

Supplementary material

Table S1. Statistics from univariate test for sea surface temperature (SST) and sea surface salinity (SSS) from February to September between the 1960s–1970s and the 2000s–2010s.

Month	SST			SSS		
	df	<i>F</i> -value	<i>P</i> -value	df	χ^2 -value	<i>P</i> -value
Feb.	1, 106	18.7	< 0.001	1	6.7	0.010
Mar.	1, 145	12.7	< 0.001	1	0.3	0.555
Apr.	1, 170	17.7	< 0.001	1	4.3	0.038
May	1, 108	7.7	0.006	1	4.5	0.033
Jun.	1, 105	<0.1	0.781	1	27.6	< 0.001
Jul.	1, 63	0.6	0.432	1	5.3	0.021
Aug.	1, 151	83	< 0.001	1	3.2	0.073
Sep.	1, 95	0.7	0.391	1	0.2	0.660

Table S2. Statistics from univariate test for otolith radius (OR), $\delta^{13}\text{C}$, and $\delta^{18}\text{O}$ at Julia day (JD) from 100 to 250 between the 1960s–1970s and the 2000s–2010s.

Date	OR			$\delta^{13}\text{C}$			$\delta^{18}\text{O}$		
	df	<i>F</i> -value	<i>P</i> -value	df	<i>F</i> -value	<i>P</i> -value	df	<i>F</i> -value	<i>P</i> -value
JD 100	1, 72	17.8	< 0.001	1, 20	12.5	0.002	1, 20	6.9	0.016
JD 110	1, 79	21.00	< 0.001	1, 20	9.6	0.005	1, 20	3.5	0.075
JD 120	1, 87	20.5	< 0.001	1, 30	16.8	> 0.001	1, 30	1.8	0.189
JD 130	1, 91	25.7	< 0.001	1, 32	22.3	> 0.001	1, 32	1.5	0.224
JD 140	1, 93	23.0	< 0.001	1, 33	9.9	0.003	1, 33	0.2	0.644
JD 150	1, 94	20.4	< 0.001	1, 34	4.8	0.036	1, 34	1.6	0.212
JD 160	1, 94	20.4	< 0.001	1, 34	6.0	0.019	1, 34	0.7	0.418
JD 170	1, 94	27.6	< 0.001	1, 34	5.5	0.024	1, 34	< 0.1	0.937
JD 180	1, 94	33.6	< 0.001	1, 34	9.5	0.004	1, 34	< 0.1	0.982
JD 190	1, 94	38.6	< 0.001	1, 34	4.6	0.040	1, 34	< 0.1	0.821
JD 200	1, 94	39.0	< 0.001	1, 34	5.1	0.031	1, 34	< 0.1	0.946
JD 210	1, 94	40.4	< 0.001	1, 34	4.7	0.037	1, 34	0.1	0.721
JD 220	1, 84	31.8	< 0.001	1, 28	6.0	0.021	1, 28	0.8	0.381
JD 230	1, 69	34.3	< 0.001	1, 19	2.3	0.150	1, 19	9.4	0.006
JD 240	1, 59	16.7	< 0.001	1, 16	0.8	0.376	1, 16	7.3	0.016
JD 250	1, 36	26.2	< 0.001	NA	NA	NA	NA	NA	NA

NA: not available, because three samples were available only in the 1960s–1970s.

Table S3. Statistics from univariate test for otolith radius (OR) and increment width (IW) at ages from 10 to 120 days post hatching (dph) between the 1960s–1970s and the 2000s–2010s.

Age	OR			IW		
	df	<i>F</i> -value	<i>P</i> -value	df	<i>F</i> -value	<i>P</i> -value
10 dph	1, 94	1.5	0.220	1, 94	1.1	0.301
20 dph	1, 94	0.3	0.607	1, 94	<0.1	0.878
30 dph	1, 94	0.9	0.350	1, 94	6.1	0.015
40 dph	1, 94	3.4	0.068	1, 94	11.2	0.001
50 dph	1, 94	6.2	0.015	1, 94	3.2	0.076
60 dph	1, 94	7.4	0.008	1, 94	0.5	0.461
70 dph	1, 94	4.8	0.030	1, 94	5.8	0.018
80 dph	1, 94	2.1	0.150	1, 94	8.2	0.005
90 dph	1, 94	0.7	0.412	1, 94	5.8	0.018
100 dph	1, 94	0.2	0.677	1, 94	0.8	0.387
110 dph	1, 94	<0.1	0.812	1, 94	<0.1	0.823
120 dph	1, 93	<0.1	0.950	1, 93	0.2	0.621

Table S4. Statistics from univariate test for $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ at ages from 10 to 120 days post hatching (dph) between the 1960s–1970s and the 2000s–2010s.

Age	$\delta^{13}\text{C}$			$\delta^{18}\text{O}$		
	df	<i>F</i> -value	<i>P</i> -value	df	<i>F</i> -value	<i>P</i> -value
10 dph	1, 34	4.2	0.047	1, 34	4.3	0.045
20 dph	1, 12	3.5	0.086	1, 12	1.6	0.229
30 dph	1, 34	6.8	0.014	1, 34	5	0.032
40 dph	1, 34	16.5	<0.001	1, 34	5.9	0.021
50 dph	1, 34	26.3	<0.001	1, 34	5.2	0.029
60 dph	1, 34	9.8	0.003	1, 34	3.9	0.055
70 dph	1, 34	2.4	0.128	1, 34	1.4	0.249
80 dph	1, 34	2.3	0.140	1, 34	1.6	0.217
90 dph	1, 34	3.9	0.058	1, 34	0.4	0.518
100 dph	1, 34	2.8	0.102	1, 34	0.9	0.361
110 dph	1, 34	1.8	0.190	1, 34	0.7	0.414
120 dph	1, 33	1.6	0.219	1, 33	0.7	0.397