Supplementary Table 1 Correlation and p-values of extended peak seasons starting day and length of extended peak seasons versus environmental factors. Yearly extended periods are the extended peak seasons of the whole year. Bold fonts are significant correlations (with p-value less than or equal to 0.05). Correlations between length of extended peak season and total length of extended seasons with environmental factors with all environmental variable except for year are Pearson product-moment correlation coefficients; all others are Spearman rank coefficients. Start day of extended peak seasons and length of extended peak seasons are based on N = 30 for DGS; N = 15 for DGN. Start day of first extended season and total length of extended season are based on N = 14 for DGS; N = 7 for DGN.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | DGS | | | | DGN | | | |
| Start day of extended peak season | | Length of extended peak season | | Start day of extended peak season | | Length of extended peak season | |
| Correlation | p-value | Correlation | p-value | Correlation | p-value | Correlation | p-value |
| Mean SST of corresponding extended peak season | **0.46** | **0.009** | 0.11 | 0.58 | 0.06 | 0.82 | -0.16 | 0.58 |
| Minimum SST of corresponding extended peak season | **0.45** | **0.01** | -0.15 | 0.44 | -0.002 | 0.99 | -0.27 | 0.33 |
| Yearly mean SST | -0.10 | 0.60 | 0.35 | 0.06 | -0.51 | 0.85 | 0.05 | 0.87 |
| Mean chlorophyll-a concentration of corresponding peak season | **-0.52** | **0.003** | 0.05 | 0.80 | -0.14 | 0.61 | 0.0001 | 0.9997 |
| Yearly mean chlorophyll-a | -0.02 | 0.90 | -0.28 | 0.14 | -0.07 | 0.79 | 0.03 | 0.90 |
|  | Start day of **first extended peak season** | | Total length of extended peak season | | Start day of **first extended peak season** | | Total length of extended peak season | |
| Correlation | p-value | Correlation | p-value | Correlation | p-value | Correlation | p-value |
| Year | **-0.53** | **0.05** | **0.82** | **3.96E-05** | -0.45 | 0.31 | 0.34 | 0.33 |
| Mean SST of corresponding **yearly extended peak season** | -0.004 | 0.99 | 0.32 | 0.27 | -0.2 | 0.67 | 0.15 | 0.75 |
| Minimum SST of corresponding **yearly extended peak season** | 0.17 | 0.57 | 0.02 | 0.93 | -0.55 | 0.21 | 0.05 | 0.91 |
| Yearly mean SST | -0.16 | 0.58 | 0.41 | 0.14 | -0.44 | 0.33 | 0.08 | 0.87 |
| Mean chlorophyll-a concentration of **yearly corresponding peak season** | -0.07 | 0.82 | -0.25 | 0.38 | 0.23 | 0.61 | -0.41 | 0.36 |
| Yearly mean chlorophyll-a | 0.40 | 0.15 | **-0.54** | **0.05** | 0.20 | 0.67 | -0.21 | 0.66 |