All Ohio Chapter News

Soil and Water Conservation Society

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INSIDE THIS ISSUE

From The President

By Brent Sohngen

Public Policy and the All Ohio Chapter

Although I have been a member of this organization for about 10 years, I still have lots to learn about our history. What I know is that our members have made and continue to make incredible contributions to the science of natural resource management in Ohio. We provide a $1000 scholarship every year to a student who is pursuing a degree in the natural resources. We support the Ohio Envirothon. We put on technical seminars that broaden the understanding of our membership about important new issues in management. We recognize outstanding publications and outstanding contributions to society through our award programs. We provide networking opportunities at our semi-annual meetings.

These activities are all part of the fundamental mission of our organization as defined by our by-laws and our strategic plan. Our strategic plan, most recently revised in 2006, lists the following seven objectives:

1. Foster leadership and technical expertise of AOCSWCS membership.

2. Diversify and increase the membership of AOCSWCS.

3. Advocate legislation and public policy that promotes the conservation of natural resources.

4. Apprise Ohio citizens of important natural resource issues.

5. Establish and affirm Chapter identity.

6. Maintain the Chapter's College Scholarship Program and continue fund raising efforts.

7. Implement the Mission, Goals and Objectives of this Strategic Plan.

There is absolutely no question that as an organization, we are accomplishing most of these objectives. When our individual efforts are considered as well, we collectively do all of these things.

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Member Spotlight – Rich Gehring

By Christina Coulon

State Soil Scientist Richard Gehring (l) receives his 30 year Length of Service Award from State Conservationist Terry Cosby (r).

SWCS member and past Secretary (2006-2007) Richard Gehring is a native Ohioan and graduate of The Ohio State University with a major in agronomy. He began a career with the Natural Resources Conservation Service in 1977 when he accepted a position as a Soil Scientist on the Belmont County Soil Survey. Since then, Rich has worked on the Ohio Soil Surveys in Pike and Morrow counties, and was the project leader on the Ohio Soil Surveys in Morrow and Coshocton counties. Rich became the Area Soil Scientist in Dayton in 1986 until he took a position in the NRCS state office as the Assistant State Soil Scientist in 1990. In 2007, thirty years after beginning his first job with NRCS, Rich was selected as the State Soil Scientist for NRCS in Ohio.

When asked why he maintains a membership with the All Ohio Chapter of the Soil and Water Conservation Society (AOC SWCS), Rich states, "I believe the work I do is important and benefits society. Belonging to SWCS helps elevate the importance of this work to the general public and policy makers. Also, I think being a member of SWCS is cool!"

Rich believes that being a member of the AOC SWCS has helped him keep up with the latest issues, concerns, problems, and solutions in natural

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Summer Meeting at Hocking College

By Dave Libben

Get ready for the summer meeting of the All Ohio Chapter in the beautiful Hocking Hills region of south central Ohio! The morning session will be held at The Inn at Hocking College, with tours of acid mine drainage treatment and campus programs in the afternoon.

The meeting will take place Thursday, August 14, 2008 with registration running from 9-9:30. Register by filling out the registration form on the website (http://www.ohiochapterswcs.org/home.html) and e-mailing or sending it to Bob Parkinson - Bob.Parkinson@oh.usda.gov

200 N. High St., Rm. 522, Columbus, Ohio 43215.

Transportation for the afternoon tours will be generously provided by Hocking College. Look forward to seeing you there!

THE INN AT HOCKING COLLEGE

15770 State Route 691, Nelsonville, Ohio, 45764

GOBA Views AOC Display

By Lloyd Owens

The 2008 Great Ohio Bicycle Adventure (GOBA), the 20th annual, spent two nights and a day in the Coshocton area. Even though the day was an optional ride day, over 700 riders decided to select one of the optional routes. All of these riders came past the North Appalachian Experimental Watershed. There were a variety of research, conservation, and related displays to view, including the All Ohio Chapter SWCS display. Of the riders who signed visitor sheets, and many did not, 17 states and Ontario, Canada were represented. There were riders from Massachusetts to California, New York to Georgia and Texas.

East North Central SWCS Leadership Workshop

By Lloyd Owens

The East North Central (Ohio, Indiana, Michigan, and West Virginia) SWCS Leadership Workshop was held on May 8 and 9 in Pokagon State Park in northeast Indiana. With the meeting going from 1 pm Thursday to 12 noon on Friday, there were opportunities for the 17 leaders from these four states to network and learn from each other.

Dewayne Johnson, Professional Development Program Director from the Society headquarters, provided updates on Society happenings, e.g. role of SWCS as a provider of professional training. Johnson also addressed requested topics such as the pros, cons, and procedures for chapter incorporation and 501 (c) status for chapters. There were regional updates on Professional Development, Chapter Development, Awards, and Membership as well as updates on the activities of individual chapters.

Technical information was provided in a presentation by Joe Draper, Project Director, The Nature Conservancy, on the conservation thrusts and educational efforts being made in the Fish Creek Watershed in northern Indiana.

The workshop closed with Michigan Chapter reporting on the current progress of planning for the 2009 International meeting to be held in Dearborn, MI.

This regional workshop is rotated among the four states, and 2009 is Ohio's turn**. If you have thoughts on location, topics that would benefit SWCS chapters, and/or technical presentations, please contact Brent Sohngen (Sohngen.1@osu.edu) or Dave Libben (dave.libben@oh.usda.gov).** This workshop is open to all chapter members, especially those in leadership positions or those interested in being more involved in chapter and Society activities.

Trading Carbon Credits in Ohio

By Mark L. Wilson, Land Stewards, LLC and
Past President of the All Ohio Chapter

There's an emerging revenue opportunity for farmers and foresters. It's called trading carbon credits. This is a very real market and if you think it's going to dry up and go away, I'd urge to think differently.

The best known market for trading carbon credits is the Chicago Climate Exchange (CCX). A closer look at the CCX reveals that it has ~ 400 members (buyers of carbon credits), ~ 70 aggregators (sellers) and each year since its inception, the volume of carbon credits traded has doubled.

All this market activity is the result of concern over global warming. There are several gases that regulate the temperature of the earth. Collectively, they're referred to as Green House Gases (GHG). Only three of these gases are of economic importance: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The global warming potential of these gases is relative. For example, CO_2 has a global warming potential of 1 X, CH_4 has a potential of 21 times X (i.e. 21 times the potential of CO_2) and N_2O is 300 X. Reduction of these gases is measured in terms of carbon credits. Specifically, one carbon credit equals a reduction of one metric ton of carbon dioxide (CO_2). In other words, carbon dioxide (CO_2) or just "carbon" has become shorthand for all these gases.

Carbon credits accrue each year. Essentially, they result from specific land management practices: no-till, strip till, grassland, CRP, and new and managed forestry. Carbon credits can also be earned for the destruction or avoidance of CH_4. Row crop production that meets the NRCS definition of conservation tillage and grass planted after 1999 is eligible to earn 0.6 and 1.0 carbon credits per acre respectively. Carbon credits from forestry can earn anywhere from 0.1 to 5 credits per year.

The value of a carbon credit at the time of this article is just under $5. Thus the carbon credits from an acre of no-till sold in July, 2008 would earn ~ $3 (0.6 credits/ac x $5). The credits from that same acre sold next year would earn the going market price at the time of the trade.

Carbon sequestration is the capture and storage of carbon that would otherwise be emitted to or remain in the atmosphere. In short, plants pull CO_2 out of the air and tie it up in the form of plant tissue. When a plant dies, its residue becomes part of the soil organic matter. And when the soil is tilled, oxygen is introduced into the profile causing soil microbes to decompose organic matter and release CO_2. You've probably smelled the sweet, baking-bread smell released in the spring when soil is tilled. That's CO_2 being released into the atmosphere.

Some of you with a background in soils are probably wondering, "How does the whole process of carbon sequestration and carbon credit accounting add up?" The answer is, "It really doesn't." Regardless of texture or organic matter, all Ohio soils in no-till row crop production earn 0.6 carbon credits per acre per year. The protocols established by CCX are geared toward facilitating trades, rather than linking rates of carbon sequestration with a melting glacier. Don't get me wrong, the GHG reduction estimates are conservative, the trades are legally clean and both buyer and seller are fairly compensated. Things are simple by design because carbon credit trading in this country is purely a private sector, self-regulating arrangement. As of now, there's no government involvement.

Carbon credits from about 4,000 acres of Ohio cropland are currently being traded through AgraGate Climate Credit Corporation. Land Stewards serves as the contract facilitator for AgraGate in Ohio. Call me at 740-751-4074 if you'd like to learn more.

Water Quality Impacts of Managed Turf

By Kevin King (USDA – Agricultural Research Service)

Turf may be defined as the surface layer of soil, grass plants, and the plant's matted roots. The grassed areas of home lawns, roadsides, commercial property, golf courses, parks, schools, churches, cemeteries, airports, and sod farms all fit this definition of turf. There are an estimated 17 million hectares (50 million acres) of turf in the U.S. (Morris, 2003). The largest percentage (67%) of turf is found in home lawns, while an approximate 4 million turf hectares (10 million acres) are located on roadside right-of-ways (Federal Highway Administration, 2004). In some rapidly urbanizing regions of the U.S., turf is rivaling corn and soybeans as the primary land use, a phenomena that is expected to continue with urban sprawl (Shuman et al. 2000) and as the size of home lawns continues to increase (Robbins and Birkenholtz, 2003).

Turf provides functional (i.e. erosion and air pollution control, wildlife habitat, dust prevention, noise abatement, and heat dissipation), recreational (i.e. a safe sport/entertainment surface), and aesthetic (i.e. increased property values and quality of life) benefits to society and the environment (Beard and Green, 1994). However, the perception (Kohler et al. 2004; Shuman, 2002; Peacock et al. 1996; Smith and Bridges, 1996; and Pratt, 1985) and potential (Balogh and Walker, 1992) for turf systems to degrade the natural resource base does exist. Unfortunately, quantification of the water quality impacts of managed turf systems has been scarce.

Two recent studies on managed turf systems in Texas and Minnesota indicate that nitrogen losses from managed turf systems do not pose a significant environmental risk (King et al. 2007 and King et al. 2008). However, phosphorus losses from turf systems are comparable to those measured from crop production agriculture and are consistent with levels known to cause eutrophication.

Storm event and baseflow hydrology and water quality (nitrogen and phosphorus) data were collected from a golf course in Austin, TX from April 1, 1998 to March 31, 2003 to assess the impact of golf courses on surface water nutrient flux. Median NO_3-N concentrations measured in baseflow and storm flow were significantly greater exiting the course compared to those concentrations entering the course. The median dissolved reactive phosphorus (DRP) concentration measured in storm flow exiting the course was significantly greater than the concentration entering the course. There was no detectable difference in the baseflow DRP concentration entering or exiting the course. The measured NO_3-N loading from the course was 4.0 kg ha^{-1} yr^{-1} (11% of applied) while the DRP loading was 0.66 kg ha^{-1} yr^{-1} (8% of applied). The resulting course concentration was 1.2 mg L^{-1} NO_3-N and 0.2 mg L^{-1} DRP. NO_3-N from this course poses little environmental risk. However, the DRP concentration is twice the recommended level to guard against eutrophication.

The second study reports data from a sub-area of Northland Country Club located in Duluth, MN. Surface water discharge and nutrient (NO_3-N, NH_4-N, dissolved reactive phosphorus (DRP), TN, and TP) concentrations were collected for a 2.5 year period (June 2002-November 2004). The mean measured rainfall/discharge coefficient during the study period was 0.46. Measured NO_3-N and NH_4-N concentrations at the inflow and outflow sites were not significantly different; however, concentrations of TN, DRP, and TP at the same locations were significantly different. Nutrient load attributed to the course was 0.11 kg ha^{-1} yr^{-1} NH_4-N, 0.59 kg ha^{-1} yr^{-1} NO_3-N, 0.14 kg ha^{-1} yr^{-1} DRP, 2.79 kg ha^{-1} yr^{-1} TN, and 0.27 kg ha^{-1} yr^{-1} TP. Nitrogen loads from this site pose minimal environmental concerns; however, phosphorus concentrations are consistent with concentrations known to lead to eutrophic conditions.

Implementation of turfgrass management system (TMS) plans designed to combat phosphorus losses would help alleviate the issues identified in these

studies. TMS plans are designed to maintain high quality turfgrass and protect water and soil resources. TMS plans are multiple integrated best management practices involving irrigation, fertilization, pest and disease control, soil and water conservation practices, and other agronomic practices related to turfgrass management. Turf managers are often faced with multiple options for managing turf. They are asked to balance turf quality and growth with climate, soil, vegetative conditions, and management practices. Their choice of practice is critical for controlling and/or reducing surface runoff and pollutant transport. The most significant management practices used to control or reduce runoff losses from established turf are: 1) maintenance of healthy turf (Watschke, 1990), 2) control of irrigation scheduling and volume based on plant requirement (Bastug and Buyuktas, 2003; Murphy, 2002; Balogh and Watson 1992), 3) establishment and maintenance of buffer zones (Bell and Moss, 2005; Cole et al. 1997), and 4) protection of trees and wetlands (Reicher et al. 2005; Kohler et al. 2004).

The perception that golf courses are environmentally unfriendly because of the significant amount of fertilizers and agrichemicals applied is not fully warranted, at least with respect to fertilizers addressed these studies. The turfgrasses used on golf courses are very efficient and aggressive at utilizing nitrogen (Turner and Hummel, 1992). As evidenced by the data collected in these studies, nitrogen losses are small and the measured concentrations are well below any level of concern and are fairly consistent with background levels. In contrast, the DRP concentrations do warrant some concern. With proper management and implementation of best management practices the levels and loads of phosphorus lost in surface waters should decrease.

** If you would like to obtain copies of the original articles by Dr. King, or if you would like further information on the articles referenced above, please contactd Dr. King directly at kevin.king@ars.usda.gov.

Events of Interest

FIELD CROPS DAY – ARS Research Station, Custer, Ohio – July 24th

OHIO NO-TILL FIELD DAY 'FARMING GREEN YEAR-ROUND', Hardin County, Ohio – August 14

FARM SCIENCE REVIEW, London, Ohio – September 16 - 18

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In our past few meetings, the executive council has discussed whether our organization can and should consider addressing in particular objectives 3 and 4 above. Discussions have thus far focused on objective 3 above ("advocate legislation and public policy that promotes the conservation of natural resources"). Our national organization advocates for conservation components of important agricultural and natural resource legislation in front of congress. Could we do the same, effectively, here in Ohio? Given that natural resource issues continue to be at the forefront of the national and state dialogue (and seemingly mixed in with conversations about jobs and the economy), it would seem prudent for us to at least take a look and consider what steps we might take to more actively advocate legislation and public policy.

To date, the executive council has considered the possibility of adding a new public policy committee that would begin to address specific policy issues. We are writing the scope for this committee now and plan to finish that up in the fall. The executive council is only at the beginning of its discussion, any thoughts or comments on this are welcome.

The executive council has also recognized that it would be useful to build a better understanding about the preferences of our membership. To that end, we are designing a short survey that we will send out to the membership via electronic mail this August. The chapter last surveyed the membership in 2002, and the information from that survey was very useful for designing programming over the subsequent several years. We hope that all of you will take the time to respond to the survey.

If you should have any questions or comments, please email me or call (614-688-4640; Sohngen.1@osu.edu). I look forward to seeing many of you at the annual summer meeting in August. Dave Libben has an exciting program set up for us at the Hocking College. In addition to the program, we'll also announce the scholarship winner, and the winner's of the publication awards.

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resource management. The SWCS has a scientific journal, The Journal of Soil and Water Conservation, which publishes research in the natural resources field, which all SWCS members receive. In addition to the informational aspects of SWCS membership, Rich says he benefits from the networking opportunities as well and has become a more well rounded professional as a result.

In answer to the question, "What does being a SWCS member mean to you?" Rich explains, "I consider myself a professional. I believe to be recognized and considered a professional one has to earn it. Belonging to a professional organization like SWCS is one of those ways to earn this distinction."

AOC Officers - 2008

Brent Sohngen, President
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To submit items for the newsletter contact newsletter editor Chris Coulon at chris.coulon@oh.usda.gov