**Table S1.** Sens slopes on all the computed climatic variables for Mohonk Lake. We computed sens slopes for all monthly and seasonal ENSO and NAO variables, but all sens slope p-values were > 0.05 and therefore not printed in this table.  
\*\*\* p < 0.001; \*\* p < 0.01; \* p < 0.05.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Climatic variable** | **p-value** | **Slope** | **Intercept** | **z-statistic** |
| Global temp. anomaly (°C) | <0.001\*\*\* | 0.0112 | -21.8 | 9.93 |
| Date of maximum snowfall | 0.8183 | 0.167 | -186 | 0.23 |
| Maximum snow depth (mm) | 0.7162 | -2.21 | 4.87e+03 | -0.363 |
| Sept. cumulative snow (mm) | 1 | 0 | 0 | 0 |
| Sept.-Nov. cumulative rain (mm) | 0.114 | 0.865 | -1.4e+03 | 1.58 |
| Sept.-Nov. number of days mean daily air T below zero | 0.0558 | -0.0213 | 46.3 | -1.91 |
| Sept.-Nov. number of days min daily air T below zero | 0.18 | -0.0286 | 69.9 | -1.34 |
| Sept.-Oct. number of days mean daily air T below zero | 0.0311\* | 0 | 0 | -2.16 |
| Sept.-Oct. number of days min daily air T below zero | 0.2535 | 0 | 1.5 | -1.14 |
| Sept. % of precipitation as rain | 1 | 0 | 100 | 0 |
| Sept. number of days min daily air T below zero | 1 | 0 | 0 | 0 |
| Sept.-Nov. cumulative mean daily air temp. (°C) | 0.0011\*\* | 1.34 | -1.64e+03 | 3.27 |
| Sept.-Nov. cumulative snow (mm) | 0.2629 | -0.0577 | 171 | -1.12 |
| Sept.-Oct. cumulative mean daily air temp. (°C) | 0.0006\*\*\* | 0.972 | -1.06e+03 | 3.41 |
| Sept.-Oct. cumulative rain (mm) | 0.0203\* | 0.977 | -1.73e+03 | 2.32 |
| Sept.-Oct. cumulative snow (mm) | 0.272 | 0 | 0 | 1.1 |
| Sept. cumulative mean daily air temp. (°C) | 0.0001\*\*\* | 0.644 | -760 | 3.9 |
| Sept. cumulative rain (mm) | 0.2184 | 0.371 | -631 | 1.23 |
| Sept. number of days mean daily air T below zero | 1 | 0 | 0 | 0 |
| Oct cumulative mean daily air temp. (°C) | 0.1013 | 0.317 | -282 | 1.64 |
| Oct number of days mean daily air T below zero | 0.0203\* | 0 | 0 | -2.32 |
| Oct.-Dec cumulative mean daily air temp. (°C) | 0.0033\*\* | 1.41 | -2.34e+03 | 2.93 |
| Oct.-Dec. cumulative rain (mm) | 0.0287\* | 0.813 | -1.3e+03 | 2.19 |
| Oct.-Dec. cumulative snow (mm) | 0.399 | 0.798 | -1.21e+03 | 0.843 |
| Oct.-Dec. number of days mean daily air T below zero | 0.0025\*\* | -0.0882 | 198 | -3.02 |
| Oct.-Dec. number of days min daily air T below zero | 0.0574 | -0.0519 | 143 | -1.9 |
| Oct.-Nov cumulative mean daily air temp. (°C) | 0.0365\* | 0.675 | -839 | 2.09 |
| Oct.-Nov. cumulative rain (mm) | 0.0435\* | 0.539 | -857 | 2.02 |
| Oct.-Nov. number of days mean daily air T below zero | 0.0511 | -0.0204 | 44.7 | -1.95 |
| Oct.-Nov. number of days min daily air T below zero | 0.1596 | -0.0286 | 69.8 | -1.41 |
| Oct. % of precipitation as rain | 0.282 | 0 | 100 | -1.08 |
| Oct. cumulative rain (mm) | 0.0065\*\* | 0.629 | -1.15e+03 | 2.72 |
| Oct. cumulative snow (mm) | 0.2791 | 0 | 0 | 1.08 |
| Oct. number of days min daily air T below zero | 0.1721 | 0 | 1 | -1.37 |
| Oct.-Nov. cumulative snow (mm) | 0.1781 | -0.127 | 304 | -1.35 |
| Nov cumulative mean daily air temp. (°C) | 0.2223 | 0.302 | -451 | 1.22 |
| Nov. % of precipitation as rain | 0.0396\* | 0.0934 | -115 | 2.06 |
| Nov. cumulative rain (mm) | 0.4715 | -0.136 | 369 | -0.72 |
| Nov. cumulative snow (mm) | 0.0551 | -0.141 | 329 | -1.92 |
| Nov. number of days mean daily air T below zero | 0.0709 | -0.0189 | 41.6 | -1.81 |
| Nov. number of days min daily air T below zero | 0.3221 | -0.0182 | 48.1 | -0.99 |
| Dec. % of precipitation as rain | 1 | 0 | 26.7 | 0 |
| Dec. cumulative rain (mm) | 0.0735 | 0.321 | -530 | 1.79 |
| Dec. cumulative snow (mm) | 0.2248 | 1.12 | -1.94e+03 | 1.21 |
| Maximum observed air temperature 17 days after 0 °C air temperature isotherm threshold | 0.02\* | 0.214 | -330 | 2.25 |
| Dec. number of days mean daily air T below zero | 0.0181\* | -0.0588 | 134 | -2.36 |
| Dec. number of days min daily air T below zero | 0.176 | -0.0196 | 64.2 | -1.35 |
| Dec. cumulative mean daily air temp. (°C) | 0.0046\*\* | 0.78 | -1.58e+03 | 2.84 |
| Jan cumulative rain (mm) | 0.9045 | 0.0201 | 41.5 | 0.12 |
| Jan-Mar cumulative mean daily air temp. (°C) | 0.0183\* | 1.39 | -2.9e+03 | 2.36 |
| Jan-Mar. cumulative rain (mm) | 0.3423 | 0.326 | -378 | 0.95 |
| Jan-Mar. cumulative snow (mm) | 0.8747 | -0.207 | 1.41e+03 | -0.158 |
| Jan. % of precipitation as rain | 0.959 | 0.0015 | 18.1 | 0.0514 |
| Jan. cumulative mean daily air temp. (°C) | 0.624 | 0.198 | -513 | 0.49 |
| Jan. cumulative snow (mm) | 0.9317 | 0 | 343 | -0.0857 |
| Jan. number of days mean daily air T below zero | 0.6182 | 0 | 24 | -0.498 |
| Jan. number of days min daily air T below zero | 0.1583 | 0 | 29 | -1.41 |
| Feb cumulative mean daily air temp. (°C) | 0.0268\* | 0.599 | -1.26e+03 | 2.21 |
| Feb-Apr. cumulative mean daily air temp. (°C) | 0.0001\*\*\* | 2.34 | -4.39e+03 | 4.03 |
| Feb-Apr. cumulative rain (mm) | 0.6143 | 0.155 | -36.7 | 0.504 |
| Feb-Apr. cumulative snow (mm) | 0.6858 | -0.714 | 2.12e+03 | -0.405 |
| Feb-Mar cumulative mean daily air temp. (°C) | 0.0021\*\* | 1.43 | -2.85e+03 | 3.07 |
| Feb-Mar. cumulative rain (mm) | 0.6264 | 0.121 | -62.6 | 0.487 |
| Feb-Mar. cumulative snow (mm) | 0.8855 | -0.186 | 1.01e+03 | -0.144 |
| Feb-Mar. number of days mean daily air T above zero | 0.0011\*\* | 0.0968 | -162 | 3.27 |
| Feb-Mar. number of days min daily air T above zero | 0.0003\*\*\* | 0.087 | -161 | 3.63 |
| Feb. % of precipitation as rain | 0.6708 | 0.016 | -13.7 | 0.425 |
| Feb. cumulative rain (mm) | 0.5928 | 0.0635 | -49.8 | 0.535 |
| Feb. cumulative snow (mm) | 0.6808 | -0.341 | 1.01e+03 | -0.411 |
| Feb. number of days mean daily air T below zero | 0.0496\* | -0.037 | 92.7 | -1.96 |
| Feb. number of days min daily air T below zero | 0.0036\*\* | -0.0263 | 77.8 | -2.91 |
| Mar-Apr cumulative mean daily air temp. (°C) | 0.0002\*\*\* | 1.59 | -2.82e+03 | 3.79 |
| Mar-Apr. cumulative rain (mm) | 0.7865 | 0.0889 | 16.5 | 0.271 |
| Mar-Apr. cumulative snow (mm) | 0.2235 | -0.998 | 2.3e+03 | -1.22 |
| Mar-Apr. number of days mean daily air T above zero | 0.0029\*\* | 0.0625 | -73.9 | 2.98 |
| Mar-Apr. number of days min daily air T above zero | 0.0007\*\*\* | 0.0923 | -150 | 3.4 |
| Mar. % of precipitation as rain | 0.3528 | 0.0534 | -79.9 | 0.929 |
| Average observed air temperature 29 days after the spring 4℃ air temperature isotherm | 0.001\*\*\* | -0.143 | 474 | -3.24 |
| Mar. cumulative mean daily air temp. (°C) | 0.0042\*\* | 0.833 | -1.59e+03 | 2.86 |
| Mar. cumulative rain (mm) | 0.5833 | 0.0939 | -91.4 | 0.548 |
| Mar. cumulative snow (mm) | 0.5213 | -0.468 | 1.2e+03 | -0.641 |
| Mar. number of days mean daily air T above zero | 0.0032\*\* | 0.0615 | -102 | 2.95 |
| Mar. number of days mean daily air T below zero | 0.0032\*\* | -0.0615 | 133 | -2.95 |
| Mar. number of days min daily air T above zero | 0.0062\*\* | 0.0545 | -99.4 | 2.73 |
| Mar. number of days min daily air T below zero | 0.0062\*\* | -0.0545 | 130 | -2.73 |
| Apr. % of precipitation as rain | 0.1598 | 0 | 92.9 | 1.41 |
| Apr. cumulative mean daily air temp. (°C) | 0.0002\*\*\* | 0.84 | -1.4e+03 | 3.69 |
| Apr. cumulative rain (mm) | 0.7112 | -0.0739 | 249 | -0.37 |
| Apr. cumulative snow (mm) | 0.1652 | 0 | 7.62 | -1.39 |
| Apr. number of days mean daily air T below zero | 0.1745 | 0 | 0 | -1.36 |
| Apr. number of days min daily air T below zero | 0.0034\*\* | -0.04 | 85.1 | -2.93 |