

Séminaire Mercredi 28 Janvier 10h30 / Seminar Wednesday January 28, 10:30 AM

Conférencier/Lecturer: Dr Kenneth Denman,
Fisheries and Oceans Canada, EC Canadian Centre for
Climate Modelling and Analysis

Sujet/Subject: Climate Change: a Collision of Science, Politics,
Economics and Ethics

Présentation/Presentation: Anglais / English

Lieu/Room: Grande salle du premier étage CMC

Résumé / Abstract:

With the completion in 2007 of the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4), public perception shifted from skepticism to a general sense that climate change is real and that humans are largely responsible. However, more recent research findings in several areas suggest additional cause for concern: e.g. the minimum summer extent of Arctic sea ice is decreasing faster than in any of the IPCC coupled models, global emissions of carbon dioxide over the last 6 years are increasing faster than in any of the IPCC SRES emissions scenarios, and evidence indicates that the Laurentide ice sheet, which covered much of the northern hemisphere at the last glacial maximum, at times during its retreat, shrank at faster rates than are forecast for the Greenland ice sheet during this century. Both as natural scientists and as members of society, the obvious question is "What do we do next ?"

Until now, scientists have resisted even discussing "geoengineering" approaches to mitigating climate change or its impacts. But unless a post-Kyoto agreement on controlling emissions, scheduled to be reached in late 2009, is much more effective than the Kyoto agreement appears to be, then we should be doing research on some of the geoengineering approaches that have been proposed: injecting sulphur aerosols into the stratosphere, fertilizing the oceans with iron, large scale tree plantations for biofuels or to

alter the albedo, etc. What about the cost of damage from projected climate change versus the cost of mitigating it? The 2007 Stern Report argues strongly that the benefits of mitigating climate change far outweigh the costs of mitigation. His report has received much criticism because he used an unusually low discount rate for the value of future generations. He has countered that at the base of the economic calculations lies an ethical issue – how much do we value the welfare of future generations relative to our own welfare? Another recent study argues that the Stern Report is right for the wrong reasons: that the statistics for rare extreme events are not properly accounted for in the assessment models. Therefore, the possibility of future unexpected “disasters”, where the costs may be enormous and continuing and beyond our current perception (e.g. Hurricane Katrina) should lead to a precautionary approach and a high value assigned to the wellbeing of future generations. More recently, the economic downturn has largely replaced climate change in the public consciousness. Clearly the climate change 'issue' extends far beyond the expertise of any scientific discipline. How can we, or should we, confine our activities on climate change to within our areas of scientific expertise?

Short Biography

Dr. Ken Denman is a Senior Scientist with Fisheries and Oceans Canada (DFO), seconded to the Canadian Centre for Climate Modelling and Analysis of Environment Canada, located at the University of Victoria where he is an Adjunct Professor in the School of Earth and Ocean Sciences. Previously he worked at DFO's Institute of Ocean Sciences in Sidney, BC and at Bedford Institute of Oceanography in Dartmouth, NS.

For the past decade he has worked at the Canadian Centre for Climate Modelling and Analysis in Victoria, developing coupled physical-biogeochemical models of the ocean, including carbon cycling and investigating the response of marine ecosystems to iron fertilization.

Dr. Denman is a Fellow of the Royal Society of Canada and has been a member of the British Columbia Premier's Climate Action Team, (2007-2008). He has contributed to the Intergovernmental Panel on Climate Change (IPCC), specifically as the Coordinating Lead Author in the IPCC Climate Change 2007 AR4 report of chapter titled “Couplings between changes in the climate system and biogeochemistry” and as Convening Lead Author in the IPCC Climate Change 1995 SAR report of chapter titled “Marine biotic responses to environmental change and feedbacks to climate”. He has served on several committees including the International and Canadian SOLAS Scientific Steering

Committees and the Joint Scientific Committee for the World Climate Research Programme between 2001-2006.

Among the awards that he has received are the CMOS President's Prize in 1987, the Parsons Award for Excellence in Ocean Sciences from Fisheries and Oceans Canada in 2006 and the Wooster Award for significant scientific contributions to North Pacific marine science, North Pacific Marine Sciences Organization (PICES) in 2007. The IPCC shared the 2007 Nobel Peace Prize with Al Gore for “/their efforts to build up and disseminate greater knowledge about man-made climate change and to lay the foundations for the measures that are needed to counteract such change/”.