

Supplementary materials

Table S1. Pairwise contrasts of mean daily otolith growth of fish caught at the Upper Estuary (UE), Middle Estuary (ME), Lower Estuary (LE), and Estuary Exit (EE) sites in 2017 and 2016. Bold values indicate significant pairwise differences existed.

Contrast	Mean daily growth between 15th and 29th of April					Mean daily growth between 17 and 3 days prior to ocean entry				
	Estimate	SE	DF	t ratio	p value	Estimate	SE	DF	t ratio	p value
Ocean 2016 - EE 2016	0.05	0.07	322	0.71	1	-0.08	0.07	317	-1.18	0.97
Ocean 2016 - LE 2016	0.05	0.06	322	0.82	1	0.04	0.05	317	0.78	1
Ocean 2016 - ME 2016	-0.03	0.06	322	-0.43	1	0.05	0.06	317	0.87	1
Ocean 2016 - UE 2016	-0.09	0.04	322	-2.07	0.55	-0.02	0.04	317	-0.42	1
Ocean 2016 - Ocean 2017	-0.2	0.04	322	-4.81	<0.01	-0.25	0.04	317	-6.03	<0.01
Ocean 2016 - EE 2017	0.03	0.05	322	0.66	1	-0.03	0.04	317	-0.59	1
Ocean 2016 - LE 2017	-0.14	0.05	322	-2.64	0.2	-0.12	0.05	317	-2.34	0.37
Ocean 2016 - ME 2017	-0.02	0.08	322	-0.21	1	-0.06	0.07	317	-0.76	1
Ocean 2016 - UE 2017	0	0.06	322	0.02	1	0.03	0.05	317	0.54	1
EE 2016 - LE 2016	-0.01	0.09	322	-0.06	1	0.12	0.08	317	1.46	0.91
EE 2016 - ME 2016	-0.08	0.09	322	-0.84	1	0.13	0.09	317	1.51	0.89
EE 2016 - UE 2016	-0.14	0.08	322	-1.72	0.78	0.07	0.08	317	0.86	1
EE 2016 - Ocean 2017	-0.25	0.08	322	-3.11	0.06	-0.16	0.08	317	-2.13	0.51
EE 2016 - EE 2017	-0.02	0.08	322	-0.27	1	0.06	0.08	317	0.72	1
EE 2016 - LE 2017	-0.19	0.09	322	-2.2	0.46	-0.04	0.08	317	-0.43	1
EE 2016 - ME 2017	-0.07	0.1	322	-0.66	1	0.03	0.1	317	0.27	1
EE 2016 - UE 2017	-0.05	0.09	322	-0.57	1	0.11	0.08	317	1.31	0.95
LE 2016 - ME 2016	-0.07	0.08	322	-0.9	1	0.01	0.08	317	0.14	1
LE 2016 - UE 2016	-0.13	0.07	322	-2.02	0.58	-0.06	0.06	317	-0.93	1
LE 2016 - Ocean 2017	-0.24	0.07	322	-3.73	0.01	-0.29	0.06	317	-4.57	<0.01
LE 2016 - EE 2017	-0.02	0.07	322	-0.24	1	-0.07	0.06	317	-1.04	0.99
LE 2016 - LE 2017	-0.18	0.07	322	-2.53	0.26	-0.16	0.07	317	-2.29	0.4
LE 2016 - ME 2017	-0.06	0.09	322	-0.68	1	-0.1	0.09	317	-1.11	0.98
LE 2016 - UE 2017	-0.04	0.08	322	-0.59	1	-0.01	0.07	317	-0.2	1
ME 2016 - UE 2016	-0.06	0.07	322	-0.84	1	-0.07	0.07	317	-1	0.99
ME 2016 - Ocean 2017	-0.17	0.07	322	-2.4	0.33	-0.3	0.07	317	-4.3	0
ME 2016 - EE 2017	0.06	0.07	322	0.77	1	-0.08	0.07	317	-1.1	0.98
ME 2016 - LE 2017	-0.11	0.08	322	-1.42	0.92	-0.17	0.07	317	-2.25	0.42
ME 2016 - ME 2017	0.01	0.1	322	0.11	1	-0.11	0.09	317	-1.17	0.98
ME 2016 - UE 2017	0.03	0.08	322	0.35	1	-0.02	0.08	317	-0.33	1
UE 2016 - Ocean 2017	-0.11	0.05	322	-2.03	0.58	-0.23	0.05	317	-4.42	<0.01
UE 2016 - EE 2017	0.12	0.06	322	2.04	0.57	-0.01	0.05	317	-0.17	1
UE 2016 - LE 2017	-0.05	0.06	322	-0.8	1	-0.1	0.06	317	-1.69	0.8
UE 2016 - ME 2017	0.07	0.08	322	0.85	1	-0.04	0.08	317	-0.49	1

UE 2016 - UE 2017	0.09	0.07	322	1.35	0.94	0.04	0.06	317	0.72	1
Ocean 2017 - EE 2017	0.23	0.06	322	4.02	<0.01	0.22	0.05	317	4	<0.01
Ocean 2017 - LE 2017	0.06	0.06	322	0.95	0.99	0.13	0.06	317	2.13	0.51
Ocean 2017 - ME 2017	0.18	0.08	322	2.18	0.47	0.19	0.08	317	2.36	0.35
Ocean 2017 - UE 2017	0.2	0.07	322	3.05	0.07	0.27	0.06	317	4.43	<0.01
EE 2017 - LE 2017	-0.17	0.07	322	-2.58	0.23	-0.09	0.06	317	-1.47	0.9
EE 2017 - ME 2017	-0.05	0.09	322	-0.54	1	-0.03	0.08	317	-0.37	1
EE 2017 - UE 2017	-0.03	0.07	322	-0.42	1	0.05	0.06	317	0.84	1
LE 2017 - ME 2017	0.12	0.09	322	1.37	0.94	0.06	0.09	317	0.72	1
LE 2017 - UE 2017	0.14	0.07	322	1.92	0.66	0.14	0.07	317	2.12	0.51
ME 2017 - UE 2017	0.02	0.09	322	0.19	1	0.08	0.09	317	0.96	0.99

Table S2. Results of the Linear mixed models examining differences in growth rates between juvenile Chinook Salmon caught in the LCRE and caught in the ocean in 2016 and 2017.

Parameter	Estimate	95 % C.I.	p value	Random Effect	Standard Deviation	Φ	Marginal R2	Conditional R2
17-3 days prior to ocean entry								
Intercept	1.66	1.61 – 1.71	<0.01	Intercept	0.09	0.21	0.046	0.333
Location	0.01	-0.08 – 0.11	0.802	Residuals	0.3			
Year	0.43	0.30 – 0.56	<0.01					
Location*Year	-0.38	-0.56 – -0.21	<0.01					
15-29th April								
Intercept	0.49	0.46 – 0.52	<0.01	Intercept	0.04	0.07	0.029	0.372
Location	0.03	-0.04 – 0.09	0.411	Residuals	0.35			
Year	0.02	0.12 – 0.28	<0.01					
Location*Year	-0.02	-0.31 – -0.09	<0.01					
7 Days prior to ocean entry								
Intercept	-838.99	-1120.49 – -557.49	<0.01	Intercept	0.302	0.2	0.064	0.354
Location	1176.4	560.69 – 1792.12	<0.01	Residuals	0.45			
Year	0.42	0.28 – 0.56	<0.01					
Location*Year	-0.58	-0.89 – -0.28	<0.01					

Table S3. Pairwise differences in growth rates between juvenile Chinook Salmon caught in the ocean and those caught in the LCRE in 2016 and 2017.

Contrast	15-29th of April					17-3 days prior to ocean entry				
	Estimate	SE	DF	t-ratio	p-value	Estimate	SE	DF	t-ratio	p-value
Ocean 2016 - LCRE 2016	-0.03	0.03	328	-0.82	0.84	-0.01	0.05	323	-0.25	0.99
Ocean 2016 - Ocean 2017	-0.20	0.04	328	-4.75	<.01	-0.43	0.07	323	-6.47	<.01
Ocean 2016 - LCRE 2017	-0.03	0.03	328	-0.90	0.81	-0.06	0.05	323	-1.26	0.59
LCRE 2016 - Ocean 2017	-0.17	0.05	328	-3.72	<.01	-0.42	0.07	323	-5.73	<.01
LCRE 2016 - LCRE 2017	0	0.04	328	-0.06	1.00	-0.05	0.06	323	-0.86	0.83
Ocean 2017 - LCRE 2017	0.17	0.05	328	3.68	<.01	0.37	0.07	323	5.06	<.01

Table S4. Pairwise differences in growth rates of juvenile Chinook Salmon caught in the ocean and at the Estuary Exit site in the seven days prior to ocean entry.

Contrast	Estimate	SE	DF	t.ratio	p. value
Ocean 2016 - Lower-Estuary 2016	-0.10	0.07	221	-1.41	0.49
Ocean 2016 - Ocean 2017	-0.23	0.04	221	-5.40	<0.01
Ocean 2016 - Lower-Estuary 2017	-0.00	0.05	221	-0.21	0.99
Lower-Estuary 2016 - Ocean 2017	-0.13	0.08	221	-1.57	0.40
Lower-Estuary 2016 - Lower estuary 2017	0.09	0.08	221	1.13	0.67
Ocean 2017 - Lower-Estuary 2017	0.22	0.06	221	3.82	<0.01