

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

Publications

- Daly, Christopher, Halbleib, Michael D., Hannaway, David B., and Eaton, Laurence M. (2017) Environmental Limitation Mapping of Potential Biomass Resources across the Conterminous United States. GCB Bioenergy, accepted for publication.
- Eichler Inwood SE, López-Ridaura S, Kline KL, Gérard B, Monsalve AG, Govaerts B, Dale VH (Submitted) Assessing sustainability in agricultural landscapes: a review of approaches. *Environmental Reviews*.
- Parish ES, Dale VH, Kline KL, Abt RC (2017) Reference scenarios for evaluating wood pellet production in the Southeastern United States. *WIREs Energy and Environment*. e259. doi: 10.1002/wene.259. <http://onlinelibrary.wiley.com/doi/10.1002/wene.259/epdf>
- Parish ES, Dale VH, Kline KL (In press) Has pellet production affected SE US forests? *World Biomass*. DCM Productions, United Kingdom.
- Ferguson, Jake, Reichert, Brian, Fletcher, Jr., Robert, and H. Jager (In press) Detecting population-environmental interactions with mismatched time series data. *Ecology* doi: 10.1002/ecy.1966
- Jager, HI and RA Efrogmson (Submitted final version) Can Upstream Production of Biofuel Feedstocks Increase Reliable Provision of Ecosystem Goods and Services Downstream? *Biomass and Bioenergy*: Special Issue on Ecosystem Services.
Souza G, Ballester MVR, Cruz CHB, Chum H, Dale B, Dale VH, Fernandes E, Foust T, Karp A, Lynd L, Maciel R, Milanez A, Nigro F, Osseweijer P, Verdade L, Victoria R, Van Der Wielen L (2017) The role of bioenergy in a climate-changing world. *Environmental Development* 23:57-64. <http://www.sciencedirect.com/science/article/pii/S2211464516302755>

Presentations

Aug. 6-11: Several ORNL scientist participated in the Ecological Society of America annual meeting in Portland.

- Virginia Dale organized a special session on Large Infrequent Disturbances.
- Virginia Dale organized a special session on Large Infrequent Disturbances for the Ecological Society of America meeting in Portland. Speakers are Monica Turner, Jerry Franklin, and Ariel Lugo.
- Gangsheng Wang presented “Simulated Response of Avian Biodiversity to Biomass Production in the Conterminous United States” with coauthors Henriette Jager, Jasmine Kreig, Nathan Sutton, and Ingrid Busch.
- **Keith Kline** presented “Estimating land-use change effects associated with supplying a billion-ton U.S. bioeconomy.”
- **Virginia Dale** presented “Status and prospects for renewable energy using wood pellets from the southeastern United States.”
- **Virginia Dale** helped lead a field trip to Mount St. Helens on August 5.

Aug. 10: Jake Childs, a Science Undergraduate Laboratory Internships (SULI) intern working with Erin Webb, presented his poster, 3D Printing with Biomass, at the ORNL student poster session on Thursday, Aug 10.

Other ORNL Activities

- **Paul Leiby** was interviewed by the Nashua Telegraph newspaper on 8/29/17 regarding impact of Hurricane Harvey on fuel markets and prices.

- **Erin Webb** traveled to Underwriters Lab in Northbrook, IL on Tuesday, August, 29 to conduct an additional corn stover fire test. The purpose of this test will be to determine if cross stacking bales in a stack can create firebreaks within the stack to slow fire growth.
- **Erin Webb** presented a seminar on Friday, September 1 at noon in Ocoee to review recent progress in the BETO biomass fire project.
- **H. Jager** was elected to the position of president-elect of the Water Quality section of the American Fisheries Society.
- **Jasmine Kreig** passed her qualifying exam for her PhD in the Bredesen Center, UTK.
- **Virginia Dale** and **Keith Kline** participated in a workshop on the implementation of Food-Energy-Water Systems Transdisciplinary Environmental Research Network (FEWSTERN). This was part of a recent award from the National Science Foundation to scientists at the University of Tennessee and ORNL under a “Research Coordination Network (RCN)” designed to identify transdisciplinary research opportunities for scientists in the US and China focusing on the NEXUS of food, energy and water.
- **Amy Wolfe** had an extensive phone conversation with Rob Skelding (Naval Surface Warfare Center, Carderock Division), sponsor for Behavioral Energy Operations Demonstration (BEyOnD) Phase 2, to plan that activity, which will start in FY 18. (Aug. 30)
- **Rebecca Efroymsen, Yetta Jager, Amy Wolfe, and Terry Mathews** spoke Renee Wegrzyn and Anne Cheever, of DARPA on August 29, 2017 about its Safe Genes research priorities. These ESD staff will speak with Paul Gilna about the new ORNL Genome Security initiative on August 31, 2017.
- **Virginia Dale, Esther Parish, Latha Baskaran, Mike Hilliard, and Keith Kline** had their quarterly review on September 1, 2017 with BETO sponsor, Kristin Johnson for their project “Bioenergy Sustainability: How to define and measure it.”

Upcoming ORNL Visits/Events

Sept. 6: Sarah Eichler-Inwood will have her comprehensive exam for her PhD under the Bredesen Center. Her major professor is **Virginia Dale**, and **Keith Kline** also serves on her committee. Her dissertation is titled “Improving sustainability of agricultural landscapes through assessment and adaptive management.”

Sept. 12-15: Virginia Dale is invited to give a presentation at the International Association for Landscape Ecology (IALE) 2017 European Congress in Ghent, Belgium, in a symposium on “Integrating renewable and non-renewable energy development with landscape service trade-offs.” She will speak on “Assessing Progress toward Sustainability of Bioenergy Systems.”

Sept. 18: Virginia Dale is invited by Felix Kienast to speak at the Landscape Ecology Group at the Swiss Federal Institute for Forest, Snow and Landscape Research. She will speak on “Sustainability Considerations for Energy Options.”

Sept. 23–27: Yetta Jager is invited to participate in a symposium highlighting authors in an upcoming Renewable Energy and Wildlife book to be published by Johns Hopkins Press in conjunction with The Wildlife Society. The Symposium is sponsored by the Renewable Energy Working Group of The Wildlife Society and will be held at the annual meeting in Albuquerque, NM.

Oct. 18: ORNL will participate in the Fifth Annual National Bioenergy Day (led by Esther Parish).

Oct. 24-26: Several ORNL researchers were invited to participate in the CRC Life-Cycle Assessment of Transportation Fuels Workshop to be held at Argonne National Laboratory, IL.

Oct. 31-Nov. 3: H. Jager is invited to participate in a review of the Department of Interior's Northeast Climate Change Science Center.

November 7-8: Virginia Dale and Keith Kline are invited to attend the workshop at the University of Florida-UF in Gainesville, Florida, on “Ethanol in the Americas”

<http://bioenfapesp.org/gsb/lacaf/index.php/workshop-ethanol-in-the-americas>

Nov. 15-17: Latha Baskaran and Virginia Dale will give a presentation at the annual Society of American Foresters National Convention in Albuquerque, NM. The presentation is on “Framework to Identify Effects of Forest Management for Wood-based Pellets on Biodiversity.”

Dec. 7-6: Virginia Dale and Keith Kline will participate in the first workshop of the US-China Food-Energy-Water Systems Transdisciplinary Environmental Research Network in Nashville, TN.

Dec. 11-15: At the invitation of Tom Richard, Virginia Dale submitted an abstract to the session on “Carbon-negative Bioenergy” at the 2017 AGU Fall Meeting Session.

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