**Supplementary information 1**

**Performance and tuning test between inverse distance weighting and kriging algorithms**

A performance and tuning test was performed between inverse distance weighting (IDW) and kriging interpolation algorithms. This supported the choice of IDW over kriging, as well as the number nearest values of each focal cell and the inverse distance power (Assis *et al.*, 2017). The test cross-validated the interpolation performance of 104 temperature records using the mean absolute error (MAE) estimated for both IDW and kriging along a span of nearest neighboring values between 2 and 25. The inverse distance power of IDW was further set to 2 and 3.

A graph with lines and numbers

Description automatically generated

Figure 1. Variation of performance (mean absolute error; MAE) as a function of interpolation algorithm (IDW and kriging), number of nearest neighboring values and inverse distance power.

The highest performance in interpolation (i.e., minimal error in cross-validation) was achieved with IDW using 8 nearest neighboring values and an inverse distance power of 2 (Figure 1). This reduced the mean absolute error of temperature down to 0.168-3 ºC. The optimization of Kriging resulted in a mean absolute error of 0.261-3 ºC.