

## WQCC explores carbon sequestering, ag carbon trading

Addressing a crowd of almost two dozen farmers, landowners and water quality professionals, Phil Metzger of USDA-Natural Resources Conservation Services said he would not currently recommend ag carbon trading to small rural farmers and landowners for its income potential. He did, however, advise that they implement the associated carbon sequestration strategies whenever possible for their environmental benefits.

Metzger spoke at the February 24 meeting of the Otsego County Water Quality Coordinating Committee. At the June, 2009 meeting of that group, Metzger explained that the Regional Greenhouse Gas Initiative -- a 10-state cooperative effort to reduce greenhouse gas emissions from electric power plants -- has imposed restrictions on the electric industry to limit such emissions. The industry has a cap, Metzger said, and must lower its carbon dioxide emissions, resulting in opportunities for the agriculture and forestry sectors to sequester carbon and sell the credits.

In order to better satisfy the educational component of its mission, the WQCC has restructured its monthly meetings to include public information sessions. Metzger was invited back to explain the basic principles behind a cap-and-trade system, describe how agricultural practices fit into such a system, and to outline how rural farmers and landowners might participate in and benefit from such a program.

As outlined by Metzger, cap-and-trade is a regulatory program that caps harmful emissions by limiting them through a permitting system and distributing the emissions permitted to different stakeholders. These are called allowances, permits or credits. Stakeholders can buy and sell the rights to the permitted emissions or "credits" after their initial distribution. Carbon trading is a strategy for mitigating the emission of carbon dioxide and other greenhouse gasses through such a cap-and-trade system, the goal of which is to prevent further increases in net emissions.

Cap-and-trade, Metzger said, allows one power plant to reduce emissions well below its cap and sell the resulting "carbon credits" to another power plant that cannot easily modify operations to meet the cap limit. In the same way, agricultural offsets can be purchased by power plants from farms to meet a small fraction of their cap, Metzger explained.

Agriculture offsets include carbon sequestration (storing carbon in forests and soils), fossil fuel displacement (alternative energy or energy efficiency) and greenhouse gas destruction (combustion of methane to reduce its global warming potential).

The U.S. Department of Energy describes carbon sequestration as one of the most promising ways for reducing the buildup of greenhouse gases in the atmosphere. "In fact," the website reads, "even under the most optimistic scenarios for energy efficiency gains and the greater use of low- or no-carbon fuels, sequestration will likely be essential if the world is to stabilize atmospheric concentrations of greenhouse gases at acceptable levels."

According to the U.S. Environmental Protection Agency website, practices that aim to reduce carbon losses and increase sequestration generally enhance the quality of soil, water, air and wildlife habitat. "Tree planting that restores fuller forest cover may not only sequester carbon but could improve habitat suitability for wildlife ... and reducing soil erosion through tree planting or soil conservation measures can sequester carbon and improve water quality by reducing nutrient runoff," the website reads. "Carbon sequestration practices that reduce soil erosion and excess fertilizer usage can decrease pollutant runoff and thus contribute to improved water quality, in addition to preventing climate change."

Metzger said ag carbon trading is an evolving, rapidly changing market, with little opportunity at the present time for small farmers and landowners to profit, unless they are able to co-op their carbon credits. However, he still urges that the following carbon sequestration practices be employed based on the merit of their environmental benefits\*:

- conservation tillage and permanent grass planting: In general, soil organic matter can be increased by converting to crops with higher root mass (such as grasses), managing crop residues to protect the soil from erosion while adding soil carbon, maintaining proper nutrient levels to achieve optimal crop growth and by adding organic supplements such as manure. Soil organic matter losses can be slowed by limiting or eliminating tillage to reduce soil aeration and warming or by maintaining year-round plant or residue cover to cool soils and reduce soil erosion.

- carbon sequestration in forests: Climate change is caused by releasing the carbon stored in fossil fuel reserves and in biological sinks such as forests. As such, providing ways to capture carbon into forestry products is one way of sequestering the carbon and keeping it out of the atmosphere. The three main categories of forestry offsets are: afforestation (the planting of trees where there were not previously forests for some period of time), sustainable forest management (certified management for sustainable forest practices to maintain maximal forest growth), and long lived forest products (forest materials such as hardwoods used in buildings and therefore stored in the buildings and not returned to the atmosphere.

- manure methane destruction: When methane is flared or burned it is turned into CO<sub>2</sub> and water and its potency in the atmosphere is reduced approximately 20 times. Flaring the methane gas on a dairy farm can earn offset credits. This can be done with a storage pit cover fitted with a simple flare, or with more complicated anaerobic digester engineering projects where the methane fuels an electric generator.

Other topics in Metzger's talk included the carbon cycle and climate change, sources of agricultural greenhouse gases, carbon registries, and steps to selling carbon credits. For complete details on agricultural carbon trading, including fact sheets and presentations, visit [agcarbontrading.org](http://agcarbontrading.org). Metzger's PowerPoint presentation can be viewed at [www.sjrkd.org/ma/ppt/metzger.ppt](http://www.sjrkd.org/ma/ppt/metzger.ppt).

Central New York Resource Conservation and Development Project, Inc. (RC&D), is a 501-C-3 not-for-profit organization located in Norwich. RC&D is a USDA-supported program, administered by the Natural Resources Conservation Service, which supplies federal support to the local CNY RC&D Council. Its mission is to “work cooperatively in educating and learning from landowners, organizations and other partners to improve our 12-county region’s economic, environmental and social vitality through the wiser use of human and natural resources.” RC&D services are free. Metzger is the RC&D coordinator for USDA/NRCS.

The OCWQCC was established in 1992 as a sub-committee of the Otsego County Soil and Water Conservation District. It is comprised of a diverse group of people representing state and local government agencies, non-profit organizations, academic institutions, and lake associations. These members have technical expertise and knowledge and are committed to working to improve and maintain the quality of water in Otsego County through the reduction of nonpoint source pollution within its boundaries. OCCA Executive Director Erik Miller and Administrative Director Darla M. Youngs have both served as WQCC facilitator and secretary, respectively. Youngs is currently the WQCC vice-facilitator.

\* Descriptions of carbon sequestration practices from "Carbon Trading 101" on the RC&D's "[agcarbontrading.org](http://agcarbontrading.org)" website.