

**ON THE RECORD**

**“You have to have an immediate effort to reduce greenhouse gases. Anything else is a fig leaf and a joke.”**

US Senator John McCain urges his colleagues to tackle global warming in a highly contentious bill on energy policy.

**“We cannot evade a liberalization of research on embryonic stem cells.”**

German Chancellor Gerhard Schröder argues that his country must relax its stem-cell policy in a speech at the University of Göttingen.

**“This is a whitewash. They took all of our science and reversed it 180 degrees.”**

In the *Los Angeles Times*, Erick Campbell protests that the government altered a report he helped to write on the impacts of grazing. The retired biologist says it was the cattle industry, not the environment, that benefited from the edits.

**NUMBER CRUNCH**

A UK survey, released this week, found that many children wouldn't take science at all if they didn't have to. Why?

**79%** of British schoolchildren think scientists are **clever**.

**7%** think scientists are **cool**.

Source: OCR exam board

**SCORECARD****Sting fever**

Japanese women are clamouring for the chance to spend a night with the jellyfish at Fujisawa's aquarium. The experience is said to relieve stress.

**Slick move**

Philip Cooney, the White House official who altered climate-change reports, returns to the oil industry with a new job at ExxonMobil.

**Speech for the stars**

NASA astronaut delivers the first-ever congressional testimony from space, showing lawmakers a surefire way to rise above partisan politics.

**Milking it**

We feel it in our bones: sales of calcium tablets are set to soar. A ten-year study has shown that the mineral can prevent premenstrual syndrome, although no one knows why.



Currents of dissent: critics say that farms in deep water could create 'dead zones'.

NOAA

## Bill on deep-sea fish farms brings wave of disapproval

**SAN DIEGO**

Scientists and activists have criticized proposed legislation that would push US fish farms into deep waters, beyond the reach of states' environmental controls.

The bill, introduced on 7 June in the Senate, would allow aquaculture pens between 5.5 and 370 kilometres off the US coast. Federal laws, not state regulations, prevail in this 'exclusive economic zone' (EEZ). The United States has the largest EEZ in the world, encompassing about 9 million square kilometres.

Tuna, salmon, halibut and cod could be farmed in the EEZ. The National Oceanic and Atmospheric Administration (NOAA), which drew up the bill, argues that it would create an industry to produce healthy food in an environmentally friendly manner. But others say that deep-sea fish farms could transmit diseases to wild fish and pollute the waters.

Fisheries officials foresee annual fish production worth \$5 billion. But this could produce as much nitrogen as 10 million pigs on land, according to the advocacy group Environmental Defense, based in New York City.

Nitrogen pollution can create 'dead zones' where few aquatic organisms live. "This can change the biology of the ocean," says Roz Naylor, an economist at Stanford University, California, who studies aquaculture.

If the bill becomes law, it could also lead to a stand-off between state and federal

authorities. Governors would be able to veto aquaculture in waters next to their state. Alaska's governor, Frank Murkowski, has already asked for a five-year moratorium so that more research can be done on the environmental and socioeconomic effects of aquaculture.

Environmentalists advocate more federal controls similar to the state ones proposed in a bill now going through the Californian legislature. The bill, sponsored by state senator Joe Simitian of Palo Alto, would set environmental standards for fish farms in state-controlled waters.

Many observers believe such guidelines are needed. Peter Douglas, executive director of the California Coastal Commission, served on a NOAA scientific advisory panel several years ago that recommended environmental guidelines for fish farms in the EEZ. "As far as I can tell, they blew those off," says Douglas.

NOAA officials say they will address the issue of environmental standards during the upcoming discussions, and point out that they have done extensive background work. "This bill is ten years in the making," says Michael Rubino, an economist with NOAA.

The federal bill is being sponsored in the Senate by Democrat Daniel Inouye of Hawaii, where limited fish farming is under way in state waters, and Republican Ted Stevens of Alaska, a state that prohibits aquaculture altogether.

**Rex Dalton**