

## Forestry and Agriculture Greenhouse Gas Modeling Forum

### Workshop # 5: Meeting the Challenges of a Rapidly Changing Climate Policy Environment

April 6–9, 2009—National Conservation Training Center  
Shepherdstown, West Virginia

Sponsored by: US Environmental Protection Agency, US Department of Agriculture, Agriculture and Agri-Food Canada, and the Farm Foundation

**Workshop Objectives:** (1) Identify the key agriculture, forestry, and land- use change issues that that will dominate climate change policy discussions over the next two years; (2) Discuss the capabilities of existing models to inform the policy process through improved understanding of the benefits, costs, and mitigation potential of alternative GHG reduction strategies in the forestry and agriculture sectors; (3) Highlight the key scientific and economic uncertainties and risks that need to be addressed in modeling for policy design and implementation; (4) Explore existing frameworks and improve the modeling of climate change impacts to agriculture and forestry.

#### Agenda

##### Day 1: Monday, April 6, 2009

5:00–6:30 pm	Registration   <i>Entry Auditorium Building</i>
6:30–8:00 pm	Optional Dinner & Reception   <i>Main Dining Room</i>
8:00 pm	Informal Discussions   <i>Roosevelt Room</i>

##### Day 2: Tuesday, April 7, 2009

7:00–8:00 am	Breakfast   <i>Main Dining Room</i> Registration   <i>Room 2011E</i>
8:00 am	<b>Welcome and Workshop Overview</b>   <i>Room 2011E</i> Adam Daigneault • EPA Climate Change Division
8:15 am	<b>Keynote Address</b> <i>Climate Stabilization, Agriculture and Land Use</i> Jae Edmonds • PNNL Joint Global Change Research Institute
8:45–10:15 am	<b>Session 1: Current Energy and Climate Policy Landscape: 1.1—Looking Back at Recent Climate Policy</b>

*Objective: Presenters will look back at recent efforts to address climate change issues in various policy settings.*

Session Chair: Francisco de la Chesnaye • Electric Power Research Institute

*Recent Efforts in US Climate Policy*  
Lydia Olander • Nicholas Institute, Duke University

**Day 2: Tuesday, April 7, 2009**

*Analysis of RFS2/EISA—Challenges and Successes*  
Michael Shelby & Sharyn Lie • EPA Office of Transportation & Air Quality

*Recent Efforts in Canadian Climate Policy*  
Karen Haugen-Kozyra • Climate Change Central

Comments & Group Discussion

10:15 am Break

10:45–12:30 pm **Current Climate and Energy Policy Landscape:  
1.2—Panel Discussion: Looking Ahead**

*Objective: Overview of policymakers needs for 2009, where they see models playing a role, and what improvements they would like to see from the modeling community.*

Session Chair: Francisco de la Chesnaye • Electric Power Research Institute

Reid Harvey • EPA Climate Change Division  
Alexandre Lefebvre • Agriculture & Agri-Food Canada  
William Hohenstein • USDA Global Change Program Office  
Rob Doudrick • USDA Forest Service

Discussant  
Bruce McCarl • Texas A&M University

Comments & Group Discussion

12:30 pm Lunch | *Main Dining Room*

1:30–5:15 pm **Modeling and Scientific Uncertainties in C and N Cycles in Forests and  
Agriculture: Implications for Mitigation**

*Objectives:*

§ *Identify state of science—and key remaining uncertainties—about C and N cycling in agriculture and forestry, with implications for inclusion of agriculture and forestry mitigation activities in an offset program*

§ *Identify strategies for addressing key challenges in achieving environmental integrity in the design of an offset program for ag and forestry activities*

1:30–2:30 pm **2.1—Overview of the Key Uncertainties**

*Objective: Provide an overview of state of science and key uncertainties about C and N cycling in North America. The focus will be on implications for mitigation activities for achieving long-term GHG atmospheric stabilization goals; as the first natural-science oriented session of the workshop, it also will set the context for subsequent discussions of mitigation, impacts and adaptation.*

Session Chair: Carol Jones • USDA Economic Research Service

*Key Scientific Uncertainties in Agriculture: Overview*  
Cesar Izaurralde • PNNL Joint Global Change Research Institute

**Day 2: Tuesday, April 7, 2009**

*Key Scientific Uncertainties in Forestry: Overview*  
Michael Ryan • USDA Forest Service

2:30–5:15 pm **2.2—Data and Methods for Offset Policy Implementation and Evaluation**

*Objective: Identify remaining data, analysis, and modeling needs for project accounting and program evaluation to achieve environmental quality in an offsets program for agriculture and forestry.*

Session Chair: Lydia Olander • Nicholas Institute, Duke University

*Context and Overview*  
Lydia Olander • Nicholas Institute, Duke University

*Additionality/Baselines*  
Tim Pearson • Winrock International

*Estimating Project or Programmatic Leakage*  
Gordon Smith • Ecofor

3:30 pm Break

3:45 pm *Prospects for using National or Regional Carbon Stock Observational Data to Measure Offset Program Performance*  
Linda Heath • USDA Forest Service

*How Canada is Dealing with Key Issues in Ag and Forestry in a Federal Offsets System: Guidelines for Protocols*  
Ian Campbell • Agriculture & Agri-Food Canada

Discussant  
Erich Livengood • KEA 3 Limited, New Zealand

Comments & Group Discussion

6:00 pm Dinner | *Main Dining Room*

7:30 pm Informal Coffee & Dessert | *Roosevelt Room*

**Day 3: Wednesday, April 8, 2009**

7:00–8:00 am Breakfast | *Main Dining Room*

8:00–10:30 am **2.3—Uncertainty in C and N Cycles and Implications for Mitigation Options**

*Objective: Discuss in more detail specific areas of major uncertainties for agricultural soil management (such as conservation tillage and fertilizer management), forest management and forest products, and land use change (for biofuels, food production/development or conversion to grasslands or forests.)*

Session Chair: Rod Venterea • USDA Agricultural Research Service

*Impact of Uncertainty of Land Management Practices on Carbon Sequestration*  
Brian McConkey • Agriculture & Agri-Food Canada

**Day 3: Wednesday, April 8, 2009**

*Reducing Uncertainty in the U.S. Soil Organic C and N<sub>2</sub>O Inventories with a Process-Based Model*

Stephen Ogle • Natural Resource Ecology Laboratory, Colorado State University

*Carbon Storage in Wood Products: Credits for Projects, Uncertainty and Bias*

Ken Skog • USDA Forest Service

*Scientific Uncertainty About Bioenergy from a Forestry Perspective*

Peter Ince • USDA Forest Service

Discussant

Steve Hamburg • Environmental Defense Fund and Brown University

Comments & Group Discussion

10:30 am

Break

11:00–12:30 pm

**Session 3: Modeling Competition for Land**

*Objective: Assess the current state of models to address competition for land. Modelers will show capabilities to estimate land use change, and resulting emissions/mitigation, if available.*

Session Chair: Ron Sands • USDA Economic Research Service

*EPA Analysis of RFS2 Land Use Change*

Vince Camobreco & Aaron Levy • EPA Office of Transportation and Air Quality

*Overview of Economic Methods to Simulate Land Competition*

Ron Sands and Michael Brady • USDA Economic Research Service

*Energy, Climate and Agricultural Policies and the Global Competition for Land*

Tom Hertel • Purdue University

12:30 pm

Lunch | *Main Dining Room*

1:30–5:15 pm

**Session 3: Modeling Competition for Land (continued)**

*Global Forest and Agriculture Model*

Suk-won Choi • National Center for Atmospheric Research

*Canadian Perspectives on Modeling LULUCF in Canada*

Ted Huffman & Stephen Smith • Agriculture & Agri-Food Canada

Denys Yemshanov • Canadian Forest Service

*Analysis of LUC in US Agriculture*

Scott Malcolm • USDA Economic Research Service

3:00 pm

Break

*National Analyses of US LUC: Linkage between Forestry and Agriculture and Conversions to Developed Uses*

Ralph Alig • USDA Forest Service

*Brazil Regional Model*

Bruce Babcock • Iowa State University

**Day 3: Wednesday, April 8, 2009**

*Econometric Estimates of LUC: New Applications*  
Ruben Lubowski • Environmental Defense Fund

Discussant  
Bruce McCarl • Texas A&M University

Comments & Group Discussion

6:00 pm Dinner | *Main Dining Room*

7:30 pm Informal Coffee & Dessert | *Roosevelt Room*

**Day 4: Thursday, April 9, 2009**

7:00–8:00 am Breakfast | *Main Dining Room*

8:00–12:00 pm **Session 4: Climate Change Impacts and Adaptation Planning—Moving Beyond Gradual & Average Change**

*Objective: The purpose of this session is to push biophysical and economic modelers to characterize and evaluate uncertainties in observed and projected biophysical conditions (climate, weather, water, productivity, disturbances) and impacts and adaptation responses and effectiveness for managed and unmanaged lands. Presenters are asked to move beyond evaluating average biophysical changes and to discuss the elements associated with developing a fuller characterization of the risks (exposure and magnitude of effects) to agriculture, forests, and unmanaged ecosystems.*

Session Chair: Steve Rose • Electric Power Research Institute

Discussion Leaders: Ralph Alig • USDA Forest Service and  
Ben DeAngelo • EPA Climate Change Division

Overview  
Steve Rose • Electric Power Research Institute

8:10-10:10am **4.1—Characterizing Historic Patterns and Trends and the Future Threat or Opportunity**

*Climate Scenarios into Policy Research: Downscaling from GCMs to Regional Scale*  
Budong Qian • Agriculture & Agri-Food Canada

*Ecosystems #1: Forests -- Uncertainties, Data and Research Needs in Projecting the Effects of Climate Change and Determining Adaptation Responses*  
Linda Joyce • USDA Forest Service

*Ecosystems #2: Crops (soils, plants, invasive species)*  
Dennis Ojima • Natural Resource Ecology Laboratory, Colorado State University

Discussion

10:10 am Break

**Day 4: Thursday, April 9, 2009**

10:40–12:00 pm **4.2—Decision-Making and Managing Risk**

*Crop Insurance to Mitigate Impacts from Climate Variability*  
Robert Beach • RTI International

*Impact of Climate Change on the Prairie Crop Sector: Integration of Bio-Physical and Economic Models*  
Bob MacGregor • Agriculture & Agri-Food Canada

Discussion

Comments & Group Discussion

12:15 pm **Wrap-Up Discussion—Workshop Review & Conclusion**

Organizing Committee • Various Affiliations

12:30 pm Lunch | *Main Dining Room*

2:00 pm Shuttle departs for Dulles Airport

4:00 pm Shuttle arrives at Dulles Airport