

RESEARCH HIGHLIGHTS

Selections from the scientific literature

REMOTE SENSING

Illicit gold rush in Peruvian Amazon

Gold mines across the Peruvian Amazon increased by more than 400% from 1999 to 2012, and are now the main cause of deforestation there.

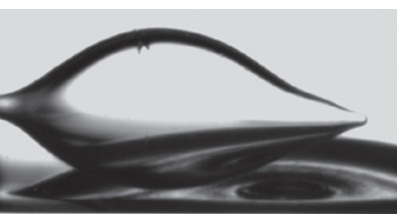
A team led by Gregory Asner of the Carnegie Institution for Science in Stanford, California, validated the results from satellite data using field sampling and high-resolution aerial surveys. These estimates are twice that of previous studies, and suggest that mining covered fewer than 10,000 hectares in 1999 but had spread beyond 50,000 hectares by September 2012.

The rate of forest loss more than tripled as gold prices rose in 2008, and was driven by small, illegal mining operations that now account for most activity in the region. *Proc. Natl Acad. Sci. USA* <http://dx.doi.org/10.1073/pnas.1318271110> (2013)

MATERIALS SCIENCE

Water sculptures crafted in oil

Water droplets suspended in oil can be shaped into ellipsoids, tubes or even fish-like forms (pictured). Thomas Russell at the University of Massachusetts in Amherst and his team added chemically modified polymers and polystyrene nanoparticles to water droplets in oil.



REBECCA BLIEGE BIRD

ECOLOGY

Hunting leads to a leap in lizards

Traditional hunting seems to boost lizard populations in Australia.

Rebecca Bliege Bird at Stanford University, California, and her colleagues found that numbers of sand monitor lizards (*Varanus gouldii*) in the Western Desert were largest where there was most hunting — lizard burrows were present in 13% of hunted plots but in only 7% of plots with least hunting. Aboriginal hunters burn small patches of land, thus

promoting habitat that favours *V. gouldii* and apparently outweighing the loss of individual lizards to Aboriginal dinner plates.

The authors suggest that extinctions of native species in the Australian desert might be linked to a decline in traditional hunters, whose cultural 'Dreaming' knowledge stresses the importance of human-made fires to the health of the landscape.

Proc. R. Soc. B 280, 20132297 (2013)

These components attract each other and crowd together across the oil–water interface. Applying an electric field distorts the droplet, allowing more particles to move in. When the field is turned off, the crowded particles jam together and keep the droplet in its altered shape.

The droplets, which remain stable for up to one month, might be useful for encapsulating chemicals or delivering drugs, the authors say.

Science 342, 460–463 (2013)

CANCER

Antibody creeps up on cancer

An antibody that becomes active only when it encounters tumours could provide a path to safer cancer drugs.

Although gentler than other cancer drugs, side effects from antibodies still limit the dosage that patients can receive. To reduce toxicity, Henry Lowman of CytomX, a biotechnology firm in South San Francisco, California, and his colleagues

designed a covert antibody — a protein-based molecule that cannot bind to its target until it faces protein-cleaving enzymes that are often abundant near tumours.

In mice, a covert antibody against a cancer-promoting protein called epidermal growth factor receptor showed little activity in the blood, yet fought tumours at levels similar to the cancer drug cetuximab. The antibody was also less toxic than cetuximab in monkeys. *Sci. Transl. Med.* 5, 207ra144 (2013)

SCIENCE/AAAS