4.83	2.26	1.90	15.49	4.78
2012	5.81	2.81	16.21	4.48	3.61	2.13	16.28	4.39	3.84	2.61	16.12	4.39	4.16	2.70	16.15	4.38
2013	7.36	3.71	15.46	4.86	5.13	2.92	16.11	4.94	5.37	3.34	15.97	4.87	5.65	3.42	15.91	4.86
2014	9.93	2.79	17.47	4.24	6.55	3.07	17.06	4.15	6.69	3.71	17.10	4.20	7.24	3.69	17.16	4.18
2015	9.65	3.31	16.89	4.24	6.82	3.38	17.14	4.36	6.79	3.86	16.84	4.41	7.29	3.86	16.88	4.35
<b>Total</b>	5.84	3.84	16.66	4.75	3.91	3.11	16.48	4.71	3.72	2.65	16.35	4.52	4.23	3.29	16.50	4.69



**Figure A1** Monthly catch per unit effort (CPUE) fluctuations over a 16-year time-span (by year) for five sites with consistent clam abundance. (A) SU1, (B) SU2, (C) SU3, (D) SU4, and (E) GY3. Note change in Y-axis between panels. Shaded blue line is mean value.



**Figure A2** Variation in monthly values of (A) salinity (ppt), (B) Secchi depth (cm), (C) dissolved oxygen (mgL<sup>-1</sup>), and (D) water temperature (°C) over a 16-year window (by year; 2000–2015). Shaded line is mean value. Note changes in Y-axis values between panels.