

Senate Environment, Communications, Information Technology and the Arts  
Committee

Parliament House

Canberra

I beg the committee to consider salinity impact as residual degradation unto the core assets soil, water, vegetation, atmosphere, and such assets the UN point out are damaged as much as 60%.. The assets if they were managed by a corporation on behalf of shareholders would be forced by shareholders to restore them to full sustainable yield. Certainly the historians of tomorrow will not report favourably on this our generation if reparation is not undertaken. The following document has just arrived I consider it as an integral part of salinity reversal as lowering CO2 build up. The CO2 build-up will take out more salt managing vegetation and salinity will be like that of other desert nations I have visited. I have seen the future of Australia unless checked soon..

Our pilot plantation is 1,000,000 hectares with Aussie seeds and direct to soil which would have also lowered and sustained salinity. Fact is under the Perpetual Trust it will return A\$4.2 billion back into China' asset reparation by 2012.

Sincerely

Robert Vincin

**THE**  **ONLINE  
EDITION**  
**INDEPENDENT**

## Global warming 'past the point of no return'

**By Steve Connor, Science Editor**

**Published: 16 September 2005** A record loss of sea ice in the Arctic this summer has convinced scientists that the northern hemisphere may have crossed a critical threshold beyond which the climate may never recover. Scientists fear that the Arctic has now entered an irreversible phase of warming which will accelerate the loss of the polar sea ice that has helped to keep the climate stable for thousands of years.

They believe global warming is melting Arctic ice so rapidly that the region is beginning to absorb more heat from the sun, causing the ice to melt still further and so reinforcing a vicious cycle of melting and heating.

The greatest fear is that the Arctic has reached a "tipping point" beyond which nothing can reverse the continual loss of sea ice and with it the massive land glaciers of Greenland, which will raise sea levels dramatically.

Satellites monitoring the Arctic have found that the extent of the sea ice this August has reached its lowest monthly point on record, dipping an unprecedented 18.2 per cent below the long-term average.

Experts believe that such a loss of Arctic sea ice in summer has not occurred in hundreds and possibly thousands of years. It is the fourth year in a row that the sea ice in August has fallen below the monthly downward trend - a clear sign that melting has accelerated.

Scientists are now preparing to report a record loss of Arctic sea ice for September, when the surface area covered by the ice traditionally reaches its minimum extent at the end of the summer melting period.

Sea ice naturally melts in summer and reforms in winter but for the first time on record this annual rebound did not occur last winter when the ice of the Arctic failed to recover significantly.

Arctic specialists at the US National Snow and Ice Data Centre at Colorado University, who have documented the gradual loss of polar sea ice since 1978, believe that a more dramatic melt began about four years ago.

In September 2002 the sea ice coverage of the Arctic reached its lowest level in recorded history. Such lows have normally been followed the next year by a rebound to more normal levels, but this did not occur in the summers of either 2003 or 2004. This summer has been even worse. The surface area covered by sea ice was at a record monthly minimum for each of the summer months - June, July and now August.

Scientists analysing the latest satellite data for September - the traditional minimum extent for each summer - are preparing to announce a significant shift in the stability of the Arctic sea ice, the northern hemisphere's major "heat sink" that moderates climatic extremes.

"The changes we've seen in the Arctic over the past few decades are nothing short of remarkable," said Mark Serreze, one of the scientists at the Snow and Ice Data Centre who monitor Arctic sea ice.

Scientists at the data centre are bracing themselves for the 2005 annual minimum, which is expected to be reached in mid-September, when another record loss is forecast. A major announcement is scheduled for 20 September. "It looks like we're going to exceed it or be real close one way or the other. It is probably going to be at least as comparable to September 2002," Dr Serreze said.

"This will be four Septembers in a row that we've seen a downward trend. The feeling is we are reaching a tipping point or threshold beyond which sea ice will not recover."

The extent of the sea ice in September is the most valuable indicator of its health. This year's record melt means that more of the long-term ice formed over many winters - so called multi-year ice - has disappeared than at any time in recorded history.

Sea ice floats on the surface of the Arctic Ocean and its neighbouring seas and normally covers an area of some 7 million square kilometres (2.4 million square

miles) during September - about the size of Australia. However, in September 2002, this dwindled to about 2 million square miles - 16 per cent below average.

Sea ice data for August closely mirrors that for September and last month's record low - 18.2 per cent below the monthly average - strongly suggests that this September will see the smallest coverage of Arctic sea ice ever recorded.

As more and more sea ice is lost during the summer, greater expanses of open ocean are exposed to the sun which increases the rate at which heat is absorbed in the Arctic region, Dr Serreze said.

Sea ice reflects up to 80 per cent of sunlight hitting it but this "albedo effect" is mostly lost when the sea is uncovered. "We've exposed all this dark ocean to the sun's heat so that the overall heat content increases," he explained.

Current computer models suggest that the Arctic will be entirely ice-free during summer by the year 2070 but some scientists now believe that even this dire prediction may be over-optimistic, said Professor Peter Wadhams, an Arctic ice specialist at Cambridge University.

"When the ice becomes so thin it breaks up mechanically rather than thermodynamically. So these predictions may well be on the over-optimistic side," he said.

As the sea ice melts, and more of the sun's energy is absorbed by the exposed ocean, a positive feedback is created leading to the loss of yet more ice, Professor Wadhams said.

"If anything we may be underestimating the dangers. The computer models may not take into account collaborative positive feedback," he said.

Sea ice keeps a cap on frigid water, keeping it cold and protecting it from heating up. Losing the sea ice of the Arctic is likely to have major repercussions for the climate, he said. "There could be dramatic changes to the climate of the northern region due to the creation of a vast expanse of open water where there was once effectively land," Professor Wadhams said. "You're essentially changing land into ocean and the creation of a huge area of open ocean where there was once land will have a very big impact on other climate parameters," he said.

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