

## Appendix I

Table S1. Kriging hold-out validation summary showing model fit for heat index across Indian study sites

Prediction error measures kriging	Efficiency	Prediction error	
Study site	$R^2$	RMSE	MAE
Delhi	0.962	0.006	0.005
Haryana	0.990	0.010	0.008
Tamil Nadu	0.759	0.010	0.007
Andhra Pradesh	0.990	0.085	0.067

$R^2$  = coefficient of determination, RMSE = root mean square error, MAE = mean absolute error

Table S2. K-fold cross validation Summary of the performance of interpolation methods to predict heat index across Andhra Pradesh

Interpolation method	Efficiency	Prediction error	
	$R^2$	RMSE	MAE
IDW	0.991	0.089	0.070
Kriging	0.990	0.085	0.067
EBK	0.906	0.277	0.193

$R^2$  = coefficient of determination, RMSE = root mean square error, MAE = mean absolute error, IDW: inverse distance weighting; EBK: Empirical Bayesian Kriging

Table S3. K-fold cross validation Summary of the performance of interpolation methods to predict heat index across Delhi

Interpolation method	Efficiency	Error	
	$R^2$	RMSE	MAE
IDW	0.980	0.004	0.002
Kriging	0.962	0.006	0.005

EBK	0.981	0.007	0.008
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$R^2$  = coefficient of determination, RMSE = root mean square error, MAE = mean absolute error, IDW: inverse distance weighting; EBK: Empirical Bayesian Kriging

Table S4. K-fold cross validation Summary of the performance of interpolation methods to predict heat index across Tamil Nadu

Interpolation method	Efficiency	Error	
	$R^2$	RMSE	MAE
IDW	0.664	0.016	0.011
Kriging	0.759	0.010	0.007
EBK	0.702	0.024	0.012

$R^2$  = coefficient of determination, RMSE = root mean square error, MAE = mean absolute error, IDW: inverse distance weighting; EBK: Empirical Bayesian Kriging

Table S5. K-fold cross validation Summary of the performance of interpolation methods to predict heat index across Haryana

Interpolation method	Efficiency	Error	
	$R^2$	RMSE	MAE
IDW	0.986	0.010	0.008
Kriging	0.990	0.010	0.008
EBK	0.437	0.068	0.050

$R^2$  = coefficient of determination, RMSE = root mean square error, MAE = mean absolute error, IDW: inverse distance weighting; EBK: Empirical Bayesian Kriging