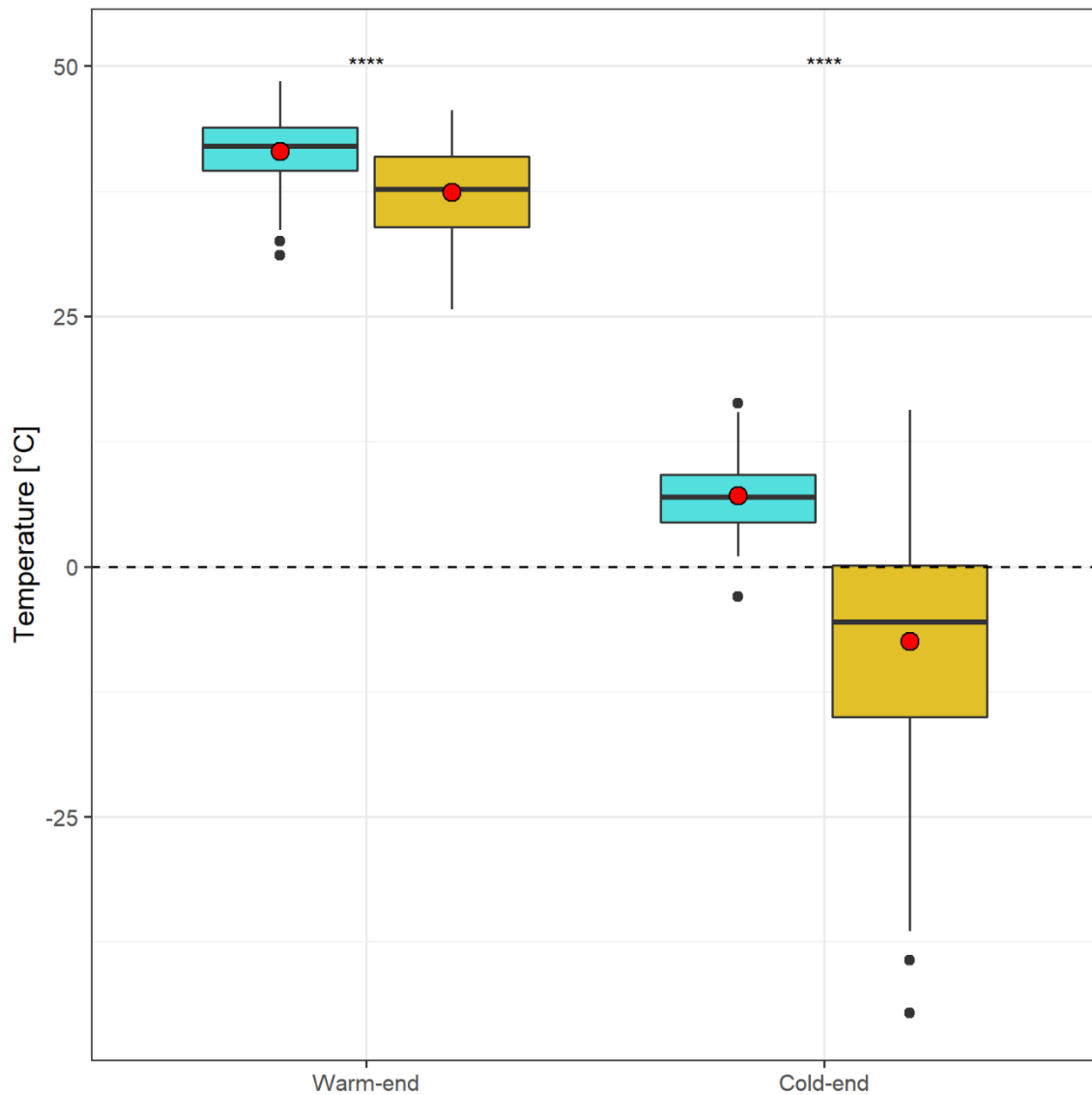


## Ecosphere

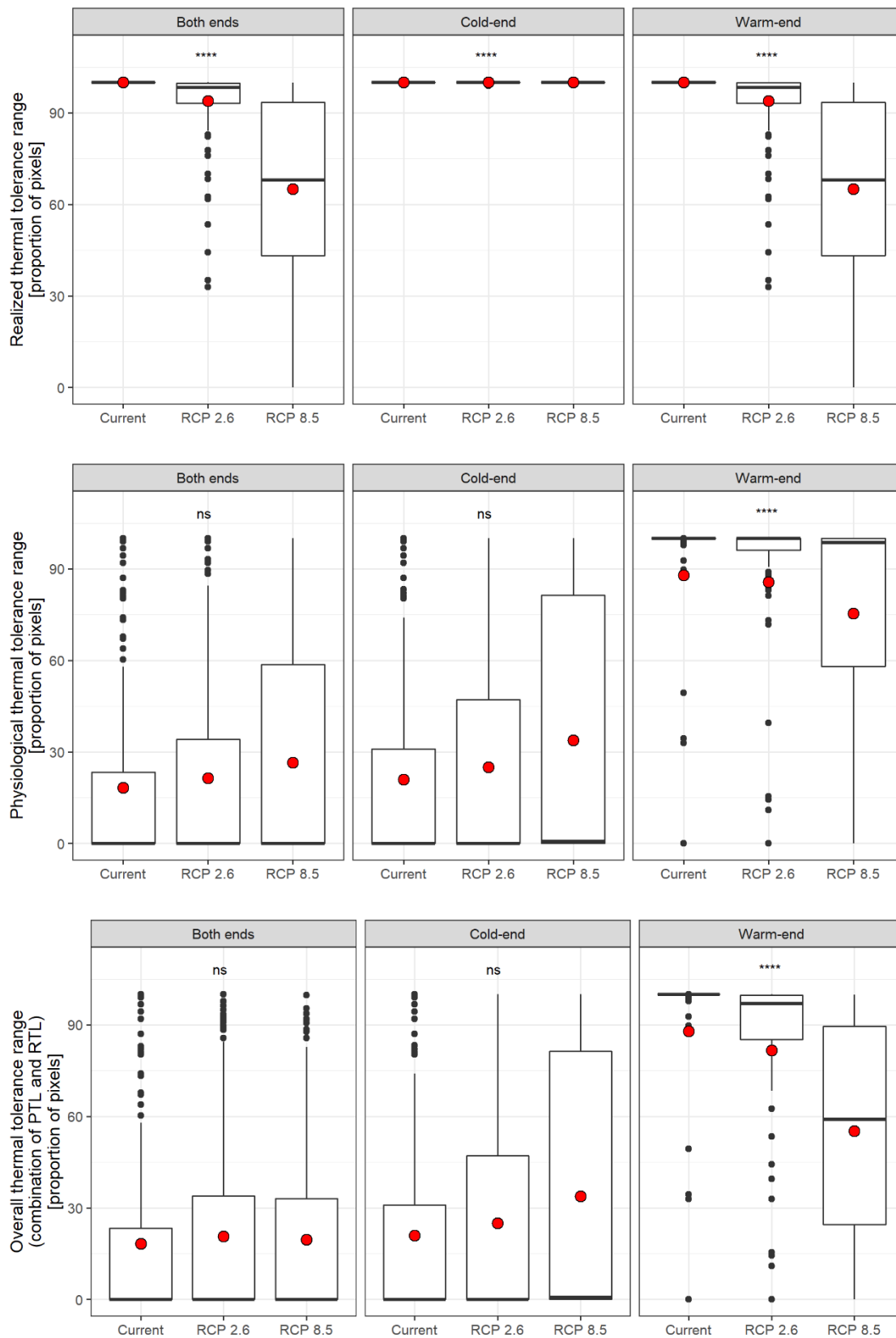
A cautionary message on combining physiological thermal limits with macroclimatic data to  
predict species distribution

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### **Appendix S1**



**Figure S1. Comparison of species' physiological thermal limits (PTL) and realized thermal limits (RTL) at both the cold and warm-ends of the thermal gradient. RTL were estimated from GBIF occurrences projected on 2.5' resolution rasters (5' for marine species). For the boxplots, the centre line represents the median, the box limits define the upper and lower quartiles, the whiskers define 1.5× the interquartile range and the points represent outliers. NS: Not Significant; \*:  $p < 0.5$ ; \*\*:  $p < 0.1$ ; \*\*\*:  $p < 0.001$ .**



**Figure S2. Estimated thermally tolerable geographic ranges.** Proportion of pixels within species IUCN geographic ranges classified as suitable according to realized thermal limits

(RTL), physiological thermal limits (PTL), and both (RTL-PTL) across all species under the three projections (current, RCP 2.6, RCP 8.5), considering the cold-end (left panels), the warm-end (middle panels) and both ends (right panels) of the thermal gradient. The realized thermal tolerance geographic range was estimated using GBIF occurrence data. For the boxplots, the centre line represents the median, the box limits define the upper and lower quartiles, the whiskers define  $1.5\times$  the interquartile range and the points represent outliers. NS: Not Significant; \*:  $p<0.5$ ; \*\*:  $p<0.1$ ; \*\*\*:  $p<0.001$ ; \*\*\*\*:  $p<0.0001$ .