

Developing Markets to Manage Ecosystems

Traditional regulatory programs manage water and other natural resources for their designated uses and to protect human health. Managing natural resources to protect and conserve healthy, balanced ecosystems has shifted subtly to managing for human-based designated uses over the last twenty years. The tremendous progress that has been made in reducing atmospheric emissions and discharges of pollutants to the nation's waters to meet designated uses has nonetheless been accompanied by a loss of contiguous wetlands, inland and coastal floodplains and habitat for aquatic and terrestrial fauna and flora. Agricultural land use has shifted to suburban development. Agricultural, urban and residential runoff and other non-point sources remain a serious challenge to making further progress in many areas. Erosion and sedimentation, as well as cultural eutrophication, are major threats to our aquatic ecosystems.



We have achieved a point of diminishing returns with our traditional regulatory controls under the Clean Water Act (CWA) to address these challenges. New tools such as water quality trading offer the ability to reduce the costs of achieving these goals by optimizing compliance expenditures, (as well as offset growth). As conceptually illustrated here, by establishing “environmental improvements” based only on attainment of designated use objectives, water quality trading and other traditional tools under the CWA also tend to be self-limiting. These intermediate ecosystem goals typically drive funding and environmental priorities, but do not achieve endpoints of an optimally functioning ecosystem.

There are few opportunities to support (i.e., fund) additional improvements to reach some optimal level of ecosystem function. It is this higher level of improvement, going beyond a minimum level of compliance through capitalized investment in ecosystem uses and function, that will provide opportunities for multiple market-based incentives. The Great Lakes Protection Fund (GLPF) is funding a planning grant through the Environmental Trading Network (ETN) to evaluate overlapping opportunities for ecosystem improvements through a multiple environmental market approach. The project is being directed by Mark Kieser of Kieser & Associates, Kalamazoo, Michigan. The World Resources Institute, Environmental Financial Products, Ltd., the Wetlands Initiative and the law firm of Miller, Canfield, Paddock and Stone are project partners.

“Ecosystem Multiple Markets” (EMMs)

Utilizing markets to manage for optimal ecosystem function is fundamentally different than other prevailing schemes that target market-based incentives that are triggered by regulatory caps or offset requirements. Furthermore, the ecosystem-based marketing approach will foster innovation across broader geographic settings rather than apply prescriptive remedies for targeted environmental or geographic segments of watersheds.

Phase I efforts of this GLPF-supported project have examined how water quality (nutrient) trading credits, wetlands credits, carbon credits and endangered species (habitat) credits can be generated and traded (sold) in existing and emerging markets. These Phase I efforts build upon: existing programs (e.g., Michigan’s trading rules); emerging greenhouse gas markets; interests and initiatives of the paid project collaborators, and; ETN support. A framework for the market-based tools and infrastructure necessary to implement this approach is now being drafted. Such efforts will support innovations in agriculture and land use management to help achieve the highest levels of ecosystem function compatible with existing uses.

