



# EQ&WWM UPDATE

Newsletter of the OSU DASNR Environmental Quality & Waste Management Team

May 2009

This is the first newsletter of the EQWM Team. This issue introduces the team and highlights the work of some of its members.

*Currently there are 82\* EQWM Team Members including 12 OSU departments, 2 Divisions, and 23 County/Region Extension Educators*

**Ron Elliott, Team Administrator**  
**Mike Smolen, Team Coordinator**

Doug Hamilton, Air and Waste Leader

- Air Quality, Shannon Ferrell
- Municipal Waste Management, Ilda Hershey
- Waste Management, Doug Hamilton

Hailin Zhang, Soil and Agriculture Leader

- Nutrient Management, Hailin Zhang
- Sustainability of Agriculture and Natural Resources, Kefyalew Desta and Leland McDaniel

Mike Smolen, Water Leader

- Emerging Contaminants & Pesticides, Jim Criswell
- Landscapes and the Environment, Michael Holmes
- Small Scale Water Supply and Wastewater Management, Mike Kizer
- Stream Restoration/Rehabilitation, Garey Fox
- Water Literacy, LaDonna McCowan-Ferrier
- Water Resource Conservation, Management and Policy (includes Water Conservation), Larry Sanders

The purpose of the EQWM Team is to help foster collaboration among Departments and across Divisions.

The named EQWM groups are active to various degrees with respect to seminar sponsorship and the development of extension fact sheets and TIP proposals.

\*New team members are always welcome, current members are listed at the following web site:

<http://eqwm.okstate.edu>,

Contact web site manager [Sharla Lovern](#) for needed web site updates.



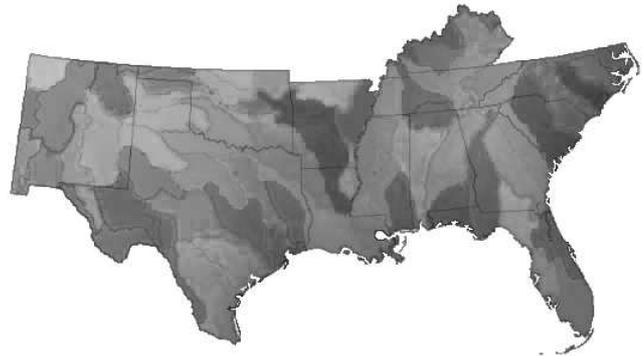
Extension programs in thirteen states have joined forces in the Southern Region Water Quality Program (SRWQP, <http://srwqis.tamu.edu/>). The participating states appear in Fig. 1 (below).

SRWQP reorganized and now focus on seven programs, listed as follows:

- Animal Waste Management\*
- Drinking Water & Rural Urban Interface Education\*
- Irrigation Water Management
- Nutrient Management
- Water Policy & Economics\*
- Watershed Assessment & Modeling
- Watershed Education & Restoration

\*Programs with OSU co-leadership

If you wish to be involved in any of the program areas, Mike Smolen can facilitate your involvement. There are funds available within each program area for contracted deliverables.



**Figure 1. Map of states participating in the USDA-CSREES Southern Region Water Quality Program. More information about USDA-CSREES can be found at the following link:**  
<http://www.usawaterquality.org/about/default.html>

## Monthly Seminars

The monthly Ordure Luncheons led by Doug Hamilton have hosted many good presentations, check it out on [CENTRA](#) or in-person at OSU-Stillwater AG Hall Room 374. Brown Bag Lunch starts at 12:00, Seminar at 12:30. The next luncheon will be the last Wednesday of August, 2009.

The **March** meeting hosted Michael Patton from MET Tulsa, considered one of Oklahoma's leaders in Waste Management and Recycling in particular. Currently the price of the feedstock and its transport greatly influences recycling, and low commodity prices may threaten municipal programs of separation and collection. Demand for recycled materials is needed, and entrepreneurs that will utilize the cheap feedstocks and create market demand.

The **April** meeting featured Josh Payne, Area Animal Waste Management Specialist in Muskogee, and Brian Pugh, Haskell County Extension Educator, speaking on "On-Farm Mortality Composting of Livestock Carcasses". Their 2007 TIP project was an on-farm large animal composting study conducted to determine the efficacy of 3 bulking agents (pine shavings, pine shavings mixed with poultry litter, and hay) for composting stocker calf carcasses.

Compost bins were constructed on a single field with similar slope, altitude, and terrain. Each carcass was surrounded by 18" to 24" of bulking agent on all sides, with water added to the center of each pile. The piles were left undisturbed while temperature was monitored using long-stem thermometers and data loggers. On days 75 and 150, the piles were turned. Samples were collected on day 150 for analysis of pH, EC, moisture content, TN, C, S, P, K, Ca, Mg, Na, Cu, Zn, Mn, Fe, NH<sub>4</sub>-N, NO<sub>3</sub>-N and soluble P.

A mortality compost field day was held to assess compost piles and report preliminary data. Preliminary data shows that all 3 treatments were effective at decomposing soft tissue at 75 days. Pine shavings and pine shavings mixed with litter formed a humus-like product, maintained temperatures required for effective pathogen kill (above 131°F) and were more effective at decomposing bones when compared to the hay treatment.

The **May** Ordure luncheon was held Wednesday May 27<sup>th</sup> featuring EQWM-related graduate student presentations by Aaron Mittelstet and Matthew Steele.

If you choose to join the group using CENTRA, click on the [Centra](#) Webpage line at the bottom of the page, and look for "Waste Management Group." If you haven't previously used Centra, you will have to register as a user first. Archived presentations are also available on Centra.

## Member Profile

**Difei Zhang** started as a professor with Natural Resource Ecology & Management in August, 2008. One of the projects she has been working on concerns the shortleaf pine-bluestem ecosystem of the Ouachita and Ozark National Forests, with analysis of long-term growth and yield data for use in



restoration of the ecosystem. This research is in collaboration with Dr. Tom Lynch, and some of the research objectives include looking at plot response to thinning, influence of understory hardwood re-growth on shortleaf pine growth, assessment of ice-storm damage, and revision of the survival model.

Oklahoma's traditional forest markets are in a state of decline, and this threatens landowners and communities who rely on these markets for jobs and economic growth. Difei is developing a forest accountancy network in Oklahoma to begin comparative efficiency analysis in forestry and to test applications for the forest industry. Difei will be looking to collaborate with other EQWM faculty on issues of contributing factors, threats, benefits, and opportunities.

Difei is also interested in collaborative work with the Environmental Quality and Water Management team in the following areas:

- Decision analysis improving environmental solutions and regional impacts of climate change on water availability and ecosystem services.
- Effects of global climate change on aquatic systems and the assessment of the ecological effects of biofuels.
- Forest Sustainability and Health, Forest Economics and Markets, Water Quality and Quantity, Wildfire Risks, Urban Forest Health and Care, Climate Change, and Forests with Unique Features and Special Values at Risk

## EQWM Team Highlights and Member Profiles

**Ilda Hershey** was hired in October, 2008, as Assistant State Extension Specialist for Solid Waste Management Programs (Ag Econ appointment). Ilda's primary duty is to fulfill the obligations of a USDA Rural Development grant. This includes helping county governments, law enforcement personnel, teachers and local citizens to establish educational programs, enforce Oklahoma solid waste laws, and implement solid waste management programs.

Among the training programs that Ilda will coordinate are: "Trash Cop" training for environmental law enforcement officers in conjunction with the Oklahoma Department of Environmental Quality; and a "Train the Trainer" in-service workshop for 4-H professionals across the state. She also will be involved in producing a symposium for solid waste professionals co-hosted by the Oklahoma Indian National chapter of SWANA (Solid Waste Association of North America).



In addition to training, Ilda will provide technical assistance through the creation of resource trunks and displays that contain K-12 educational materials on topics associated with waste management such as source reduction, reuse, composting, recycling, illegal dumping and littering. These materials will be on loan to rural communities and will complement solid waste workshop programming at rural schools.

Ilda received her master's degree in Environmental Science from Oklahoma State University in 2001 and has since worked for the ODEQ, Water Quality Division, coordinating grant programs. She currently serves on the boards of the Oklahoma Recycling Association and Sustainable Stillwater.

**Jason Warren** started as the Soil and Water Conservation/ Management Extension Specialist in the Plant and Soil Science Department in June 2008. A product of OSU for his undergraduate degree and thesis, he completed his Ph.D. in Crop and Soil, Environmental Sciences from Virginia Tech and did post-doctoral work with USDA-ARS Animal Waste Management Research Laboratory in Bowling Green, KY.



Jason's research (15%) and extension (85%) efforts are focused on conservation tillage crop management practices, with interest in water use dynamics and carbon storage/sequestration in agricultural soils. Jason currently provides extension education programs on soil quality and characteristics that influence land use and management, including soil profile training to assess site suitability for small scale septic system placement.



**EQWM Mission:** Promote collaborative research and extension programs addressing environmental issues of Oklahoma. Increase public awareness of environmental quality and waste management research and extension programs underway in the OSU Division of Agricultural Sciences and Natural Resources, and DASNR's commitment to environmental programs as an important part of the land grant mission.

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*EQWM Newsletter*

Oklahoma State University, U.S. Department of Agriculture, State and Local Governments cooperating. Oklahoma Cooperative Extension Service offers its programs to all eligible persons regardless of race, color, national origin, religion, sex, age or disability and is an Equal Opportunity Employer.