

Supplementary Table 7. Cross correlations comparing the log₁₀+1 hourly estimated count of alewife (AW) and blueback herring (BBH) with hourly water temperature (Temp), tide (Tide), and solar elevation (Solar) in the Choptank River. Correlation coefficients that exceeded the 95% CI are indicated in bold italics.

Choptank River											
Year	Species	Factor	Lags (hours)								
			-4	-3	-2	-1	0	1	2	3	4
2014	AW	Temp	-0.04	-0.01	0.01	0.03	0.05	0.07	0.09	0.10	0.10
		Tide	-0.03	-0.03	-0.03	-0.03	-0.03	-0.05	-0.06	-0.09	-0.11
		Solar	0.38	0.40	0.40	0.37	0.31	0.22	0.13	0.02	-0.09
	BBH	Temp	0.25	0.26	0.27	0.29	0.31	0.33	0.35	0.36	0.37
		Tide	0.04	0.03	0.02	0.00	-0.03	-0.05	-0.08	-0.10	-0.10
		Solar	0.30	0.36	0.40	0.41	0.39	0.35	0.29	0.21	0.11
2015	AW	Temp	-0.12	-0.10	-0.08	-0.06	-0.03	0.00	0.02	0.04	0.05
		Tide	-0.16	-0.14	-0.13	-0.15	-0.19	-0.25	-0.32	-0.37	-0.40
		Solar	0.38	0.41	0.41	0.39	0.34	0.26	0.16	0.06	-0.05
	BBH	Temp	0.15	0.17	0.18	0.20	0.21	0.24	0.27	0.30	0.32
		Tide	0.08	0.09	0.09	0.08	0.06	0.04	0.00	-0.04	-0.07
		Solar	0.29	0.40	0.47	0.51	0.52	0.49	0.43	0.33	0.22
2016	AW	Temp	0.25	0.26	0.27	0.27	0.28	0.28	0.28	0.28	0.28
		Tide	-0.03	0.00	0.03	0.04	0.04	0.02	-0.01	-0.04	-0.07
		Solar	0.13	0.13	0.11	0.09	0.06	0.02	-0.02	-0.06	-0.10
	BBH	Temp	0.33	0.33	0.33	0.34	0.34	0.33	0.33	0.32	0.31
		Tide	0.08	0.10	0.11	0.11	0.10	0.09	0.07	0.04	0.03
		Solar	0.14	0.14	0.13	0.10	0.08	0.04	0.00	-0.03	-0.07
2017	AW	Temp	0.25	0.25	0.26	0.26	0.25	0.25	0.24	0.24	0.23
		Tide	0.14	0.16	0.16	0.14	0.11	0.08	0.04	0.02	0.00
		Solar	0.11	0.06	0.00	-0.05	-0.10	-0.15	-0.19	-0.21	-0.22
	BBH	Temp	0.08	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.13
		Tide	-0.03	-0.01	0.00	0.01	0.00	-0.02	-0.05	-0.07	-0.09
		Solar	0.09	0.09	0.09	0.08	0.06	0.04	0.01	-0.02	-0.05

Supplementary Table 8. Cross correlations comparing the log₁₀+1 hourly estimated count of alewife (AW) with hourly water temperature (Temp), tide (Tide), and solar elevation (Solar) in Deer Creek. Correlation coefficients that exceed the 95% CI are indicated in bold italics.

Deer Creek											
Year	Species	Factor	Lags (hours)								
			-4	-3	-2	-1	0	1	2	3	4
2015	AW	Temp	<i>0.23</i>	<i>0.24</i>	<i>0.24</i>	<i>0.23</i>	<i>0.21</i>	<i>0.18</i>	<i>0.15</i>	<i>0.12</i>	0.08
		Tide	-0.06	-0.09	-0.11	<i>-0.12</i>	<i>-0.11</i>	-0.09	-0.06	-0.02	0.02
		Solar	-0.07	<i>-0.14</i>	<i>-0.20</i>	<i>-0.25</i>	<i>-0.27</i>	<i>-0.29</i>	<i>-0.29</i>	<i>-0.27</i>	<i>-0.23</i>

Supplementary Table 9. Cross correlations comparing the log₁₀+1 hourly estimated count of alewife (AW) and blueback herring (BBH) with hourly water temperature (Temp), tide (Tide), and solar elevation (Solar) in Marshyhope Creek for one month in 2013 (March 27 to May 2). Correlation coefficients that exceed the 95% CI are indicated in bold italics.

Marshyhope Creek (March 27 to May 2, 2013)											
Year	Species	Factor	Lags (hours)								
			-4	-3	-2	-1	0	1	2	3	4
2013	AW	Temp	<i>-0.11</i>	<i>-0.10</i>	<i>-0.09</i>	-0.08	-0.06	-0.05	-0.03	0.00	0.02
		Tide	-0.08	-0.05	-0.02	0.00	-0.01	-0.03	-0.07	<i>-0.12</i>	<i>-0.16</i>
		Solar	<i>0.20</i>	<i>0.25</i>	<i>0.27</i>	<i>0.27</i>	<i>0.26</i>	<i>0.23</i>	<i>0.18</i>	<i>0.12</i>	0.05
	BBH	Temp	<i>-0.22</i>	<i>-0.23</i>	<i>-0.23</i>	<i>-0.22</i>	<i>-0.19</i>	<i>-0.14</i>	-0.08	-0.01	0.06
		Tide	<i>-0.12</i>	-0.09	-0.04	-0.02	-0.02	-0.05	<i>-0.11</i>	<i>-0.18</i>	<i>-0.25</i>
		Solar	<i>0.23</i>	<i>0.39</i>	<i>0.54</i>	<i>0.64</i>	<i>0.70</i>	<i>0.72</i>	<i>0.68</i>	<i>0.61</i>	<i>0.49</i>

Supplementary Table 10. Cross correlations comparing the $\log_{10}+1$ hourly estimated count of alewife (AW) and blueback herring (BBH) with hourly water temperature (Temp), tide (Tide), and solar elevation (Solar) in the Patapsco River. Correlation coefficients that exceed the 95% CI are indicated in bold italics.

			Patapsco River								
Year	Species	Factor	Lags (hours)								
			-4	-3	-2	-1	0	1	2	3	4
2016	AW	Temp	0.27	0.24	0.20	0.16	0.11	0.06	0.01	-0.04	-0.08
		Tide	-0.07	-0.08	-0.09	-0.09	-0.09	-0.08	-0.06	-0.05	-0.03
		Solar	-0.24	-0.37	-0.47	-0.54	-0.58	-0.58	-0.54	-0.47	-0.36
	BBH	Temp	0.21	0.19	0.16	0.12	0.08	0.02	-0.03	-0.08	-0.13
		Tide	0.15	0.13	0.12	0.12	0.13	0.15	0.19	0.22	0.25
		Solar	-0.20	-0.33	-0.43	-0.50	-0.54	-0.55	-0.52	-0.46	-0.37
2017	AW	Temp	0.30	0.27	0.24	0.20	0.16	0.12	0.07	0.03	0.00
		Tide	-0.01	-0.01	-0.01	-0.02	-0.03	-0.03	-0.02	-0.01	0.00
		Solar	-0.14	-0.25	-0.35	-0.41	-0.46	-0.46	-0.44	-0.38	-0.30
	BBH	Temp	0.15	0.14	0.12	0.09	0.06	0.02	-0.02	-0.06	-0.10
		Tide	0.01	-0.01	-0.04	-0.07	-0.08	-0.08	-0.07	-0.03	0.02
		Solar	-0.23	-0.38	-0.50	-0.59	-0.64	-0.65	-0.61	-0.54	-0.43
2018	AW	Temp	0.20	0.16	0.10	0.05	0.00	-0.04	-0.08	-0.11	-0.14
		Tide	0.08	0.04	0.04	0.04	0.06	0.08	0.10	0.12	0.12
		Solar	-0.15	-0.25	-0.32	-0.37	-0.39	-0.40	-0.38	-0.33	-0.26
	BBH	Temp	-0.25	-0.27	-0.30	-0.32	-0.35	-0.37	-0.39	-0.41	-0.43
		Tide	0.21	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.25
		Solar	-0.11	-0.14	-0.16	-0.18	-0.18	-0.17	-0.15	-0.12	-0.09
2019	AW	Temp	0.51	0.49	0.47	0.45	0.43	0.40	0.38	0.36	0.34
		Tide	0.09	0.05	0.02	-0.01	-0.02	-0.01	0.01	0.04	0.06
		Solar	-0.18	-0.26	-0.31	-0.34	-0.35	-0.33	-0.29	-0.23	-0.15
	BBH	Temp	0.04	0.01	-0.02	-0.05	-0.08	-0.12	-0.16	-0.19	-0.21
		Tide	-0.12	-0.15	-0.17	-0.19	-0.19	-0.18	-0.18	-0.17	-0.17
		Solar	-0.11	-0.21	-0.30	-0.37	-0.42	-0.44	-0.44	-0.41	-0.36