Treaty nations 'are exploiting Antarctica'

[SYDNEY] Forty years after the Antarctic Treaty was signed, the first meeting of ministers on the frozen continent generated an urgent sense last week that measures to protect the territory are failing.

Simon Upton and Robert Hill, environment ministers of New Zealand and Australia, are pressing for action against the lucrative but illegal fishing industry in the Southern Ocean. They want to see at least A\$600 million (US\$378 million) a year spent to combat it. Along with Chile, Argentina, France, Norway and the United Kingdom, the two countries have claims over sectors of Antarctica.

Last week's meeting, held under the auspices of New Zealand with support from the United States and Italy, attracted senior representatives (including 13 ministers) from 24 of the 43 nation members of the Treaty to New Zealand's Scott Base.

At the meeting, Upton characterized the largely covert fishing industry as "a threat to the credibility and integrity" of the treaty and its spin-off, the 27-member Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR).

"The great bulk of the uncontrolled fishing for the [Patagonian] toothfish in the waters managed by CCAMLR has been, and is being, carried out by companies and citizens from parties either to the Antarctic Treaty or the CCAMLR — an awful indictment of us," said Upton.

Hill revealed estimates by Australian sci-

Toothsome: the current level of poaching could wipe out toothfish in three years.

entists that, at the present rate of poaching, the toothfish will be extinct in only two to three years. The long-line fishing method also endangers populations of other fish species and albatross.

Representatives formalized an agreement with New Zealand for scientific collaboration. Tony Press, director of the Australian Antarctic Division, and Gillian Wratt, chief executive of Antarctica NZ, say they plan joint studies of fish and krill populations to support monitoring and conservation.

Australia spends A\$60 million annually

on Antarctica while New Zealand spends about NZ\$17 (US\$9) million. Most of this money is spent on maintaining bases on the continent and Sub-Antarctic islands. Additional funds for research come from competitive grants to university staff. Both countries admit that their small navies and air forces can mount only inadequate surveillance.

Logistic sharing is likely later, especially over transport. New Zealand can fly to its base from Christchurch, while Australia has become increasingly hampered by dependence on a chartered icebreaker (see *Nature* 390, 109; 1997). The *Aurora Australis* has suffered three breakdowns since last July, forcing Australia to acknowledge last week that its Antarctic science programme is "in disarray". A Norwegian ship has been chartered for the voyage cancelled last month, but it has to leave from Cape Town.

Although last week's meeting carried no formal force, some ministers used it as a springboard for more concerted lobbying before an April meeting of the CCAMLR in Brussels, and a full meeting of Treaty ministers in the Peruvian capital, Lima, in June.

Measures proposed to save the toothfish are based on introducing mandatory systems for monitoring vessels by satellites; placing scientific observers on board licensed vessels to report on other vessels sighted; uniform licensing and marking systems for vessels; and making it difficult to land illegally caught fish and sell it in the main markets of Japan and the United States. **Peter Pockley**

German science council clashes with anti-nuclear government

[MUNICH] In a report that appears to conflict with the new government's antipathy to nuclear power, the Wissenschaftsrat, Germany's influential science council, has called for an across-the-board 30 per cent increase in the energy research budget over the next three years.

The council says funding needs to be more efficiently coordinated between the federal government and the 16 *Länder* (states), criticizing universities for the fragmentation of their energy research.

But it also recommends that the breadth of research topics, including nuclear fission and fusion, should be maintained, stressing the "need to maintain nuclear competence".

Germany's Social Democrat and Green coalition government hopes to phase out nuclear energy. The Greens have criticized the Wissenschaftsrat's demand that all energy options should be left open, as well as its refusal to compare renewable and non-renewable energy sources. "The opportunity to reassess and reorganize energy policy from a scientific point of view has been

wasted," says Hans-Josef Fell, the Green parliamentary spokesman on research.

A Wissenschaftsrat committee, advised by industrial experts, spent almost two years reviewing energy research in Germany. It warns that, without more money for research, Germany risks losing its international competitiveness in areas such as power technology, reactor safety and waste disposal technology.

Germany spends only around DM1.1 billion (US\$650 million) per year — 0.015 per cent of its gross domestic product — on energy research. Japan spends six times more, France three times more and the United States twice as much.

The report recommends additional funding for interdisciplinary research on the efficiency of fossil energy sources, which supply 87 per cent of the primary energy consumed in Germany, but contribute heavily to greenhouse gases.

It also recommends greater investment in renewable energy sources, such as solar radiation, biomass, water, wind and

geological heat, which provide around two per cent of Germany's primary energy.

Nuclear research, it says, should focus on reactor safety and nuclear waste disposal. But the need for international cooperation in reactor safety means that existing reactor technology should be further developed. It urges that all aspects of nuclear physics and radiochemistry should be taught at universities, warning that Germany could fall behind because of recent spending cuts.

The Greens agree with the proposal for more research in reactor safety and waste disposal, but oppose additional nuclear research. In contrast, the Social Democrat's science advisers have indicated that phasing out nuclear energy should not necessarily end basic nuclear research.

The Greens and the science council agree that the public and social scientists should be given more influence in decision-making on energy issues. The Greens also agree with the Wissenschaftsrat's proposal to encourage a broad public debate about the risks of fusion technology. **Quirin Schiermeier**