Workshop Report to IASC, June 2012

Workshop: Lead/Co-lead Meeting of the Vulnerability of Permafrost Carbon Research Coordination Network

Date: 17-18 May, 2012

Location: St. Pete Beach, Florida, USA

Organizers: Ted Schuur (University of Florida), Christina Schädel (University of Florida)

Participants: David McGuire (University of Alaska), Guido Grosse (University of Alaska), David Olefeldt (University of Guelph), Charles Koven (Lawrence Berkeley National Laboratory), David Lawrence (National Center for Atmospheric Research), Daniel Hayes (Oak Ridge National Laboratory), Peter Kuhry (Stockholm University), Jennifer Harden (US Geological Survey Menlo Park), Julie Jastrow (Argonne National Laboratory), Britta Sannel (Stockholm University), Merrit Turetsky (Guelph University)

Overview: The overall objective of the Vulnerability of Permafrost Carbon Research Coordination Network (RCN) (http://www.biology.ufl.edu/permafrostcarbon/) is to link biological C cycle research with well-developed networks in the physical sciences focused on the thermal state of permafrost. This interconnection is being used to produce new knowledge through research synthesis that can be used to quantify the role of permafrost C in driving climate change in the 21st century and beyond. This is achieved by synthesizing information in a format that can be assimilated by biospheric and climate models, and that will be contributed to future assessments of the Intergovernmental Panel on Climate Change (IPCC). Our ongoing activities to reach this goal are: **1)** organization of an interrelated sequence of meetings and working groups designed to synthesize existing permafrost C research, and **2)** formation of a consortium of interconnected researchers to disseminate synthesis results about permafrost C to other scientific networks and activities. These two research coordination activities are aimed at developing and disseminating algorithms that encapsulate the new process knowledge and datasets in support of model development.

The Permafrost Carbon Network held its third workshop in St. Pete Beach, Florida May 17-18, 2012. This workshop included members of the steering committee as well as leads and co-leads of each working group. The purpose of this meeting was to present draft products from each working group, discuss further synthesis activities and to think about future cross-group synthesis opportunities. Three of the five working groups had draft manuscripts and databases to present. The Carbon Quantity group (represented by Peter Kuhry and Jennifer Harden) presented one draft manuscript on the Northern Circumpolar Soil Carbon Database and one manuscript focusing on the linkage of field information of permafrost carbon to physical vulnerabilities of thawing. The Carbon Quality group (represented by Christina Schädel, Ted Schuur and Julie Jastrow) presented a draft manuscript on the vulnerability of permafrost carbon from different soil horizons to decomposition. Another draft manuscript was presented by the An/aerobic

working group (represented by David Olefeldt and Merrit Turetsky) which focuses on terrestrial methane fluxes in the permafrost region. The Thermokarst working group (represented by Guido Grosse and Britta Sannel) presented progress on a synthesis activity that focuses on thermokarst and thermo-erosional process rates in a circum-Arctic context. The Model-Integration working group (represented by David McGuire, David Lawrence, Dan Hayes and Charles Koven) showed current progress on protocol development and presented a manuscript on the retrospective evaluation of thermal and carbon dynamic permafrost-carbon models. These activities set the stage for the next annual meeting at AGU in fall of 2012 where several new manuscripts will be ready for submission.

The second activity of the workshop was to solicit and prioritize synthesis products that will be conducted by members of the network over the course of the 4-year RCN project. This activity was achieved with a combination of overview presentations by product lead/co-leads followed by discussions to identify cross-group synthesis potential and remaining gaps. Scaling was an issue identified by multiple working groups and will likely be a theme carried into the next RCN meeting at AGU in December 2012. Finally we also discussed important themes of communicating within and outside the network in order to more efficiently keep members informed and able to input ideas.

Agenda Permafrost Carbon Network Meeting (May 17-18 2012)

Thursday, 17 May 2012

AM

8:30-9:30	**Workshop goals** and outline of high-level conceptual synthesis product: Ted Schuur + steering committee

Presentation of key results of synthesis products from working group leads (10-15 min) and feedback, review and discussion by workshop participants (15-20 min).

	Carbon Pools and Quality
9:30-10:00	Presentation+Discussion: Jennifer Harden/Charlie Koven
10:00-10:30	Presentation+Discussion: Peter Kuhry/Gustaf Hugelius
11:00-11:30	Presentation+Discussion: Christina Schädel/Ted Schuur
11:30-12:00	Carbon Pools and Quality: Gaps + Next Steps

PM

	Environment for Decomposition/Rates of Change
1:00-1:30	Presentation+Discussion: Guido Grosse/Britta Sannel

1:30-2:00	Presentation+Discussion: David Olefeldt/Merrit Turetsky
2:00-2:30	Environment for Decomposition/Rates of Change: Gaps + Next Steps
	Model Synthesis
2:30-3:00	Presentation+Discussion: Dave McGuire/Dave Lawrence
3:30-5:30	Authorship and publications/special issue

Friday, 18 May 2012

AM

8:00-10:00	Revisit conceptual synthesis product. Revise outline, merge current products, gaps.
10:00-12:00	RCN Update: New participants and Outreach: How to engage new members? Include new data? Roadmaps: future goals, AGU 2012 plans
12:00	End

Workshop Participants (standing row, left to right: Christina Schädel, David McGuire, Guido Grosse, David Olefeldt, Charles Koven, David Lawrence, Daniel Hayes, Peter Kuhry, Ted Schuur, Jennifer Harden; front row, left to right: Julie Jastrow, Britta Sannel, Merrit Turetsky)