

# 2008-2009 Accomplishments



## NORTHWEST BIOSOLIDS MANAGEMENT ASSOCIATION



### Education & Information



- ☀ Hosted General Membership, Board & Committee Meetings
  - British Columbia (2008), Oregon (2008) & Washington (2008 & 2009)
- ☀ Presented “A Tale of Trials, Tribulation, and Triumph: Biosolids Management in the Pacific Northwest” at the 2009 WEF Biosolids & Residuals Conference
  - Article presented in the August 2009 issue of Water Environment & Technology
- ☀ Produced monthly Biosolids eBulletin and Technical Resource Library
  - Received additional support from other regional associations to utilize library

- ☀ University researchers provided biosolids presentations to schools, public agencies and organizations such as BioCycle, Soil Science Society of America, the WA Tilth Conference and Master Gardeners
  - (total audience = approximately 2000 people)
- ☀ Held 2008 & 2009 Biosolids Management Conferences



### Regulatory Coordination

- ☀ Provided comment on the BNQ Draft Standards for Biosolids Soil Amendments
- ☀ Presented the Regulations Corner in the Biosolids eBulletin

### Research & Demonstration

- ☀ Co-hosted the Kittitas County Soil Quality Workshop: Organics & Biosolids with Conservation District and Natural Selection Farms
- ☀ Presented that latest research at the Biosolids & Reclaimed Water Research Day in Renton, WA
- ☀ Toured Watershed Park borrow pit in Kirkland, WA, featuring native plant establishment research being conducted by Eastside Preparatory School



- ☀ Showcased the use of organic amendments to improve urban soils at the Expanding Biosolids Utilization Opportunities in Wilsonville, OR
- ☀ Featured WSU & UW research projects, including long-term benefits of organic amendments, soil carbon accumulation, turf grass and comparing potting mix blends at the April ('09) Biosolids Research Forum and June ('08) Biosolids Research: Our Knowledge is Growing Workshop
- ☀ Highlighted creative biosolids end use options at the Innovative Uses of Biosolids in our Backyard Field Day in Vancouver, BC

## 2008-2009 NBMA & Member Agency Funded Research



NBMA and member agencies continue to fund research on trace organic chemicals and pathogens and their potential effects on the environment following land application of biosolids. Results of these studies will help biosolids managers respond to questions from community members and regulators.

- University of Washington (UW) research on fate of estrogenic compounds from biosolids and reclaimed water applied to turf grass showed no leaching or plant uptake from soil. Soil concentrations of the estrogens were below detection limits for all reclaimed water and biosolids treatments analyzed.
- University of Arizona (UA) completed a national study of microbial indicators and pathogens at wastewater plants across the U.S. This information will be used to update biosolids risk assessments. Results show that pathogen loads are lower than in the early 1990's, and data suggest human health risks from Class B biosolids have been reduced by implementation of the EPA Part 503 Rule.
- UA studies on the long-term sustainability of land application of biosolids, demonstrate that biosolids positively affect soil microbial activity and diversity, enhanced soil organic matter and nutrients, and that potential risks from biosolids were shown to be low.
- UA is evaluating fate and relative risk of fire retardant chemicals, polybrominated diphenyl ethers (PBDEs), in biosolids; WSU-Puyallup research plots are included in the study.



### NBMA research and demonstration program is helping to develop new markets and products for biosolids use.

- UW study evaluated use of GIS to plot public (market) acceptance of biosolids products. The work showed broad acceptance for exceptional quality products from City of Tacoma and King County. The study tracked delivery by size and destination. The results suggest that GIS can be used as a powerful marketing tool for Class A biosolids products.
- UW has worked with the City of Tacoma to integrate TAGRO's Exceptional Quality biosolids products into community gardens. Gardens have been established, including one in an organic garden located in a low-income housing development. Surplus food harvested from the gardens is donated to local food banks.



- Washington State University (WSU) researchers evaluated alternative potting mixes produced from composts made with biosolids and land-clearing debris, construction debris, and horse manure. Results showed bedding plant growth and quality similar to a standard peat-based potting mix and TAGRO potting mix, when used with drip irrigation. It also demonstrates how these residuals can be used to create a high value potting mix, suitable for greenhouse and nursery plant production.
- WSU and Oregon State University (OSU) are continuing evaluation of biosolids effects on landscape plant performance and soil quality in compacted urban soils.
- WSU is involved in numerous extension activities, sharing the science of biosolids recycling at workshops and field days, Master Gardener classes, Compost Operator training and other WSU events.

### NBMA researchers are exploring how to use biosolids as a tool to reduce greenhouse gas emissions by storing carbon in the soil

- UW and WSU are conducting a collaborative project with funding from NBMA and WA Department of Ecology. Researchers documented the long-term benefits of biosolids amendments on carbon sequestration and soil quality in a variety of agro-ecosystems across Washington State. New sites are being established with a focus on carbon sequestration potential on highly disturbed sites such as borrow pits or mined sites. These sites will measure plant response, soil carbon concentrations and nitrous oxide emissions from the biosolids amended soils.