



All Ohio Chapter News

Soil and Water Conservation Society

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From The President

By Brent Sohngen

Growing Conservation for the Future

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As you read this newsletter you know doubt will realize that Ohio has been blessed with incredible leadership in natural resource management and conservation. Ted Napier has been named the Hugh Hammond Bennett Award recipient - the highest possible granted by our international society - for 2008. Norm Fausey received the Conservation Research Award, and Andy Ward received a Commendation Award. All these awards recognize the outstanding accomplishments by these individuals and their widely recognized contributions to our body of knowledge. I'm honored to be associated with all three of these members of our society.

Their efforts have helped Ohio build a better environment. Dr. Napier's work has helped us better understand how new technologies are adopted by landowners. Dr. Fausey has pioneered water management in agricultural systems and is working on showing how these technologies can help reduce nutrient loads. Andy Ward, as they say, has "written the book" on *Environmental Hydrology*. Not only have these individuals helped Ohioans, but their contributions have been felt around the world.

Today's challenges, of course, will demand that this kind of leadership continue in the future. Ohio's farms and forests probably have not seen such wide a diversity of demands for services than currently. High energy prices and congressional mandates have increased the demand for biofuels. Droughts come and go, it seems, but incomes world-wide keep marching upward, and with higher income comes a shift in consumption towards meat products, in turn raising the demand for grain. Rising incomes have another, more important effect: They increase the demand for environmental services from the land, such as improved water quality, wildlife habitat, biodiversity, reduction of carbon dioxide in the atmosphere, and views of pastoral settings. The last couple of Farm Bills, with their growing generosity towards conservation programs, have only enhanced the demands placed on today's landowners.



*Past President Owens (l)
passes gavel to President
Sohngen*

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Member Spotlight – Bob Parkinson

By Christina Coulon

Not many people can say they've been a member of SWCS for 36 years, but Robert J. Parkinson can! Bob has served on the Soil Resources Committee, and on the Scholarship Committee, and is currently the chapter treasurer. Bob has also been recognized for his outstanding contributions to the AOC-SWCS and to the field of natural resources conservation in 1999 when he was awarded as the AOC SWCS Outstanding Member. In addition, Bob served as a presenter at the 1988 International SWCS meeting on one of the technical tours.

An Ohio State University graduate, Parkinson earned both a bachelor's degree in agronomy and a master's degree in soil science. Parkinson also studied at Iowa State University in their Soil Science Institute.

Currently, Bob is the State GIS/Resource Inventory Coordinator for the USDA Natural Resources Conservation Service in Ohio. His past assignments with NRCS include Soil Survey Project Member, USDA-SCS, Crawford, Franklin & Licking Counties, OH; Research Associate, OSU Institute of Polar Studies, Prudhoe Bay, Alaska; Soil Survey Project Leader, USDA-SCS, Licking & Ross Counties, OH; Assistant State Soil Scientist & State GIS Specialist, USDA-SCS, Columbus, OH.



Robert Parkinson, circa 1974

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Winter Meeting Highlights

By Alan Sundermeier

The All Ohio Chapter SWCS Winter Meeting was held on February 7, 2008 with 62 participants at the Ohio Department of Agriculture Headquarters in Reynoldsburg. The theme of the program was "Utilizing Cover Crops in Conservation Practices". Speakers from OSU Extension included Alan Sundermeier, Dr. Rafiq Islam, and Jim Hoorman who discussed an overview of cover crop opportunities in cropping systems, effect on soil quality, species screening, nutrient cycling, and no-till systems. Mark Fritz, Seneca County SWCD shared on-farm research with cover crops and manure. Mark Scarpitti, NRCS Agronomist, discussed NRCS Cover Crop standards. And Larry Antosch, Ohio Farm Bureau, shared policy implications that promote cover crops. A business meeting, agency update, and awards presentations were also conducted.



Jim Hoorman presentation

AOC Chapter Award Winners!

The All Ohio Chapter of SWCS may be the one chapter in the world with three national award winners for the 2008 award season. Dr. Ted Napier received the Hugh Hammond Bennett Award, Dr. Norm Fausey won the Conservation Research Award and Dr. Andy Ward won the Commendation Award. Read on to learn about their honors.

Conservation Research Award– Dr. Norm Fausey



Dr. Norm Fausey

Dr. Norman Fausey is recognized internationally as an expert on drainage of slowly permeable soils in humid regions, as an authority on modeling of soil-water flow phenomena, and as a pioneer in the use of sub irrigation and controlled drainage technologies in the slowly permeable soils. His achievements related to modernization of the drainage installation process, to changing the prevailing mindset regarding 'disposal' of drainage water to one of management and reuse, and to quantifying economic and environmental benefits of drainage water management are of benefit to scientists and producers. He developed a revolutionary advance in the equipment and materials used for subsurface drainage; i.e., a floating-beam drain tube plow that is controlled automatically from a laser light based reference plane and installs flexible corrugated-wall

plastic drain tubing accurately to design grades (In May, 2007, this laser beam automatic grade control system was dedicated as 'A Historical Landmark of Agricultural and Biological Engineering' by the American Society of Agricultural and Biological Engineers.). The major advantages of the new system are rapid installation, reduced labor requirements, and greater accuracy of drain grade alignment. Industry sources estimate that more than 5 million miles of corrugated plastic drain tubing have been installed in six Midwest states alone.

Dr. Fausey documented that drainage water management during the dormant season substantially reduces the volume and nitrate load of drainage water discharged to streams. The results from this research have been acclaimed as the best hope for reduction of the hypoxic zone in the Gulf of Mexico. Thus he is recognized as a national expert in drainage water management and is a deserving recipient of the Society's 2008 Conservation Research Award.

Commendation Award – Dr. Andy Ward



Dr. Andy Ward

Dr. Andy Ward took leadership of the organization and implementation of the All Ohio Chapter of the Soil and Water Conservation Society's commemorated its 50th Anniversary on September 5-8, 2006, in Columbus, Ohio, by presenting a conference entitled *Floodplains, Riparian Zones, and Buffer Strips: Key Components to Aquatic Life Attainment and Self-Sustaining Stream and Watershed Systems*. More than 165 people from 15 states and Canada, including 15 Past Presidents of the All Ohio Chapter, attended the event that centered on the theme of *Celebrating 50 Years of Conservation and Beyond*. Events included a technical tour to view urban storm-water best management practices; a conference with presentations from 12 nationally and internationally recognized speakers from 5 states; one 4-day workshop; five 1-day workshops; a CPESC Certification Examination on Erosion and Sediment Control, and 14 exhibits. Dr. Ward's efforts in planning an event of this size and caliber required considerable time and effort beginning in March 2006 and ending in September 2006. Dr. Ward was responsible for organizing a planning committee to plan the event; handling the logistics of the entire event; advertising the event; identifying, inviting and hosting speakers; and teaching a workshop during the event.

Hugh Hammond Bennett Award – Dr. Ted Napier

Dr. Napier has devoted over four decades to understanding the socioeconomics and public policy aspects of soil and water conservation. During his career he has focused on conservation at the local, state, national and international levels. Throughout his career Dr. Napier has authored or co-authored over eighty-five (85) peer-reviewed journal articles on research ranging from the transfer and adoption of conservation practices to national and international conservation policy.

He has served on and chaired numerous professional and academic committees during his career including the International Committee of the Soil and Water Conservation Society (1991-2004). He has received many awards and recognitions. Most noteworthy was his 1999 Fellow Award with SWCS. He has and continues to dedicate his personal and professional life to advance the art and science of soil and water conservation. His eloquent, influential, and sometimes controversial presentations are remembered by many and have shown his ability to foster the art of conservation. The SWCS awards its most prestigious award, the 2008 Hugh Hammond Bennett Award, to Dr. Ted Napier with highest regard and respect for his passion, integrity, and professionalism.



Dr. Ted Napier

Drainage Water Management

By Norm Fausey, US Department of Agriculture - ARS. Columbus, Ohio.

Drainage water management includes the conventional concept of open, free-draining outlets from field ditches and subsurface tile drains into drainage ditches and streams as well as the newer concepts and technologies for managing the elevation of the drainage system outlet as a means to control when and to what depth water may be drained from the soil and to facilitate subirrigation. Various terminology including "water table management", "water table control", "controlled drainage", and "managed drainage" is used to describe drainage systems that have facilities for some level of management of the outlet elevation.

Drainage water management is known to affect the amount and timing of water movement from the soil, but there have been few definitive studies to quantify the impact on nitrate concentration in the drainage water. It is generally accepted that the nitrate concentration is determined largely by cropping management and climatic conditions and not by drainage. One study on Hoytville silty clay soil in Ohio (Fausey, 2005) compared the annual average nitrate concentration in drainage waters from plots with free, controlled, and subirrigated drainage water management practices during a 5 year period. Nitrate concentrations were 16.4, 14.4, and 10.9 mg/l for the free, controlled, and subirrigated treatments respectively from the corn phase of a corn-soybean rotation. These concentrations were significantly different at the 95% level of significance. Concentrations of nitrate during these same years for the soybean phase of the rotation were 15.9, 15.5, and 9.5 mg/l for the free, controlled, and subirrigated treatments respectively. In this case, there was no difference in nitrate concentration between free and controlled drainage, but the concentration of nitrate from the subirrigated treatment was significantly lower.

Based on the annual drainage discharge volume from the Ohio drainage water management research plots, the load of nitrate in the drainage water was 24.0, 13.3, and 17.6 kg/ha/yr for the corn phase of the rotation with the free, controlled, and subirrigated treatments respectively. The load of nitrate in the drainage water was 26.4, 14.4, and 18.1 kg/ha/yr for the soybean phase of the rotation with the free, controlled, and subirrigated treatments respectively. These results indicate a 45% reduction in nitrate load with controlled drainage compared to free drainage for both crops even though the reduction in nitrate concentration was 12% and 3% with controlled drainage compared to free drainage for corn and soybean respectively.

The recommended spacing between subsurface, tile drains is generally a function of the hydraulic properties of the soil, annual precipitation, rate or speed of drainage desired, depth of placement, and installation cost. As farms and farm equipment get larger, and as agriculture in the Midwest has shifted from rotations that include forage for hay or pasture to annual cash grain farming mostly comprised of corn and soybeans, the importance of timeliness and suitable soil moisture conditions for

conducting field operations becomes more critical for crop producers. Soil compaction is likely reduced and trafficability enhanced with closer drain spacings that remove excess water more quickly. Lower yields are often thought to be due to inadequate drainage in these poorly drained soil landscapes. Consequently, many farmers install additional drain tile to narrow the spacing between tiles with the expectation that crop yields will be improved because of enhanced drainage.

Drain depth and spacing studies in Ohio (Hoover and Schwab, 1969) clearly indicate that the growing season drainage volume increases as drain spacing decreases. Over a seventeen year period on Nappanee silt loam soil, they found overall that drains spaced 10 m apart removed 1.56 times more water than drains spaced 20 m apart, and that the narrow drain spacing resulted in a higher discharge rate. Thus, the narrower spacing brings about a faster removal of the drainable water. For drains located at 60 cm depth, this discharge volume ratio for drains spaced at 10 and 20 m was 1.83. For drains located at 90 cm depth, the ratio was 1.17. These data illustrate that drainage system design (depth and spacing) can greatly influence the amount and timing of drainage water removed from the soil. This study also showed that drain flow amounts were affected by the previous crop, and that drain flows were considerably greater in years following an annual grain crop (corn or oats) than in years following a meadow (hay) crop.

Current farming practices in the Midwest are extensively annual cash-grain based systems which have encouraged the shift to more intensive (closer drain spacings and shallower depths) drainage systems to provide maximum drainage for trafficability and crop protection. Is this level or intensity of drainage necessary outside the growing season? Intense drainage systems can remove excess water rapidly, so if a lower level of drainage intensity were used during the non-growing season, and the more intense drainage were used during the planting and growing seasons, e.g. use of controlled drainage, this would reduce the annual volume of drainage water with a concurrent reduction in nitrate delivery to the drainage outlets.

There is no question that drainage changes the hydrology of the field where it is installed. Schwab et al., (1985) reported that mean seasonal flow (March through September) was 101, 132, and 150 mm with surface drainage, subsurface drainage (90 cm deep, 12.2 m spacing), and both surface and subsurface drainage on Toledo and Fulton silty clay soil. We have a tool in the form of drainage water management that will allow us to provide the drainage necessary for crop production and to reduce the level of drainage during periods when it is not required for crop production. This will provide a significant reduction in offsite nitrate delivery.

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With nearly all the signs pointing up, questions about balance are surfacing. How will we produce more food and biofuels, and improve water quality? If we don't expand the land in agriculture, will we increase output by increasing inputs? If we expand the land in crops, will that mean less land in conservation and forests? It is easy to believe that new technologies will ultimately enhance food production, but it is harder to address the public good and environmental problems that likely will result in both the

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short- and the long- run. The recent run-up in crop prices illustrates well how difficult it is to achieve conservation when the costs are high.

These are exactly the kinds of questions that the members of our society have wrestled with over the years; however, it has never been more important than now to have a strong society. Our society must hold a conversation with Ohioans about strengthening our natural resource base. If good science - and better policy - is important today, they will only become more important in the future.

The All Ohio Chapter of the Soil and Water Conservation is fortunate to have a deep and strong membership, and leaders like Ted, Norm, and Andy, who have held this conversation with Ohioans for years. As individuals we should make it our mission find the people around us who every day do award-winning work, and make sure they are recognized for their efforts. As an organization, we should continue supporting scientific research and working to ensure that the newest knowledge makes its way into the hands of all those working so hard to improve our soil and water resources.

Our organization also has an important duty to help guide Ohio's soil and water policy so that it best reflects the state of the science, and so that it recognizes the important trade-offs among different outcomes. By lifting up the accomplishments of all our colleagues, by practicing sound science and outreach, and by promoting good policy, the All Ohio Chapter of the Soil and Water Conservation Society will continue to have a positive impact on Ohio's future.

2007 All Ohio Chapter Outstanding Member Award

By Art Brate, Award Committee Chair



Award Committee Chair Art Brate (l) presents Jon Gerken (r) with the 2007 AOC-SWCS Outstanding Member Award. Jon was unable to accept his award in person at the winter meeting. Art and Jon attend the same church, where Art was able to personally present Jon with this honor.

This year's Outstanding Member has a B.S. Degree in Agriculture from The Ohio State University in 1970.

After college and time in the Ohio National Guard, this little fellow started his career as a soil scientist with the SCS. He mapped soils in Crawford, Williams, and Franklin Counties before becoming the soil survey party leader for Madison and Hocking counties.

In 1980, this Buckeye moved to the SCS state office and held several soils jobs including the state soil scientist position from 2000-2007. During those years he and I had adjoining cubicles and carried on much engineer-soil scientist debate. He is currently the Assistant Program Manager for NRCS in Washington D.C.

He joined the SWCS in 1971 and is a life member. He has served the All Ohio Chapter, as the Treasurer, President Elect, and the 1994 AOC President. He has served on numerous chapter and East North Central Regional committees. He has attended 7 International conferences.

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When asked why he belongs to SWCS Bob states, "I joined SWCS to broaden my knowledge of conservation-related issues and to network with other professionals from the conservation community in Ohio." He also cites the professional growth he experiences from his interactions with conservation professionals as a benefit of SWCS membership.

On a personal note, Bob and his wife Ann have a grown son, who is a microbiologist at Battelle Memorial Institute, and a daughter, who is a senior at Ohio State University, and live in Arlington, Ohio.

Save the date!

The 2008 Summer AOC SWCS Meeting will be held at Hocking College on either August 13 or 14, 2008. A tour of a regional natural resource area will take place in conjunction with the meeting. Mark your calendars and look for more information on this event soon!

2008 International SWCS Conference

The Executive Council is looking for a delegate for the summer meeting this summer. Three awards will be presented to AOC SWCS members, it would be an honor to accept the award on their behalf and present them to the award winners at the summer meeting! If you would like to participate this way, contact President Brent Sohngen. Unfortunately, we can't pay your way, but it should be pretty cheap getting to Tucson in July! Seriously, thanks for your consideration, and please let me know if you have interest.



2008 AOC-SWCS Officers (L-R)

Alan Sundermeier, Bob Parkinson, Dave Libben, Brent Sohngen, MaryAnn Core, Lloyd Owens

We are currently searching for someone to take over the management of our website. If you have interest in helping the AOC-SWCS in this capacity, please contact Brent Sohngen (Sohngen.1@osu.edu).

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

AOC Officers - 2008

Brent Sohngen, President
Dave Libben, President-Elect
Lloyd Owens, Past-President
Sandy Chanel, Secretary
Bob Parkinson, Treasurer
Mary Ann Core, Member At Large
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