

InCrops Launch



Planting the seeds for an important contribution to facing up to the climate challenge

Trevor Davies

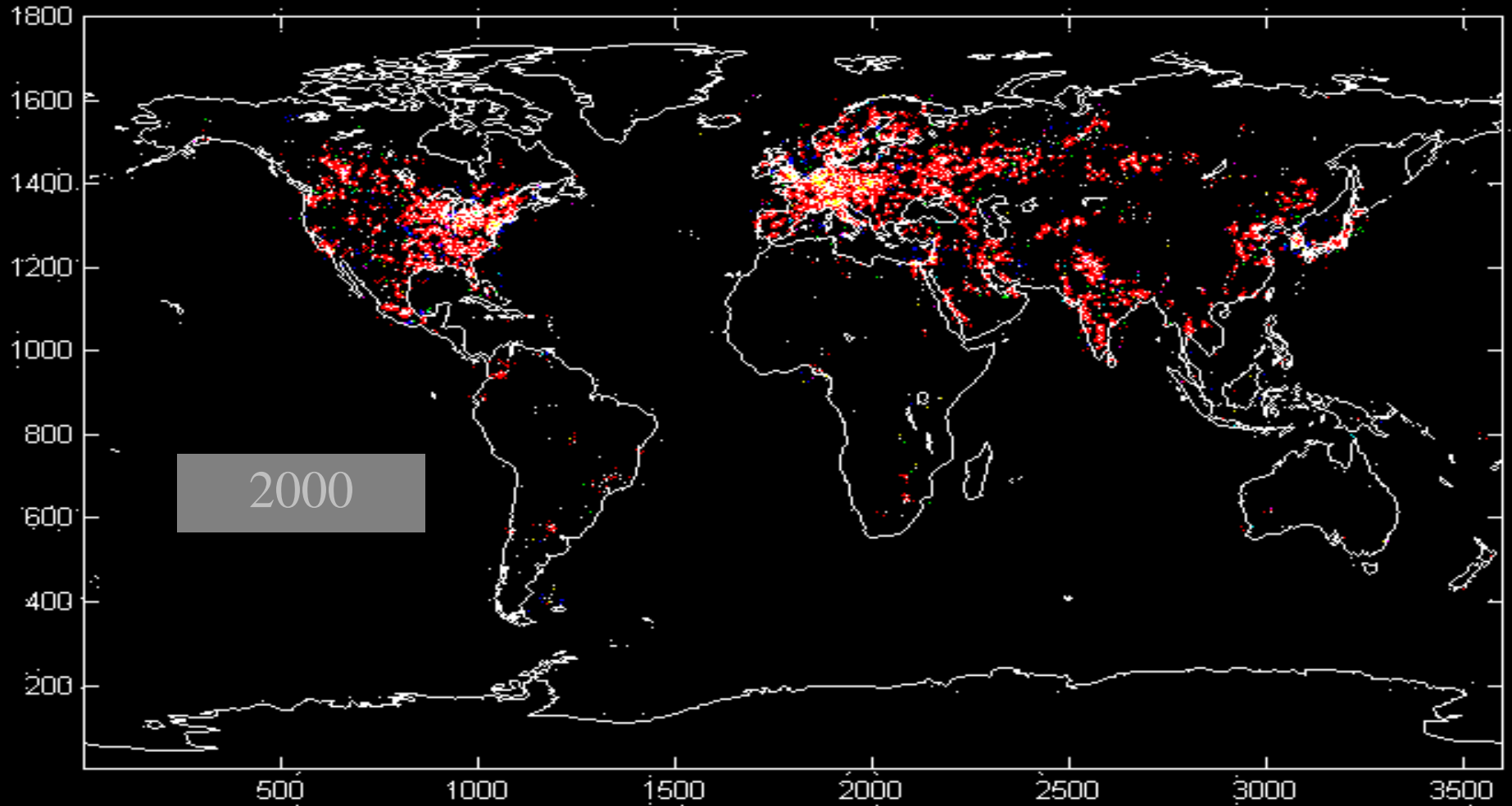
Pro Vice Chancellor Research, Enterprise & Engagement
University of East Anglia

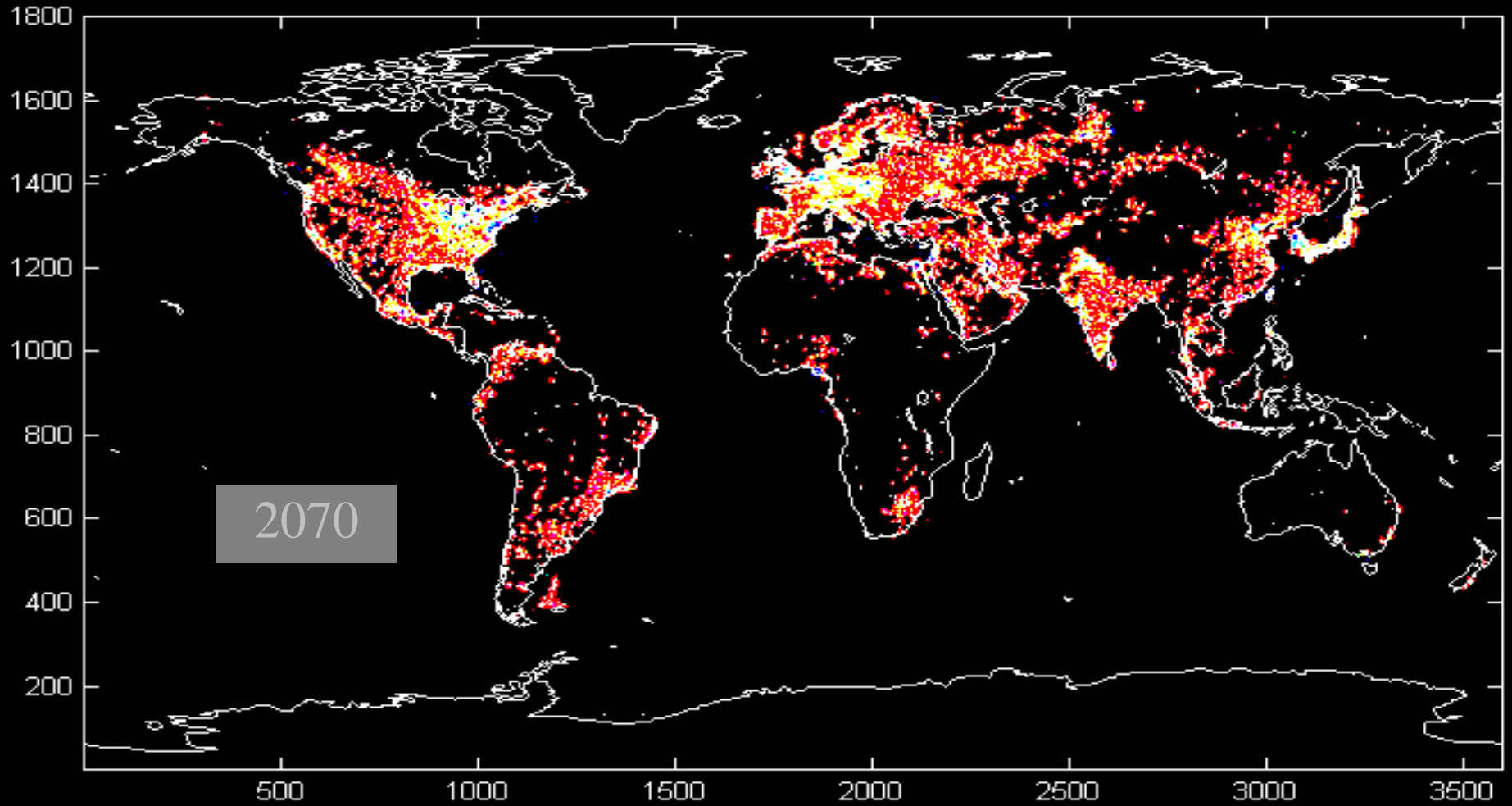
29 June 2009 (96 months left?)

Doom and Gloom

Unless you change direction, you shall end up where you are heading. *Lao Tse, 5th Century BC*

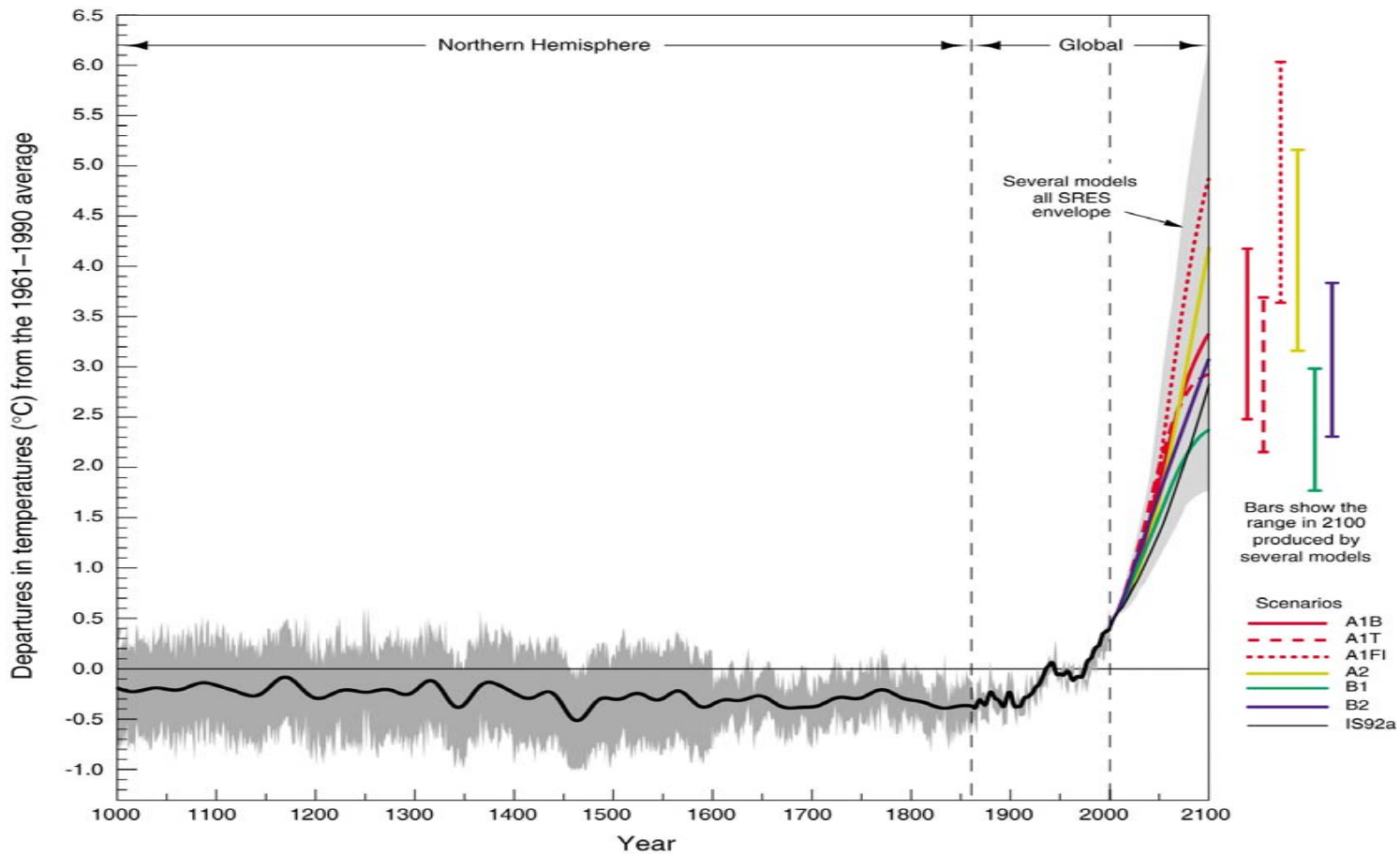






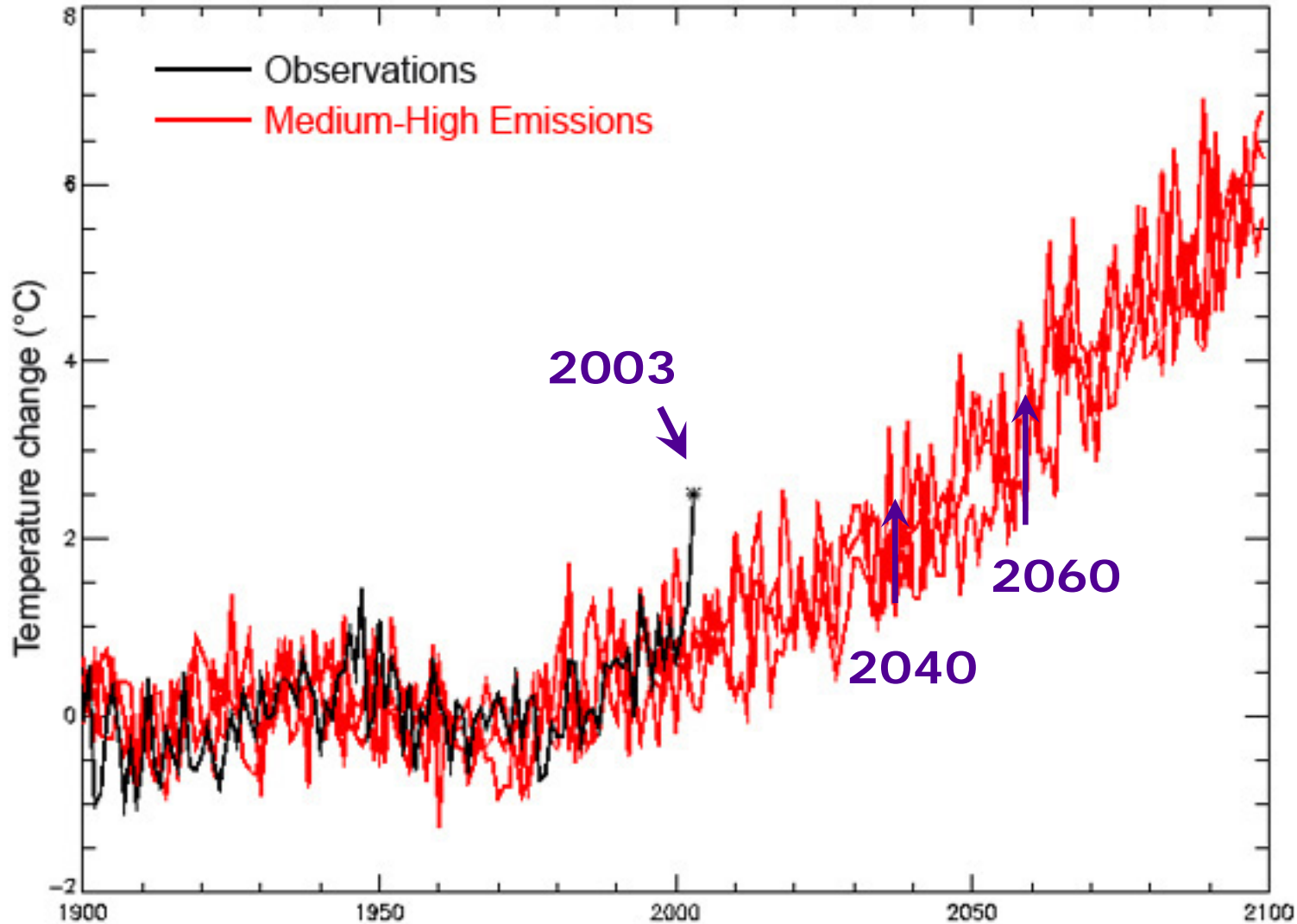
Variations of the Earth's surface temperature: 1000 to 2100.

1000 to 1861, N.Hemisphere, proxy data; 1861 to 2000 Global, Instrumental;
2000 to 2100, SRES projections



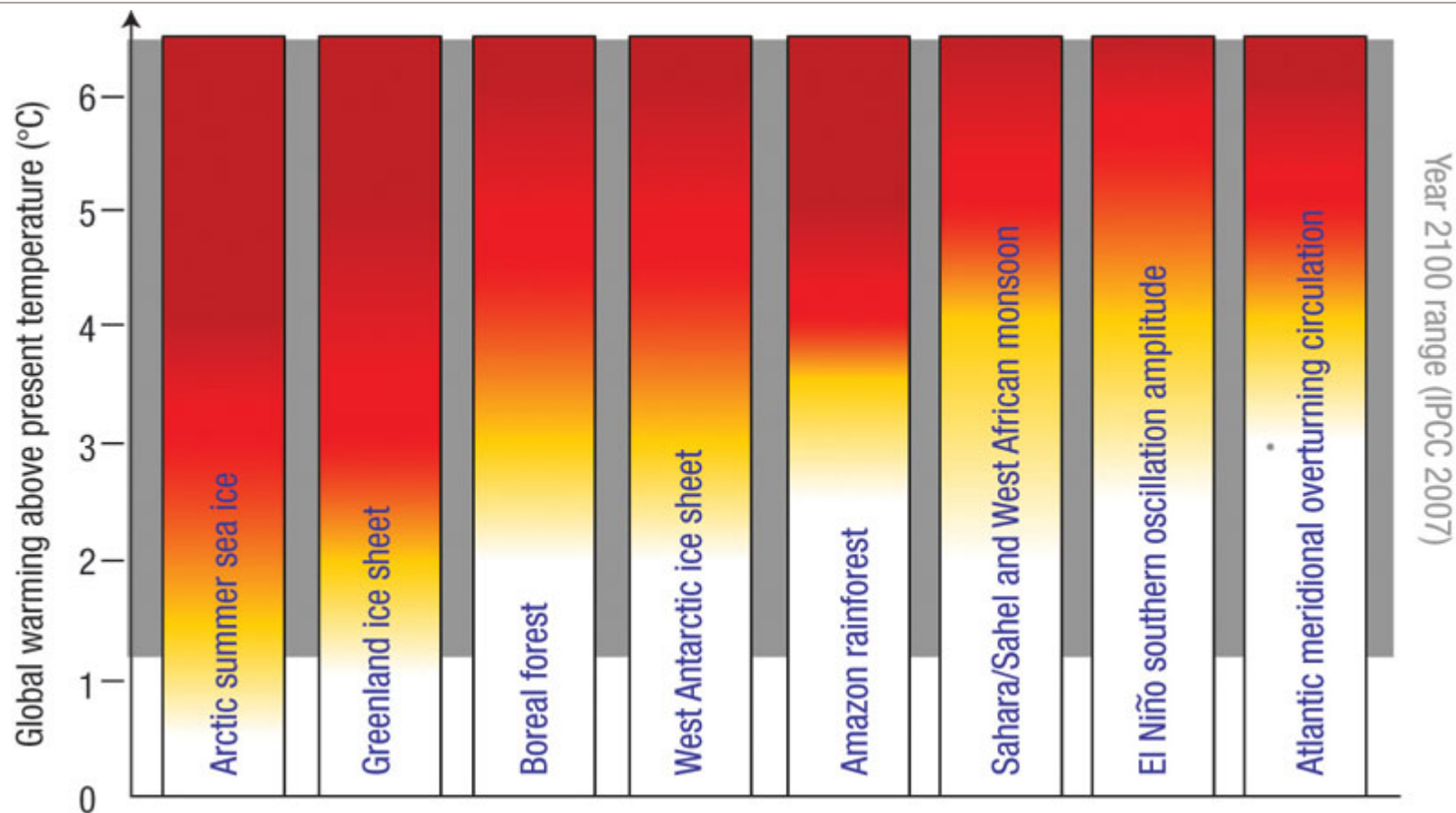


European 2003 heatwave could be normal by 2040s, cool by 2060s



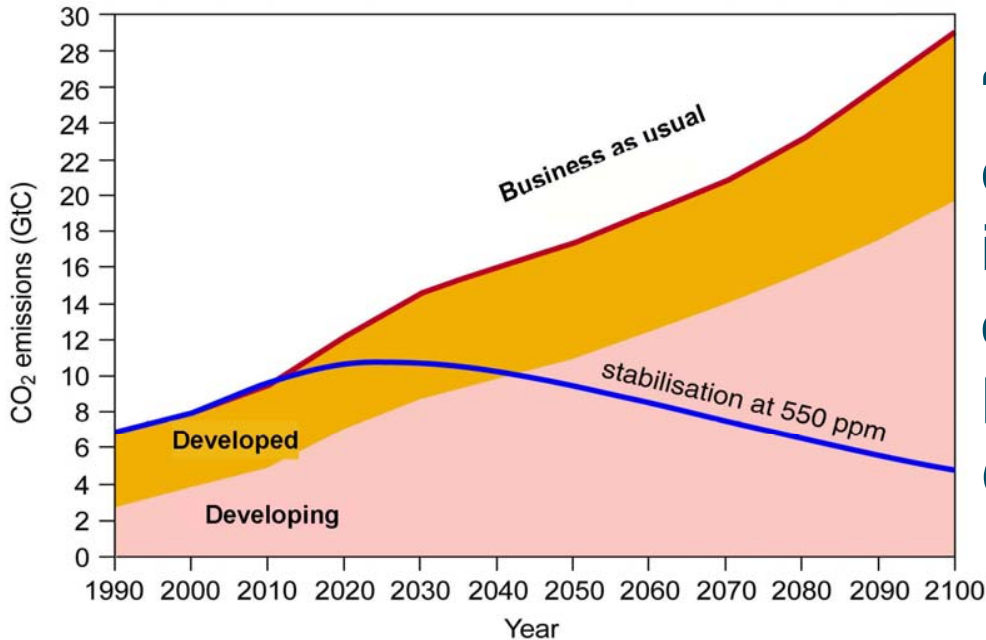


Some tipping points could be too near





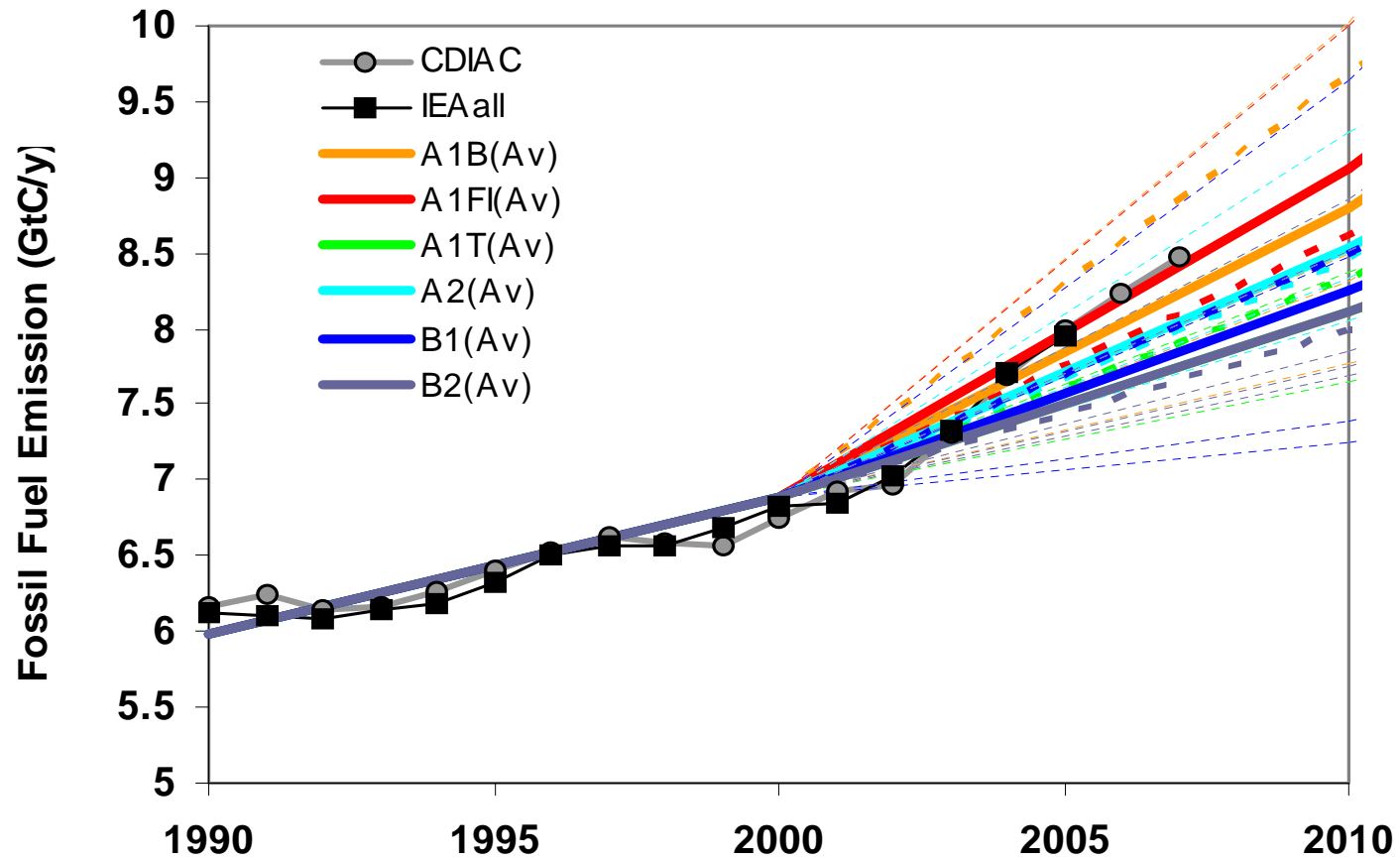
Scale of the climate challenge



“Responding to climate change is a moral imperative; it is also a major business opportunity across the board”
Larry Brilliant, Vice-President Google, 2009



Fossil Fuel Emissions: Actual vs. IPCC Scenarios



Innovation and Enterprise Step-Change Required



Tonnes of carbon dioxide per capita

USA	20
UK	10
China	3.5
India	1.2
Rwanda	0.1

Geoengineering - growing interest

- Royal Society review
- Government Innovation, Universities, Science and Skills committee
- Institution of Mechanical Engineers competition



Page last updated at 20:30 GMT, Thursday, 15 January 2009

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Farms to take heat out of warming

By Richard Black
Environment correspondent, BBC News website

Farmers could help curb rising global temperatures by selecting crop varieties that reflect solar energy back into space, researchers say.

Scientists at Bristol University calculate that switching crops in North America and Europe could reduce global temperatures by about 0.1C.

Temperatures have risen by about 0.7C since the dawn of the industrial age.

Other experts say the idea is feasible but could not cool the world enough to combat rising



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Geoengineering 'no substitute' for climate targets, UK minister warns

UK climate minister Joan Ruddock wary of reliance on radical technology that could be used by some as an excuse to avoid meeting targets to reduce carbon emissions

James Randerson
[guardian.co.uk](#), Tuesday 18 November 2008 15:37 GMT
[Article history](#)

Research into drastic solutions to climate change such as cloud seedir sun shades in space and ocean fertilisation risks hampering global climate negotiations by giving some countries an excuse for not agreeing to short-term emissions reductions, a UK government minister warned today.

The remarks by Joan Ruddock, a minister in the Department of Energy



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Ancient skills 'could reverse global warming'
Trials begin of a technique used by Amazon Indians that takes CO2 and locks it
By Geoffrey Lean, Environment Editor
Sunday, 7 December 2008
Ancient techniques pioneered by pre-Columbian Amazonian Indians are about to be pressed into service in Britain and Central America in the most serious commercial attempt yet to reverse global warming.
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From The Times
September 1, 2008
Scientists issue warning that technology to beat global warming may backfire
Mark Henderson
Engineering solutions to modify the Earth's environment and climate may be necessary if humanity is to adapt to global warming, a group of influential scientists will say today.
Technological fixes such as encouraging cloud formation and increasing the amount of carbon dioxide absorbed by the oceans have the potential to limit climate change, according to papers
TIMES RECOMMENDS
> Antarctica is warming, not cooling, study finds
> Attenborough on Charles Darwin
> Ecologists warn of riots over fresh water



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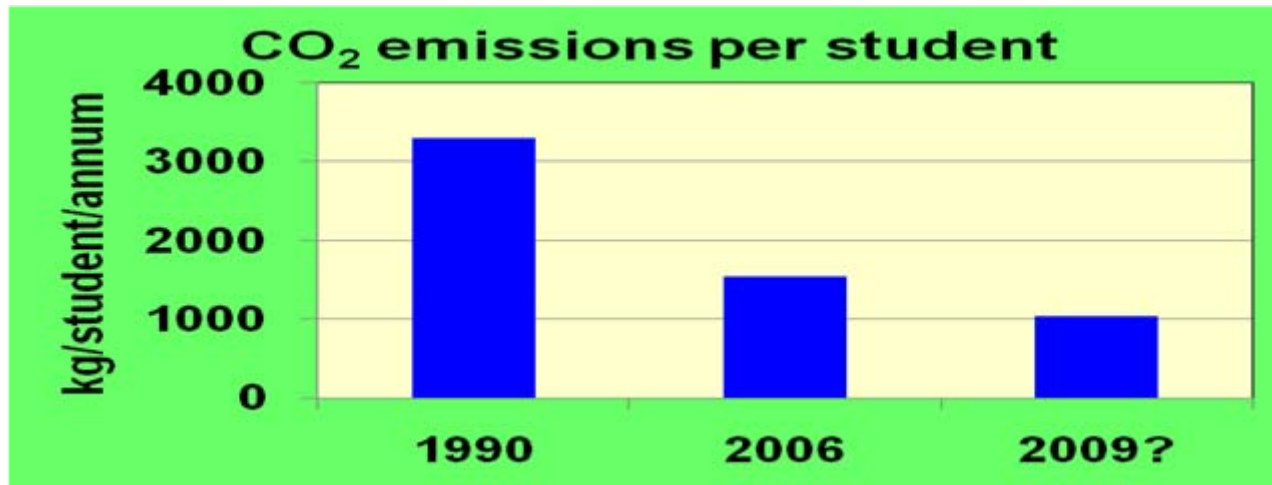
James Lovelock's plan to pump ocean water to stop climate change

By Roger Highfield, Science Editor
Last Updated: 11:28PM GMT 10 Nov 2008

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2009 – 70% reduction in direct CO₂ emissions from 1990 baseline
the low carbon campus on the NRP





Low Carbon Training

**The world's
first
MBA in
Strategic
Carbon
Management**





Research evolving into action, innovation and enterprise



Tapping the excellent knowledge base in the UK

Local Example

CRed (Carbon Reduction Programme) (2003) with support of EEDA; helping partners follow lower carbon pathways

Carbon Connections (2006) with support of HEFCE; stimulating & investing in early stage innovation-enterprise partnerships between UK universities and UK businesses

Low Carbon Innovation Centre (2009); integrating and exploiting the research knowledge base

Ensuring Synergy

Close partnership: CueEast, Renewables East, BRE, Resource Efficiency East, NRP Energy Laboratories

Partnership and UEA/NRP support vehicle for regional activity of **InCrops**; maximising knowledge exchange, innovation and enterprise

Land-based and related activity - globally most important emitter of greenhouse gas emissions

Plants and Plant-derived Products

Central to climate change mitigation and adaptation strategies, and to the related challenges of food/water security and human health.

InCrops can be a path-finder – continuing strong support from UEA and Norwich Research Park Partners.

Critical element – **InCrops** partners' enthusiastic and continuing support.



Thank you for your that support – and for your attention