

## **Aquatic carbon biogeochemistry of the Pacific coastal temperate rainforest region**

**Dates:** February 7-10, 2017

**Location:** Seattle, Washington - Talaris Conference Center

**Goal:** This workshop will define the state of the science for understanding carbon fluxes from Pacific Coastal Temperate Rainforest (PCTR) ecosystems. It is our hope to develop a quantitative understanding of the relationships among land cover, hydrology, and riverine carbon export for to coastal environments.

### **Questions to Address:**

- 1) What are the biogeochemical fluxes of water and carbon across the terrestrial - freshwater - marine interfaces of the PCTR and are they changing through time?*
- 2) How vulnerable across space and time are the processes that transform carbon in aquatic environments of the PCTR to increases in temperature, glacial melt, and altered precipitation regimes?*

**Proposed Outcomes:** We will develop a framework for using landcover, hydrology/glaciology, and riverine carbon data to estimate riverine carbon fluxes from PCTR ecosystems; develop a coordinated approach for monitoring riverine carbon and nutrient fluxes from the PCTR; and analyze approaches for scaling local estimates of riverine carbon and nutrient fluxes up to robust regional estimates. This effort will lead to first order estimates of land-to-ocean biogeochemical fluxes for PCTR ecosystems in Alaska and coastal British Columbia as well as an improved understanding of how carbon storage in the PCTR may change in response to shifts in temperature and regional hydrology. We will produce a manuscript summarizing the state of knowledge regarding riverine C processing and fluxes from PCTR ecosystems with a comparison to other ecoregions where riverine fluxes are better constrained.

### **Agenda:**

#### **Day 1 (Tuesday)**

**7:00 pm**      **Welcome Mixer** - Talaris Center Building D, Cedar Foyer

#### **Day 2 (Wednesday)**

**7:30**            **Continental Breakfast**

**8:30**            Welcome - Overview of the structure and goals of the CRMNR and workshop context (Allison Bidlack)

**8:45**            Workshop overview - Review goals and agenda (Eran Hood)

**9:00**            Introductions by workshop participants - Background, relevant experience, workshop interests

**9:30**            Icebreaker (Allison Bidlack)

**10:00**          **Coffee Break**

- 10:15** PCTR Regional Overview (Dave D'Amore) - (Talk + Discussion & Questions)  
Define the region - spatial extent, climate, vegetation, soils, C stocks, nearshore oceanography
- 11:00** PCTR Hydrology Overview (Bill Floyd, Sean Fleming) - (Talk + Discussion & Questions)  
Define the hydrologic regime, summarize existing data and modeling efforts
- 12:15** **Lunch on site**
- 1:15** PCTR Carbon Overview (Sarah Stackpoole, Jason Fellman, Suzanne Tank, Miguel Goni) - (Talk + Discussion & Questions)  
Define what is known and not known about riverine C cycling and export (focus on DOC, but including DIC and POC)
- 2:45** Transboundary watersheds database (Ian Giesbrecht)
- 3:15** **Coffee Break**
- 3:30** Interdisciplinary break-out groups (4)
- Identify key components that need to be addressed for the region
  - Identify key datasets, people, agencies, and also data gaps
  - Biggest unknowns or issues that were not identified in the talks
  - Identify how to place the PCTR - carbon/nutrient/chemical fluxes in the context of other systems
- 4:30** Report back from breakout groups, set stage for Day 2
- 5:30** Adjourn for day; dinner on own or in groups

### **Day 3 (Thursday)**

- 7:00** **Continental breakfast**
- 8:00** Present rough straw man based on key themes from Day 1, have group discussion about paper format
- 9:00** Interdisciplinary working groups (4) geared toward creating carbon flux model - Giant Pad brainstorming (e.g. PCTR conceptual models)
- 10:30** **Coffee Break**
- 10:45** Working group reports and discussion of model concepts
- 12:00** **Lunch on site**
- 1:00** Disciplinary working groups (4) focusing on what needs to be done to parameterize and test the conceptual model
- 2:45** University of Washington Arboretum tour
- 6:30** **Group Dinner** (Eureka)

**Day 4 (Friday)**

**7:00**            **Continental breakfast**

**8:00**            Group presentations - report back from previous day

Identify author list and leads for synthesis product(s) to be written

**9:30**            Open discussion (next steps):

- a. Discuss data management - NANOOS for freshwaters?
- b. Funding opportunities
- c. Suggestions for expanding the Network
- d. Website thoughts
- e. Other?

**11:30**            Wrap up (Workshop Organizers, Dave D'Amore) - describe upcoming soils workshop

**12:00**            Workshop adjourn