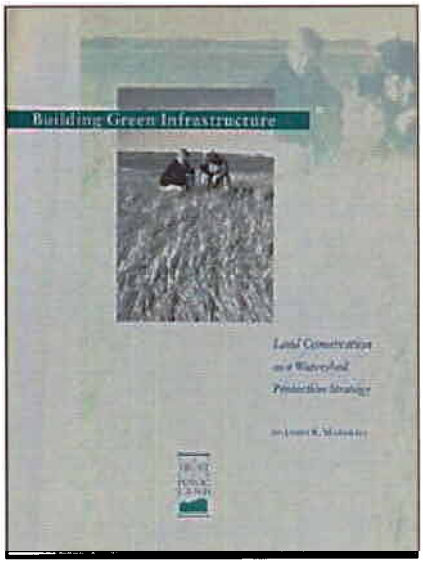
Building Green Infrastructure

Land Conservation as a Watershed Protection Strategy



TPL's latest report on using land conservation to preserve water quality presents the cases of four watersheds where land conservation is helping preserve water quality.

- Austin, Texas, where nonpoint-source pollution due to rapid development is threatening the Barton Springs/Edwards Aquifer, a major drinking-water source.
- Barnegat Bay, a coastal estuary of more than 450 square miles along New Jersey's tidal shoreline. Rapid development in the area threatens local drinking water, water quality in the bay, and the region's important wildlife habitat.
- Mountain Island Lake, a pristine source of drinking water for Charlotte, North Carolina, and environs. Development along the lakeshore and tributary streams endangers water quality.
- Indian River Lagoon, a 155-mile-long estuary along Florida's east coast. Rich in habitat for both marine and shore species, the lagoon is threatened by ecological changes due to past ditching and draining of water courses, as well as by development within the watershed.

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Executive Summary

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Land Conservation as a Watershed Protection Strategy

The nation's waters have become progressively cleaner since the passage of the federal Clean Water Act in 1972. Today, the main threat to clean water is not industrial and sewage wastes, but nonpoint-source pollutants--often the byproduct of urban sprawl and development--that are washed by rainwater into sources of drinking water, or into streams that support recreation and fisheries. Nonpoint-source pollutants include oil washed off roadways and parking lots; pesticides and fertilizers from agriculture, lawns, and golf courses; and sewage from septic systems.

The U.S. Environmental Protection Agency's (EPA) 1998 Clean Water Action Plan estimated that about half the nation's 2,000-plus major watersheds experience degraded water quality--polluted runoff a primary cause. To address this problem, EPA has urged a watershed management approach, and proposed that 20 percent of its Clean Water State Revolving Fund (CWSRF) be set aside to provide communities with more flexibility to protect water.

The Trust for Public Land's 1997 report "Protecting the Source--Land Conservation and the Future of America's Drinking Water" found that communities across America are increasingly adopting watershed management plans as a way to ensure safe drinking water without having to resort to costly water filtration and treatment. Sometimes communities regulate the kinds of development and activities that can take place in a watershed. Another effective way to protect a watershed is to buy critical watershed lands or development rights, sometimes as a complement to regulation, as part of a holistic approach to overall watershed management.

In many communities, buying land to protect water quality has become part of a broader "Smart Growth" effort. Smart Growth is the name for a nationwide movement that seeks to direct development in ways that preserve critical open space and natural resources. Protected watershed lands become part of a community's "green infrastructure"--an infrastructure as important to community life and well-being as roads, schools, and utilities.

This report presents the cases of four watersheds where land

conservation is helping preserve water quality.

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Lessons Learned

Taken together, the cases reveal the common elements that lead to success in watershed land conservation:

- Land conservation projects usually are driven by several motivations, in addition to the desire to protect watershed or marine waters. Water managers may need to look to diverse sources for funding and support. Supporters may also be motivated by the desire to preserve habitat, recreational opportunities, or the historic values of a landscape; or by the more general Smart Growth goal of preserving quality of life and curbing sprawl development.
- Decisions about land acquisition and public investment must be based on credible scientific or economic information. Such information might include data from water-quality monitoring; demographic projections; modeling of development scenarios using Geographical Information Systems (GIS); and cost analyses of alternatives to land acquisition, such as infrastructure and water treatment costs.
- In the absence of sophisticated information, land-use managers and water managers make decisions based on simpler models that show the cost-effectiveness and multiple benefits of land conservation. The more extensive data now being developed will help managers better target and prioritize parcels for conservation, and will help them make the argument for investment in watershed lands.
- For programs to win support and funding, the public must be educated on the multiple values of watershed protection. Grassroots efforts at public education may spring up around a specific incident of pollution. An independent convener,

such as an environmental or civic group, may work to educate the public about water pollution problems and conservation solutions. In some areas, NEP has convened and helped educate local stakeholders through its citizens advisory committees, management committees, and scientific and technical advisory committees. In each of the case studies, public awareness has been reflected in voter approval for local land-protection funding.

- Complex land-protection programs require complex partnerships between jurisdictions and professional disciplines. Each of the case studies shows unique partnerships between water managers and land-use managers who share compatible goals. Public and private agencies together with independent nonprofits can help provide a collaborative conservation solution to water quality problems. In addition to generating public support, these organizations can promote sharing of information and help forge a cooperative effort--addressing both acquisition and management issues--among the many public and private partners. In two of the cases outlined, the National Estuary Program filled this organizational role.
- To be successful, land-acquisition programs require local funding, often generated through voter-approved bond sales or taxes. Beyond its fiscal contribution to land acquisition, local funding helps ensure community involvement and support. State funding often helps generate local funding, through incentives such as matching funds for land-protection programs.
- Successful land acquisition often takes place within a strong regulatory framework and alongside other water-quality protection tools. Land acquisition is not a replacement for regulation, but rather an alternative for communities and landowners in cases where regulation seems inadequate, or treatment prohibitively expensive, to protect the resource. For example, a successful program might combine a common regulatory technique--such as zoning--with the acquisition of land or easements to protect a wellhead or set aside wetlands in need of restoration.
- While the federal government played a small role in these watershed-protection examples, the potential for stronger state and federal support is important and growing. The National Estuary Program has shown that it can be a key coordinating partner in watershed-protection efforts. The EPA and USGS both generate data that can be used to link land-use and development patterns with changes in pollution levels. And while federal funding for watershed acquisition is still limited, EPA has proposed greater flexibility in the use of the Clean Water State Revolving Fund, which may make this money more available for land-acquisition projects.