AERC Newsletter_____April 2009

ASSOCIATION OF ECOSYSTEM RESEARCH CENTERS

Annual Meeting September 2008

AERC Congressional Briefing and Symposium
Responding to Climate Change: A Role for Ecosystems

AERC held the third in a series of symposia in Washington DC addressing ecosystem topics related to climate change, presenting a congressional briefing and a symposium on carbon sequestration on September 25, 2008. The briefing at the Smithsonian Institution Ripley Center attracted a crowd of about 50 to hear experts address aspects of carbon sequestration (see news reports in *BioScience* 58(11):1094). Representatives from key congressional offices, executive branch agencies, and non-governmental organizations attended the briefing and the scientific symposium which followed. The briefing featured presentations by six leading ecosystem scientists:

Robin Graham of Oak Ridge National Laboratory "Environmental Policy and Carbon Sequestration by Ecosystem." Graham provided a summary of the process of ecosystem carbon sequestration in plants and soils and discussed the magnitude of some potential ecosystem sequestration processes.

Ken Buesseler of Woods Hole Oceanographic Institution: "Ocean Fertilization: Ironing Out Uncertainties in Climate Engineering." Bruessler discussed the role of the ocean as a carbon sink and the potential role of fertilizing oceans with iron for stimulating marine algal growth and increasing carbon uptake. He concluded with a discussion of the uncertainties regarding these processes and their outcomes.

Peter Curtis, of Ohio State University: "Forest Carbon Storage in the Upper Midwest: Lessons from the Past and Predictions for the Future." Curtis's presentation covered the processes controlling annual carbon storage (sequestration) (e.g., respiration, photosynthesis) and their rates (e.g., forest type, age, and geographic location). Many unanswered questions remain to be addressed.

J. Patrick Megonigal, of the Smithsonian Environmental Research Center: "*Carbon In, Methane Out: The Greenhouse Gas Balance of North American Wetlands*." The role of wetlands, particularly peatlands, as a source or sink for carbon was discussed. Organic wetland soils sequester carbon, but also emit methane, a highly concentrated greenhouse gas, when exposed to the atmosphere during drainage or drought or when frozen soils are thawed. The conditions that favor carbon sequestration over methane emissions are not well understood.

Charles Rice, of Kansas State University: "Carbon Sequestration in Agroecosystems." The role of the agricultural sector in sequestering greenhouse gasses was discussed. While afforestation shows the greatest potential for sequestering carbon, the use of management practices such as conservation tillage (which reduces soil turnover) and grassland conversion showed the greatest potential for carbon sequestration. Soil carbon stores have the potential to change greatly under different cropping and management practices.

John Arnone, of the Desert Research Institute: "Carbon Sequestration in Deserts." Although arid systems are not generally highly productive, new data suggests that carbon uptake may be larger than expected. The potential offsetting roles of invasive grasses and soil microbial production was discussed. The frequency and amount of rain will play a large role in determining whether arid lands will serve as a net sink or source of carbon.

The symposium that followed also featured a presentation by **Jim Dooley** (Joint Global Change Research Institute): "Potential for Large-Scale Carbon Capture and Storage Technologies." Dooley provided some technical background on the current technologies available for carbon sequestration.

Following the congressional briefing, these speakers presented more detailed talks at the annual symposium. The symposium was attended by representatives of AERC member organizations from around the US and by staff from Washington DC agencies such as NSF, EPA, USDA, and DOE. Less formal discussions continued during the luncheon at the symposium and during the reception that followed the symposium. The 2008 briefing and symposium presentations are posted on the updated AERC website at **www.ecosystemresearch.org,** as are the presentations from the 2007 and 2006 briefing and symposia, entitled **Informing a Sound Bioenergy Policy,** and **Ecological Tipping Points Associated with Global Climate Change**.

AERC Council Meeting

The AERC Council Meeting was held at the Smithsonian Institution on September 26, 2008 with AERC officers and representatives of several member organizations present. Major items of business included the election of new officers, new member recruitment, and the desire to provide additional services for our member organizations. Dr. Lucinda Johnson (Center for Water and the Environment at the Natural Resources Research Institute, University of Minnesota Duluth) was elected president; Dr. Robin Graham (Oak Ridge National Laboratory) was reelected as secretary; Dr. David Smith (University of Virginia, Environmental Sciences Department) was elected incoming-president; Dr. John Arnone (Dessert Research Institute) and Dr. Ann Rypstra (Ecology Research Center, Miami University) were elected to the board as members-at-large.

Robert Gropp, director of the Public Policy Office at the American Institute of Biological Sciences (with whom we have a formal affiliation), discussed current policy issues and upcoming legislative priorities.

Future AERC Events

The 2009 meeting, scheduled for September 24-25 in Washington DC, is entitled "Out on a Limb: Sustainability of Urban Ecosystems Under Changing Climates." A slate of interesting speakers addressing coastal hazards, water stress, and human health effects due to a changing climate are planned.

AERC and AIBS are cooperating to bring the members two new initiatives this year. Prior to the annual symposium and briefing, AERC will collaborate with American Institute of Biological Sciences to present a half day workshop entitled "**Communicating Science: A Workshop for Talking with the Media"** on the afternoon of September 23rd. AERC will subsidize 50% of the cost of this workshop, making the registration fee $50. A maximum of 40 individuals can be accommodated. Attendees will receive coaching from experienced professionals and helpful materials, including a copy of the book "**Communicating Science: A Primer for Working with the Media."** Further information is forthcoming. We especially encourage students and young investigators to attend this training opportunity.

In addition, we will be expanding our policy briefing at this year's meeting. Upon completion of the AERC business at noon on September 25, we will host Robert Gropp (AIBS) to present a one-hour long briefing covering current policy issues, and highlighting upcoming initiatives and legislative priorities. We look forward to seeing you there.

The mission of the Association of Ecosystem Research Centers is to promote the use of ecosystem science to address environmental problems. AERC advocates support for ecosystem-scale research, provides information for scientists and policy makers, promotes training opportunities in ecosystem studies, and fosters collaboration among member institutions.