Great Lakes Trading Network

Summary of the April 10, 2001 Conference Call

Nine people participated on the call including representatives from Kieser Associates, Fox Wolf Basin 2000, the Connecticut Department of Environmental Protection, the World Resources Institute, Environmental Defense, Texas A&M, a private consultant and the United States Environmental Protection Agency (EPA) Region 10 and NRMRL Center. Dave Batchelor (Michigan Department of Environmental Quality) chaired the call.

A couple of corrections and citations were provided for the draft March conference call summary. The revised final version is attached.

Nutrient Net Kalamazoo Trading Days

Patricia Zurita presented an overview of the trading workshop that was held in Kalamazoo in mid-January. Twenty-four people participated in the workshop and seventeen participants engaged in trading. Mark Kieser indicated that the workshops included representatives from private agriculture, industry, a local environmental group, regulators and the public sector.

The workshop simulated phosphorus trading under the total daily maximum load (TMDL) that has been developed. Nutrient Net was used to compare the costs of various point source and non-point source (NPS) control strategies. The model allowed agricultural NPS to compare the costs and determine the loading reductions that could be achieved through the implementation of different management practices. Offers to sell and buy credits were posted on Nutrient Net. This "board of trade" allowed the public and traders to track the generation and use of credits and fix the market value of credits to be traded. Transactions were then negotiated and credits bought and sold privately. The full results of trading activity are available on the World Resources Institute website at http://www.nutrinetnet.org.

The Kalamazoo Trading Days workshop demonstrated that Nutrient Net works very well. Participants were able to use the program without scripts. The use of Nutrient Net allowed transaction costs to be kept very low virtually zeros.

One example of the cost benefits of trading was provided. A hypothetical case based on actual conditions was tested. A paper company discharging phosphorus to the river was required to reduce its discharge by 26% under the TMDL. This meant that the company had to reduce phosphorus loadings by around 3,000 pounds per year. Although there were not enough agricultural NPS phosphorus reductions available for the company to avoid the installation of additional controls, the company was able to purchase credits in conjunction with upgraded controls to meet the reduction requirements under the TMDL. Trading allowed the company to save around $300,000. The cost of controls was about $200 per pound compared to $50 a credit.

There was a lot of interest in using Nutrient Net in other watersheds, like the Fox Wolf Basin. WRI is now starting to work on Chesapeake Bay.

Grasslands Tradable Loads Program

Angela Sherry (Environmental Defense) and Susan Austin presented the Grasslands Tradable Loads Program. In the early 1980's the Bureau of Reclamation was using a federal drain to divert agricultural flows into the Kesterson Reservoir. The concentrations of selenium (SE) reached toxic levels and caused the death and deformity of many birds that were using the reservoir. While selenium is a trace element in soils and a nutrient, it accumulates in the food chain and becomes toxic. This crisis triggered efforts to develop a plan to control agricultural runoff. A stalemate developed and the plan was not implemented.

This situation raised a fundamental question. How can agricultural drainage be controlled without controlling farmers? Finding the answer to this question gave rise to the Tradable Loads program. Voluntary management practices were not doing enough to solve the problem and Environmental Defense proposed a system that enforced performance results. The approach was to control agricultural selenium loading by controlling drainage flow. Trading was considered to be an important mechanism in conjunction with economic incentives (fees) for excess discharges.

In the early 1990's, ED proposed an approach to address the problem. The approach was based on four principles:

1. Make farmers accountable.
2. Use economic incentives.
3. Measure results.
4. Establish strong streamlined enforcement.

In 1995 a different group of farmers than those responsible for the Kesterson disaster proposed to use the federal drain to divert flows into California's San Joaquin River. The farmers agreed to a contract that gave them the privilege to use the drain in exchange for load limits that would reduce their selenium discharges by 15% by 2000. Penalties were established for excess discharges with a provision that the contract between the Bureau and farmers would terminate if excess discharges greater than 20% occurred.

A selenium cap for the region was developed and farmers allocated the cap among the drainage districts in the region. Each district was able to implement its own measures to achieve reductions required by the cap. The program was also set-up to allow selenium trading between districts reduce overall control costs.

A tradable loads program was initiated in 1998. The first step was the regional allocation of selenium loads to each district. This was based on historical levels of tiled and total acres. This created the baseline for trading to occur. Economic incentives were established through regional fine. This was considered as a fair mechanism to enforce the allocations. Tiered water pricing was also established to create incentives to reduce use.

The results of this program are impressive. In the fourth year of the program, the farmers discharged 23% less that their allowable limit for that year and selenium discharges were 15%

below historical levels.

The first trade occurred between a small drainage district that purchased load reductions from a larger district that made reductions greater than required under the cap and allocation scheme. Trading can occur to meet monthly and annual limits. By February 2000, 9 trade agreements had been executed. A total of 39 trades have occurred with a total of 605 monthly pounds and 128 annual pounds traded.

Some interesting observations were made. No hot spots developed as a result of trading. Trading ratios were not used. Transaction costs were virtually zero because permits and regulatory approvals were not required. This program is performance based. It allows farmers to decide what measures to implement. Control is at the local level.

Environmental Defense (ED) believes the approach used in the Tradable Loads program is transferable to other situations. ED presented four pre-requisites for this type of a program to be acceptable:

1. There must be a motivation to meet water quality standards.
2. Legal mechanisms and institutional structures need to be in place to regulate water use.
3. Clear targets and effective measurements must be established.
4. Enforcement authority needs to be clear and credible.

The next conference call was scheduled for 11:00 EST on Tuesday, May 8, 2001.