

## Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) July 2016

### Publications

- U.S. Department of Energy. 2016. 2016 Billion-Ton Report: Advancing Domestic Resources for a Thriving Bioeconomy, Volume 1: Economic Availability of Feedstocks. M. H. Langholtz, B. J. Stokes, and L. M. Eaton (Leads), ORNL/TM-2016/160. Oak Ridge National Laboratory, Oak Ridge, TN. 448p.
- Parish ES., S Jackson, VH Dale (submitted) Appropriate application of nitrogen fertilizer to cellulosic biofuels provides climate benefits. Environmental Research Letters.
- Jager, HI (submitted) A systems view of upstream and downstream ecosystem services provided by bioenergy. Biomass and Bioenergy.

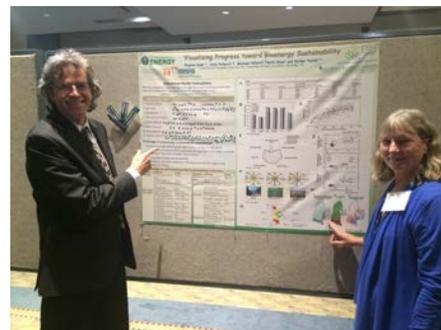
### CBES Forum

**July 20 @ 3:30 pm:** CBES Forum entitled “Creating a tool for visualizing progress toward bioenergy sustainability” by Nate Pollesch (UTK) and Mike Hilliard and Virginia Dale (ORNL).

### Presentations

**July 11-13:** ORNL was actively engaged in the Bioenergy 2016 conference in Washington DC: <http://www.energy.gov/eere/bioenergy/bioenergy2016>.

- The Billion Ton 2016, Volume 1, which quantifies potential biomass availability at particular prices, was released: <http://www.energy.gov/eere/bioenergy/2016-billion-ton-report>. Presentations on the Billion Ton study were made by Matt Langholtz, Laurence Eaton, and Maggie Davis.
- Keith Kline presented in the Plenary IV: Policy for the Bioeconomy—Local, State, Federal, and International Perspectives.
- Mike Hilliard and Tim Theiss operated the ORNL booth.
- Virginia Dale presented an interactive poster on “Visualizing progress toward bioenergy sustainability.” Other poster authors included Nate Pollesch, Mike Hilliard, Keith Kline and Esther Parish.



**July 27-28:** The Southeastern Partnership for Integrated Biomass Supply System (IBSS) Annual Meeting was held at the University of Tennessee Arboretum in Oak Ridge. Virginia Dale presented on “Landscape Design,” and, Lawrence Eaton gave a lunchtime presentation about the new Billion Ton Study. Other ORNL attendees, included Esther Parish, Tim Theiss, Erin Webb, and summer students Tim Alland, Devita McCullough-Amal, Hernan Chavez, Mackenzie Morris, and Dami Fasina.

**August 4:** The Southern Grassroots Biofuels Project Workshop was held at Tennessee Technical University in Cookeville, TN. Yetta Jager presented ‘Implications of future bioenergy production for water quality and biodiversity’ with co-authors Latha Baskaran, Gangsheng Wang, and Jasmine Kreig.



## Other ORNL Activities

A website documenting the Symposium, Reshaping Landscapes: Bioenergy and Biodiversity II held in April at the Annual meeting of the International Association of Landscape Ecologists has gone ‘live’. The site includes presentations and abstracts: [http://www.esd.ornl.gov/~zj/IALE\\_symposium\\_2016/](http://www.esd.ornl.gov/~zj/IALE_symposium_2016/).

**July 8:** Draft Biodiversity Chapter was submitted to reviewers of the Billion Ton 2016 Volume 2. Coauthors include Jager, Wang, Kreig, Baskaran, Busch, and Bevelhimer.

**July 11-12:** Natalie Griffiths and short-rotation woody biomass sustainability team collaborators met at Oregon State University on July to discuss project progress and future research plans.

**July 19:** Draft Water Quality Chapter was submitted to reviewers of the Billion Ton 2016 Volume 2. This Chapter represents a joint effort by ORNL (Jager, Baskaran, Kreig, Hilliard) and Argonne (Wu, Mei)

**July 25:** Virginia joined a conference call discussing Objective 2 of the IEA Bioenergy Inter-task sustainability project. Objective 2 focuses on comparing and assessing the legitimacy, effectiveness, and efficiency of approaches to govern and verify sustainability of biomass and bioenergy supply chains in different conditions.

## Upcoming CBES Forums

**August 9 @ 3:30 pm:** CBES Forum entitled “Using Landscape typologies to model socioecological systems: Application to agriculture of the United States Gulf Coast” by Sujithkumar Surendran Nair of ORNL.

## Upcoming ORNL Visits/Events

**Aug 7-12:** Natalie Griffiths and co-authors will present at the Ecological Society of America meeting in Florida on “Evaluating the water quality effects of short-rotation pine production for bioenergy using a watershed-scale experiment.”

**Aug. 21-25:** Yetta Jager will present modeling of water quality results associated with bioenergy for two large river basins in the Mississippi River Basin as part of a Symposium on ‘Inland Drivers of Hypoxia’ at the Annual meeting of the American Fisheries Society in Kansas City. Coauthors will include Latha Baskaran, Gangsheng Wang, and Jasmine Kreig.

**Aug 24:** Esther Parish will attend the Appalachian Wood Energy Innovations Conference tour of the DuPont State Forest in Asheville, NC in order to gain a better understanding of the relationships between wildlife abundance and biomass following timber harvests.

**Aug 29-30:** With partners from ANL and INL, Yetta Jager is helping to organize the “Bioenergy Solutions to Gulf Hypoxia Workshop”. This workshop will be hosted by the U.S. Department of Energy’s Bioenergy Technologies Office in Washington, D.C. Virginia Dale, Rebecca Efrogmson, and Matt Langholtz have been

invited to share their expertise in Gulf hypoxia, algae, valuation of ecosystem services, and environmental markets.

**Sept. 24:** Virginia Dale will contribute to a symposium on “The value of a tree” at Appalachian State University in Boone, NC, organized by Eric Marland.

**Sept. 28-29:** Virginia Dale has been invited to give a talk at the Symposium on Watershed Scale Sustainability of Forest-Based Bioenergy Production in the Southeastern United States to be held in Raleigh, NC. The goal of this symposium is to synthesize results from the Operational Scale Pine/Switchgrass Intercropping Project, initiated by Catchlight Energy, LLC and Weyerhaeuser Company, with additional funding from DOE; and to put the results into a scientific, operations and policy context. Keith Kline, Natalie Griffiths, Yetta Jager, and Craig Brandt will also attend the symposium.

**Oct. 19:** ORNL CBES will celebrate the 4<sup>th</sup> Annual Bioenergy Day. More details to come.

**Oct. 2016:** Rebecca Efroymsen will speak at the Algae Biomass Summit in Phoenix, Arizona, on “*The Billion Ton 2016 Algae Resource Analysis: Prices to Procure the Biomass*”. Susan Schoenung will present a poster “*Algae Co-location Resources of Carbon Dioxide and Effective Transport Distances*.”

**Fall:** Presentation by Tim Volk at the International Poplar Commission meeting in Germany on “Incorporating shrub willow into a multifunctional system using a landscape design approach” by T.A. Volk, J. Heavey, C. Negri, H. Ssegane, V. Dale, D. Daley, and M. Eisenbies.

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