

Watershed Perspective on Bioenergy Sustainability

Participant Summary

Name	Affiliation	Email	Phone	Research Description
Adams, Mary Beth	USDA Forest Service	mbadams@fs.fed.us	304-478-2000	I am working on sustainability of biomass/biofuels in forests, looking at nutrient cyclinc and effects on soil and water.
Amatya, Devendra	USDA Forest Service	damatya@fs.fed.us	843-336-5612	Primary hydrologic research on low-gradient coastal forested landscape - hydrologic and water quality impacts of land use change and land management practices using monitoring and modeling approaches at Forest Service longterm Santee Experimental Forest watersheds and Weyerhaeuser's drained pine plantation forests. Involved in a new Weyerhaeuser Company funded project EFFECT OF BIOFUEL INTERCROPPING ON THE WATER QUALITY AND QUANTITY FROM A DRAINED PINE PLANTATION at the Carteret county site in eastern North Carolina. The study is in collaboration with Weyerhaeuser Company and North Carolina State University. The main objectives are to quantify and evaluate the effects of (a) traditional silviculture like pine plantation and (b) biofuel interplanting of switchgrass (panicum virgatum) on hydrology (water quantity, water table depths) and water quality of drained pine plantations. The four-year new study, which bases on a long-term (1988-08) historical data from a drained pine plantation at this site, has just completed one year in gathering data for calibration period.
Baskaran, Latha	Oak Ridge National Laboratory	baskaranl@ornl.gov	8655761397	My research involves modeling the impact of bioenergy related land-use changes on water quality and habitat of species.
Best, Elly	NRMRL, Water Supply and Water Resources Div.	best.elly@epa.gov	513-569-7517	Scenario development and evaluation of effects from increased biofuel feedstock production and changes in landuse on water quality in the Chesapeake bay watershed using a modeling approach; potential implications for the site selection for biofuel industry activities.
Bhardwaj, Ajay	Great Lakes Bioenergy Research Center, MSU	ajaykbhardwaj@gmail.com	269-753-5350	My current research work involves hydrology, wateruse, and water quality aspects of growing various cellulosic and non cellulosic crops. I am also investigating various aspects of environmental quality, soil quality, biomass and plant quality, nutrient use and losses in various model biofuel cropping systems.

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Bilby, Robert	Weyerhaeuser Co.	bob.bilby@weyerhaeuser.com	253-924-6557	Coordinator for a series of resaerch projects evaluating the environmental effects of biomass production in pine plantations in the southeastern U.S.
Blake, John	USDA Forest Service	jblake@fs.fed.us	803-725-8721	Water Quality & Wildlife
Buford, Marilyn	USDA Forest Service Research & Development	mbuford@fs.fed.us	703-605-5176	I work in the area of productivity and forest management and co-lead the USDA FS R&D Bioenergy and Biobased Products Research Program.
Chescheir, George	N. C. State University	cheschei@eos.ncsu.edu	919-515-6741	Our reseach project investigates the hydrologic and water quality effects of the production of energy crops inter-planted in forest plantations in North Carolina and other southeastern states.
Christopher, Sheila	Virginia Tech	sheila.christopher@vt.edu	540 231-6616	Regional-scale modeling of water quality and quantity effects of intercropping switchgrass in pine plantations.
Dale, Virginia	ORNL	dalevh@ornl.gov	865-576-8043	Virginia's primary research interests are in landscape designs for bioenergy, environmental decision making, land-use change, landscape ecology, and ecological modeling.
Demissie, Yonas	Argonne National Laboratory	ydemissie@anl.gov	630-252-7553	Studying potential impacts/benefits of large scale biofuel production on water quality and resources.
Dempsey, Roxanne	US Dept of Energy	roxanne.dempsey@go.doe.gov	303-275-4822	Interested in sustainability issues in production of biomass, energy crops and algae
Downing, Mark	Oak Ridge National Laboratory	downingme@ornl.gov	865-576-8140	Bioenergy Program Team Lead.
Efroymsen, Rebecca	ORNL	efroymsenra@ornl.gov	828-505-1673	My research in bioenergy sustainability includes sustainability indicator development, land-use considerations, biodiversity effects, and valuation of ecosystem services. Other research relates to ecological risk assesssment and management for wind energy and activities at military installations.
Fox, Thomas	Virginia Polytechnic Institute and State University	trfox@vt.edu	540.231.8862	Silviculture to increase productivity, profitability and sustainability of plantation forestry systems in US and South America.
Franklin, Jennifer	University of Tennessee	jafranklin@utk.edu	865-974-2724	I look at the interactions of root systems and soil chemistry in forested ecosystems, and the results on the above-ground growth. I am interested looking at crops and/or practices of biomass production to minimize inputs while maintaining high levels of other ecosystem services, specifically water storage and quality.

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Garten, Charles	Oak Ridge National Laboratory	gartenctjr@ornl.gov	865-574-7355	Soil carbon and nitrogen dynamics under switchgrass
Gopalakrishnan, Gayathri	Argonne National Laboratory	ggopalakrishnan@anl.gov	630-252-7051	I am currently working with Cristina Negri on using degraded land and water resources to grow bioenergy crops, thus converting environmental liabilities into productive resources for sustainable biomass production
Goss Eng, Alison	US Department of Energy	alison.gosseng@ee.doe.gov	202-586-9109	Manage bioenergy sustainability research for US DOE-Biomass Program
Graham, Robin	Oak Ridge National Laboratory	Grahamrl@ornl.gov	865-576-7756	I currently manage the ORNL Biomass Program which encompasses research projects at all points along the bioenergy supply chains. As an ecosystem ecologist who has been engaged with bioenergy for 2 decades, I have long been interested in a systems perspective on sustainability of bioenergy. In particular designing bioenergy systems and making fair comparisons with alternative sources of energy (including energy conservation).
Hamilton, Stephen	Michigan State University	hamilton@kbs.msu.edu	269-671-2231	Research on water and biogeochemistry as part of the Sustainability Thrust Area of the Great Lakes Bioenergy Research Center.
Hilliard, Michael	ORNL	hilliardmr@ornl.gov	865-576-5337	Collaborating on optimization model for assessing impacts to watershed quality from biomass production and developing supply chain models of cellulosic ethanol production.
Ice, George	NCASI	GIce@wrc-ncasi.org	541-752-8801	We are engaged in research addressing flow and water quality response to forest management. This includes paired watershed studies. BioEnergy practices can represent an extension of intensities or new practices such as intercropping.
Jackson, Rhett	University of Georgia	rjackson@warnell.uga.edu	706-542-1772	I am an expert in the effectiveness of forestry BMPs, and my current interests and research address how the water quality effects of silviculture for biofuel production will differ from those of current forestry practices.
Jager, Yetta	Oak Ridge National Laboratory	jagerhi@ornl.gov	865/574-8143	Understanding the potential effects of bioenergy-related landscape changes on water quality and biodiversity
Kaczmarek, Don	US Forest Service	djkaczm@yahoo.com	(843) 851-5073	I am a newly hired Research Forester with the Forest Service stationed at the Savannah River Site. My research will focus on developing enhanced short rotation woody biomass production systems.
Kane, Michael	Warnell School of Forestry and Natural Resources, UGA	mkane@warnell.uga.edu	706-542-3009	Evaluation of southern pine plantations systems for biomass production and for multiple products including biomass.

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Kline, Keith	ORNL	klinekl@ornl.gov	865-574-4230	Research has focused on sustainability indicators, the drivers of land-use change, biomass resource assessments and biofuel feedstock potentials around the world. Also, helped plan and document the results from the Land Use Change and Bioenergy Workshop in Tennessee (May 2009), examining data, modeling and other issues contributing to uncertainty in land-use change calculations required for life-cycle assessment.
Knoepp, Jennifer	USDA Forest Service-Southern Research Station	jknoepp@fs.fed.us	828-524-2128 x103	Current research focuses on the effects of forest management and disturbance on soil nutrient availability and nutrient cycling processes, long-term changes in nutrient cycling, and effects of atmospheric deposition on forest ecosystems. My interest in bioenergy sustainability is understanding impacts on site productivity, soil nutrient and carbon cycling, and impacts on water quality.
Kwit, Charles	University of Tennessee	ckwit@utk.edu	865-809-5337	I am an ecologist interested in gene flow and the population biology of plants, including switchgrass.
Lucier, Alan	National Council for Air and Stream Improvement, Inc.	alucier@ncasi.org	919-941-6403	Research focused on three aspects of sustainability - sustainable forest management; air emissions associated with biomass processing; and carbon footprints of bioenergy systems.
Mayes, Melanie	ORNL	mayesma@ornl.gov	865-574-7336	hydrology of soil and ground water
McBroom, Matthew	Stephen F. Austin State University	mcbroommatth@sfasu.edu	936-468-2469	Effects of forest management on water quality and quantity, watershed effects of biomass growth and harvest.
Moynihan, Sheila	U.S. Department of Energy	sheila.moynihan@ee.doe.gov	202-287-5272	Provide analytical support to OBP sustainability efforts.
Mulholland, Patrick	ORNL	mulhollandpj@ornl.gov	865-574-7304	Project leader - Hydrology and water quality effects of biofuels feedstock production: Experimental study at DOE's Savannah River Site

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Nettles, Jami ``	Weyerhaeuser Company	jami.nettles@weyerhaeuser.com	662-245-5226	<p>I am a research hydrologist with Weyerhaeuser Company, and am working on a study on water quality and quantity effects of biofuel growth, management and harvest options in pine plantations. We have established a large project with watersheds in North Carolina, Mississippi, and Alabama, and 4 to 5 fully instrumented subwatersheds per site. We are also doing smaller plot studies at another site in NC and modeling regional effects. There are several collaborators involved, some of whom will be presenting their work.</p> <p>This work was funded through Catchlight Energy, a joint venture of Weyerhaeuser and Chevron, and the project also includes sustainability, wildlife, and life cycle analysis components.</p>
Parish, Esther	ORNL Environmental Sciences Division	parishes@ornl.gov	865-241-3118	Currently assessing the potential impacts to water quality of growing switchgrass (rather than annual crops). Working to define "sustainability" and a set of metrics to assess progress toward "sustainability." Also trying to assess future water availability in response to climate change and population growth scenarios.
Pease, James	Virginia Tech	peasej@vt.edu	(540)231-4178	Potential economic and environmental tradeoffs of bioenergy/biofuel industry development in the Chesapeake Bay drainage
Rials, Tim	University of Tennessee	trials@utk.edu	865 946-1130	Coordinating R&D program in biomass conversion at UT. Personal interests in lignin structure and properties; sustainable production of dedicated bioenergy crops.
Schoenholtz, Stephen	Virginia Water Resources Research Center, Virginia Tech	stephen.schoenholtz@vt.edu	540-231-0711	We are studying the influences of woody biofuel production on water quality and quantity at regional scales.
Schweizer, Peter	ORNL / ORAU	pgs@ornl.gov	865-241-5622	I currently work as a postdoctoral research associate at ORNL. Our current projects focus on biodiversity and water quality modeling using the Soil and Water Assessment Tool (SWAT). We seek to predict environmental consequences of growing switchgrass as dedicated bioenergy crop in future landscape scenarios projected by the agro-economy model POLYSYS.
Skaggs, R. Wayne	North Carolina State University	wayne_skaggs@ncsu.edu	919-515-6739	Determining effects of afforestation and interplanting of energy crops on hydrology and water quality
Vose, James	USDA Forest Service -- Coweeta	jvose@fs.fed.us	828-524-2128	implications of water use of bioenergy species vs. alternative or native species

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Walbridge, Mark	USDA/ARS	mark.walbridge@ars.usda.gov	301-504-4731	As National Program Leader for ARS' Water Availability and Watershed Management National Program, we are concerned about the implications of increased biofuel production on water availability and quality at the watershed scale, and how this affects the sustainability of both water resources and food security.
Warren, Jeff	ORNL	wnj@ornl.gov	865-241-3150	Investigation of plant and ecosystem water use under climate change influences. Interest in water transport dynamics through the soil-plant-atmosphere continuum, mechanistic constraints, scaling, and ecological and biogeochemical consequences at the landscape level
Wu, May	Argonne National Laboratory	mwu@anl.gov	630-252-6658	Water consumption in the life cycle of conventional and new generations of biofuel; water quality impact of large scale biofuel production from various feedstock.
Yan, Eugene	Argonne National Laboratory	eyan@anl.gov	630-252-6322	Potential effects of biofuel and climate changes on Upper Mississippi River Basin