

PHENOLOGY

Tracking plant performance

Ecology <http://doi.org/h26> (2012)



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Seasonally earlier life-history events such as leaf and flowering dates are being observed in many plant species, and these are often used as evidence that species are already responding to the rising temperatures associated with anthropogenic climate change. However, there is great variability among species in their phenological sensitivity to temperature, and these differences may be indicative of species' performance under climate change.

Elsa Cleland from the Ecology Behaviour and Evolution Section of the University of California San Diego, US, and co-workers, test this hypothesis by synthesizing results across a number of terrestrial warming experiments where measures of species performance (such as

biomass, percentage cover and number of flowers) are available.

Results indicate that in species whose phenology is advanced with warming their performance also increased, and vice versa. This suggests that species that cannot phenologically 'track' climate may be at increased risk, and that phenological monitoring could provide an important tool for setting future conservation priorities. AB

FORESTRY

REDD costs and uncertainties

Climatic Change <http://doi.org/h25> (2012)

REDD (Reducing Emissions from Deforestation and Forest Degradation) is a mitigation strategy designed to reward countries for reducing deforestation and forest degradation through financial benefit. Although the potential of REDD policies has been widely discussed, the implication of uncertainties and costs involved in estimating forest carbon stock changes are less well explored.

Daniel Plugge from the Institute for World Forestry, University of Hamburg, Germany and co-workers conducted a simulation study for a set of countries that exhibit a range of deforestation rates in order to investigate the influence of carbon estimation costs and uncertainties on REDD policy efficacy in these situations.

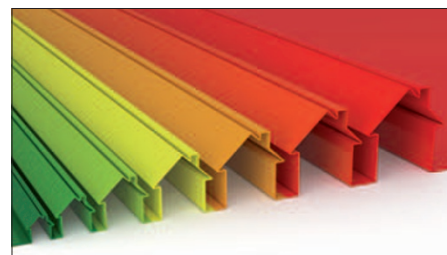
Their experiments indicate that the potential to generate benefits from REDD is highly dependant on the magnitude of the total error, whereas assessment costs and the price of carbon credits

were found to play only a minor role. Consequently, total errors under current monitoring systems are only sufficient to gain revenues from REDD-regimes under high deforestation rates, and the authors argue that REDD is therefore not currently a useful policy tool in countries with low deforestation rates. AB

POLICY

Australian building codes

Energ. Policy <http://doi.org/h28> (2012)



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Building performance standards — star ratings of energy efficiency — were introduced in Australia in 2003 and then toughened in 2006 and 2011. However, the steady increase in house sizes there has limited the potential for the standards to reduce greenhouse-gas emissions.

Stephen Clune of the Royal Melbourne Institute of Technology, Australia, and colleagues developed a residential emissions calculator to compare heating and cooling loads — the amount of heat that needs to be provided to (or removed from) a building in a given time unit, to maintain a comfortable temperature for its occupants — for 72 new Australian houses based on star ratings, house sizes by state, and international house sizes. They found that the impact of building standards on greenhouse-gas emissions depends significantly on house size. Their results estimate that, in the state of Victoria, the move of building standards from 5 to 6 stars in 2011 may be 38% less effective than expected, due to the recent increase in house size. Projections show that the state of Victoria will dominate new house emissions, even with further strengthening of the codes. MC

ATMOSPHERIC SCIENCE

Aerosol-driven warming

PNAS <http://doi.org/h3d> (2012)

Carbon aerosols are made up of two components: the more commonly known black carbon, and organic matter. Whereas black carbon is a strong absorber of solar

COMMUNICATION

New focus in climate messages

Climatic Change <http://doi.org/h27> (2012)

Experts tend to communicate climate change as either an environmental or a political issue but this approach has had limited impact on public concern. Other dimensions of climate change, such as public health and national security, could be used to engage the public.

Teresa Myers of George Mason University, USA, and colleagues analysed public reactions to climate change messages in America with the use of a nationally representative survey, conducted in December 2010. The participants were randomly asked to read news articles emphasizing the risks climate change poses to the environment, public health or national security. Grouped as Alarmed, Concerned, Cautious, Disengaged, Doubtful and Dismissive about climate change, they were asked indicate which part of the message made them feel hopeful, and which part made them feel angry. Results show that, across all audience groups, the public health focus led to reactions of hope consistent with support for climate action.

In the Doubtful and Dismissive groups, the national security focus aroused feelings of anger. Finally, in the Disengaged, Doubtful and Dismissive groups, the environmental focus neither inspired hope nor reduced anger. MC