Fig. S1. Relationship between observed proportional shrinkage (open symbols) and mean predicted proportional shrinkage (filled symbols) (± standard error (SE), lines) (y-axis) vs. elapsed time after collection (days) (x-axis) for *Fundulus heteroclitus* from five tidal creeks in coastal North Carolina (USA) that were preserved in 95% ethanol. Observed points are jittered around their true x-values to avoid overlap with the symbols for predicted values.

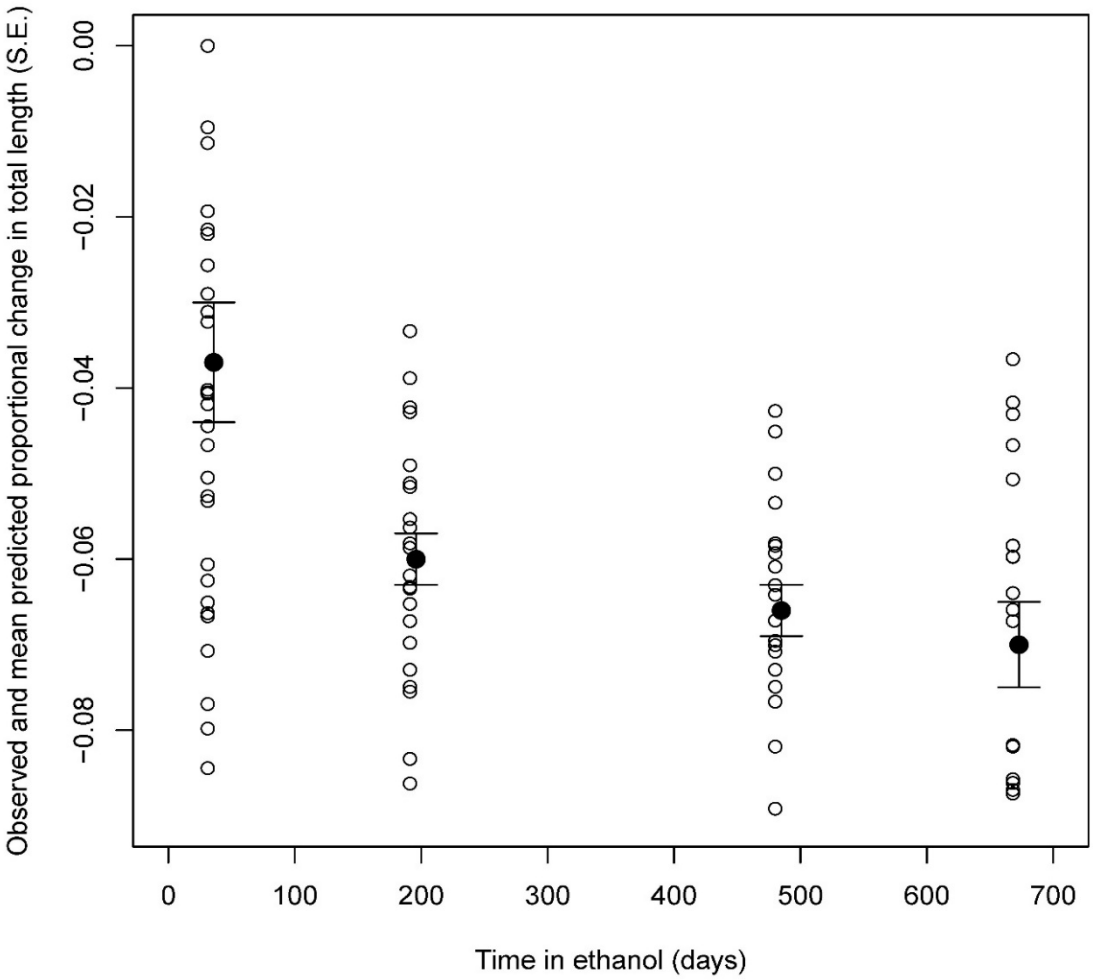

Fig. S2. Non-linear relationships between observed dry weight (g) (open symbols) and predicted dry weight (line) and the total length (mm) (x-axis) for *Fundulus heteroclitus* captured from five tidal creeks in coastal North Carolina (USA). The ranges of the x and y axes are identical among panels.

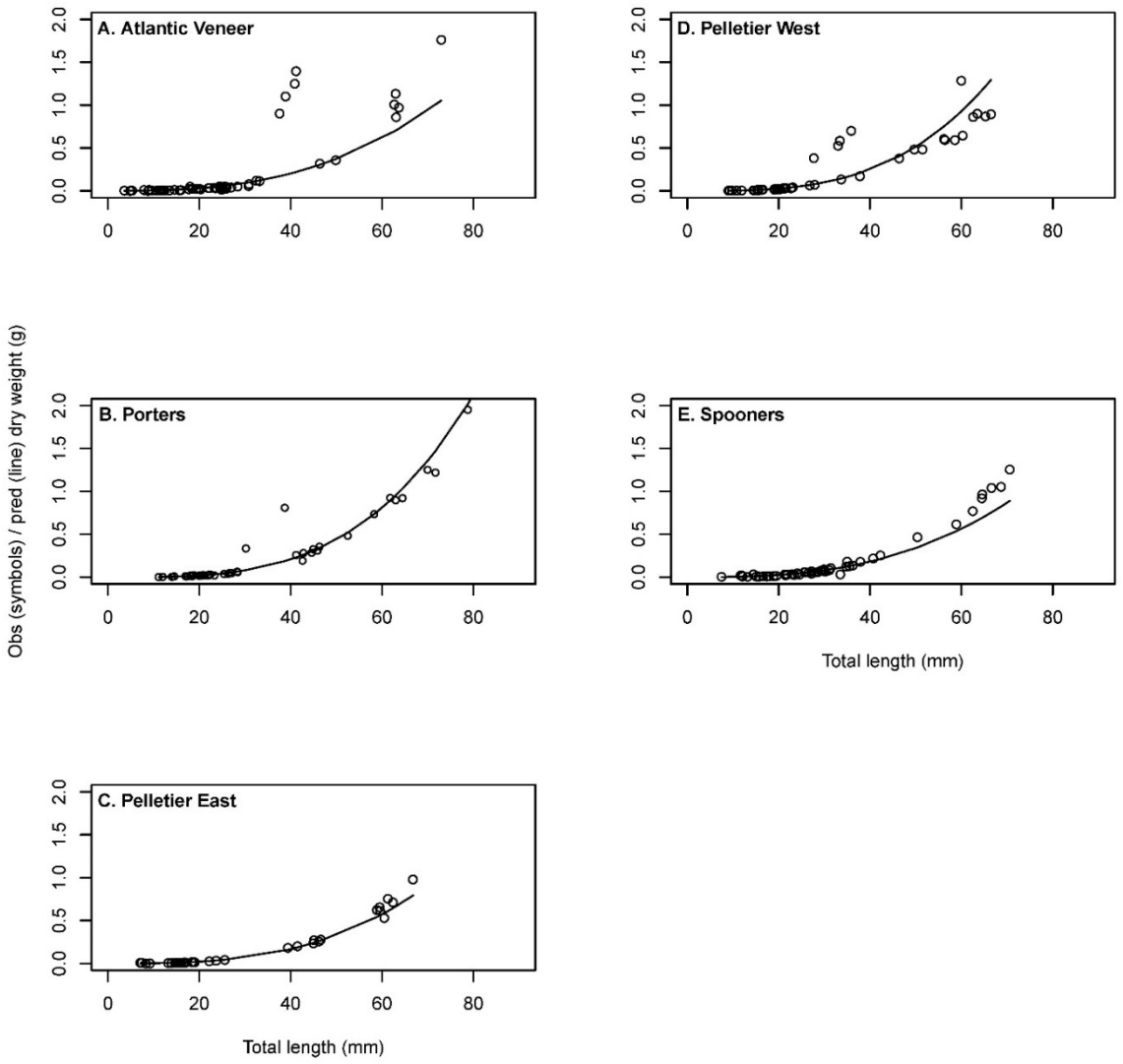

Fig. S3. Numbers of *Fundulus heteroclitus* captured by deploying a 1 m^2 throw trap on the marsh surface (y-axis) by total length (3 mm length bins) (x-axis). Data were collected in five tidal creeks in coastal North Carolina (USA) from April through October, 2012-13. The x axes are identical among panels within- and among creeks. The y axes are identical among the five panels within each creek and year combination. Ellipses and lines show each cohort tracked from one month to the next to calculate cohort-specific growth rates. The number of cohorts that were tracked differed among creeks and months.

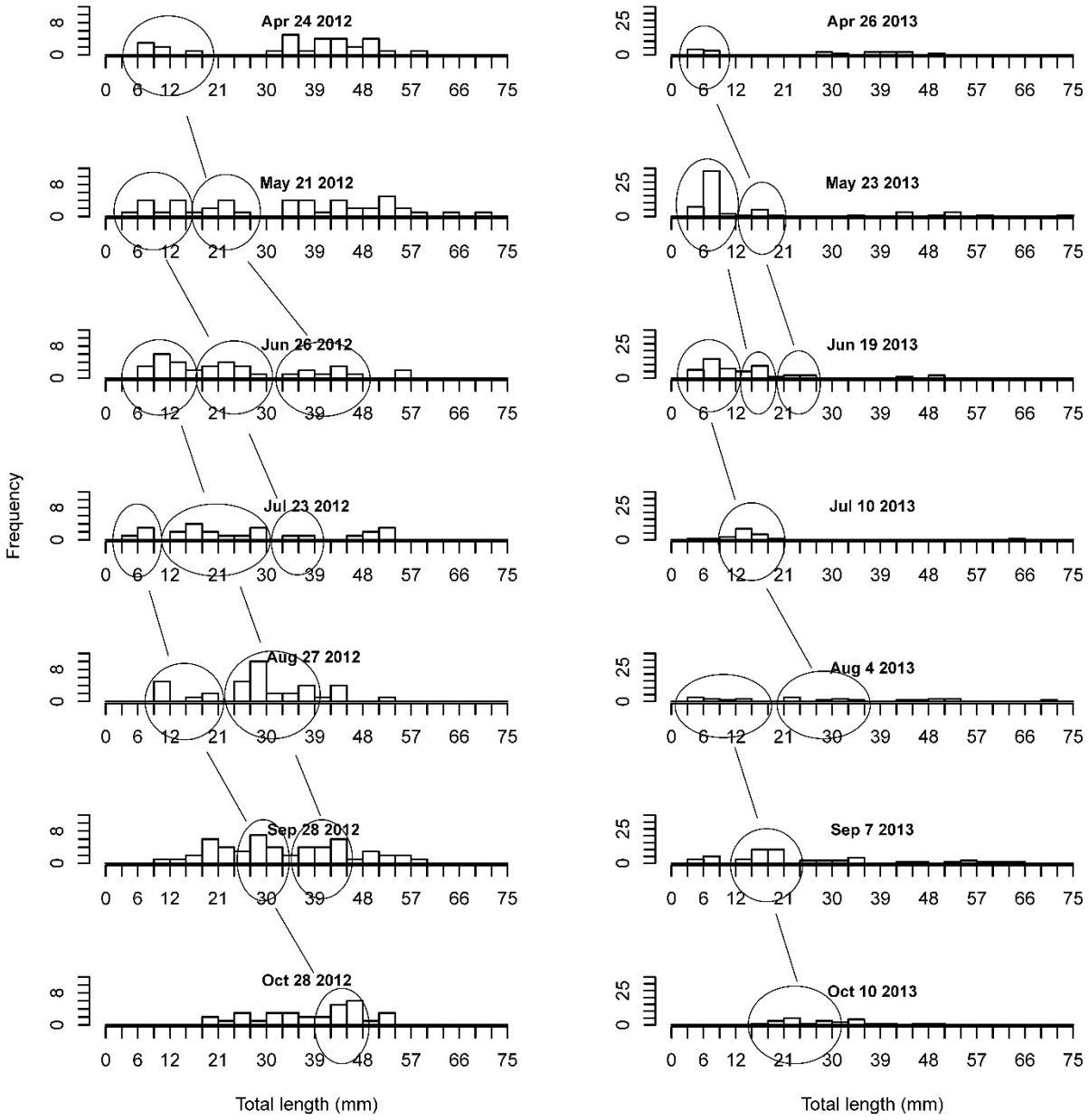

Fig. S3 (con't)

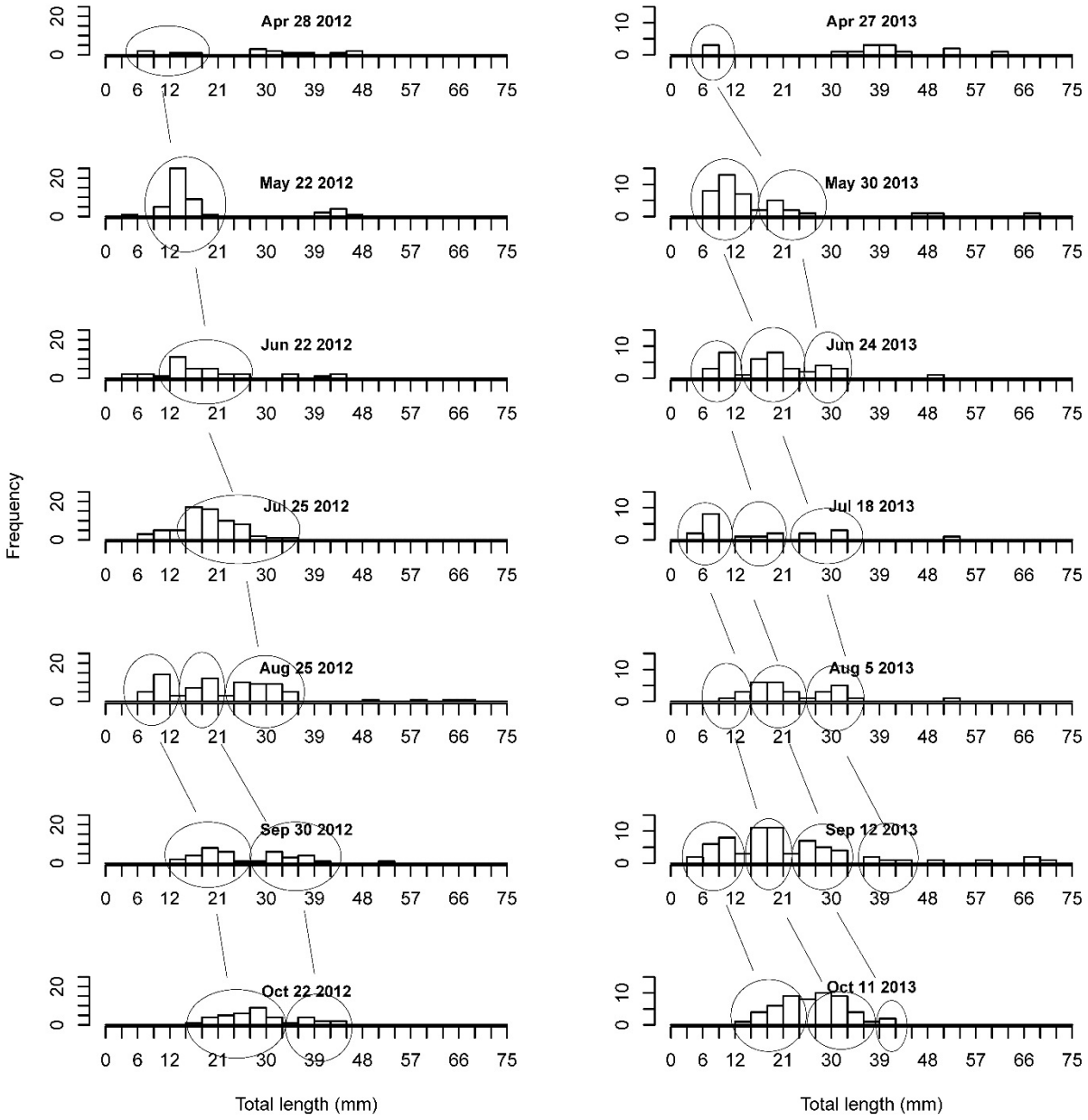
Apr 28 2012
May 22 2012
Jun 22 2012
Jul 25 2012
Aug 25 2012
Sep 30 2012
Oct 22 2012
Apr 27 2013
May 30 2013
Jun 24 2013
Jul 18 2013
Aug 5 2013
Sep 12 2013
Oct 11 2013
Frequency
Total length (mm)
Total length (mm)

Fig. S3 (con't)

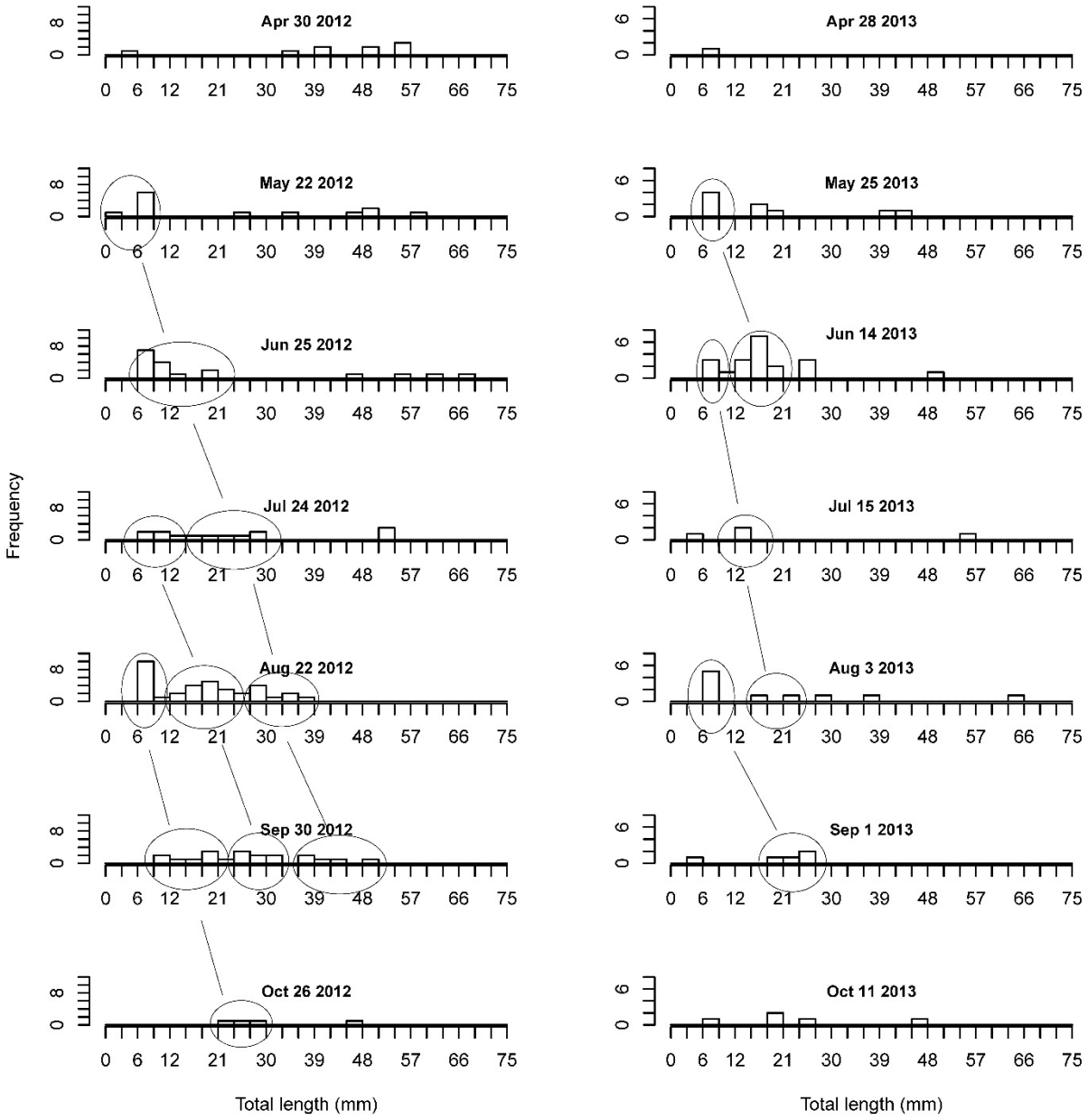
Apr 30 2012
May 22 2012
Jun 25 2012
Jul 24 2012
Aug 22 2012
Sep 30 2012
Oct 26 2012
Apr 28 2013
May 25 2013
Jun 14 2013
Jul 15 2013
Aug 3 2013
Sep 1 2013
Oct 11 2013
Frequency
Total length (mm)
Total length (mm)

Fig. S3 (con't)

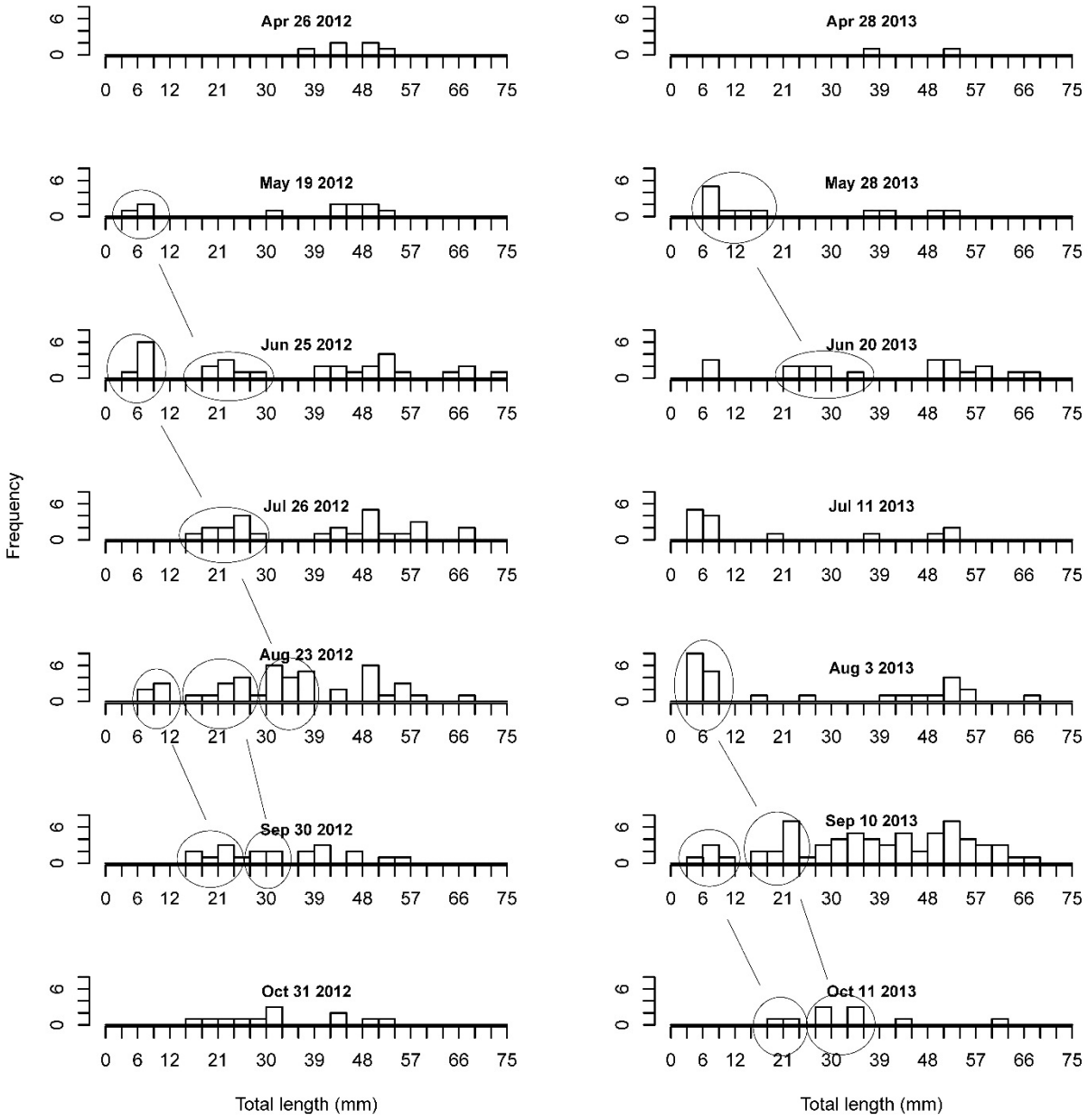
Apr 26 2012
Apr 28 2013
May 19 2012
May 28 2013
Jun 25 2012
Jun 20 2013
Jul 26 2012
Jul 11 2013
Aug 23 2012
Aug 3 2013
Sep 30 2012
Sep 10 2013
Oct 31 2012
Oct 11 2013
Frequency
0 6
0 6 12 21 30 39 48 57 66 75
Total length (mm)

Fig. S3 (con't)

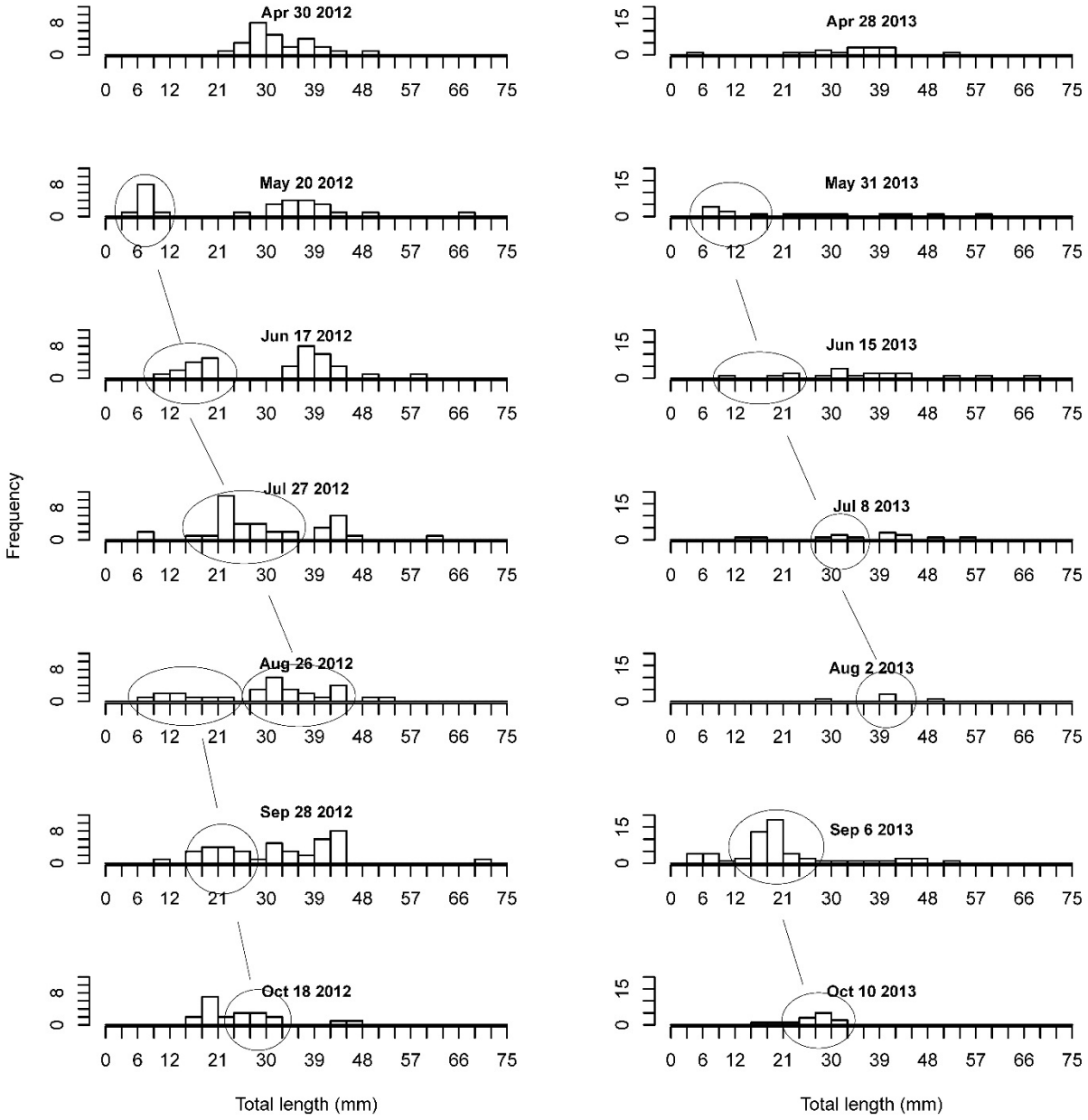
Apr 30 2012
May 20 2012
Jun 17 2012
Jul 27 2012
Aug 26 2012
Sep 28 2012
Oct 18 2012
Apr 28 2013
May 31 2013
Jun 15 2013
Jul 8 2013
Aug 2 2013
Sep 6 2013
Oct 10 2013
Frequency
Total length (mm)
Total length (mm)

Table S1. Cohort-specific growth and density data used to estimate production of *Fundulus heteroclitus* sampled with a 1 m^2 throw trap from April through October, 2012-13 in salt marsh of five tidal creeks in coastal North Carolina. Data include: span (days) between successive samples, mean estimated total length (TL, mm) and dry weight (DW, g), mean absolute growth in length (Growth, mm/day), mean estimated

Creek	Year	Months	Span	TL_1	TL_2	Growth	DW_1	DW_2	G_{inst}	N_1	N_2
AV	2012	Apr-May	27	10.1	21.9	0.44	0.0061	0.0333	0.0629	0.60 (0 - 1.26)	0.70 (0 - 1.53)
		May-Jun	36	10.1	23.0	0.36	0.0061	0.0370	0.0501	1.10 (0.16 - 2.04)	1.20 (0.24 - 2.16)
		May-Jun	36	21.9	41.4	0.54	0.0333	0.1426	0.0404	0.70 (0 - 1.53)	0.80 (0 – 2.16)
		Jun-Jul	27	10.6	20.6	0.37	0.0063	0.0306	0.0585	1.40 (0.12 - 2.68)	1.30 (0.36 - 2.24)
		Jun-Jul	27	23.0	36.1	0.49	0.0370	0.1021	0.0376	1.20 (0.24 - 2.16)	0.20 (0 - 0.59)
		Jul-Aug	35	7.1	14.1	0.20	0.0025	0.0125	0.0460	0.40 (0 - 0.83)	0.80 (0.16 - 1.44)
		Jul-Aug	35	20.6	30.2	0.27	0.0306	0.0693	0.0234	1.30 (0.32 - 2.27)	2.30 (1.13 - 3.47)
		Aug-Sep	32	14.1	30.1	0.50	0.0135	0.0944	0.0608	0.80 (0.16 - 1.44)	1.40 (0.42 - 2.38)
		Aug-Sep	32	30.2	41.4	0.35	0.0977	0.2250	0.0261	2.30 (1.13 - 3.47)	1.50 (0.66 - 2.34)
		Sep-Oct	30	30.1	44.5	0.48	0.0944	0.2727	0.0354	1.40 (0.42 - 2.38)	1.30 (0.13 - 2.47)
	2013	Apr-May	27	6.6	16.6	0.37	0.0020	0.0170	0.0793	0.70 (0 - 1.42)	0.80 (0 - 1.72)
		May-Jun	27	6.6	16.1	0.35	0.0020	0.0156	0.0761	4.20 (1.94 - 6.46)	1.30 (0 – 2.81)
		May-Jun	27	16.6	23.8	0.27	0.0170	0.0389	0.0307	0.80 (0 - 1.72)	0.40 (0 - 1.00)
		Jun-Jul	21	7.7	14.3	0.31	0.0032	0.0122	0.0637	2.90 (0.42 - 4.38)	1.50 (0.71 - 2.29)
		Jul-Aug	25	14.3	27.5	0.53	0.0122	0.0565	0.0613	1.50 (0.71 - 2.29)	0.70 (0 - 1.47)
		Aug-Sep	34	6.7	17.4	0.31	0.0019	0.0211	0.0708	0.60 (0.17 - 1.03)	2.30 (0.73 - 3.87)
		Sep-Oct	33	17.4	24.0	0.20	0.0211	0.0530	0.0279	2.30 (0.73 - 3.87)	1.40 (0.51 – 2.29)
P	2012	Apr-May	24	11.8	13.9	0.09	0.0047	0.0055	0.0065	0.40 (0 - 1.00)	4.00 (0.22 - 7.77)
		May-Jun	31	13.9	17.4	0.11	0.0055	0.0154	0.0332	4.00 (0.22 - 7.77)	2.50 (0.86 - 4.14)
		Jun-Jul	33	17.4	20.7	0.10	0.0154	0.0306	0.0208	2.50 (0.86 - 4.14)	5.50 (0.89 - 10.11)
		Jul-Aug	31	20.7	29.4	0.28	0.0306	0.0971	0.0372	5.50 (0.89 - 10.11)	3.30 (1.17 - 5.43)
		Aug-Sep	36	9.7	19.3	0.27	0.0019	0.0200	0.0654	1.90 (0.49 - 3.31)	2.10 (0.57 - 3.63)
		Aug-Sep	36	18.5	33.3	0.41	0.0167	0.1161	0.0539	2.50 (0.43 - 4.57)	1.50 (0.71 - 2.29)
		Sep-Oct	22	19.3	25.6	0.29	0.0200	0.0517	0.0432	2.10 (0.57 - 3.63)	2.90 (0.52 - 5.28)
		Sep-Oct	22	33.3	38.8	0.25	0.1161	0.1928	0.0231	1.50 (0.71 - 2.29)	0.90 (0.10 - 1.70)
	2013	Apr-May	33	7.1	20.4	0.40	0.0004	0.0234	0.1233	0.30 (0 - 0.89)	1.00 (0.49 - 1.51)
		May-Jun	25	10.6	18.8	0.41	0.0021	0.0180	0.0859	2.80 (0.38 - 5.22)	1.90 (0.65 - 3.15)
		May-Jun	25	20.4	29.4	0.36	0.0234	0.0942	0.0557	1.00 (0.49 - 1.51)	0.80 (0 - 1.80)
		Jun-Jul	24	9.4	17.0	0.32	0.0012	0.0126	0.0980	1.10 (0.42 - 1.78)	0.40 (0 - 0.83)
		Jun-Jul	24	18.8	29.2	0.43	0.0180	0.0946	0.0691	1.90 (0.65 - 3.15)	0.50 (0.06 - 0.94)
		Jul-Aug	18	6.6	12.9	0.35	0.0003	0.0040	0.1439	1.00 (0.22 - 1.77)	0.40 (0 - 0.83)
		Jul-Aug	18	17.0	19.2	0.12	0.0126	0.0194	0.0240	0.40 (0 - 0.83)	1.60 (0.87 - 2.33)
		Jul-Aug	18	29.2	30.7	0.08	0.0946	0.1109	0.0088	0.50 (0.06 - 0.94)	0.90 (0 - 1.93)
		Aug-Sep	38	12.9	17.8	0.13	0.0049	0.0144	0.0284	0.40 (0 - 0.83)	2.60 (0.95 - 4.25)
		Aug-Sep	38	19.2	27.2	0.21	0.0192	0.0600	0.0300	1.60 (0.87 - 2.33)	1.80 (0.64 - 2.96)

		Aug-Sep	38	30.7	39.6	0.23	0.0877	0.2046	0.0223	0.90 (0 - 1.93)	0.40 (0.08 - 0.72)
		Sep-Oct	29	9.1	20.7	0.40	0.0017	0.0243	0.0917	1.60 (0.54 - 2.66)	2.30 (1.02 - 3.58)
		Sep-Oct	29	17.8	29.8	0.41	0.0144	0.0802	0.0592	2.60 (0.84 - 4.25)	2.80 (1.03 - 4.57)
		Sep-Oct	29	27.2	39.6	0.43	0.0600	0.2026	0.0420	1.80 (0.65 - 2.96)	0.30 (0 - 0.60)
PE	2012	May-Jun	34	7.0	19.3	0.36	0.0013	0.0158	0.0735	0.40 (0.15 - 1.85)	0.55 (0 - 0.88)
		Jun-Jul	30	10.3	23.1	0.43	0.0043	0.0268	0.0610	2.80 (0.53 - 5.07)	1.00 (0 - 2.34)
		Jul-Aug	29	10.6	18.5	0.27	0.0036	0.0151	0.0494	0.83 (0 - 1.77)	2.00 (0 - 4.14)
		Jul-Aug	29	23.1	30.0	0.24	0.0268	0.0510	0.0222	1.00 (0 - 2.34)	1.43 (0.70 - 2.16)
		Aug-Sep	39	8.1	16.4	0.21	0.0013	0.0128	0.0586	1.57 (0 - 3.38)	1.00 (0 - 2.04)
		Aug-Sep	39	18.5	27.4	0.23	0.0175	0.0548	0.0293	2.00 (0 - 4.14)	1.14 (0.35 - 1.93)
		Aug-Sep	39	30.0	42.4	0.32	0.0733	0.2034	0.0262	1.43 (0.70 - 2.16)	0.71 (0 - 1.53)
		Sep-Oct	26	16.4	24.6	0.32	0.0128	0.0389	0.0428	1.00 (0 - 2.04)	0.43 (0 - 1.27)
	2013	May-Jun	20	7.1	16.6	0.48	0.0012	0.0110	0.1108	1.00 (0 - 2.38)	2.40 (0 – 5.35)
		Jun-Jul	32	9.1	13.2	0.13	0.0023	0.006	0.0300	0.40 (0 - 0.88)	0.33 (0 - 0.75)
		Jul-Aug	19	13.2	18.6	0.28	0.0060	0.0154	0.0496	0.33 (0 - 0.75)	0.40 (0 - 0.88)
		Aug-Sep	29	7.5	23.9	0.57	0.0011	0.0364	0.1207	1.00 (0 - 2.96)	0.67 (0.01 – 1.33)
PW	2012	May-Jun	23	6.5	23.0	0.72	0.0005	0.0548	0.2042	0.30 (0 - 0.72)	0.70 (0 - 1.47)
		Jun-Jul	32	6.5	23.3	0.53	0.0004	0.0604	0.1568	0.70 (0.34 - 1.05)	1.00 (0 - 2.17)
		Jul-Aug	28	23.3	34.2	0.39	0.0604	0.2313	0.0480	1.00 (0 - 2.17)	1.50 (0.52 - 2.48)
		Aug-Sep	38	8.9	20.9	0.32	0.0020	0.0332	0.0739	0.50 (0 - 0.94)	0.70 (0.04 - 1.36)
		Aug-Sep	38	23.0	30.0	0.18	0.0488	0.1000	0.0189	0.90 (0.10 - 1.70)	0.40 (0.08 – 0.72)
	2013	May-Jun	23	9.7	25.3	0.68	0.0032	0.0758	0.1376	0.80 (0 - 1.72)	0.60 (0.17 - 1.03)
		Aug-Sep	38	5.8	20.7	0.39	0.0005	0.0311	0.1087	1.30 (0.58 - 2.02)	1.10 (0.25 - 1.95)
		Sep-Oct	31	7.5	21.1	0.44	0.0012	0.0316	0.1055	0.50 (0 - 1.17)	0.20 (0 - 0.46)
		Sep-Oct	31	20.7	31.5	0.35	0.0311	0.1194	0.0434	1.10 (0.25 - 1.95)	0.60 (0.17 - 1.03)
S	2012	May-Jun	28	7.0	16.6	0.34	0.0022	0.0171	0.0732	1.00 (0 - 2.20)	1.20 (0 - 2.74)
		Jun-Jul	40	16.6	25.4	0.22	0.0171	0.0477	0.0256	1.20 (0 - 2.74)	2.50 (0.98 - 4.02)
		Jul-Aug	30	25.4	34.8	0.31	0.0477	0.0990	0.0243	2.50 (0.98 - 4.02)	1.90 (0.61 – 3.19)
		Aug-Sep	33	14.5	21.2	0.20	0.0128	0.0322	0.0280	0.80 (0.07 - 1.53)	1.40 (0.26 - 2.54)
		Sep-Oct	20	21.2	27.7	0.33	0.0322	0.0663	0.0361	1.40 (0.26 - 2.54)	0.90 (0.05 – 1.75)
	2013	May-Jun	15	10.4	18.6	0.55	0.0062	0.0233	0.0883	0.70 (0 - 1.87)	0.40 (0.08 - 0.72)
		Jun-Jul	23	18.6	32.1	0.59	0.0233	0.0803	0.0538	0.40 (0.08 - 0.72)	0.40 (0.08 - 0.72)
		Jul-Aug	25	32.1	40.2	0.32	0.0803	0.1347	0.0207	0.40 (0.08 - 0.72)	0.30 (0 - 0.60)
		Sep-Oct	34	18.7	27.4	0.26	0.0228	0.0643	0.0305	4.00 (2.00 - 6.00)	1.10 (0.03 - 2.17)