

JAMES RENNIE BEQUEST

REPORT ON EXPEDITION/PROJECT/CONFERENCE

Expedition/Project/Conference Title: Canadian Carbon Program AGM 2009

Travel Dates: February 25th – March 2nd 2009

Location: Vancouver, Canada

Group Member(s): Jon Atherton

Aims:

1. To Present a poster: ‘Comparison of Satellite and Revised Simple Biosphere Model (SiB2) Estimates of Photosynthetic Light Use Efficiency’
2. To meet with colleagues from NASA & The University of British Columbia

OUTCOME (not less than 300 words):-



Figure 1. Vancouver from Stanley Park. This image consists of three or four pictures stitched together and was taken at dusk.

The Canadian Carbon Program (CCP) AGM took place between Friday 27th February and March 1st 2009 at the Sheraton Wall Centre, Vancouver. The CCP AGM provides a forum for Canadian and international scientists to present new and cutting edge research relating to forest science conducted predominantly in Canada. The CCP has an interesting history: during the early 1990s a ground breaking, large-scale experiment, called the Boreal Ecosystem - Atmosphere Study (BOREAS), was conducted which involved hundreds of participants and numerous research institutes. The primary goal of BOREAS was to assess the heat, water, energy and carbon fluxes in boreal (the

largest of the biomes) forest regions. The integration of techniques such as eddy covariance flux towers (structures that measure gas exchange at the surface, see Fig. 2), remote sensing and computer modelling were pioneered and the experiment helped to establish a long term monitoring network of eddy covariance flux towers across Canada and North America. The CCP is a direct descendant of BOREAS, with the primary goal of reducing uncertainty in the Canadian carbon budget. With the financial help of the James Rennie fund I was able to travel to Vancouver, to present a poster and to establish and re-enforce working relationships with researchers from Canada and North America.

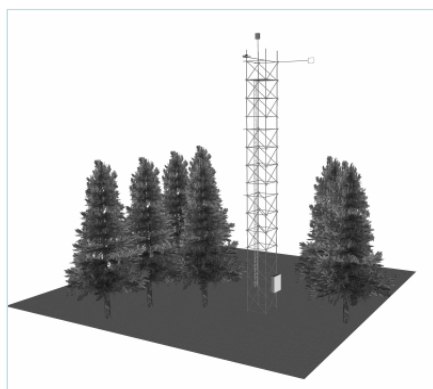


Figure 2. Computer drawing of an eddy flux tower used for measuring carbon exchange in boreal ecosystems

During autumn 2008 I completed a Planetary Biology Internship at NASA Goddard Space Flight Center. During this time I worked on comparing remote sensing (i.e. satellite) estimates of photosynthesis with computer land-surface-model estimates for a region of Canada. The idea being that we can use the satellite data to keep the models in check. The model I'm using is called SiB2 and was developed by a famous former Edinburgh student, Piers Sellers (who is presently planning his next trip into space!). The work is ongoing, and the poster I presented summed up the work thus far. In addition to the AGM I also attended meetings at the University of British Columbia where several scientists are working on similar projects. The conference also gave me a chance to catch up with my supervisor from NASA and to plan the next stages of the remote sensing modelling project.

I found the sessions highly stimulating. I particularly enjoyed talks by Baozhang Chen (UBC) on integrating models, flux towers and satellites (similar to my study); Matthew Brown (UBC) on Mountain Pine Beetle attacks on Pine forests; and Forrest Hall (my supervisor from NASA) talking about a forthcoming satellite mission (DESDynI).

I had a great time and made several new contacts with scope for future collaborations.