

## Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) August 2015

### Publications

- Dale VH, RA Efrogmson, KL Kline, and M Davitt. 2015. A framework for selecting indicators of bioenergy sustainability. *Biofuels, Bioproducts & Biorefining* 9(4):435-416. DOI: 10.1002/bbb.1562
- B. L. Preston, A. W. King, K. M. Ernst, S. M. Absar, S. S. Nair, and E. S. Parish. 2015. Scale and representation of human agency in the modeling of agroecosystems. *Current Opinion in Environmental Sustainability*. doi:10.1016/j.cosust.2015.05.010

### ORNL Presentations



**August 8-14:** Virginia Dale attended the 2015 Ecological Society of America (ESA) Annual Meeting and gave an invited talk in a special session on “The role of long-term studies in advancing ecological understanding.” Keith Kline presented on “A landscape design approach for assessing trade-offs and sustainability of woody biomass production from forests in the Southeastern United States.” This meeting took place in Baltimore, Maryland.

**August 12-13** - Esther Parish attended the Annual Meeting of the Southeastern Partnership for Integrated Biomass Supply Systems (IBSS) held at Auburn University in Alabama. She gave an invited talk about “ORNL’s Approach to Sustainability Evaluation of Bioenergy Production Systems & Landscape Design” and attended other lectures and tours. The IBSS regional partnership is sponsored by USDA and led by the University of Tennessee’s Institute of Agriculture’s Center for Renewable Carbon.



### Other CBES Activities

**August 4** – Emma Tobin attended the annual scientific meeting of the Southern Forest Resource Assessment Consortium (SOFAC), research cooperative at NC State University where discussion focused on current research and applications that have occurred in the last year pertaining to (1) SRTS modeling, biomass and energy and (2) international timber investments and models.

**August 21:** ORNL is pleased to be a part of the new Antares Group, Inc., project announced by the Department of Energy to improve sustainability of cellulosic bioenergy:

<http://energy.gov/eere/articles/energy-department-announces-9-million-improve-sustainability-cellulosic-bioenergy>

**August 25** – A conference call was held between ORNL staff, DOE, and representatives of the South Atlantic Landscape Conservation Cooperative to discuss ways to assess biodiversity effects of pellets in the southeast.

**August 27** – Virginia Dale gave a presentation to the Biomass Research and Development Technical Advisory Committee on assessing progress toward sustainability using an indicator approach.

**August 27** - The U.S. Department of Energy's Bioenergy Technologies Office (BETO) hosted the Biomass Basics webinar, which provided general information about bioenergy, how it is produced, and how it can be used.

### Upcoming ORNL Visits/Events:

**September 15** – The University of Tennessee Watershed Symposium (<http://isse.utk.edu/wrrc/>) will be held. GangSheng Wang will give an oral presentation entitled “Hydrological Modeling of the Tennessee River Basin” ( Authors: Gangsheng Wang, Yetta Jager, Latha Baskaran). Also, Natalie Griffiths will present a poster on the “Effects of short-rotation pine management for bioenergy on water quality in the southeastern U.S.”

**September 27** – Virginia Dale will participate in the debate about the recent SCOPE report on “Bioenergy and Sustainability: Bridging the Gaps” at the World Bank in Washington, DC.

**September 29-October 2:** Rebecca Efroymson plans to attend the 2015 Algae Biomass Summit in Washington, DC, and to present “Environmental and socioeconomic indicators for sustainable production of algal biofuels.”

**Sept 30-Oct 2:** Esther Parish will present her multi-metric sustainability case study assessment of the Vonore switchgrass-to-ethanol experiment at the Switchgrass III: Prairie and Native Grass International Conference in Knoxville.

**October 15** – GangSheng Wang will attend 2015 Soil and Water Assessment Tools (SWAT) conference. He will present a paper entitled: “Forecasting changes in water quality in the Tennessee River Basin with growing biofuels.” Authors: Gangsheng Wang, Yetta. Jager, Latha Baskaran, Tyler F. Baker, Craig C. Brandt. (<http://swat.tamu.edu/conferences/2015-purdue>

**October 21:** ORNL will celebrate the 3rd Annual National Bioenergy Day by contributing several webinars to a week-long Bioenergy Week Web-a-thon being planned by the USDA-funded Southeastern Partnership for Integrated Biomass Supply Systems (IBSS). The webinars are planned to raise awareness of bioenergy and its potential benefits. All of the talks will be archived for future access.

**October 26-29:** Virginia Dale and Keith Kline are invited to participate in the International Energy Agency (IEA) Bioenergy Conference 2015 in Berlin, Germany. Virginia will give a

presentation titled “Integrating biomass supply systems into sustainable landscape designs” with coauthors Keith Kline and Esther Parish. Keith will give a poster on “Understanding Indirect Effects: Evaluating and Improving Science-based Practices for ILUC assessment” with coauthors Hans Langeveld, Virginia Dale and Rebecca Efroymsen.

**November 2-6:** Keith Kline and Maggie Davis plan to attend the Society of American Foresters annual convention and present on “Bioenergy Trade and Sustainability Assessment: Science, Truth and Consequences” and “Indirect Effects of Bioenergy: International Standards and Science” in a special session on “Sustainability of International Trade in Bioenergy.” Virginia Dale will also attend and give a presentation on “Using landscape design to assess sustainability of wood biomass production from southeast US forests.”

**December 14-18:** H. Jager and SWAT-modeling team are invited to the 2015 AGU fall meeting to present at a Symposium on “Biofuel-induced land use / land cover change and associated biogeochemical and biophysical impacts”. L. Baskaran will present our research on bioenergy effects on water quality and quantity in the Arkansas-White-Red and Tennessee River basins.