ECOLOGICAL IMPACTS

Evidence for consistency

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There are three methods commonly used to estimate the effect of warming on plant communities; manipulative warming experiments, monitoring, and space-for-time substitution. An understanding of the consistency of the results from these different approaches is vital when attempting to generalize relationships and project future vegetation changes in response to climate change.

Sarah Elmendorf, from the University of Colorado, and co-workers compared the three approaches for tundra plant community composition. They find agreement in the direction of change — increasing species abundance with warming — but that the magnitude of change differed significantly between approaches. In particular, space-for-time substitution displayed a much stronger response than the other two, which were broadly similar. These results suggest that *in situ* experimental warming and monitoring approaches are best suited for projecting the impacts of climate change on vegetation and associated ecological services over the coming decades. *AB*

PUBLIC PERCEPTION

A Twitter thermometer

Glob. Environ. Change **30,** 92–100 (2015)

Maintaining public interest in environmental issues is important if solutions are to be to found, funded and ultimately implemented. Understanding the factors that influence public attention to climate change is therefore valuable information for those working towards policy solutions. The proliferation of social media provides one means to examine these influences.

In a US-based study, Andrei Kirilenkoa, from the University of North Dakota, and co-workers use the volume of Twitter messages containing the phrases "climate change" and "global warming" as an indicator of public attention to the issue.

They find that both the mass media and temperature variables strongly influence public interest in climate change, as indicated by tweeting rate. They also investigate the causal relationships, finding no support for the hypothesis that the media influences the relationship between local weather experience and climate change tweets. These findings support the idea that the public connects extreme temperature events to climate change. *AB*

REGIONAL CLIMATE

Local or foreign influences

Clim. Dynam. http://doi.org/x6r (2015)

Local climate is influenced by regional radiative forcing as well as global circulation effects such as the introduction of air masses from other regions. Climate change will impact on both of these processes, so understanding of how the local and global mechanisms will impact on regional temperature and precipitation is needed.

Heiko Paeth and colleagues from the University of Würzburg, Germany, use a global climate model alongside a regional climate model to assess the projected contribution from these two processes to Asian climate change for 2001–2100. To study local effects, they increase greenhouse-gas concentrations in the region with a control situation for the rest of the globe, whereas the global effect study uses a consistently forced global simulation instead.

The authors report that changes in the local radiative forcing result in a minor warming effect (0.5 °C) but minimal changes in precipitation or circulation, but air masses entering the region are responsible for most of the change in temperature (>4 °C) and precipitation (increased wetness). These findings emphasize the need to consider regional climate change within a global context. *BW*

EVOLUTION

Coral diversity

Phil. Trans. R. Soc. B **370,** 20140010 (2015)

DANWEI HUANG

Climate change, alongside human impacts, is increasing the extinction risk of reef corals. A third of reef-building corals are threatened, and the loss of these species would reduce the evolutionary diversity of reefs. To prioritize conservation efforts that would maintain such diversity, information is needed at a regional level.

Danwei Huang, of National University of Singapore, and Kaustuv Roy, of the University of California, San Diego, USA, use two metrics of evolutionary diversity — phylogenetic diversity (representing the amount of evolutionary history present) and phylogenetic species variability (a measure of the level of evolutionary redundancy). Combining these with the geographic distributions of 842 reef-building corals they investigate ecoregions at risk of losing evolutionary diversity.

The two measures give different results on the regional scale, highlighting the need to consider multiple metrics in risk assessments. The authors report that regions that are species-rich are at lower risk of losing a substantial amount of their evolutionary diversity, whilst regions with fewer species are at a higher risk and should be prioritized for conservation. This is counter to current practices, where species-rich areas are often favoured due to the potential loss of a large number of species. *BW*

Written by Alastair Brown and Bronwyn Wake.