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Carbon, Nutrients, and Other Ecosystem Service Markets
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Green jobs, green marketing, and a general consensus that something must be done to ameliorate the effects of nearly 7 billion people on our natural resources, continue to generate a fair amount of discussion related to the creation, adoption, and functionality of ecosystem service markets. The term ecosystem services is really a broad wrapper that typically incorporates sequestering carbon, reducing excessive nutrient loading to water sources, mitigating destruction of wildlife habitat and wetlands, and many

other situations in which natural resources provide value to society; values which up until recently have not be monetized or traded.

Though a few successful case studies exist, there remain several obstacles to implementing markets to pay landowners for ecosystem services. These obstacles include:

- Initiating payments for services which have historically been provided free of charge;
- Assigning appropriate values to these services (e.g., how much is a gopher tortoise worth?); and
- Managing and overseeing the entire process from payments made to services provided.

Many ecosystem services are currently handled on a case-by-case basis with variable buyers, sellers, and administrators. As such, there is really no way to generalize over all markets, so each service will be discussed separately.

Carbon

Carbon markets are now taking center stage, as the United States gives more serious consideration to combating global climate change. To recognize the importance of this shift in policy, the U.S. Department of Agriculture (USDA) created the Office of Ecosystem Services and Markets which will be headed by Sally Collins, formerly the Associate Chief of the USDA Forest Service. This office will provide direct access to and streamlined communication for carbon markets. Carbon trading will be the first priority.

Currently, the push for carbon markets at the national level is being overshadowed by the country's economic struggles. Additionally, personnel changes with the new administration, debates about the best approach (cap-and-trade vs. carbon tax), and

guidelines for phasing-in changes must be settled before the finer points can be fleshed out. In the meantime, states (e.g., California) and/or regions (i.e. Regional Greenhouse Gas Initiative – comprised of ten Northeastern and Mid-Atlantic states) are taking matters into their own hands by setting up local cap-and-trade systems. *[editors note: for more detailed information, please see the Winter 2008 edition of the Virginia Forest Landowner Update www.cnr.vt.edu/forestupdate/pages/newsletter.htm]*

Nutrients

Nutrient credit trading is more localized, operating at the watershed scale. The concept here is to set up a cap (upper limit) on the nutrient emitters (right now, this primarily includes point source emitters like waste water treatment plants and livestock feeding operations) and allow them to trade credits among themselves, or for non-point source nutrient reduction practices.

Recently Pennsylvania initiated a nutrient credit trading program allowing water treatment plants to purchase credits from other treatment plants or from farms which reduce their nutrient inputs beyond their mandated requirements. One company in particular is generating credits by hauling chicken manure out of a targeted watershed to be applied in a beneficial manner in another watershed and selling those credits to local housing developments and municipalities.

Though carbon and water are the larger-scale issues that dominate the press, there are many other ecosystem services markets that deserve some airtime. Habitats for rare and threatened wildlife species, such as the red cockaded woodpecker and gopher tortoise, are creating markets. To learn more about these ecosystem services, visit <http://www.speciesbanking.com/>, a website dedicated to tracking successful markets for wildlife species banking efforts across the United States.

To learn more about how market-based solutions are being used to solve environmental problems from the foremost international, national, and regional experts, please join us for **Ecosystem Services: Marketing Environmental Solutions Conference** coming up on March 12-13, 2009 in Charlottesville, Virginia. Featured speakers from international Non-Governmental Organizations, such as the World Resources Institute and WinRock International, as well as from Duke's Nicholas School of the Environment, will discuss the formation of ecosystem service markets. Successful projects will be described and buyer and seller perspectives will be offered. Panel discussions will aid in sorting out the finer details of specific carbon, nutrient, wetlands, and species market opportunities. Industry, government, non-governmental organizations, academia, and landowners will all benefit by gaining a better understanding of how ecosystem service markets function and what that will mean for them and their organizations.

For conference registration information: <http://www.cpe.vt.edu/esmes/index.html>

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