Table S4. Correlation analysis between longitude and environmental factors for the 25 populations of *A. sachalinensis*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *r* | Longitude | WI | CI | TMC | PRS | PRW | MSD | WinSR | SprSR | SumSR | AutSR |  |  |  |
| *p* |  |  |  | *r* | |
| Longitude | | – | -0.29 | -0.22 | -0.37 | -0.19 | -0.62 | -0.53 | 0.57 | -0.06 | 0.10 | -0.39 |  |  | 1.0 | |
| WI | | 0.1582 | – | 0.90 | 0.76 | -0.35 | 0.17 | -0.19 | -0.31 | -0.73 | -0.28 | 0.38 |  |  | 0.8 | |
| CI | | 0.2979 | **<0.0001** | – | 0.93 | -0.14 | 0.31 | -0.09 | -0.19 | -0.73 | -0.43 | 0.34 |  |  | 0.6 | |
| TMC | | 0.0668 | **<0.0001** | **<0.0001** | – | 0.04 | 0.53 | 0.14 | -0.30 | -0.56 | -0.35 | 0.32 |  |  | 0.4 | |
| PRS | | 0.3556 | 0.0829 | 0.4906 | 0.8471 | – | 0.38 | 0.27 | 0.28 | 0.26 | -0.41 | -0.43 |  |  | 0.2 | |
| PRW | | **0.0009** | 0.4221 | 0.1344 | 0.0068 | 0.0594 | – | 0.71 | -0.54 | 0.03 | -0.01 | 0.14 |  |  | 0.0 | |
| MSD | | 0.0070 | 0.3623 | 0.6721 | 0.5089 | 0.1893 | 0.0001 | – | -0.54 | 0.37 | 0.35 | 0.14 |  |  | -0.2 | |
| WinSR | | 0.0028 | 0.1287 | 0.3568 | 0.1394 | 0.1692 | 0.0050 | 0.0054 | – | 0.18 | -0.36 | -0.29 |  |  | -0.4 | |
| SprSR | | 0.7748 | **<0.0001** | **<0.0001** | 0.0033 | 0.2156 | 0.8799 | 0.0648 | 0.3767 | – | 0.51 | 0.06 |  |  | -0.6 | |
| SumSR | | 0.6381 | 0.1693 | 0.0313 | 0.0818 | 0.0442 | 0.9563 | 0.0837 | 0.0750 | 0.0095 | – | 0.30 |  |  | -0.8 | |
| AutSR | | 0.0529 | 0.0604 | 0.1007 | 0.1160 | 0.0317 | 0.5100 | 0.4958 | 0.1646 | 0.7778 | 0.1502 | – |  |  | -1.0 | |

Upper triangle, regression coefficient; lower triangle, *p*-value; WI, warmth index; CI, cold index; TMC, mean minimum temperature of the coldest month; PRS, precipitation in summer (May to September); PRW, precipitation in winter (October to April); MSD, maximum snow depth; WinSR, solar radiation in winter (October to April); SprSR, solar radiation in spring (May); SumSR, solar radiation in summer (June to August); AutSR, solar radiation in autumn (September). Bold font in *p*-value indicates significance after Bonferroni correction (*p* < 0.00091).