

## Ocean Acidity to rise 150%

The oceans are soaking up atmospheric carbon dioxide at such a rate that their acidity could increase 150 per cent by 2050. A more acidic ocean could mean that by the century's end, some 70 per cent of cold-water corals, will be exposed to these corrosive waters.

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As deadlocked Climate talks in Copenhagen enter a critical, second week, a major new United Nations' study showed how quickly the world could be running out of time.

The world's biggest insurance policy against rapid warming, the oceans, are soaking up atmospheric carbon dioxide at such a rate that their acidity—and so their ability to nurture an intricate planet-wide web of life—could increase 150 percent by 2050.

This dramatic increase is 100 times more than at any time in the last 20 million years.

It could cause "irreversible damage", and highlights the link between climate change and the health of the oceans, said the study, released by the United Nations Convention on Biological Diversity.

"Ocean acidification is irreversible on timescales of at least tens of thousands of years, and substantial damage to ocean ecosystems can only be avoided by urgent and rapid reductions in global emissions of CO<sub>2</sub>," said Ahmed Djoghlaif, Executive Secretary of the Convention.

Djoghlaif said this was a "critical issue" that now needed to be included in the climate-change debate. That may not be easy with rich and poor countries failing to agree even on the language of the possible joint statement at the end of the meeting, much less key points like cutting emissions and allocating money.

Seas and oceans absorb about one quarter of the carbon dioxide spewed into the atmosphere from the burning of fossil fuels, deforestation, and other human activities. Without this absorption, the global warming crisis would be greater than it is now.

"This CBD study provides a valuable synthesis of scientific information on the impacts of ocean acidification, based on the analysis of more than 300 scientific literature, and it describes an alarming picture of possible ecological scenarios and adverse impacts of ocean acidification on marine biodiversity," Djoghlaif said.

The study predicts direct impacts on commercial fishing. A more acidic ocean could mean that by the century's end some 70 percent of cold-water corals, a key refuge and feeding ground for species that fishermen catch, will be exposed

to these corrosive waters.

Given current emission rates—global emissions are up 30 per cent since the Kyoto Protocol was signed 12 years ago—the effects will begin much sooner. The Arctic Ocean will lose essential minerals by 2032 and the southern seas by 2050. That means a disruption of food sources to many marine species, particularly to mussels, oysters, shrimp, crab and lobsters, which need calcium to grow.

Scientists say some species might benefit from such changes to the ocean, but overall the effects are likely to be negative, with attendant effects that could range from livelihoods of coastal communities to planetary regulation of carbon dioxide.

"This publication...confirms again how great the stakes of sustainability are in the climate change negotiations," said Thomas E. Lovejoy, Biodiversity Chair of Washington D.C.'s Heinz Center for Science, Economics and the Environment, in the preface to the publication, officially titled *Scientific Synthesis of the Impacts of Ocean Acidification on Marine Biological Diversity*.

### Fish Losing Survival Instinct

Fish are losing their survival instinct—even becoming attracted to the smell of their predators—as the world's oceans become more acidic because of climate change.

The study of fish in coral reefs off the coast of Papua New Guinea—where the waters are naturally acidic—showed the animals' behaviour became riskier.

"Fish will normally avoid the smell of a predator, that makes a perfect sense," lead author Prof. Philip Munday from Australia's James Cook University said. "But they start to become attracted to the smell of the predator. That's incredible".

He added the research, published in the journal *Nature Climate Change*, was important given that about 30% of the carbon dioxide released into the atmosphere is ultimately absorbed by the ocean, a process which results in the seas becoming more acidic.

Acidification around the reefs studied is at levels predicted to become ocean-wide by the end of the century as the climate changes.