**Additional file 3** Environmental variables for each location from the WorldClim database.

|  |  |
| --- | --- |
| Population no. and code |  Environmental variables |
| Bio1 | Bio2 | Bio3 | Bio4 | Bio5 | Bio6 | Bio7 | Bio8 | Bio9 | Bio10 | Bio11 | Bio12 | Bio13 | Bio14 | Bio15 | Bio16 | Bio17 | Bio18 | Bio19 |
| 1.SXNN | 9.0  | 12.7  | 31.1  | 1030.5  | 27.9 | -12.9 | 40.8 | 19.5  | -4.8  | 21.1  | -4.8  | 646 | 174 | 6 | 103.0  | 398 | 20 | 393 | 20 |
| 2.GSLG | 11.4  | 8.9  | 27.4  | 853.6  | 27.7 | -4.9 | 32.6 | 20.5  | 0.4  | 21.8  | 0.4  | 704 | 126 | 5 | 82.3  | 377 | 18 | 339 | 18 |
| 3.SXLJ | 10.1  | 9.0  | 26.1  | 924.3  | 26.6 | -7.7 | 34.3 | 20.0  | -1.7  | 21.4  | -1.7  | 734 | 144 | 9 | 73.2  | 368 | 31 | 337 | 31 |
| 4.SXWZ | 14.0  | 8.8  | 27.7  | 853.1  | 29.8 | -2 | 31.8 | 23.3  | 3.2  | 24.4  | 3.2  | 891 | 164 | 5 | 78.6  | 461 | 22 | 393 | 22 |
| 5.SXWJ | 7.7  | 13.0  | 30.9  | 1074.6  | 27.2 | -14.9 | 42.1 | 18.7  | -6.3  | 20.3  | -6.3  | 415 | 125 | 2 | 114.1  | 273 | 9 | 265 | 9 |
| 6.HNSN | 11.2  | 11.4  | 30.1  | 988.3  | 28.9 | -8.8 | 37.7 | 21.4  | -1.8  | 23.0  | -1.8  | 659 | 157 | 8 | 87.2  | 369 | 28 | 358 | 28 |
| 7.SXWL | 10.1  | 9.4  | 26.5  | 963.6  | 27 | -8.6 | 35.6 | 20.3  | -2.3  | 21.8  | -2.3  | 631 | 128 | 8 | 77.4  | 329 | 26 | 304 | 26 |
| 8.GSMJ | 9.0  | 9.3  | 28.2  | 850.0  | 25.4 | -7.6 | 33 | 18.1  | -2.0  | 19.2  | -2.0  | 649 | 120 | 4 | 83.0  | 346 | 15 | 315 | 15 |
| 9.SCGP | 14.3  | 8.8  | 30.4  | 726.9  | 28.5 | -0.6 | 29.1 | 22.1  | 4.8  | 23.0  | 4.8  | 868 | 195 | 5 | 96.2  | 515 | 18 | 494 | 18 |
| 10.HBLJ | 13.7  | 9.3  | 28.2  | 876.7  | 29.6 | -3.3 | 32.9 | 23.4  | 2.6  | 24.4  | 2.6  | 972 | 175 | 20 | 64.4  | 449 | 71 | 440 | 71 |