

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

Publications

- Efroymson RA, Dale VH and Langholtz MW (2016). Socioeconomic indicators for sustainable production and use of algal biofuels. *GCB Bioenergy*. doi: 10.1111/gcbb.12359
- Dale VH and KL Kline. Interactive posters: A valuable means for enhancing communication and learning about productive paths toward sustainable bioenergy. Submitted to *PLOS Computational Biology*.
- Jager HI. A system's view of upstream and downstream ecosystem services provided by bioenergy. Submitted to *Biomass & Bioenergy*, Special Issue on Ecosystem Services.

CBES Forum

May 17: The CBES Forum was held at the Forest Inventory Analysis Demonstration Plot at the UT Forest Resources AgResearch and Education Center. The tour was led by Jason McHan and Sam Lambert of the US Forest Service, Southern Research Station. For more information see <http://www.fia.fs.fed.us/>



CBES Presentations

May 8-12: Virginia Dale gave a plenary lecture at the International Society of Ecological Modelling (ISEM) Global Conference Towson University in Maryland – see <http://www.isemconference.com/>. The title of her talk is "Tradeoffs in sustainability assessment."

Jasmine Kreis presented "Spatial allocation of conservation practices to maximize bioenergy production and water quality at a regional scale" at the ISEM Conference.



May 11: Yetta Jager presented the Water quality and Biodiversity Chapters at the BT16 Vol. 2 review meeting in DC.

May 11: The peer review workshop for the Billion Ton Sustainability Report (Vol. 2) was held in Washington DC. Many ORNL researchers are contributing this effort. Presentations were given by Rebecca Efroymson, Keith Kline, Yetta Jager, and Matt Langholtz, who are leading chapters in BT16 Vol 2, as well as Laurence Eaton.

Other ORNL Activities

May 10-12: Latha Baskaran participated in the Enviva/Endowment Bottomland Hardwood Workshop held at Roanoke Rapids, NC. The goal of this workshop was to co-design management recommendations

(beyond BMPs for water quality) to enhance ecological values in working bottomland hardwoods.

May 12: Virginia Dale joined Alison Goss Eng, Kristen Johnson, and Bryce Stokes from BETO as well as Jennifer Dunn and May Wu (from Argonne) in a briefing at the White House Office of Science Technology Policy (OSTP) and the Office of Management and Budget (OMB). Topics covered included BETO's sustainability approach and its diversity of indicators, landscape design, BETO's view on the bioeconomy, and the Billion Ton study.

May 15-21: Keith Kline joined colleagues in Tabasco, Mexico to contribute to the Annual Project Meeting, Program for International Research and Education-PIRE, Sustainable Bioenergy in the Americas at the invitation of Michigan Technological University (under the project supported by the National Science Foundation).



May 19: Yetta Jager participated in the Hypoxia Taskforce Federal MARB Modeling call.

May 24-25: Terry Mathews participated in the BETO workshop "Sharpening our tools: Algal biology toolbox workshop" in San Diego.

May 25: At the inaugural Pint of Science event in Knoxville, Virginia Dale spoke on "Mount St Helens: Devastation in 1980; Resiliency Now." Check it out at <http://pintofscience.us/event/ch-ch-ch-changes>



May 25: Laurence Eaton participated in a phone conference with representatives from White House Council on Environmental Quality (CEQ) and Office of Science Technology and Policy (OSTP). The purpose of the meeting was to brief CEQ and OSTP on the Billion Ton 2016 report.

Upcoming ORNL Visits/Events

June 6-10: Keith Kline and Virginia Dale plan to contribute to the Workshop on Land Use Change at the European Biomass Conference and Exhibit (EUBCE) <http://www.eubce.com/conference/parallel-events-workshops-and-project-meetings/workshops-project-meetings/the-world-needs-more-land-use-change.html>

June 13: Nate Pollesch will defend his PhD dissertation in the Department of Mathematics at the University of Tennessee. The title is "Mathematical Approaches to Sustainability Assessment and Protocol Development for the Sustainability Target Assessment Resource for Bioenergy (Bio-STAR)

June 14-16: Representatives from the International Maize and Wheat Improvement Center (CIMMYT) will visit ORNL to discuss methods to quantify progress toward sustainable agriculture.

June 29: Keith Kline will attend the American Society for Testing and Materials (ASTM) International meeting (Bellevue, WA) to help E-48 committee review ballot results and respond to comments on the new Standard Practice for Sustainability Assessment.

July 11-13: The Billion Ton 2016, Volume 1, which quantifies potential biomass availability at particular prices, is to be released at Biomass 2016.

July 17-20: Yetta Jager is invited to the symposium, “Conservation of aquatic ecosystem connectivity: from planning to practice,” at the Society of Conservation Biology in Madison, Wisconsin. She will present parallel spatial optimization of new energy generation and eel production with coauthors James Nance (ORNL) and Matt Fuller (Duke).

July 27-28: The Integrated Biomass Supply System (IBSS) Annual Meeting will be held at the UT Arboretum in Oak Ridge. Esther Parish will present on “Landscape Design,” and Virginia Dale will participate in the synthesis panel.

Aug. 21-25: Yetta Jager will give an invited talk on ‘Inland Drivers of Hypoxia Symposium’ at the Annual meeting of the American Fisheries Society.

Aug.: 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.”

Sept. 24: Virginia Dale will contribute to 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 and Natalie Griffiths will also attend the symposium.

Oct. 2016: Rebecca Efrogmson 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 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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