Fast Track Options

Agriculture, Forestry and Waste Technical Working Group

Mitigation Working Group
Maryland Climate Change Commission
October 11, 2007

Nutrient Trading *(currently a component of AFW 3.2 Advanced Nutrient Management)*
Nutrient trading is a concept that is currently being pursued in a number of states in including Virginia, the District of Columbia and Maryland through other programs, specifically The Chesapeake Bay Program. Nutrient trading is the transfer of credits created through nutrient reduction (specifically for nitrogen and phosphorus). Buyers are typically entities that wish to apply more nutrients than is currently permitted under their nutrient management plan as submitted to the State. Sellers have excess nutrient credits for sale from under-utilizing their allowed nutrient application limits.

Nutrients in the form of fertilizers and soil amendments can release nitrogen into the soil and into surface and groundwater when application rates are too high or rain or irrigation washes the nutrients away before full uptake occurs. That nitrogen is then oxidized and released as N_2O (nitrous oxide), a greenhouse gas with a carbon equivalent of 310, meaning each unit of N_2O has the same effect on the atmosphere of 310 units of carbon dioxide (CO_2).

Although the initial reason for implementing nutrient trading was to improve water quality, it is also possible that the reduction of greenhouse gas can be achieved through the same mechanism.

A nutrient trading scheme can extend beyond nutrients to include credits for enhanced management for forest health (leading to greater sequestration rates in thriving trees): increased soil carbon sequestration: and focused reforestation/afforesetation. This is because nutrient trading is a market based mechanism designed to be non-prescriptive in how an entity reduces nutrient loadings. The Maryland Department of Agriculture is already drafting policy that includes non-point source trading.

The TWG noted that there may be some cross over and synergies with carbon trading which is being considered by the cross cutting TWG. The AFW TWG proposes that both carbon and nutrient trading could be considered in parallel.

Forest Management *(currently AFW 7.4)*

This option is designed to enhance greenhouse gas sequestration in two ways: first, through increasing the rate of carbon dioxide (CO_2) sequestration in forest biomass through healthier forests, and secondly, through increasing the amount of carbon stored in harvested, durable wood products.

Specific actions and practices included under this option vary widely. (see AFW State Actions Descriptions for more detail). The TWG identified four possible areas where

policies could be quickly amended to improve forest management practices in Maryland with limited controversy or legislative maneuvering.

1. Assist in connecting forest management products to markets to provide financial incentives for improved forest management practices. Examples include:
   - Carbon trading (being considered by the Cross-Cutting TWG)
   - Facilitating markets for biomass utilization for energy.
   - Storm-water run-off reduction credits
   - Encouraging value-add production using under-utilized small diameter and wood residues.

2. Provide land developers with best management practices and options to maintain forest land tracts. A DNR adaptation work group is looking into a similar issue.

3. Fee-in-lieu programs that allow for developers pay for conversion of forest lands to development rather than set-aside forests lands within their development. Counties, which administer most of such transactions, are limited to investing in the planting stock for reforestation on existing public lands. The actual higher priority for these funds is to purchase, either through easements or fee simple purchase, additional lands for reforestation. This situation discourages counties from meaningful contributions to reforestation, lacking high quality lands for planting. Of highest priority should be lands that can connect existing islands of forest or expand the biodiversity of forest lands by expanding contiguous habitats. (Note: Fees from penalties for development violations can be used for land or easement acquisition.)

   Another option is to move unspent, excess fee-in-lieu funds into State coffers (as a grant) for distribution to areas of higher need and available reforestation opportunities or for urban forestry enhancement. No net loss of forests remains an underlying goal. Some counties already have such policies and the MD Department of Natural Resources is (or has recently) instituted a similar policy.

   Another option is to increase the scope and strength of the existing Forest Conservation Law as natural regeneration is not meeting the forest lands goals as browsing by deer and competition from invasive species is suppressing the spread and vigor of existing forests.