

# RESEARCH HIGHLIGHTS

Selections from the scientific literature

## ECOLOGY

### Roadkill yields panther numbers

By counting the number of endangered panthers hit and killed by cars in Florida, researchers have estimated the population size of this rare cat. They say that it is the first statistically robust population estimate for the animals across their breeding range.

Brett McClintock of the National Marine Mammal Laboratory in Seattle, Washington, and his team used data on reported collisions with *Puma concolor coryi* (fewer than 20 per year) and traffic densities, as well as information from a small number of radio-collared panthers to estimate the total population across the state. They show that panther numbers seem to be slowly increasing, but may never have exceeded 150 individuals between 2000 and 2012.

This method could be applicable to other rare animals, the researchers say. *J. Appl. Ecol.* <http://doi.org/5sg> (2015)

## MARINE BIOLOGY

### Corals inherit love for heat

Heat tolerance in corals can be passed down the generations, suggesting that corals can adapt as the climate warms.



Researchers have suggested that corals physiologically acclimatize to higher temperatures rather than inherit heat tolerance. To test this idea, Line Bay at the Australian Institute of Marine Science in Townsville, Australia, Mikhail Matz at the University of Texas at Austin and their team bred corals (*Acropora millepora*; pictured) from two locations in Australia separated by 5° of latitude. Offspring produced by parents from the warmer area had an up to 10 times greater chance of

survival when exposed to heat, compared with the larvae of parents from the cooler region. Larvae generated by crossing corals from the warm area with those from the cool region inherited key genetic differences associated with heat tolerance.

Corals that thrive in the heat could be moved to other latitudes so that they reproduce with local corals and introduce heat tolerant adaptations to the population. *Science* 348, 1460–1462 (2015)

## NEUROBIOLOGY

### Target neurons to relieve asthma

Silencing signals from pain-sensing nerve cells in the lungs reduces the symptoms of asthma in mice.

When stimulated by allergens, these neurons cause airways to constrict and trigger symptoms such as coughing and wheezing. Bruce Levy and Clifford Woolf of Harvard Medical School in Boston, Massachusetts,



## ATMOSPHERIC SCIENCE

### Air pollution triggers floods

A catastrophic 2013 flood in China was probably caused, in part, by air pollution.

In July 2013, heavy rainfall resulted in a devastating flood in the mountains northwest of the Sichuan Basin in China (pictured). The basin has seen increasing industrial activity in the past few decades. Jiwen Fan at the Pacific Northwest National Laboratory in Richland, Washington, and her team modelled the region's atmospheric processes during the storm using different levels of aerosol emissions. By setting the modelled emissions

at a level similar to that before China's economic boom, the team found that the rate of rainfall in the storm would have been up to 60% lower than under current emissions levels. Aerosols trapped in the basin warm the air and suppress convection, allowing excess moisture to build up and condense into rain as it rises up over the mountains.

The authors suggest that future severe floods in the region could be mitigated by reducing air pollution, particularly black carbon. *Geophys. Res. Lett.* <http://doi.org/5q9> (2015)

IMAGINECHINA/CORBIS

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