nature climate change

Analysis

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Greater evolutionary divergence of thermal limits within marine than terrestrial species

In the format provided by the authors and unedited

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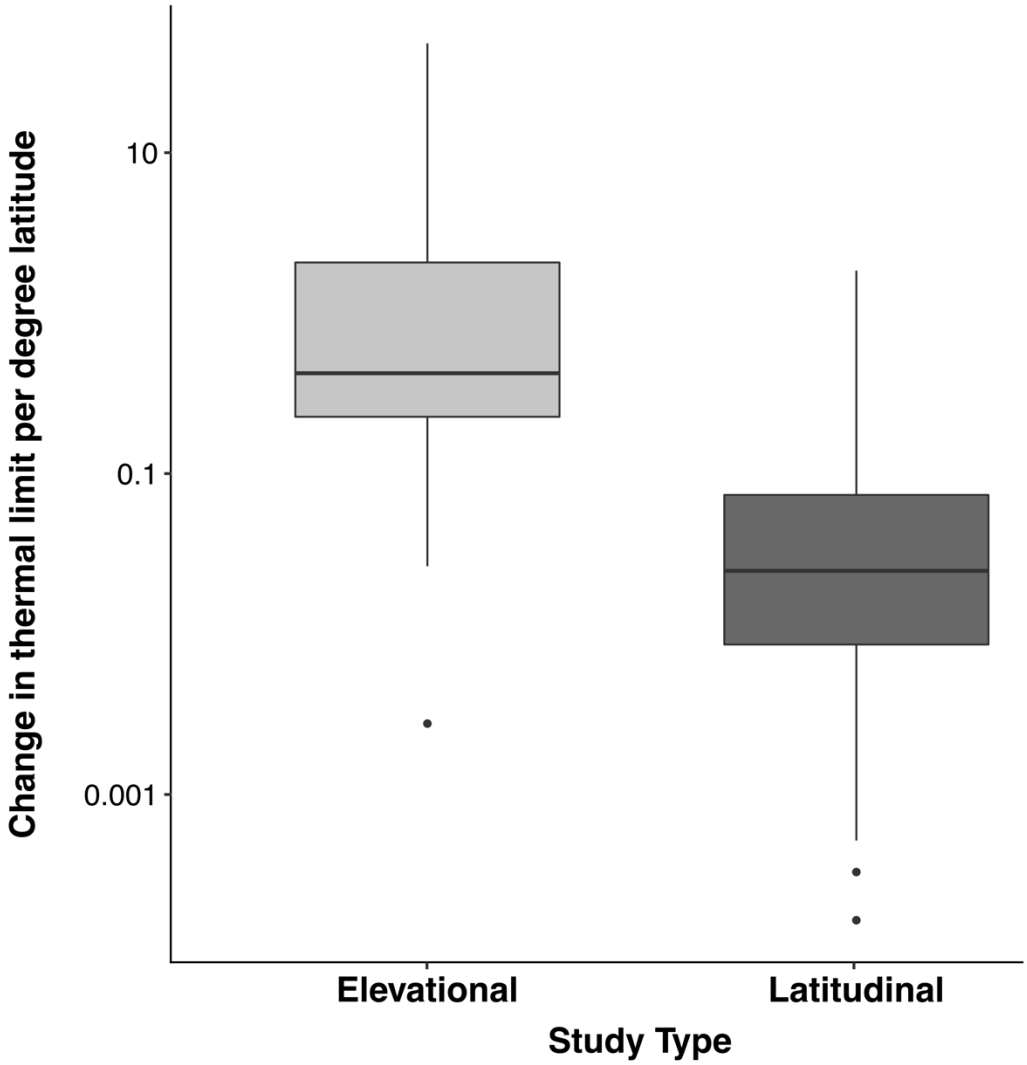
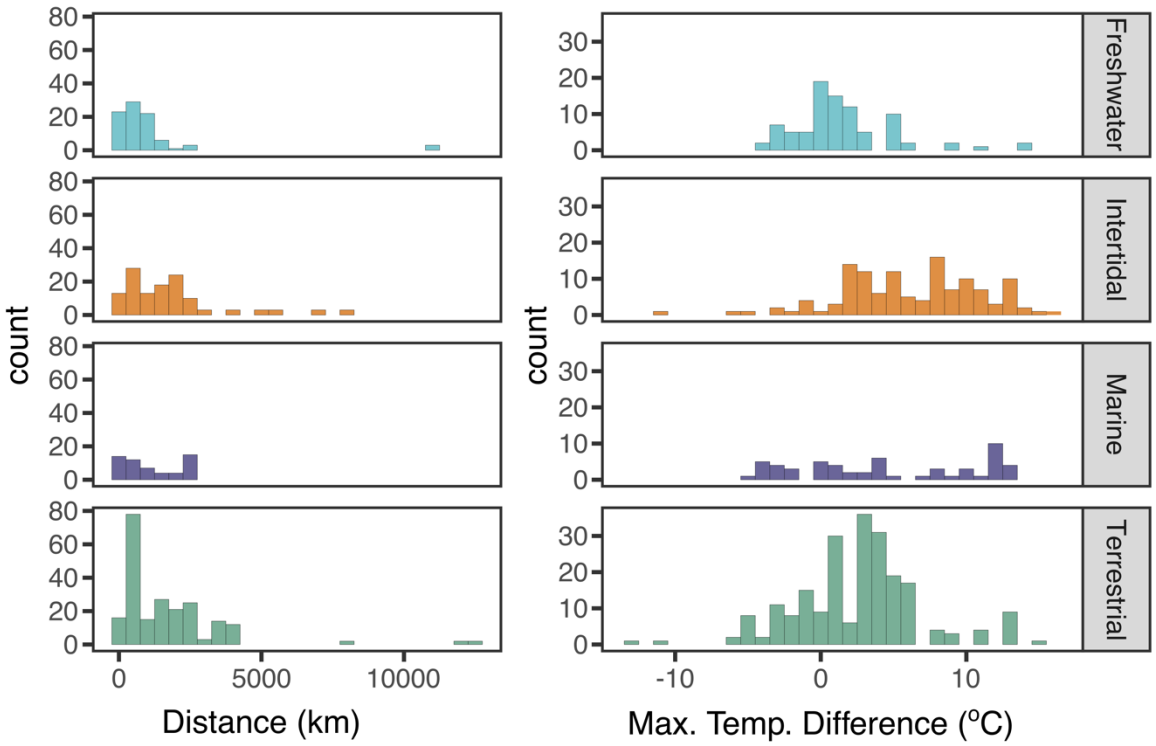
Supplementary Information

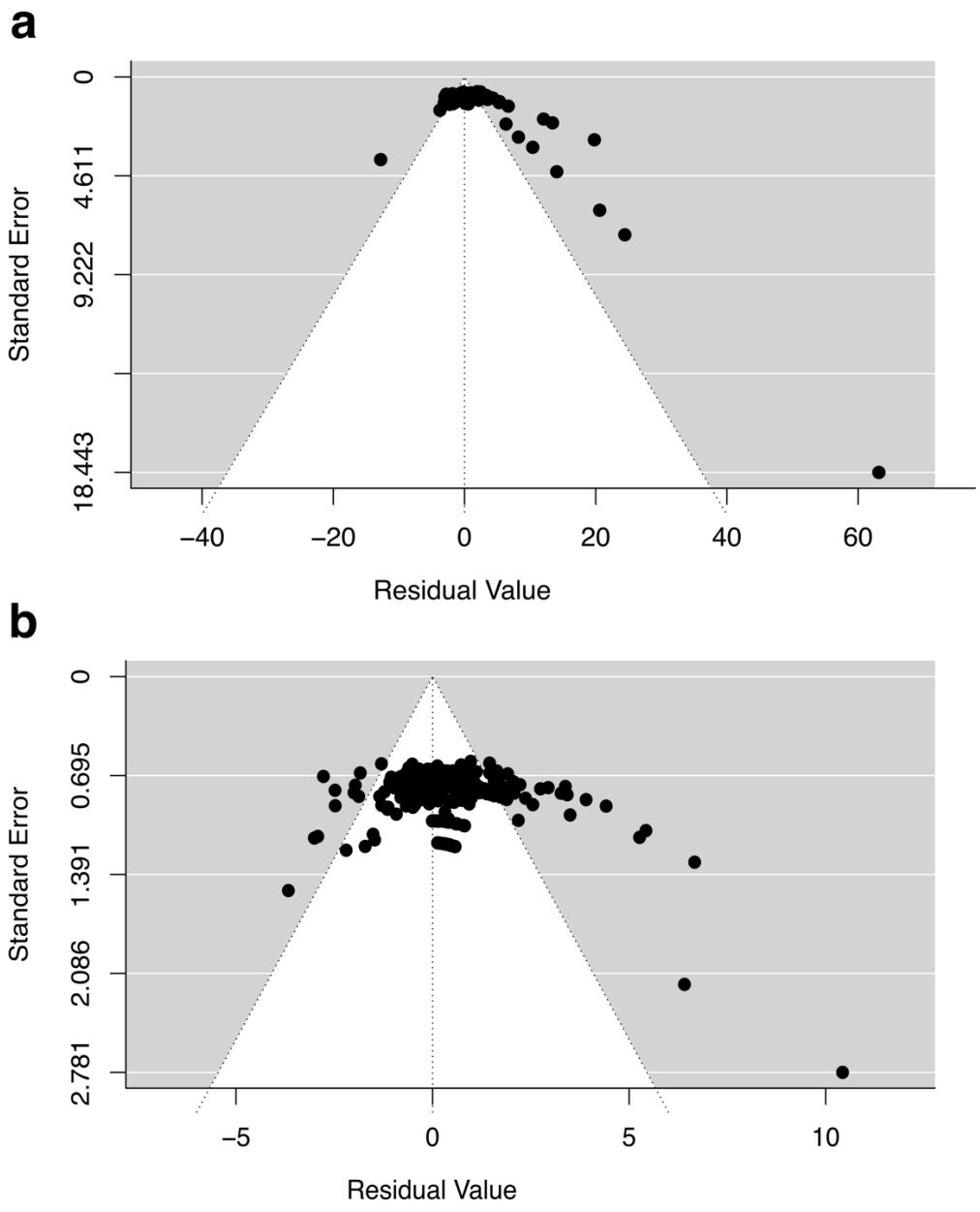
Supplementary Fig. 1 | Boxplots comparing latitudinal slopes (change in upper thermal limit per degree latitude) of terrestrial populations from studies examining altitudinal or elevational gradients (n = 47) compared with studies examining latitudinal gradients (n = 44). The box plot's horizontal line represents the median, while box limits illustrate the first and third quartiles. Whiskers extend from the box limits to the minimum and maximum values (not including outlier values that are more than 1.5 times the interquartile range from the box limits). Note the log-transformed y-axis.



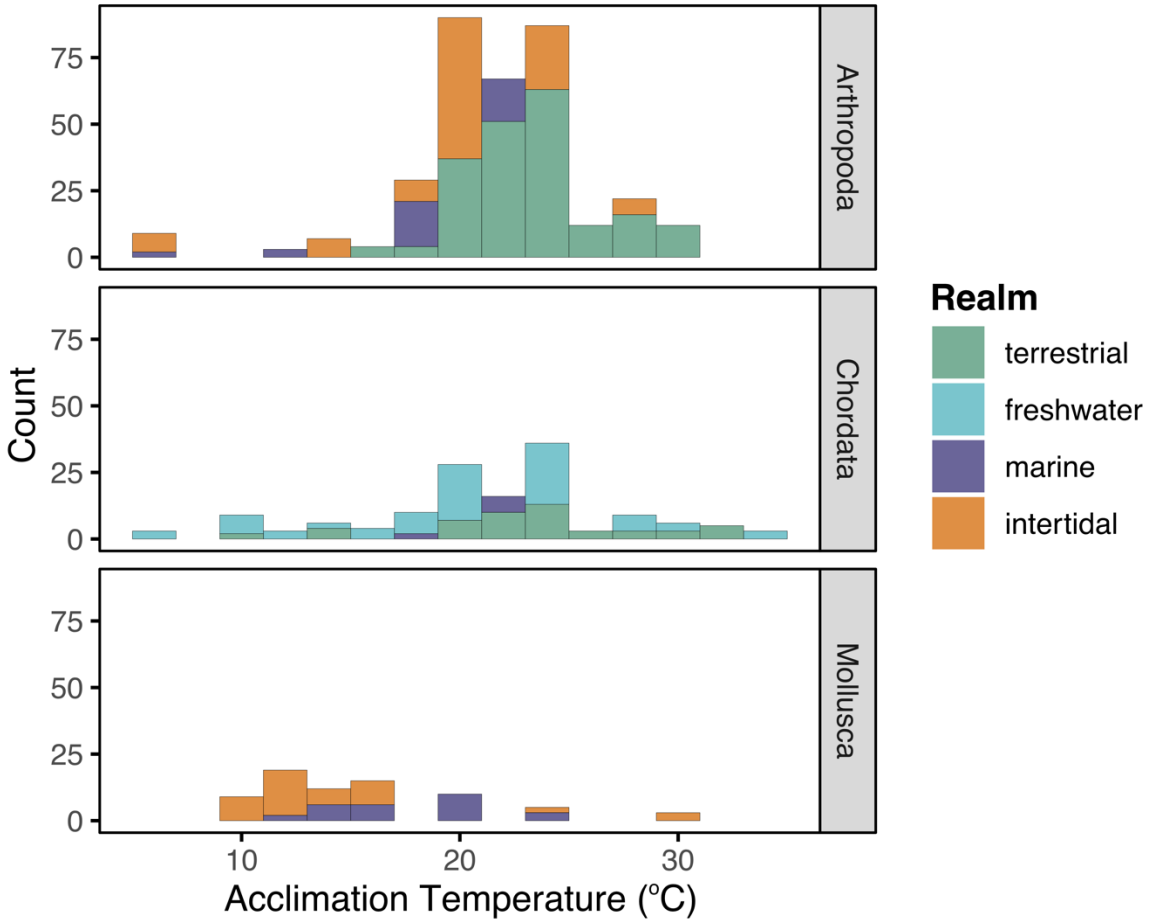
Supplementary Fig. 2 | Distributions of spatial and environmental gradients examined by the studies included in our dataset. Spatial gradients are represented by the distribution of distance between population pairs (in kilometer). Environmental gradients are represented by the difference in maximum temperature between sites (in degrees C). There are similar ranges in both forms of gradients across the four realms.



Supplementary Fig. 3 | Funnel plots depicting effect sizes and precision (standard error) from the metaregression model for the full data set (**a**) and for when effect sizes with absolute values greater than 10 are excluded from the model (**b**).



Supplementary Fig. 4 | Acclimation temperatures used in the studies included in our data set for three taxa abundant across realms (Arthropods, Chordates, and Mollusks). There are no large differences in the acclimation temperatures or the distribution of temperatures across realms or taxa.



Supplementary Fig. 5 | Illustration of the two approaches used to estimate thermal tolerance in the field. Figure is for a hypothetical study that measures thermal tolerance in three populations. When a study exposes each of the populations to two acclimation temperatures (**a**), the resulting reaction norms are used to adjust thermal tolerance to reflect the mean temperature at the collection location for each population. When a study does not expose populations to multiple acclimation temperatures (**b**), Acclimation response ratio (ARR) is predicted for each population based on its thermal tolerance and the ecosystem. This ARR is then used to adjust thermal tolerance based on the difference between acclimation temperature and the mean temperature of each population's collection location.