

Bioenergy, Sustainability, and Land-Use Change Report Oak Ridge National Laboratory (ORNL) November 2017

Publications

- Dale VH, HI Jager HI, AK Wolfe, RA Efrogmson. In press. Risk and resilience in an uncertain world. *Frontiers in Ecology and the Environment*.
- Daly, Christopher, Halbleib, Michael D., Hannaway, David B., and Eaton, Laurence M. 2017. (submitted final version) Environmental limitation mapping of potential biomass resources across the conterminous united states. *GCB Bioenergy*.
- Koponen K., Soimakallio S., Kline K.L., Cowie A., Brandão M. 2018. Quantifying the climate effects of bioenergy – Choice of reference system. *Renewable and Sustainable Energy Reviews* 81(2) January 2018, 2271-80. *Get it now! Free 45 days only at: <https://authors.elsevier.com/c/1W4114s9Hvq84->
- Ferguson, Jake; Reichert, Brian; Fletcher, Jr., Robert; and H. Jager. 2017. Detecting population-environmental interactions with mismatched time series data. *Ecology* 98(11): 2813-2822.

Presentations

Nov. 6: Rocío Uría and Paul Leiby were the featured presenters in the Monthly BETO Analysis and Sustainability Program webinar. They presented “Quantifying the Economic and Energy Security Implications of Biofuels.” During the presentation, they navigated through Biofuel-EESR, their web based tool: <https://biowit.shinyapps.io/Biofuel-EESR/>



Nov. 7-8: Keith Kline gave a presentation (invited) on “Measuring Sustainability of Bioenergy Systems” at the workshop “Ethanol in the Americas” sponsored by the Global Bioenergy Project and the Bioenergy for Latin America, Caribbean and Africa (LACAF) Project <http://bioenfapesp.org/gsb/lacaf/index.php/workshop-ethanol-in-the-americas> at the University of Florida- in Gainesville.



Nov. 8: Yetta Jager gave a presentation overview of research, including bioenergy-related projects to the UTK-Ecology and Evolutionary Biology faculty (Adjunct Faculty renewal).

Nov. 13-16: Members of the Energy Analysis Team made a total of 5 presentations at the US Association for Energy Economics Annual Meeting November 12-15, 2017 (to be published in Proceedings):

- Uria-Martinez, R., Leiby, P.N., Oladosu, G., Bowman, D.C., and Johnson, M.M. 2017. “Using Meta-Analysis to Estimate World Oil Demand Elasticity.”
- Uria-Martinez, R., Leiby, P.N., and Brown, M.L. 2017. “Energy Security Implications of Biofuels: Welfare Effects of Biomass Supply Shocks.”
- Oladosu, G., Paul Leiby, D. Bowman, R. Uría-Martínez, and M. Johnson 2017. “Impacts of Oil Price Shocks on the U.S. Economy: A Meta-Analysis of Oil Price Elasticity of GDP for Net Oil-Importing Economies.”
- Leiby, P.N., D. C. Bowman, G. A. Oladosu, R. Uria-Martinez, and M. Johnson, 2017. “Economic Benefits of Alternative Configurations of the U.S. Strategic Petroleum Reserve.”
- Gbadebo Oladosu, P.N. Leiby, J.C. Li (US DOE) 2017. "An Evaluation of U.S. Macroeconomic and Petroleum Market Outcomes Under Future Economic Scenarios."

Nov. 14: Amy Wolfe gave a presentation (invited) to the local chapter of the American Society for Military Engineers in Oak Ridge. The topic was “Sustainability research at ORNL—social, institutional, and behavioral dimensions.”

Nov. 15-17: Latha Baskaran and Maggie Davis presented at the Annual Society of American Foresters (SAF) National Convention in Albuquerque, NM.

- Baskaran, L and Dale, V. 2017. "Framework to Identify Effects of Forest Management for Wood-based Pellets on Biodiversity."
- Davis, M., Kline, K., and Langholtz, M. 2017. "Measuring Sustainability: The Role of International Standards & Relevance to Bioenergy Trade & Industry."
- Latha Baskaran and Maggie Davis attended a preconference workshop on "Data Science for Forestry Applications."

Nov. 29: During the tour of the UT Agricultural Extension Service Eastern Region, Virginia Dale will provide a brief overview of the analyses conducted of the Forest Inventory and Analysis data annual survey data for 2002–2014 that found minimal changes in timberland trends since 2009 for the two major fuelsheds supplying pellets being exported to Europe.



Nov 29: Mike Hilliard will present the first talk in a series of quarterly presentations on the use of Tableau for data visualization in DOE. He will showcase some of the visualizations used by the Billion Ton 2016 team to analyze the data and provide a user with an interactive version of the report.

Other ORNL Activities

Nov. 1-4: Yetta Jager participated in a review of the Department of Interior's Northeast Climate Change Science Center in Amherst, Mass.

Nov. 6-10: Rebecca Efrogmson and Matthew Langholtz were co-recipients of an Energy Rock Star award for leadership in the pioneer summation of the cutting edge research on the potential environmental implications of land-management changes portrayed in Billion-Ton 2016 (BT16). They are grateful for contributions from all BT16 co-authors.

Nov. 8: David Bowman and Paul Leiby submitted a list of proposed study assumptions to DOE/FE/SPR and the International Energy Agency for the FY2018 study: Costs, Benefits and Financing of Holding Emergency Oil Stocks. The study assumptions will be reviewed and commented on by DOE and the IEA Standing Group on Emergency Questions.

Nov. 8: Yetta Jager joined the advisory board of the journal Ecological Complexity.

Nov. 14-15: Erin Webb attended the LEAF (Logistics for Enhanced-Attribute Feedstock) Project Meeting at Auburn University. LEAF is led by the University of Tennessee and funded by the DOE Bioenergy Technologies Office.

Nov. 16: Esther Parish participated in an Environmental Metrics for Hydropower (EMH) Project Follow-up Webinar for the DOE WPTO project sponsors and Mission and Science Advisory Boards to discuss feedback from the October 25, 2017 EMH meeting in D.C.

Nov. 16: Tim Theiss had an all hands meeting of ORNL staff working on BETO projects.

Nov 27: Yetta Jager was involved in discussions with Bonneville Power Administration regarding the application of the Snake River fall Chinook salmon population viability analysis model to evaluate scenarios for the Lower Snake River as part of an Environmental Impact Statement led by federal agencies in the Columbia River Basin.

Upcoming ORNL Visits/Events

Dec. 4: Keith Kline and Maggie Davis will lead a webinar on December 4, to kick-off a newly approved project sponsored by the Bioenergy Technologies Office. The project aims to develop a standard *Protocol* for defining and documenting reference scenarios when assessing the effects of bio-based product systems. Participants include representatives from DOE headquarters, other National Laboratories, USDA, EPA, private industry, researchers from Canada and Europe, and others.

Dec. 4-6: Virginia Dale will participate in the workshop of the National Institute for Mathematical and

Biological Synthesis (NIMBios) at the University of Tennessee, Knoxville, on “How well are the research needs of the conservation policy and resource management practitioner communities being met in Tennessee and Southern Appalachia?”

Dec. 6: Keith Kline will give a briefing in Houston, Texas, about the new project to develop a *Protocol for Reference Scenarios involving Bio-based Product Systems* in conjunction with the annual meeting of ASTM International Committee E48 on Bioenergy and Industrial Chemicals from Biomass.

Dec. 6-8: Virginia Dale, Keith Kline, and Esther Parish will participate in the first workshop of the US-China Food-Energy-Water Systems Transdisciplinary Environmental Research Network (FEWSTERN) in Nashville, TN. Virginia will give a plenary lecture on “Environmental Challenges and Opportunities in the Food-Energy-Water Nexus.”

Dec. 11-15: At the invitation of Tom Richard, Virginia Dale will give a poster in the session on “Carbon-negative Bioenergy” at the 2017 AGU Fall Meeting Session.

Dec. 13: A Retirement Reception will be given for Virginia Dale in Bldg. 1505, DJ Nelson Auditorium from 3-4 p.m. After December she can be reached at vdale@utk.edu.

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