

**A Watershed Perspective on Bioenergy Sustainability;
A Workshop to be held at Oak Ridge National Laboratory
Oak Ridge, Tennessee
3-4 February 2010**

An informal workshop focused on a watershed-scale perspective of cellulosic bioenergy feedstock sustainability will be held at Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee 3-4 February 2010. The workshop will include researchers from ORNL, Savannah River Site, NCASI, Weyerhaeuser, academic institutions, and other private industry groups.

The topics covered will include water-related sustainability issues associated with intensive cellulosic bioenergy feedstock production (particularly hydrology and water quality). Overall goals for the workshop include:

- Definition of the type and level of intensive management inputs required to achieve various production levels for trees and switchgrass and the likely watershed hydrology and water quality consequences
- Definition of watershed standards in terms of hydrology and water quality regulatory compliance or targets in states in which intensive cellulosic production is possible
- Attendees to exchange information about their activities in this area and to build collaborations and connections
- Identification of sustainability indicators relevant at a watershed scale
- Development of key attributes of watershed studies/experiments that address bioenergy sustainability
- Development of a network of experimental intensive cellulosic bioenergy watersheds where research is ongoing, planned, or potentially can occur in a collaborative fashion to characterize the variability in key sustainability attributes.

Workshop participants will share their current research and perspectives in a format that promotes communication among all participants. This workshop should increase the awareness of what research is occurring as well as research needed in this rapidly developing field.

Draft format:

Day 1:

- Introduction (welcome, goals, why watershed perspective, components of sustainability to consider, etc)
- 15-20 min presentations (with 10 min of discussion following each):

Tom Fox (VPI) and Mike Kane (UGA): Inputs needed to achieve high biomass production for SE trees

George Ice: Groundwater and stream water quality compliance standards and expectations

Wayne Skaggs (NCSU): Eastern NC study

Jami Nettles (Weyerhaeuser): Weyerhaeuser Catchlight study

Matthew McBroom: Texas study of water quality impacts of intensive forestry

Melanie Mayes (ORNL): Soil water quality under fertilized switchgrass plots in Alfisol soils, Milan, TN.

Rhett Jackson (UGA): Sites for watershed studies

Susan Riha (Cornell): NY biofuels initiative and water quality modeling

Yetta Jager and Latha Baskaran (ORNL): Modeling direct and indirect landscape influences on water quality and fish biodiversity over large spatial extents

Stephen Schoenholtz/Sheila Christopher (VPI): Scaling up results from small watershed studies to larger spatial scales

- Brief presentations by other workshop attendees on ongoing/planned work (~5 min, max of 3 PowerPoint slides)

Day 2:

- Discussion topic 1 ó What are the critical questions/hypotheses with regard to hydrology and water quality issues from intensive cellulosic bioenergy feedstock production at the watershed scale
- Discussion topic 2 - Sustainability indicators (including most appropriate hydrologic and water quality measurements, other measurements), equipment and instrumentation needed
- Discussion topic 3 - Field study design involving management treatments for planned experiments (site preparation, fertilizers, herbicides), considerations for observational studies (monitor, spatial considerations and nesting of catchment scales)
- Discussion topic 4 ó Linking empirical studies (experiments, observations) and modeling
- Closing: summary of workshop results, next steps.

Adjourn ~3-4 pm

Steering Committee

ORNL: Virginia Dale, Pat Mulholland

USFS/SRS: John Blake

NCASI: Al Lucier

Weyerhaeuser: Bob Bilby