

Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) September 2012

ORNL Publications:

Dale VH and KL Kline. Issues in using landscape indicators to assess land changes. Ecological indicators. (Resubmitted in response to reviewers' comments).

Dale VH, Kline KL, Kaffka SR, and Langeveld JWA. A landscape perspective on sustainability of agricultural systems. Landscape Ecology. (Resubmitted in response to reviewers' comments).

Dale VH, Langholtz MH, Wesh BM, and Eaton LM. Environmental and socioeconomic indicators for bioenergy sustainability as applied to Eucalyptus. International Journal of Forestry Research. (Resubmitted in response to reviewers' comments).

Wolfe A, Downing M, Hoagland C, and Campa Ayala MF. The perennial question: Farmers choices and the biofuel future. Environmental Science & Technology. (Submitted).

ORNL Presentations:

Sept 18 -- Rebecca Efroymsen presented "Sustainability Indicators for Bioenergy Systems and Applicability to Genetically Modified Organisms (GMOs)" at the 12th International Symposium on Biosafety of Genetically Modified Organisms in St Louis, MO. The talk was in a session entitled "Symposium on Biofuel Crop Risk Assessment – Regulatory, Industry, and Academic Perspectives." Rebecca participated in a panel discussion, along with the other speakers from USDA, Canadian Forest Service, Ceres, Inc., Virginia Tech University, and University of Florida.

Sept 20- Shujiang Kang, Kline and ORNL research staff who have teamed to develop a global scale HPC-EPIC bioenergy crop modeling platform gave a presentation to Xuesong Zhang (PNNL), Kristen Johnson and others on progress and next steps.

ORNL Center for BioEnergy Sustainability (CBES) Forums:

September 20th – Xuesong Zhang from Pacific Northwest National Laboratory (PNNL) presented "Balancing Human Needs and Ecosystem Services to Develop a Sustainable Biofuels Industry: A Modeling Systems Approach." This presentation can be accessed at the CBES website under forums: <http://www.ornl.gov/sci/ees/cbes/forums.shtml>

Other ORNL Activities:

Sept 5 – Kline, Dale, and Davis participated in a meeting with ORNL visitor from "Fibria S.A.," the largest cellulose producer in Brazil and supplier of "sustainable" fiber to US multi-nationals such as Kimberly-Clark and P&G. Fibria S.A. is interested in collaboration on Eucalyptus sustainability, cellulosic fuels, and metrics for tracking carbon change in forest ecosystems.

Sept 6 – Kline convened and facilitated the ISO Sustainability Criteria for Bioenergy webinar for an 18-member international Editing Committee working toward consensus on the first "committee draft" document. The draft was subsequently distributed for review by member

countries enrolled in TC-248. All comments are due by December 17, when they will be consolidated, reviewed and discussed in the next plenary meeting in January 2013.

September 7 – Keith Kline and Virginia Dale joined a conference call of the Council on Sustainable Biomass Production (CSBP) regarding its future direction.

September 7 – Virginia Dale participated in a conference call of the Steering Committee/Programming Committee for the SunGrant National Conference on “Science for Biomass Feedstock Production and Utilization” to be held in October 2-5 in New Orleans.

September 18-20 – Melissa Klembara, Kristen Johnson, Dan Lehrburger from the DOE Office of the Biomass Program as well as Corinne Valkengurg from Pacific Northwest National laboratory met with staff from the National Transportation Research Center (NTRC) and Bioenergy Program including the Renewable Energy Systems Group, Landscape Ecology & Regional Analysis Group and Energy Analysis Group. September 18 was spent in Vonore, TN, where Genera Innovation Center hosted a tour and the group visited field sites sampling water attributes from study watersheds (supported by the USDA CAP Southeastern Partnership for the Integrated Bioenergy Supply Systems in conjunction with ORNL).

Sept 18-20 - ORNL staff briefed OBP representative Kristen Johnson on sustainability and analysis projects, reviewing the progress made this FY and the plans for FY13.

September 20-21 – Mac Post hosted Xuesong Zhang from PNNL who met with various ORNL staff.

September 25 – Don Hodges and Virginia Dale hosted Marko Debeljak from The Jozef Stefan Institute in Ljubljana, Slovenia. Marko met with various staff from the Bionenergy Resource & Engineering Systems Team, ESD Terrestrial Systems Modeling and Landscape Ecology & Renewable Energy Team. Marko also presented “Inductive machine learning in ecological modeling” at a special seminar on Tuesday 25th, September.

September 27- Virginia Dale hosted 10 students and 2 teachers from the L&N STEM Academy who toured the Oak Ridge National Laboratory facility, the Aquatics Laboratory as well as a tour of the Greenhouses. Virginia also gave a presentation titled “Indicators to support sustainability assessment of energy systems.”

September 27-28 - Kline, Dale, and Davis assisted Tim Theiss and NTRC in hosting Professor Ulf Schuchardt, from UNICAMP and currently funded by FAPESP to work on aviation biofuel research with Boeing/EMBRAER. Ulf is interested in catalysis and ORNL research related to bioenergy sustainability.

Upcoming ORNL Visits/Events:

Kline received requests to make presentations on international sustainability standards and related issues for international biofuel meetings in Brazil (GSB) in October and in Gaithersburg, MD, USA (NIST - 4th International Conference on Biofuels Standards: November 13-15).

October 16-18 – Virginia Dale will participate in the NEON STEAC meeting in Washington, DC.

October 18-28 – Kline received an invitation from the Sao Paulo Research Foundation (FAPESP) and the Global Sustainable Bioenergy (GSB) Project to participate and make presentations in a series of meetings in Campinas, Brazil, related to next steps in the GSB and the Latin America, Caribbean and African Sustainable Biofuels (LACAF) projects.

October 2012 - Virginia Dale is serving as a member of the Conference Programming Committee for the "Science for Biomass Feedstock Production and Utilization National Conference" to be held in October 2012 in New Orleans and sponsored by the Sun Grant Initiative. <http://www.sungrant.org/News+and+Events/2012+National+Conference.htm>

October 24-25 – Virginia Dale will be guest speaker at the University of Tennessee 2012 From Grow to Go: A Biomass Field Day in Vonore, TN.

November 5-8 – The 9th Biennial Short Rotation Woody Crops Operations Working Group will meet in Oak Ridge and Knoxville, Tennessee.

November 12-15 – Latha Baskaran will present “Modeling the effects of switchgrass management on aquatic macroinvertebrates” at the 2012 American Water Resources Association Conference in Jacksonville, FL. <http://www.awra.org/meetings/Jacksonville2012/>

November 13-15: Kline is invited to attend and make a presentation for the “4th International Conference on Biofuels Standards” hosted by NIST in Gaithersburg, MD.

November 16-17: Kline is invited to participate in IEA Task 38 workshop developing two white papers on time and emission accounting in forest ecosystems and is investigating options for remote/virtual participation.