Supplementary Table 2. Chi-squared value, degrees of freedom, and p-value for fitted generalized linear mixed models with fixed effects of body length (length), monthly SST (SST), season, sex, and year from 1986 -2016. Models were run for all individuals (n=534), young individuals (less than 10 years old, n=254) and mature individuals (n=280, greater than or equal to 10 years old) and repeated measures for individuals were treated as random effects. Models were selected using Akaike’s Information Criterion correction. Monthly average sea surface temperature (SST) data were extracted using the HadISST Average Sea Surface Temperature dataset.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Variable | X2 | df | p-value |
| All | Length | 5.75 | 1 | 1.65x10-2 |
|  | SST | 20.1 | 3 | 1.61x10-4 |
|  | Season | 240 | 1 | 2.22x10-16 |
|  | Sex | 2.79 | 1 | 9.45x10-2 |
|  | Year | 106 | 28 | 5.10x10-11 |
|  | Monthly SST\*Season | 7.49 | 2 | 2.36x10-2 |
| Young | Length | 100 | 1 | 2.22x10-16 |
|  | SST | 112 | 1 | 3.38x10-4 |
|  | Season | 19.4 | 3 | 2.24x10-4 |
|  | Sex | 3.55 | 1 | 5.96x10-2 |
| Mature | SST | 0.57 | 1 | 0.450 |
|  | Season | 52.5 | 3 | 2.39x10-11 |
|  | Sex | 45.1 | 1 | 1.90x10-11 |
|  | Year | 89.9 | 28 | 2.07x10-8 |