

## ECOLOGICAL RESILIENCE

### Drought sensitivity

*Ecol. Lett.* <http://doi.org/bxcg> (2017)



XINHUA / ALAMY STOCK PHOTO

Climate warming is expected to intensify drought in many regions of the world. However, the determinants of ecological sensitivity to changing drought dynamics are unclear in many cases. In particular, the role of species interactions in modulating ecological responses to drought remains underexplored.

Qiang He from Beijing Normal University, China, and co-workers test whether grazers can lower a natural ecosystem's resistance to, and recovery from, drought using a series of salt marsh grazer exclusion experiments in a protected area in temperate China.

They find that in salt marshes experiencing a severe drought, grazers (the crab *Helice tientsinensis*) eliminated drought-stressed vegetation (*Suaeda salsa* L.) that could otherwise survive and recover in plots where grazers were excluded. In combination, drought and grazing led to the conversion of previously lush vegetation into persistent salt barrens. These results demonstrate how grazing pressure can make an ecosystem more vulnerable to drought than would be expected based on plant physiological tolerances alone. **AB**

## CLIMATE VULNERABILITY

### Drivers of migration

*J. Environ. Econ. Manage.* **79**, 135–151 (2016)

In recent years a number of studies have supported an association between climate change and migrations; Ruohong Cai from the Environmental Defense Fund, USA, and co-authors studied the role of one of the intermediate links between climate change and migrations: agriculture.

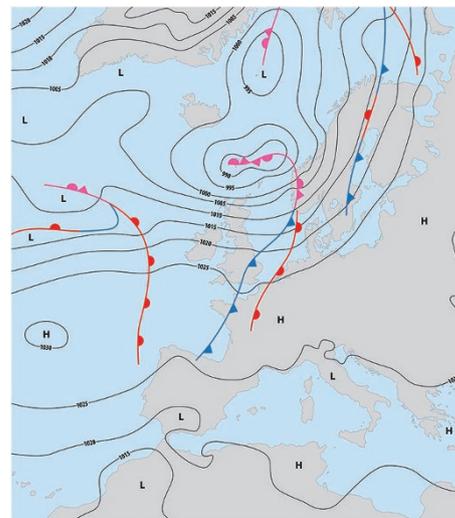
They show that temperature increases are associated with migration flows and that this relationship is particularly strong for countries that base a large part of their economies on agriculture. This finding is explained by the crop yield losses that can occur under higher temperatures. Furthermore, the authors find that this effect is non-linear: long exposure periods to temperatures higher than 30 °C during the crop growing season can greatly reduce yields. This, in turn, increases the number of people who are forced to migrate from agriculture-focused countries. A possible way to reduce this effect would be to encourage implementation of adaptation strategies that protect agricultural

production in particularly agriculture-dependant countries, and hence reduce the incentive to migrate. **MG**

## HYDROCLIMATE

### Stronger atmospheric fronts

*Geophys. Res. Lett.* <http://doi.org/bxch> (2016)



RAINER LESNIEWSKI / ALAMY STOCK VECTOR

Atmospheric fronts — the sharp boundaries between air masses of different thermal properties — are associated with high-impact extreme weather in the mid-latitudes. Their passage, for example, often triggers intense precipitation and strong winds, with potentially severe socio-economic impacts.

Sebastian Schemm from the University of Bergen, Norway, and co-authors investigate recent changes in frontal system behaviour using gridded data based on observations and satellite retrievals. While the total annual number of fronts has not altered over the period 1979–2014, the authors find a systematic increase in the frequency of strong and extreme fronts traversing Europe during summer and autumn. This change, they argue, can be linked to increasing atmospheric humidity gradients. Strengthened frontal systems are also found to have enhanced frontal precipitation rates, and may therefore be one factor contributing to the observed increases in extreme rainfall events over Europe. No similar frontal trends are evident over North America. These findings continue to highlight the importance of assessing both dynamic and thermodynamic atmospheric properties when diagnosing contemporary and future hydroclimate variability. **GS**

*Written by Alastair Brown, Michele Graffeo, Jenn Richler and Graham Simpkins.*

## SOCIOLOGY

### Public inaction

*J. Sociol.* <http://dx.doi.org/10.1177/1440783316684661> (2017)

Despite the growing consensus that climate change mitigation is necessary, the public remains resistant to personally contributing. This has been attributed to both cost-benefit analysis and the tendency to prioritize present over future goods. This suggests that inaction on climate change is driven by deep-rooted, universal aspects of human rationality.

Louis Everuss from the University of South Australia and colleagues compare willingness of different national populations to contribute to climate change mitigation. A cross-national survey shows that individuals in Lisbon, Portugal, are more willing to pay for climate mitigation than those in Adelaide, Australia, despite the fact that Lisbon has a lower GDP and higher unemployment. Furthermore, willingness to contribute in both countries was not influenced by presenting negative impacts of climate change as occurring within respondents' lifetime versus affecting their descendants. These results challenge broad assumptions that climate change is a lower priority in poorer countries and is discounted because of its delayed effects. Instead, public engagement with climate change may be tied to contextual social and cultural factors. **JR**