

# Rapid Climate Change



## What is RAPID?

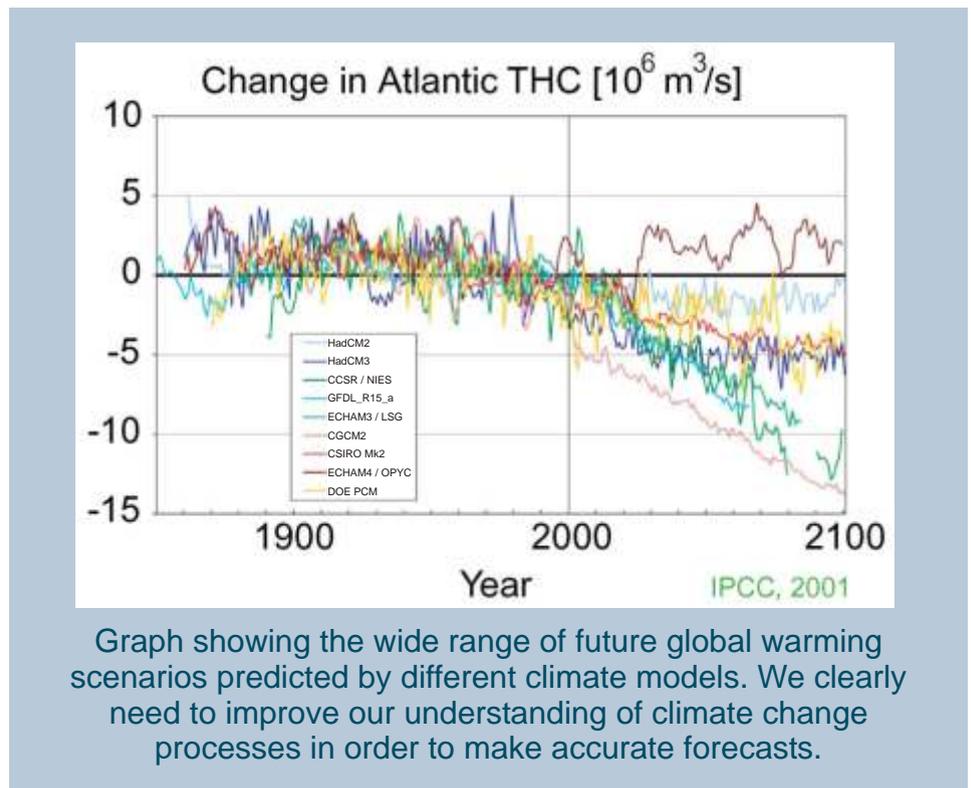
The RAPID programme is a concerted research effort into the causes of rapid changes in climate, over timescales of decades.

The programme runs for 6 years until 2008 and has more than 30 individual research projects. With climate change mentioned daily in the media, it is a high profile programme, both nationally and internationally.

## Why is RAPID important?

The Earth's climate is maintained through interactions between the atmosphere, oceans, ice and the land surface. Studies of past climate suggest that large and rapid (as fast as 10-20 years) changes have occurred and that changes in the transport of heat by the ocean, the thermohaline circulation (THC), are often a major factor.

Observations suggest that the THC may be changing but there are too few measurements to be sure. Model studies of global warming scenarios predict a diverse range of results for the future.



## What will RAPID do?

RAPID aims to investigate and understand the causes of abrupt transitions from warm to cold conditions using a novel combination of present day observations, palaeo data and a hierarchy of models from a local to global scale.



## How will it be done?

RAPID Scientists are making observations of present day conditions; measuring past conditions through palaeo records in ice, sediment, bog and coral cores; and modelling past events. As a result, our ability to monitor and predict future rapid climate change, particularly in the North Atlantic region, will be enhanced.

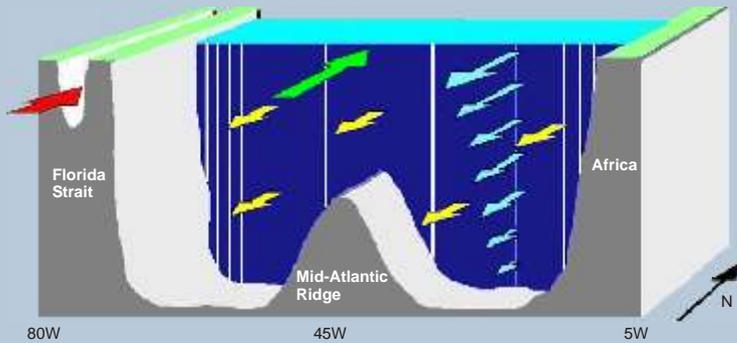
A major element of the programme is monitoring today's thermohaline circulation in the Atlantic. A mooring array has been deployed that is providing important full depth measurements across the North Atlantic over several years. Each year builds on a valuable timeseries data set, which provides a baseline for present day conditions and a test bed for the models.

Some of the data are transmitted back to land in real time and can be viewed and downloaded on line (<http://www.bodc.ac.uk/rapidmoc/>).

## BODC's Role

The RAPID programme will result in a large and diverse range of data. BODC, with partners BADC, will collate all resulting data sets and preserve them as a valuable data resource for future use.

Data sharing and collaboration between projects is an important aspect of the RAPID science plan. During the lifetime of RAPID, the data centres will provide a focal point for co-operation between projects.



A data management website (<http://www.bodc.ac.uk/projects/uk/rapid/>) has been set up to provide a central point of information regarding RAPID data. BODC also produced the website for display of and access to real time data from the Atlantic monitoring arrays and are responsible for carrying out basic quality checks on the data.

It is expected that a final data set DVD will be produced at the end of the project which will be a key source of information for future climate change research.