

WATERSHED-BASED NUTRIENT TRADING

INTRODUCTION

Reducing the amount of nutrients that flow into the bays is an expensive endeavor. But, allowing the bays to remain polluted from nutrients also costs the community in terms of ecological resources and dollars. Elimination of nitrogen and phosphorus from point-source discharges may seem to be the easiest way to eliminate some of the problem. However, in the Inland Bays watershed, point sources only account for 8% of the nitrogen influx and 30% of the phosphorus loading. In some cases, it could cost 11 to 29 million dollars to reduce phosphorus by 15%. Non-point source contributions of nutrients (runoff) make up the majority of the nutrient loading into the bays. Controlling or regulating these non-point sources may be more effective at reducing nutrient levels in the bays and may be much less expensive. A nutrient-trading program may achieve the needed reduction in nitrogen and phosphorus.

DEFINITION

Nutrient trading is a way of allocating the assimilative capacity of the system—regardless of activity. These trades can take place among point sources; between point and nonpoint sources; or, among nonpoint point sources.

Trading alters the pollutant reduction responsibilities between parties. Trading may be done such that Party A pays Party B to undertake a greater than required pollution reduction. The amount of this reduction should offset (be equal to or greater than) the quantity of pollution reduction that they were required to implement. Thus, the same, or a greater, pollution reduction goal is met. These trades should occur within the same watershed and between sources in close proximity. Trading may also be accomplished through setting up “banks” where the nutrient reducing parties can sell their credits and parties requiring nutrient credits can purchase them. Many times purchasing ratios can be involved such that the purchase of nutrient credits cost 2 to 7 times that in nutrient credits. These ratios are believed to cover uncertainty in nutrient reduction achieved through nonpoint source use of best management practices.

AN EXAMPLE

Numbers for illustration purposes only:

A plant contributes 10 pounds of nitrogen per day into the Bays. It will cost them \$500,000 to remove that pollution discharge. They are required to reduce their discharge to 0. They need to purchase 10 pounds of allocated nitrogen load, or 10 pollution rights, to continue their existing operations.

Ten farmers in the area contribute 20 pounds of N per day, together. Each farmer has 2 pollution rights. The farmers could eliminate 15 pounds of N per day by installing a new technology. This would cost \$20,000 per farm.

The plant could then pay each farmer \$21,000 for one of their pollution rights, giving the farmers, the money to purchase and use the new technology. This would cost the plant \$210,000. The entire watershed would enjoy a reduction of 15 pounds of nitrogen per day. This is 5 pounds more per day than would have occurred without the trading.

TRADING PRINCIPLES

In order for trading to work within the current legal framework, a series of eight principles (written by EPA) should be followed:

1. Trading Participants must meet applicable Clean Water Act (CWA) technology-based requirements.
2. Trades are consistent with water quality standards throughout a watershed. Anti-backsliding and other requirements at the local, state and federal level still apply as well. (*Anti-backsliding* means that the pollution must be reduced overall, not increased.)
3. Trades are developed within a TMDL or equivalent analytical and management framework.
4. Trades occur in the context of current regulatory and enforcement mechanisms.
5. Trading boundaries generally coincide with watershed or water body segment boundaries, and trading areas are of a manageable size.
6. Trading will generally add to existing ambient monitoring since all parties require data.
7. Careful consideration is given to types of pollutants.
8. Stakeholder involvement and public participation are key components of trading.

ISSUES

- ☞ It does not make sense that a point source can trade for a pollution right from a non-point source where they use economic incentives and volunteerism to achieve pollution reduction—no enforcement mechanism.
- ☞ Requiring the use of technology-based standards may stifle innovation.
- ☞ If you require all parties to be using BMPs, then there would be no relief for any party through trading.
- ☞ Place the burden of proof that trading works on the party with initial burden of reducing the pollution.
- ☞ Pollution trading is flexible—managers can target areas for trading.
- ☞ Pollution trading is cost-effective.
- ☞ Trading allows for the opportunity to implement enhancement projects.
- ☞ The process of organizing a trading scheme identifies areas for trading and brings regulated and non-regulated community together.
- ☞ Can point sources enforce nonpoint source polluters' actions?
- ☞ Should enforcement actions be taken against the party that traded the point sources if nonpoint sources do not comply?
- ☞ Can trading between point and non-point sources meet goals of CWA?

INLAND BAYS WATERSHED

This fact sheet was prepared by the Delaware Department of Natural Resources and Environmental Control's Whole Basin Team, at the request of the Inland Bays Tributary Action Teams, for citizens and stakeholders interested in one of Delaware's most environmentally and economically attractive areas—the Inland Bays and its surrounding lands, surface and ground waters.

For additional information, contact the:

Watershed Assessment Section
Department of Natural Resources and Environmental Control
820 Silver Lake Blvd., Suite 22nd
Dover, Delaware 19904-2464
(302) 739-4590



Delaware's good nature depends on you!