

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

Publications

- Efroymsen RA, Kline KL, Angelsen A, Verburg PH, Dale VH, Langeveld JWA, McBride A (In press) A causal analysis framework for land-use change and the potential role of bioenergy policy. *Land Use Policy*.
- Singh N, Kline KL, Efroymsen RA, Bhaduri B, O'Banion B (submitted as AGU Book Chapter, Bioenergy and LUC) Uncertainty in estimates of bioenergy-induced land-use change: The impact of inconsistent land-cover datasets.
- Pollesch N, Dale VH (2016) Normalization in sustainability assessment: Methods and implications. *Ecological Economics* 130:195-208. <http://dx.doi.org/10.1016/j.ecolecon.2016.06.018>
- *Auburn Speaks: On Biofuels in the Southeast* (2016), edited by Steve Taylor, 226 pages. This special issue produced by Auburn University highlights research by the Southeastern Partnership for Integrated Biomass Supply Systems (IBSS) and contains three articles highlighting ORNL's bioenergy sustainability research:
 - "In Search of Sustainability" by Esther Parish of ORNL (pp. 152-157),
 - "Comparing the Social, Environmental and Economic Impacts of Using Woody Feedstocks for Biofuel Production" by Sudipta Dasmohapatra, Robert Radics and Stephen Kelley of North Carolina State University (pp. 158-163)
 - "Environmentally Sustainable Bioenergy Crop Production with Switchgrass" by John Schwartz, Jordan Hayes and Zachariah Seiden of The University of Tennessee (pp. 164-169)
- Jager, HI, Brandes, KCraig, S Evans, C Negri, A P Nejadhashemi, C Phifer, M Schwartz, L M Verdade, C Zump (In review) Understanding how spatial decisions influence co-production of bioenergy feedstocks and biodiversity: a synthesis. *Landscape Ecology*.

CBES Presentations

Sept. 13-14: Laurence Eaton presented at the Alternative Aviation Fuel Workshop in Macon, GA on the "BT16 and Implications for Jet Fuels."

Sept. 14: Keith Kline gave a presentation on "Interactions among bioenergy, food security and ecosystem services" at the meeting of the National Science Foundation (NSF) 2nd Research Coordination Network Conference on Pan American Biofuels & Bioenergy Sustainability in Argentina.



Sept. 24: Virginia Dale gave a presentation on “Seeing Both the Forests and the Trees” at a symposium on “The Value of a Tree” at Appalachian State University in Boone, NC, organized by Eric Marland.



Sept. 26: Laurence Eaton presented at the 2025 and Beyond: Modeling the land sector’s role in achieving GHG mitigation and adaptation goals, *8th Forestry and Agriculture Greenhouse Gas Modeling Forum* in Shepherdstown, WV on “The role of forests and agriculture in the Billion Ton Study.”

Sept. 28-29: Virginia Dale presented on “Landscape planning for wood-based bioenergy” and Natalie Griffiths presented on “Short rotation woody biomass and water quality” at the Symposium on Watershed Scale Sustainability of Forest-Based Bioenergy Production in the Southeastern United States held in Raleigh, NC. Keith Kline also attended the symposium, and he, Natalie and Virginia all presented posters. 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.



Sept. 28-30: Maggie Davis presented at the International Biofuels and Bioproducts Conference on the Billion Ton 2016, in session on “What’s Your Feedstock?” (Chair: Bob Hurter, Hurter Consult Inc.).

Other ORNL Activities

Sept. 7: Erin Webb participated in a conference call focused on coordinating the logistics analysis of the Antares Landscape Design project.

Sept. 14-15: Keith contributed to the Research Coordination Network on Pan American Biofuels & Bioenergy Sustainability Steering Committee meeting and Research Roadmap Report.

Sept. 20-22: Keith Kline participated with experts from the US, Canada and Europe in the “Sustainability and ILUC Workshop,” organized by the National Biodiesel Foundation in St. Louis, Missouri, to develop strategies to better address Indirect Land-Use Change (ILUC).

Sept. 26: Rebecca Efroymsen, Yetta Jager, Keith Kline and Matt Langholtz joined a call regarding Billion Ton Volume II with Jonathan Mae and others at the Department of Energy (DOE) Bioenergy Technologies Office (BETO).

Sept. 26-29: Yetta Jager participated in a meeting of the 'Modeling Organisms to Ecosystems' Working Group at the National Institute of Mathematical and Biological Synthesis http://www.nimbios.org/workinggroups/WG_o2e



Sept. 28: Matt Langholtz contributed to the Workshop on Sustainable Bioenergy Supply in Berlin organized by IEA Bioenergy and International Renewable Energy Agency (IRENA) to update and align global estimates of available biomass supplies.

August 15: Rebecca Efroymson was one of the local scientific experts to meet with science writers at the small conference "Measure Locally, Respond Globally" in Asheville, NC, intended to focus on the "next chapter of the climate change story." She met with journalists who cover the environment, science, data analytics, farming, lifestyle, and weather.

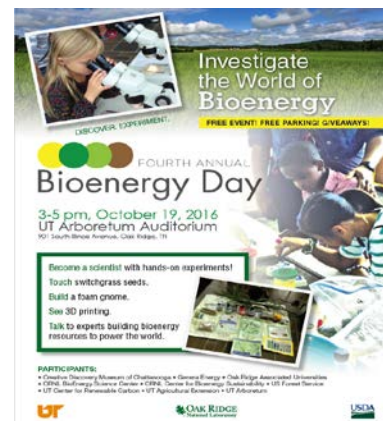
Upcoming ORNL Visits/Events

Oct. 4: Virginia Dale will attend the Roundtable on Sustainable Biomaterials' North America Business Forum in Chicago.

http://rsb.org/news-and-publications/events/rsbs-north-america-business-forum-chicago-usa/?utm_source=Reminder+to+key+contacts+Chicago+NA+TWG+Business+Forum+Invite+Sept+15+2016&utm_campaign=September+15+2016+Chicago+NA+Invite+to+key+contacts&utm_medium=email

Oct. 19: ORNL CBES will celebrate the 4th Annual National Bioenergy Day in conjunction with several other organizations at a family-oriented after-school hand-on STEM and career fair to be held at the beautiful UT Arboretum Auditorium from 3-5 pm. The event is designed to increase general awareness of the potential jobs and educational opportunities associated with the Southeastern US Bioeconomy. Check out

<http://energy.gov/eere/bioenergy/events/national-bioenergy-day-2016>



Oct. 23-26: Rebecca Efroymson 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."

Nov. 2-6: Maggie Davis will attend the 2016 Society of American Foresters National Convention (Madison Wisconsin) to present on the Billion Ton 2016 report and to showcase potential biomass production strategies, including county-level results of short rotation woody crop production simulations at the farmgate or roadside.

Dec. 12-16: Virginia Dale and Keith Kline will participate in American Geophysical Union (AGU) Fall Meeting in San Francisco in the session titled "Biofuel-induced land use change impacts on hydrology, water quality, and carbon and evapotranspiration dynamics." Virginia will speak on "Effects on

Environmental and Socioeconomic Sustainability of Producing Ethanol from Perennial Grasses," and Keith will speak on "Land-Use Change and the Billion Ton 2016 Resource Assessment: Understanding the Effects of Land Management on Environmental Indicators."

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