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Sunday J, Bates A, Dulvy N.
Nat Clim Chang. 2012 May 23

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New Finding

DOI: 10.3410/f.717962852.793464854

This is a very comprehensive study of the effects of temperature on the latitudinal distribution of animals on land and in the sea. The study only considers ectotherms, as they cannot regulate their internal temperature. Interestingly, there is a fundamental difference between the two realms: marine species fill their thermal niches, i.e. their distribution is tied closely to their temperature tolerance, whereas land species tend to 'underfill' their equator-bound ranges, such that there is a thermal buffer to warming temperature. In contrast, they 'overfill' their poleward range, often extending into regions beyond their thermal tolerance. Behavioral mechanisms like hibernation may explain the latter, whereas the reasons for the equator-ward underfilling are less clear. In any case this observation, if general, would mean that the biogeographical effects of climate change should be more easily predicted in the ocean (at least for individual species) than on land. Empirical data on observed range shifts seem to support this assertion.

Disclosures
None declared

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