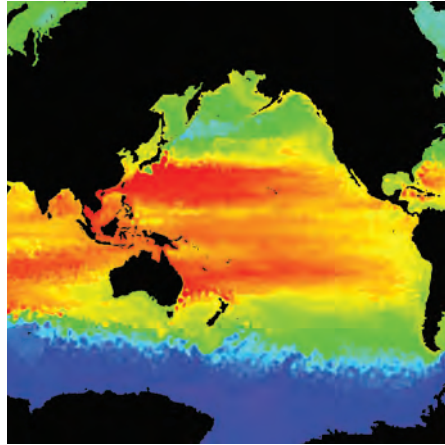


Why is climate change so important to the University?

Over the centuries Cambridge academics have changed the world with their ground-breaking ideas and work. As the world itself changes, it seems only logical that many of our most brilliant minds are dedicated to tackling this most compelling of environmental challenges.

**How are we advancing understanding about climate change?**

Our researchers are working on assessing the risk, understanding and limiting the causes. They are also working on mitigating the consequences of climate change.

What is Cambridge doing to assess the extent of climate change?

Research ranges from long-term climate modelling using geological data to airborne measuring of the present composition of the Earth's atmosphere, and at all levels from global climate models to the study of the chemical processes involved.

**Who is involved?**

Some 80 research groups – including scientists, engineers, architects and economists – are involved in developing technologies to reduce energy and fuel requirements, cut carbon dioxide emissions, make cities more sustainable, and help determine the best policies for governments.

**What are the major initiatives?**

Some groups measure the way climate is changing; focus on limiting the effects of human activity on the Earth's climate. Others increase understanding about the current and future impact of climate change, and on developing new technologies and policies that could reduce or even reverse its effects.



How can we measure climate change accurately?

In the 1970s, it was Cambridge scientists with the British Antarctic Survey who first discovered the dangerous thinning of the ozone layer, paving the way for the Montreal Protocol whose objective is the eventual recovery of the ozone layer. Since then other Cambridge researchers have advanced new techniques for measuring climate change.

For example,

- Researchers at the Scott Polar Research Institute pioneered the use of radars to measure the thickness of ice sheets. This is combined with data from satellites and allows monitoring of changes in the ice caps.
- Scientists at the Centre for Atmospheric Science use a specially equipped plane to measure atmospheric composition at an altitude of 10km, where the so-called greenhouse gases have the most effect.
- Geologists in the Department of Earth Sciences collect and analyse samples from the sea floor. The samples show fluctuations in atmospheric composition as well as temperature over millions of years. This provides vital clues for understanding the present changes in climate.

What progress is being made?

A great deal of progress is being made at the University Departments. Examples of which are:

- Mathematicians in the Department of Applied Maths and Theoretical Physics are exploring innovative ways of modelling climate change and working to understand how atmospheric changes affect physical processes such as ocean currents and ice formation in polar regions.
- Our architects are engaged in key projects related to creating sustainable and energy-efficient designs for buildings and cities.
- Amongst other things, Cambridge engineers have been involved in developing small-scale wind turbines for urban areas and efficient hydrogen fuel cells.
- Researchers at the Institute for Aviation and the Environment are assessing the impact of growing air traffic on the atmosphere, and determining how air transport could be made more efficient.
- Economists at the Cambridge Centre for Climate Change Mitigation Research are creating and using computer models to simulate what might happen given different scenarios, and investigating the consequences of various scenarios.

What about educational initiatives?

- Through our lifelong learning programmes and executive education, such as the Cambridge Programme for Sustainable Leadership (CPSL), we are bringing together

the leaders of today to educate them in the dangers and potential solutions to climate change.

- Through our student body we are educating potential future leaders about climate change, as well as nurturing the next generation of researchers.

How has Cambridge been raising awareness of the climate change issue?

We are involved with several major programmes that assess the effects of climate change on human health, raise awareness of the dangers of climate change, and encourage future and current leaders to understand this global challenge and develop effective preventative policies. At CPSL these include the Prince of Wales's Corporate Leaders Group on Climate Change, the Business & the Environment Programme, the Climate Leaders Programme, the P8 with the Pensions sector and ClimateWise with the insurance sector.

Cambridge University Press has one of the world's leading publishing programmes on climate change. For 17 years it has been publishing the influential and timely reports of the Intergovernmental Panel on Climate Change, which was awarded the Nobel Peace Prize in 2007. Many Cambridge scientists and economists have been major contributors to the IPCC reports.

What next?

We are investigating alternative sources of energy, for example the use of waste biomass and algae as fuel, wind, wave, solar and nuclear power; increasing the efficiency of large-scale plant; clean coal combustion; and many transport initiatives.

Cambridge scientists and researchers are working to provide the data, models and tools necessary to tackle climate change: there is scope to make a real impact through integrating new designs, technologies and policies.

For further information on climate change initiatives at Cambridge

The University of Cambridge Environmental Office:
www.admin.cam.ac.uk/offices/environment

The University of Cambridge Programme for Sustainability Leadership: www.cpsl.cam.ac.uk/

Cambridge Environmental Initiatives: www.cei.cam.ac.uk/

The Intergovernmental Panel on Climate Change:
www.ipcc.ch/