

**Bioenergy Sustainability and Land-Use Change Report  
Oak Ridge National Laboratory (ORNL) June 2011**

**ORNL Publications:**

Dale VH, Efrogmson RA and Kline KA. 2011. The land use-climate change-energy nexus. *Landscape Ecology* 26(6):755-773.

**ORNL Presentations:**

June 1 – Virginia Dale gave a presentation to 500 5<sup>th</sup>-8<sup>th</sup> grade students and teachers at the Glenville State College, WV on behalf of The Jason Project. <http://www.jason.org/>

June 14 – Virginia Dale and Tanya Kuritz presented a talk titled “Environmental Effects of Large-Scale Algal Fuel Production” to the National Research Council Committee on Sustainable Development of Algal Biofuels.

June 24 – Virginia Dale gave a presentation titled “Pathways toward Sustainable Bioenergy” in Howard Baker Center’s Energy and Environment speaker series.

June 27 – Maggie Stevens gave a presentation to the Sunset Rotary club of Oak Ridge about Brazil, LUC, and her thesis research with small-scale eucalyptus foresters.  
[http://www.oakridgesunsetrotary.org/IMupload/newsletter/20110627\\_newsletter.pdf](http://www.oakridgesunsetrotary.org/IMupload/newsletter/20110627_newsletter.pdf)

**ORNL Provided Comments:**

Global Bioenergy Partnership (GBEP): June 7 ORNL submitted comments on GBEP Capacity Building to support an Office of the Biomass Program (OBP) proposal submitted to the State Department. The proposal recommends that GBEP facilitate training and scientific cooperation to build capacity around three areas of common interest – biomass resource assessments, feedstock logistics, and conversion technologies – in target regions including Central America, Asia and West Africa.

Global Sustainable Bioenergy Project (GSB): ORNL contributed to further revisions and clarifications in the draft “Vision and Action Plan” document for the GSB Stage 2, which was distributed on June 27 to potential external partners for further input.

**ORNL CBES Forum:**

The Center for Bioenergy Sustainability Forum was held on June 16th, 2011. The guest speaker was Jody Endres from the Law and Regulation Program at the Energy Biosciences Institute at the University of Illinois. Jody presented “A legal typology of sustainable biomass definitions in U.S. law, and other theoretical perspectives”.  
(See:[http://www.ornl.gov/sci/ees/cbes/forums/Slides\\_.pdf](http://www.ornl.gov/sci/ees/cbes/forums/Slides_.pdf))

### **Other Activities:**

Office of the Biomass Program (OBP) Milestones: June 3 – ORNL submitted comments to OBP on proposed metrics and program performance targets for sustainability. June 30 - ORNL participated in a conference call with OBP and National Renewable Energy Laboratory (NREL) to refine the Platform Milestones for FY12 based on revised metrics and improved definitions.

International Energy Agency (IEA): June 6-9 – ORNL discussed draft abstracts submitted and topics proposed with OBP and other labs to coordinate contributions to the IEA Task 38/40/43 joint workshop on quantifying and managing land-use effects of bioenergy (see future events below).

International Organization for Standardization (ISO): ORNL (Tara Hall and Keith Kline) participated in a series of calls to organize the first ISO PC248 (Sustainable Bioenergy Standard) webinar and meeting of Work Group 4 on Indirect Effects. Definitions and criteria drafted by ORNL were discussed in the call. Work Group 4 is led by a team from Argentina, Canada and the U.S. (represented by ORNL). Keith prepared and submitted Update #4 outlining progress with the ISO Process Standard development, future plans and OBP contributions via Argonne National Laboratory (ANL) and ORNL.

Roundtable of Sustainable Biofuels (RSB): June 14 – Keith Kline was invited by Victoria Junquera (RSB Manager for Science and Technology) to participate in the RSB Indirect Impacts Expert Group (IIEG) <http://rsb.epfl.ch/lang/en/iieg>

Brazil: Maggie Stevens led outreach to Brazilian bioenergy researchers from Brazilian Bioethanol Science and Technology Laboratory (CTBE), Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Universidade de São Paulo (USP) to develop technical collaborations on sustainability, land-use and soil carbon change.

Socio-Econ Indicators: The ORNL sustainability team met several times to develop an annotated outline for the development of a draft publication on “indicators to support socioeconomic sustainability of bioenergy systems.”

June 29 and 30: Keith Kline and Virginia Dale participated in conference calls of the Council on Sustainable Biomass Production (CSBP) Producer Work Group and Field Testing Task Force.

Esther Parish, Laurence Eaton and Mark Downing had a series of meetings with University of Tennessee Institute of Agriculture (UTIA) personnel Sam Jackson, Tim Rials and Mladen Grbovic over the months of May and June to discuss CBES collaboration UTIA Southeastern Sun Grant Center staff in the collection, synthesis, and analysis of GIS data from a variety of past, ongoing and planned bioenergy-related studies conducted throughout Tennessee and the Southeast Region, and at Vonore in particular. Joint collaboration will ultimately facilitate input of information into the KDF.

### **Upcoming ORNL Visits/Events:**

July 10-15 – Natalie Griffiths will present research on “Biogeochemistry of forested watersheds in the Upper Coastal Plain of the Southeastern U.S. prior to conversion to short-rotation pine for bioenergy” at the Gordon Research conference on Catchment Sciences at Bates College, Lewiston, ME.

August 14-18 – Keith Kline is invited to attend and make a presentation at the Brazilian Bio-Energy Science and Technology (BBEST) Conference in São Paulo, Brazil, where bioenergy experts from around the world will discuss progress and collaborations on projects and emerging research. Keith was also invited to participate in parallel meetings of the Executive Committee of the Global Sustainable Bioenergy Project.

August 21-25 – Virginia Dale is invited to give a presentation on “Integrating climate change with land-use change” at the 4<sup>th</sup> World Conference on Ecological Restoration of the Society for Ecological Restoration (SER) in Mérida, Mexico.

September 7-9 – Kline is invited to the National Wildlife Federation/RSB workshop on the Role of Commodity Roundtables & Avoided Forest Conversion in Subnational Reducing Emissions from Deforestation and Forest Degradation (REDD) – Agriculture, Food Security & Greenhouse Gas (GHG) Accounting; San Diego, California.

September 19-21 – ORNL scientists will present at the IEA Joint Task 38/40/43 Workshop on "Quantifying and managing land use impacts of bioenergy" in Campinas, Brazil.

October 18-19 – Keith Kline is invited to speak at The Coordinating Research Council (CRC) Lifecycle Analysis Workshop in the "Land Use Change and GHG Emissions" session at Argonne National Laboratory.

November 2011: Virginia Dale will visit Michigan Technological University as a Distinguished Ecologist lecturer in the School of Forest Resources and Environmental Science.

November 13-16: Mike Hilliard will give a presentation at the Annual Meeting of the Institute for Management Science and Operations Research (INFORMS) in Charlotte, NC, on the Biomass Location for Optimal Sustainability Model (BLOSM) --Balancing Profit and Water Quality in a Watershed. His presentation will use data from the watershed surrounding a cellulosic ethanol refinery in Tennessee; an optimization model paired with results from a water quality model demonstrates that planting switchgrass in the right locations can improve nitrogen, phosphorus and sediment levels with a moderate impact on revenue. A web-based interface communicates the results. <http://meetings2.informs.org/charlotte2011/index.html>

February 22-24, 2012 – Virginia Dale is invited to speak on “Short-rotation Woody Crops in the United States and Biodiversity” at symposium on “Assessment and Management of Environmental Issues Related to Eucalyptus Culture in the Southern United States”. The symposium is being organized by the USDA Forest Service and the National Council for Air and Stream Improvement, Inc. (NCASI) in Charleston, SC.