# Briefly

## International

### Forensic tests to help tackle rhino poaching

Poaching has reduced the population of black rhinos by >90% in the past 60 years and reduced the population of Javan rhino to <200. Two forensic tests may now help to curb the illegal trade in poached rhino horn. The tests look for genetic or chemical signatures of rhino horn in products such as powdered Asian medicines and Yemeni ornamental daggers. The first test detects rhino DNA in various products. Each of the five rhino species has a unique version of the *cytochrome b* gene in mitochondrial DNA. The other test chemically fingerprints seized samples of raw rhino horn, revealing both the species and individual game reserve from which the horn came. The chemical test is not yet admissible as evidence in court but the two tests together should assist in the detection of illegal trade.

*Source: New Scientist* (2003), **179**(2411), 9.

### Whale numbers may historically have been much higher

A recent genetic survey of three species of North Atlantic whales has suggested that the oceans may have contained ten times as many great whales as previously thought. The study looked at genetic diversity of mitochondrial DNA, which is inherited from the mother, in fin, minke and North Atlantic humpback whales. Researchers estimated the likely rate of genetic mutation and from that calculated how many females would be needed in the past to accumulate the diversity in each species. The researchers then estimated the size of historical populations. Before commercial whaling began in the mid-19th century, there may have been 240,000 humpback whales in the North Atlantic, 12 times previous estimates, 360,000 fin whales (more than nine times previous numbers) and 265,000 minke whales (compared to 149,000 today).

*Source: New Scientist* (2003), **179**(2406), 4.

### Miscalculation may drive beluga sturgeon to extinction

The caviar from the beluga sturgeon may fetch US $3,000 per kg but critics argue that a recent decision by CITES to continue to allow the species to be fished may lead to its eventual extinction. The critics' argument revolves around the estimate of current population numbers in the Caspian Sea, the species' last stronghold. CITES argues that numbers have increased from 7.6 million in 1998 to 11.6 million in 2002. Critics believe there may be fewer than 0.5 million fish left and the continuing fishing and trade in caviar will hasten the species' decline. The US Government, the world's leading importer of beluga caviar, is considering an outright ban on trade. Ironically, however, beluga are largely cut off from their natural river spawning grounds by dams, and *c.* 90% of the fish are from artificial hatcheries that are expensive to build and maintain. A total ban on trade could stop the money that pays for the hatcheries and may itself lead to the species' extinction.

*Source: New Scientist* (2003), **179**(2413), 6–7.

### Good and bad news on world's protected areas

At the 5th World Parks Congress in Durban in September 2003, the United Nations Environment Programme and IUCN reported that nearly 19 million km² worldwide is now included in protected areas, an area larger than China (see also pp. 1–2). This is a big improvement on the 2.4 million km² protected at the time of the 1st World Parks Congress in 1962. However, Conservation International has reported that many protected areas are too small or isolated to effectively conserve species. More than 700 bird, mammal and amphibian species included in *The IUCN Red List of Threatened Species* remain completely unprotected. The situation may be even worse in the oceans.

*Source: Nature* (2003), **425**(6955), 230.

### Concern over acidification of the oceans

Scientists studying the world's oceans have highlighted the threat from climate change. If $CO_2$ emissions keep rising, surface waters could become more acidic than they have been for 300 million years. As the amount of $CO_2$ in the atmosphere rises, more of the gas reacts with seawater to produce bicarbonate and hydrogen ions, increasing the acidity of the surface layer of the water. Ocean pH was 8.3 after the last ice age and 8.2 before $CO_2$ emissions took off during the industrial revolution. The pH is now 8.1. Primary productivity in the oceans has dropped sharply in the past 20 years. Since the 1980s ocean productivity has dropped by an average of 6%. This may be part of a natural cycle, but very little is known about the factors that control ocean productivity.

*Source: New Scientist* (2003), **179**(2414), 8.

### North east Atlantic and Baltic Sea need more protection

The joint HELSCOM-OSPAR Ministerial Conference to protect the marine environment of the North East Atlantic and Baltic Sea has been crippled by apathy, according to WWF, who also argue that the conference has failed to address issues of shipping accidents, pollution and destructive fishing practices. Russia has opposed the establishment of a Particularly Sensitive Sea Area for the Baltic Sea, despite strong political consensus from other states in the Baltic area. The Baltic States also failed to agree a recommendation to ensure the protection of seals in the Baltic. The OSPAR countries failed to adequately address the need to better manage fisheries, despite the fact that fishing is seen as a major threat to oceans and seas.

*Source: Marine Pollution Bulletin* (2003), **46**(8), 929.

### 'Non-destructive' aquarium trade fishery – a misnomer

Methods of reef fish collection for the aquarium trade have moved from destructive forms, such as cyanide or dynamite fishing, towards so-called non-destructive methods, such as traps and hand nets. The impact of non-destructive methods had been unknown prior to a study published recently on the Bangaii cardinalfish *Pterapogon kauderni* in Indonesia. The study investigated eight sites in the Bangaii archipelago. Through the combination of data on fish abundance and information on fishing methods, non-destructive techniques were shown to have halved fish populations in heavily fished areas. With the large reductions in numbers of *P. kauderni* shown by the research, the authors suggest that the