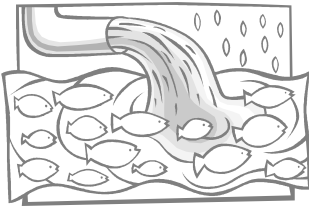


# STREAMLINES



## STREAM FLOW PROTECTION IN 2010?

In 2005, we celebrated passage of An Act Concerning the Minimum Water Flow Regulations. A thirty-year fight to protect streams and rivers from harmful diversions appeared to be near an end. The state's old flow regulation, dating from 1971, applied only to state-stocked streams and provided no substantial protection even to them. Ongoing harmful water diversions led river advocates to challenge the system, the most famous instance being the expensive litigation by advocates in the towns of Washington and Roxbury to force the City of Waterbury to release more water into the parched Shepaug River.

The 2005 law was written to be an alternative to litigation and to apply to all watercourses. The science was brought up to date, calling for flow standards that would mimic the variation in flows that exists in nature. The law includes strong balancing language, requiring the Department of Environmental Protection (DEP) to write a regulation that would protect not just rivers but also

society's need for clean water for health, agriculture, commerce, and industry.

The law having passed, only one step remained: to write and adopt the protective regulations that the Act required.

It can be much easier, however, to get a law than a regulation. A law can be passed with no public debate in a matter of hours. A regulation typically requires informational meetings, at least one public hearing, revisions as needed, approval by the Attorney General, and approval by the legislature's standing, bipartisan Regulation Review Committee, which can hold its own hearing in some circumstances. The process can stall a regulation for decades. The state's aquifer protection regulations took 14 years to pass, even though they provided only limited protection to public wells (not all aquifers); and then, just one year later, the DEP and legislature reduced the scope of the protection by authorizing a new mapping method.

The DEP has seemed determined to avoid another regulatory morass in the case of the flow-regulation Act. Since 2005, DEP representatives, including the commissioners, have been meeting with multiple parties representing a wide range of water interests to craft the regulation. *(Continued on page 4)*

### IN THIS ISSUE

<i>President's Message</i>	2
<i>A Portrait of a River</i>	2
<i>2009 Environmental Champion</i>	4
<i>Reading Room</i>	5
<i>Ripples</i>	6
<i>Alternate Treatment Systems (ATS)</i>	7
<i>Thank You to our Members</i>	10

## Shepaug River Celebration

More than 350 people came to the Steep Rock Preserve in Washington, CT, to celebrate the Shepaug River with Gov. M. Jodi Rell and other dignitaries on September 12, 2009. The event marked the implementation of a settlement agreement in the litigation between the Shepaug River advocates and the City of Waterbury. The agreement brought more water to the river under a state-approved flow-management plan.

Speakers included Gov. Rell; Attorney General Richard Blumenthal; Mayor Michael Jarjura of Waterbury; Don Carver, Superin-

tendant of Waterbury Water Department; Edwin Matthews, President of the Shepaug River Association; Judge William Bright, formerly lead counsel for the river advocates; Edmund White, President of Steep Rock Association; and John Millington, Honorary Trustee.

All remarked on the importance of the Shepaug River case in demonstrating that the environment and water supply can both be served. Increased flow releases to the river began in September, and former adversaries are now stewardship partners. This success will be,

*(Continued on page 3)*



**Rivers Alliance  
of Connecticut**

Rivers Alliance of Connecticut, Inc., is the only statewide nonprofit dedicated to protecting and enhancing Connecticut's rivers, streams, and watersheds. Our members are individuals, organizations, and corporations concerned with the health and protection of our rivers and water resources in general. We were founded in 1992 to promote and support environmentally sound state policies, assist the state's many watershed and river groups, and educate the public about the importance of water conservation and aquatic habitat protection. We are governed by our Board of Directors with regular guidance and comment from the Housatonic Valley Association, the Connecticut River Watershed Council, the Farmington River Watershed Association, and other watershed organizations in Connecticut.

Funding for Rivers Alliance is received from our members, grants, and special events. Membership categories are: Individuals and Families: \$35.00; Nonprofit Organizations: \$50.00; Patrons: \$50.00; Sponsors: \$100.00; Businesses: \$250.00; Sustainers: \$250.00; Benefactors: \$500; Guardians: \$1000.00. (Membership donations, comments, and letters to the editor can be mailed to: Rivers Alliance, P.O. Box 1797, Litchfield CT 06759, e-mail [rivers@riversalliance.org](mailto:rivers@riversalliance.org), or call (860) 361-9349.)

**BOARD OF DIRECTORS**  
Eric Hammerling, President  
Jim Creighton, Vice President  
David Bingham, Secretary  
James McInerney, Treasurer  
William Anthony  
Eileen Fielding  
Martin Mador  
Dwight Merriam  
David Radka  
Marc Taylor  
Lynn Werner  
Richard Windels

**STAFF**  
Margaret Miner, Executive Director  
Rose Guimaraes, Development Director & Newsletter Editor  
Amanda Branson, Programs Manager  
Tony Mitchell, Website Manager

# THE PRESIDENT'S MESSAGE



Dear Supporters of Rivers Alliance:

At a recent forum on Connecticut forestry issues, I wore a sports jacket with a fish lapel pin on it. When another attendee pointed to my pin and asked "Why not a tree?" I told him that fish do, in fact, grow on trees. If we want to have clean rivers and a healthy Long Island Sound, solid science informs our belief that healthy vegetation along our river banks is critical to purify our rivers, to reduce stormwater pollution, and to slow and absorb potential flood waters.

As you see in this issue-packed newsletter, Rivers Alliance appreciates the many intricate connections between clean rivers, working river buffers, adequate natural flows, upgraded sewage treatment facilities, and preserving our public health. Rivers Alliance is working quite hard and leading the charge on behalf of rivers statewide to achieve rational water policy and retain the rich water resources that we have taken for granted for too long.

Please think of Rivers Alliance when you think of your favorite river, and find a way to support our dedicated efforts on stream flow, riverfront protection, and wastewater treatment at this critical time. Thank you!

*Eric Hammerling*  
President

## **WASHINGTON GARDEN CLUB'S "PORTRAIT OF A RIVER."**



On October 7, the Washington Garden Club continued its tradition of environmental stewardship with a panel presentation on the health and future of the Shepaug River. The program was put together by club officers Gay Canal and Margaret Field. The panel moderator was Margaret Miner from Rivers Alliance. Susan Peterson from the Department of Environmental Protection explained the status of the river and watershed in relation to water quality. Randy Bernard of the Steep Rock Land Trust discussed flows in the river; his graphs showed the first illustrations of new water releases by the City of Waterbury. Tim Abbott of the Housatonic Valley Association finished the evening with a flourish, providing such colorful descriptions of nasty invasive species, animal and vegetable, that the audience "oohed" in horror.

# RIVERS ALLIANCE HONORS DAVID SUTHERLAND

## As Its 2009 Environmental Champion

Rivers Alliance has named David Sutherland, Director of Government Relations for The Nature Conservancy Connecticut Chapter, as environmental champion of the year. Mr. Sutherland not only has a strong record of accomplishment as an environmental advocate, he is exceptionally helpful to his colleagues. He is perennially one of the first advocates to grasp the details of the state budget as it develops and as it concludes. Given that the 2009 legislative session was almost all about the budget, Mr. Sutherland was much in demand. In particular, he was able to explain the complexities of the budget proposed for the Department of Environmental Protection, thereby strengthening the testimony of his many colleagues who sought to minimize cuts to the agency. He also was a leader in saving the funding that is distributed under the Connecticut Community Investment Act for open space, farmland, affordable housing, and historic preservation.

In his nineteen years with The Nature Conservancy, Mr. Sutherland has worked with colleagues in the Land Conservation Coalition for Connecticut to lobby for over \$350 million in state funds to preserve natural lands across the state. He has led the Face of Connecticut campaign, which provided a vision and map for preserving the state's natural and historic heritage. He has also lobbied for tax incentives to encourage conservation and laws to ensure the permanence of conservation restrictions and ownership.

Mr. Sutherland served on the Governor's Stakeholder Dialogue on Climate Change in 2004, and helped to pass

legislation implementing the Regional Greenhouse Gas Initiative in Connecticut and establishing a state task force on the impacts of climate change. He was appointed by the Speaker of the House to serve on the Connecticut Invasive Plants Council.



David Sutherland, The Nature Conservancy

Rivers Alliance  
Executive Director

Margaret Miner expresses thanks to Mr. Sutherland and The Nature Conservancy for their collegial assistance on a number of policy issues. "David has always been exceptionally helpful and gracious. He never seems to mind explaining the basics."

At the present time, Rivers Alliance and the Nature Conservancy are leading the effort to achieve passage of the Department of Environmental Protection's proposed streamflow regulation to provide protective standards for all Connecticut's stream and rivers. This looks to be the most important and, unfortunately, contentious issue on the state's water-policy agenda.

Mr. Sutherland lives in Glastonbury's Kongscut Mountain/Diamond Lake neighborhood and has a Masters degree in Environmental Studies from Antioch University.

---

### Shepaug River Celebration — Continued from page 1

---

many hope, a model for watersheds under the streamflow regulation that the Department of Environmental Protection released shortly after the celebration.

Gov. Rell stressed the significance of the Shepaug case for all state rivers. She said:

*In fact, the battle over the Shepaug River flow was one worth fighting. The issues raised and the resolution created will resonate beyond just our borders. The case pointed to the important need for us to properly manage the flow of our rivers and to do it with balance: balancing our needs for drinking water and recreational use while protecting our natural resources....*



Right to Left: Gov. Rell, Margaret Miner, John Millington, & John Herrmann, Jr.

DEP's basic approach is to categorize streams by flow quality, ranging from high to low. The highest quality, most pristine waterways will be highly protected. Protections drop down from there. The required flows will be governed by a complex, sophisticated formula that takes into account bio-periods (such as spawning periods), natural variations in flow according to seasons and over years (both dry years and wet years occur naturally). The formula also allows for cutbacks in flow requirements when a drought threatens. In addition, the proposed regulation includes numerous exemptions and "off-ramps." Implementation will be slow, starting with a year-by-year categorization of flows within the state's five largest watersheds.

Earlier this year, a draft regulation reflecting this approach was circulated for comment. Water utilities did not react positively. They are faced not only with the proposed regulation in Connecticut, but a pending law in Massachusetts also requiring limits on water diversions. The utilities have responded with aggressive opposition in both states. The most extreme statements threaten that in some communities the new rules will halt all economic growth.



### **PUBLIC HEARING**

January 21, 2010  
9:00 a.m. – until all comments  
have been heard  
CT DEP, Hartford

For water utilities in Connecticut and New England generally, the prospect of reduced access to water comes at a bad time. For at least a decade, water consumption per capita has been declining. The last two summers have been rainy; fewer customers need water for farming or landscaping; therefore revenues have tanked.

### **Water Utilities in Transition?**

The silver lining in this picture is that many utility leaders realize that the challenges will not just go away. A new business plan may be needed. A key question is: Should growth in revenues continue to be tied directly to ever increasing water use? This appears to be unsustainable. Water supplies are finite. A more prudent approach would seem to be to adjust pricing so as to decouple revenues from use. This is not easy, but the basic concept is to price water closer to its market value, so that revenues, even in a dry year provide for stable business operations, possibly with extra revenue coming from those customers who use water well above the normal rate.

An even more radical concept was brought forward at the influential Aspen Institute this summer in a report titled "Sustainable Water Systems: Step One -- Redefining the Nation's Infrastructure Challenge." This report, developed by experts in the field, recommended that water utility infrastructure be redefined to include not just traditional pipes, pumps, and reservoirs, but also *natural watershed systems*. An ample, clean supply of public water depends ultimately on the health of the entire ecology of the watershed.

### **Challenges Ahead: How you can help.**

The Aspen concept unites the goals of environmentalists and water companies. Unfortunately we are not there yet. We are pretty much on opposite sides of the field. We anticipate that there will be difficult discussions ahead on every aspect of streamflow protection.

*Rivers Alliance, The Nature Conservancy, and others are asking all their members and colleagues to learn about the proposed flow regulation, to suggest improvements as needed, and, above all, to testify in person, in writing, or by telephone. If there is a stream near you that runs very low or dry each year, let us know. Now is the time that the fish and frogs may get relief.*

The regulation along with explanatory materials is posted on our website at [www.riversalliance.org](http://www.riversalliance.org). If you are on the CT Environmental Leader List or one of our network lists, you will be getting information by email. The public hearing opens officially on January 21, 2010, at the DEP. We hope you will submit comments or, if you prefer, sign on to a group letter.

If you know of a group, including one of your town commissions, that would like a presentation on the regulation, let us know. The DEP has offered to give presentations to watershed groups, regional planning agencies, and others. The Connecticut Water Works Association has been admirably active in making presentations of their view around the state. We hope that both sides will be fully heard in the end.

To reach us, email [rivers@riversalliance.org](mailto:rivers@riversalliance.org) or call 860-361-9349. The DEP has information on their website. The Water Bureau telephone at the DEP for asking questions or requesting a presentation is 860-424-3704.

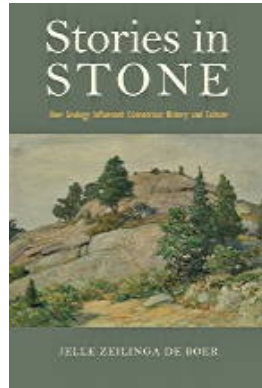
The DEP proposed regulations are not perfect. The science behind them is excellent. (The Nature Conservancy was an important contributor.) But there are weaknesses in the law and procedures for implementation. We would like to see a stronger regulation. At the same time, we are listening to the points made by utilities, looking for issues on which we agree or might find common ground. We are determined to come out of the process with a good result.

**This will be our best chance in the foreseeable future to get adequate state standards for flow in rivers and streams. Please take part in the effort. The little water creatures have no voice.**

*Margaret Miner*

# READING ROOM

***Stories in Stone: How Geology Influenced Connecticut History and Culture*** by Jelle Zeilinga De Boer, Garnet Books, Wesleyan University Press. This is a wonderful book: lucid, entertaining, informative, and ranging wide through the natural and cultural history of the state. Disclosure: the author is a former director of Rivers Alliance. He is also a world renowned geologist, most famous perhaps for his investigation of the Delphic Oracle site where fumes emanating from rock may have caused the famous trances of the priestesses of Apollo. He is emeritus Harold T. Stearns Professor of Earth Science at Wesleyan University, and the author of *Volcanoes in Human History*, and *Earthquakes in Human History*. The book *Stories in Stone* is beautifully produced, with maps, charts, art, and photographs in black-and-white and color, plus a full bibliography and a good index (increasingly a rarity). The text is laced with telling excerpts from poems and prose of the past and present, anecdotes, and folklore. An example of the poetry: “No one can understand Connecticut /Who leaves the rocks out of his reckoning./Three hundred years now we have worked among them./ And they have worked on us to more effect –“ Odell Shepard, 1939.



tour of the degradation of the waters of this nation and the breakdown of regulation. As in the past, EPA figures from 2004 to 2007 show Connecticut with a middling performance in compliance with Clean Water Act permits (40 percent out of compliance), and a near-bottom ranking for enforcement (3 enforcement actions per 100 facilities out of compliance).

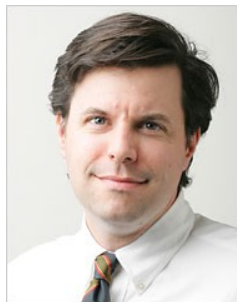
[www.TheSteveGrantWebsite.com](http://www.TheSteveGrantWebsite.com) is the new home of nature writer Steve Grant, formerly with the Hartford Courant. The good news is now we don't have to wait for the Courant to get around to reading one of his inspiring pieces on paddling and rivers.



Steve Grant

Recently, Mr. Grant recommended the following two books: ***Two Coots in a Canoe: An Unusual Story of Friendship*** by David E. Morine, Glove Pequot Press; and ***The Connecticut River: A Photographic Journey Through the Heart of New England*** by Al Braden, Wesleyan University Press. Both books focus on the Connecticut River, with the Braden book more celebratory and the Morine book more personal and, at times, more angry. Mr. Morine was head of land acquisition for The Nature Conservancy and doesn't suffer pollution gladly. He observes, “There are seventeen dams on the Connecticut River. All the dams re degrading, but the one at Holyoke is the worst by far: dirty and disgusting, like a ball of hair clogging up a drain.” Mr. Braden, too, looks at the river's problems, and his book includes an afterword by Chelsea Rieff Gwyther, executive director of the Connecticut River Watershed Council, calling for more responsible stewardship of this extraordinary waterway.

***Toxic Waters: A Series about the Worsening Pollution in America's Waters and Regulators' Response*** by Charles Duhigg, The New York Times. This great series of investigative reports is available on line at <http://projects.nytimes.com/toxic-waters>. It a thorough and frightening



Charles Duhigg, New York Times



Margaret Miner with HVA Executive Director Lynn Werner

## HVA AWARD TO MINER

At its annual meeting on October 9, the Housatonic Valley Association (HVA) gave the Montgomery Hare Environmental Defender Award to Margaret Miner, executive director of Rivers Alliance, for her work in defense of the rivers and other natural resources of the Connecticut. The award is named for Montgomery Hare,

poet, playwright, theater producer, and resident of Cornwall. Mr. Hare, who died in 1998, was a founder and president of the Housatonic Valley Association. The mission of HVA is to protect land and water in the multi-state Housatonic River Watershed.



# ~ ~ ~ RIPPLES ~ ~ ~

## World Toilet Summit

Last November, several hundred engineers, entrepreneurs, bureaucrats, and bankers gathered in Macau to talk toilets at the World Toilet Summit organized by the World Toilet Organization. The title of the summit was *Driving Sustainable Sanitation through Market Based Initiatives*.

Worldwide, 2.6 billion people do not currently have toilets. Due to the lack of toilets, 3.12 trillion tons of untreated human waste contaminates water supplies each year. This waste results in waterborne illnesses that kill up to seven thousand people, mostly children, per day. For the billions who do not have them, toilets are an icon of progress beyond reach. Forty percent of the world is suffering from chronic water shortages, so even if toilets and sanitation services were available worldwide, there isn't enough water to flush that many toilets. Toilets account for the most water consumption in average U.S. households.

Problems certainly exist for people who have toilets. Sewage treatment costs the U.S. approximately \$20 billion per year. Ninety percent of sewer effluent is dumped untreated.

The future of sustainable toilets lies with waterless designs, such as composting or eco-san systems. The most successful models utilize ecological sanitation (eco-san) in which solids and liquids are collected separately, then composted, and reused as fertilizer. The process has been revived in Scandinavia, where rocky land makes traditional septic systems impractical. Eco-san toilets recover nutrients such as nitrogen and phosphorus from human waste. They close an environmental loop and turn waste into a commodity.

These systems are not yet suited to cities, unless incorporated into new

construction, because they are too difficult to retro-fit.

It seems clear that the concept of the eco-san system, turning waste into a commodity through a low-energy, waterless process, is the future of toilet and sanitation design worldwide. The next World Toilet Summit is in Singapore in early December 2009.

## Scoring CT Legislators

The 2009 Legislative Scorecard is now available on the website of the Connecticut League of Conservation Voters. The link is <http://www.ctlc.org/scorecard.htm>.

The Scorecard includes information on bills scored and the performance of legislators. By and large, scores have trended up in the nine years the League has been active in the state. Legislators generally want to support environmental causes and want to be seen as doing so.

## Recharge Mapping for Water Conservation

The 90-square mile Pomperaug River Watershed encompasses the towns of Bethlehem, Woodbury, and Southbury in a landscape that ranges from rural to suburban. The Pomperaug River Watershed Coalition (PRWC) formed ten years ago to preserve the quality and quantity of local water resources in the face of rapid development. The Coalition specializes in scientific research, science-based planning, and educational outreach. In partnership with the Council of Governments of Central Naugatuck Valley and the Housatonic Valley Association, PRWC has developed a mapping tool that local commissioners or others concerned with water resources can use to identify areas of land that are especially critical for groundwater recharge. Good re-

charge areas hold back stormwater so that instead of rushing into the nearest water body (often carrying contaminants with it) the water soaks into the ground, and is filtered and cleaned. Water held in underground aquifers is water in the bank for times of drought.

The Recharge Mapping Tool is based on the United States Geological Survey's (USGS) Precipitation Runoff Modeling System (PRMS). Physical attributes of the landscape are the driving factors influencing the fate of water once it hits the ground. Statistical analyses of the output from the PRMS model identified four attributes as significant in determining the fate of water: coarse stratified drift, Class D soils, impervious surfaces, and drainage density. In the simplified model, these attributes were weighted to estimate the mean relative amount of water that recharges the aquifer based on historic precipitation records. The results are displayed graphically on a map for the area of interest, showing basins with high, medium, and low recharge relative to other basins in the area of interest.

A watershed recharge map is a valuable tool to help identify lands that may be most valuable in terms of preserving the quality of local water resources. Areas with significant recharge should be considered prime spaces for open space conservation and preservation. The first iteration of the Recharge Mapping project, which was a "Manual for Assessing Hydrologic Value of Land Parcels based on Physical Attributes," walks the conservationist through a series of maps to help in the prioritization of open space preservation. This manual, along with the "Recharge Mapping: A GIS-based tool for identifying land with significant groundwater recharge" is available on the Watershed Science section of the Pomperaug River Watershed Coalition's website: [www.pomperaug.org/NewScience.htm](http://www.pomperaug.org/NewScience.htm).

# ATS: PROBLEM OR SOLUTION?

## AN ESSAY ON AN UNMENTIONABLE SUBJECT

Since 2001, the terms “Alternate Treatment Systems,” “Advanced Treatment Systems,” “Advanced Technology,” and their acronyms “ATS” and “AT” have been appearing with increasing frequency in Connecticut policy discussions. They all refer to technologically complex on-site sewage treatment systems. The purpose of this technology is to allow development or remediation on sites that do not have access to a public sewer and that lack the space or the right soil for a conventional septic system.

### **Waste Treatment by Nature and Beyond**

Nature provides good treatment of biological waste. In a pristine environment, say, the Garden of Eden, excrement is deposited randomly on the ground, perhaps covered with a thin layer of soil. Anaerobic and aerobic bacteria from the gut and the soil break down the organic matter; rain dilutes the material as it leaches through the soil; and pathogenic viruses and bacteria are killed off by sunlight and conditions in the soil.

As civilization progressed, it became customary to deposit excrement in one place designated for the purpose, and, with the advent of plumbing, to wash the waste away with considerable volumes of water. Waste was (and sometimes still is) transported through sewer pipes to rivers or the sea; or it may be disposed locally to an in-ground collection site, such as a cesspool. But simple sewers and cesspools have limited capacity to handle large volumes of waste. As populations grew, sewage entering aquifers and surface water caused disease and environmental degradation.

Technology came to the rescue. For onsite disposal, unregulated cesspools have been replaced with more sophisticated septic systems. Wastewater is transported to one or two closed septic tanks, where solids settle to the bottom and anaerobic bacteria begin the work of breaking down organic material. The effluent then flows through a distribution box into several parallel pipes running through trenches in a leaching field. This disperses the waste (as nature intended) and exposes it to aerobic bacteria in the soil that further break down the organic matter. “Bad,” pathogenic bacteria and viruses that are adapted to anaerobic conditions in the gut fare poorly in healthy soil and die off. The system is simple (gravity provides the motive power) and, when pumped periodically, should last for decades.

For discharge to surface water, a more complex technology is needed. There are no trenches or soil to provide filtering, and the bacteria are diluted or not present. The wastewater is clarified to a considerable extent in tanks (pre-treatment and primary treatment); then sent into a closed structure containing the bacteria necessary to complete the digestion of organic matter (secondary treatment); and, finally the effluent is sterilized with ultraviolet light, chlorine, or some other sanitizing agent to kill remaining pathogens (tertiary treatment).

Sewage treatment plants are complicated systems in which mechanical and biological processes must be maintained and synchronized. Mishaps of numerous sorts can disrupt the system, the most commonly reported being surges of stormwater that overwhelm the plant’s capacity and kill the needed bacteria. An emergency response to this situation is to bypass the secondary treatment stage allowing the release of inadequately treated sewage. In these cases, shellfish beds and beaches may have to be closed. Presently in Connecticut, many millions are being spent to separate stormwater sewers and wastewater sewers in order to avoid flooding mishaps.

### **Lethal Nutrients**

The first concern in sewage treatment is to protect human health. But an increasingly urgent concern is to protect the ecological health of the receiving soil or waters. It is especially important to limit the nutrient nitrogen. In a properly functioning onsite system, the transformation of organic materials by anaerobic and aerobic bacteria eventually yields pure nitrogen that disperses to the air or is taken up by plant roots. If this process falls short, nitrogen travels through groundwater to surface water, causing algae blooms and algae die-offs that deplete oxygen in the water. Nitrogen is the key factor in salt-water algae blooms and the chief cause of the large dead zones in L.I. Sound. New York state and Connecticut have a joint commitment to limit nitrogen in sewer discharges.

Sewage treatment should also remove phosphorus, a nutrient that, with nitrogen, is essential to plant growth and that is the key factor in fresh water algae blooms and other disturbances in plant growth in wetlands. Until recently, phosphorus removal was a secondary concern because phosphorus binds to soil and travels less readily than nitrogen. But the damaging effects of excess phosphorus have prompted an EPA-led, nationwide effort to reduce excess phosphorus. The Connecticut Department of Environmental Protection (DEP) is developing a phosphorus-reduction policy.

### **No Space and No Sewer: Turning to ATS**

Connecticut and other New England states have numerous communities where antiquated septic systems have broken down, and there is inadequate space to replace these systems. Frequently these are shoreline communities. There are also numerous properties that have potential for ripe intense development but have neither access to a sewer line nor sufficient space for a conventional in-ground system. Building a public sewer may be deemed too expensive or undesirable. Many municipalities have sewer-avoidance ordinances intended to curb development. (Continued on page 8)

ATS offers a solution. AT systems are packaged mini-sewage treatment plants that promise advanced treatment of effluent in a compact system requiring less land. They provide secondary treatment by passing the wastewater through one or more closed boxes containing “good” bacteria. This treated effluent then enters a leaching medium, which may be soil or peat or other medium that can be contained in a small space. If there is not even a small space, almost the entire process can be moved indoors.

On the down side, the technology is delicate and prone to failure. The good bacteria require a steady diet of nutrients: too much flow and the bugs can’t handle it, too little and they starve. This is obviously a problem for schools and vacation homes, where flows are highly variable. The bacteria also succumb to caustic cleaners, various solvents, antibiotic products, and so forth. They don’t function well in the cold. They need lots of oxygen. In theory, these problems can be solved by good engineering and vigilant management. In practice, as long as flows don’t back up, these problems may not even be noticed. Large treatment plants have fulltime staff. Monitoring and maintenance of small plants varies from good to almost non-existent.

In the past 20 years, thousands of ATS were installed on “problematic” sites in Massachusetts, Rhode Island, and New York. Connecticut was more cautious. In 2002, lawmakers banned construction of ATS in drinking-water watersheds, with exceptions for public schools and remediation. The state has not, until this year, permitted ATS for single-family residential use. Connecticut has permitted only about 60 systems, primarily in commercial and public buildings and condominium complexes. Performance has been mixed/. A few facilities have functioned very well, especially recently. Several have been prominent and costly failures. A large number of ATS in Connecticut do not consistently meet today’s standards for nitrogen reduction. Few treat phosphorus. Fecal coliform exceedances are fairly common.

### **Regulatory Confusion**

Since 2000, local and state officials have been faced with growing numbers of applications for development and remediation projects dependent on AT technology. At the same time, there was an obvious need for enforcement of existing permits but insufficient resources and conviction to act. Then and now, purchasers and facilities managers are on their own, dealing with a multiplicity of vendors, installers, and operators -- and a scarcity of guarantees.

In 2003, DEP’s reluctance to permit residential ATS was challenged in a law enabling municipal Decentralized Wastewater Districts. The process requires costly studies and approvals, but, in the end shifts authority from the state to the local Water Pollution Control Authorities and Health Districts. Old Saybrook has just become the first municipality to implement the law, inspired by a court order requiring remediation of some 1,700 properties with failing septic systems. Under the proposed plan, some 400 residential property owners will be required to install ATS. Old Saybrook officials and the DEP are struggling to come up with a regulatory program for this novel project. Meanwhile, the rest of the state is in regulatory confusion.

The DEP has no regulations for ATS, only individual permits in which standards and conditions vary considerably. In 2007, legislators attempted to improve matters by transferring authority for the household-size treatment units (under 5,000 gallons per day) to the Department of Public Health (DPH) and the local Health Districts. It was a good bill, until the funding was stripped out. As a result, DPH has declined to proceed, and DEP remains the dominant permitting authority for ATS of all sizes.

### **What’s a Town to Do?**

Local officials, including volunteer land-use commissioners, have been in a quandary concerning land-use applications that propose to use AT technology. In Greenwich, Westport, Madison, Weston, New Milford, and elsewhere, applications have come forward for intense development in locales where such development was assumed to be impossible due to limited space for a septic system. With a packaged treatment plant as an option, a property that might normally accommodate small-scale development is instantly eligible for extensive development generating tens of thousands of gallons of wastewater daily.

Local officials are assailed by experts and advocates testifying that AT technology has a high failure rate and by other experts and advocates testifying that it works fine, even better than Mother Nature. Their discomfort is compounded by the fact that, even though they are charged with protecting water resources or upholding town planning principles, they do not officially have a say in the permit for the AT system. If DEP approves the permit, it is difficult and perhaps impossible for local officials to rule that

the packaged unit poses a threat to water resources. And if the town has been counting on sewer-avoidance ordinances to limit development, it will find that just about anything that can be built using a sewer can be built using a packaged AT system. Rivers Alliance has received a grant from the Geoffrey C. Hughes Foundation to review the status of ATS and provide information and recommendations for town commissioners and local water advocates on how to respond to applications involving ATS. We are partnering with The Nature Conservancy, Connecticut Fund for the Environment, and others. We have taken the opportunity of this newsletter to touch on some of the issues. The full report is due after the first of the year. A good introduction to AT technology is *The Nature Conservancy's 2007 White Paper* which can be found on their website: [http://www.nature.org/wherewework/northamerica/states/connecticut/files/ats\\_white\\_paper.pdf](http://www.nature.org/wherewework/northamerica/states/connecticut/files/ats_white_paper.pdf).

One conclusion, however, is already clear. Towns and cities should address how they want to handle the use of ATS within their borders before the issue arises in applications, litigation, court orders, or legislation.

State officials and our law researchers have suggested three different approaches that are worth investigation. One is to use the authority of the local Water Pollution Control Authority or Board of Selectmen to pass an ATS ordinance similar to a sewer-avoidance ordinance. The point would be to determine where use of ATS is appropriate and where it is not. Another possibility may lie in action by a regional health district; the districts have more authority over septic systems than is generally known or used. A third possibility is to consider setting up a Decentralized Wastewater District. This is expensive to do and then may require more local work and expertise than is realistic to expect.

We, at Rivers Alliance, are advocating for regulations and guidelines for the safe use of ATS. Safe use will require higher standards, and far more monitoring and enforcement than is currently contemplated by most regulators. We also recommend adoption of certification standards for both products and operators, similar to programs in other states, with financial guarantees in cases of failure to achieve promised performance. The certification process itself must be reviewed regularly. For example, it seems logical to certify as acceptable a brand-name product that tests well. But, in fact, one of the most dangerous AT systems installed in the state and one of the best performing are the same brand. Quality and performance depend on site-specific design, trained personnel, and constant attention. In reviewing the Old Saybrook project from an environmental perspective, Sally Harold from The Nature Conservancy and Eric Annes from Connecticut Fund for the Environment have proposed important improvements.

The use of alternate and new sewage-treatment technologies has potential environmental benefits. It provides for local recharge of

## BUFFERS WILL BE BACK

For some fifteen years, Connecticut water advocates have tried to achieve passage of legislation to protect vegetated buffers alongside wetlands, headwaters, streams, rivers, and Long Island Sound. Natural vegetation is by far the most cost-effective means to protect water quality.

The spread of lawns and impervious surface across our state has caused a rise in water temperature and contamination. As rainfall and snow meet pavement and lawn, the result is accelerated down-slope flow, with little recharge of groundwater. That means more flooding in wet weather and more droughts in dry weather. The water flowing over smooth surfaces carries all kinds of pathogens, toxins, sediment, nutrients and other contaminants into surface water. And if shorelines trees are cut down, the water is deprived of the shade and woody debris need for healthy habitat.

Scientists advise us to expect more intense storm events in coming years. This will magnify the negative effects of smooth surfaces.

Advocacy for buffers has been met with extremely strong opposition from development interests. Town officials, too, worry about effects on the grand lists of taxable properties and difficulties associated with enforcement.

A coalition of environmental groups, led by Connecticut Fund for the Environment and Rivers Alliance of Connecticut, continues to press for the conservation of vegetated buffers. The reasons for taking on this fight are the spread of dead zones in L. I. Sound, the disappearance of native fish habitat in our rivers, the contamination of recreational waters, and the disappearance of frogs, salamanders, and turtles. It's sad.

Champions in the legislature have included the Co-chairs of the Environment Committee, Sen. Ed Meyer and Rep. Dick Roy, as well as longtime environmental leader Rep. Mary Mushinsky. With their help and the help of concerned people around the state, we will protect our shorelines with the free, green infrastructure provided by nature to protect our waters.

# Many Thanks to Our Supporters!

Fiscal Year 2008 – 2009

Thank you to all our members and funders! With your generous support Rivers Alliance is able to help our rivers and help those who cherish and protect them.

## FOUNDATIONS / GRANTS

Connecticut Community Foundation  
Connecticut Department of Environmental Protection  
The Gryphon Fund  
REI

### Members

Peter & Lisa Aarrestad  
Karl & Elizabeth Acimovic  
Bruce & Susan Ackerman  
Gail Adams & Wayne H. Coste  
Mary Adams & Robert Lockhard  
Barbara von Kreuter Adams  
Worthington M. Adams  
Mehrnoz Aghili  
Sidney C. Albertsen  
Nancy & Myles Alderman  
Karen & Tucker Andersen  
R. Gavin Anderson  
Shimon & Sharon Anisfeld  
Anonymous  
William & Joan Anthony  
Aquarion Water Co. of CT  
Thomas M. Armstrong  
Ashford Conservation  
Commission  
Michael Aurelia &  
Denise Savageau  
Joseph A. Austin &  
Adrian Wagner  
Lucy Averill  
Avon Water Company  
Hugh & Susan Balloch  
Mary Jane Barnett  
John R. Battista, M.D.  
Marc Baum  
David Behnke &  
Paul Doherty, Jr.  
David A. Belden  
Mr. & Mrs. Maxwell M. Belding  
Barbara Currier Bell  
Richard & Anne Bell  
John & Lucille Bellemare  
Claire Bennitt  
Edward S. Bent  
Jayne Bentzen &  
Ben Silverman  
Randy Bernard  
Burton & Jane Bernstein  
David & Anne Bingham  
Kenneth & Mary Bird  
Linda E. Bireley  
Bill C. Blaufuss  
Pamela Z. Blum  
John & Susan Boland  
John & Linda Bowers  
N. Clark Bowlen & Kathy Keena

John & Jane Boyer  
Branford Land Trust, Inc.  
Mark K. Branse & Linda Reid  
Susan Branson  
Russell & Fredericka Brenneman  
Sharon W. Brezner  
James & Judith Brideau  
William & Jennifer Bright, Jr.  
Mr. & Mrs. David Brooks  
Horace H. Brown  
Lori Brown  
Lois Bruinooge  
Karen Burnaska  
Stephanie Burrows  
Ann M. Burton  
Peter Canoni  
Kevin Case  
Fred A. Cazal, Jr.  
Nancy L. Cebik  
James & Brenda Chapman  
Wayne Spencer Chapman  
Cherry Brook Garden Club  
Mr. & Mrs. Starling Childs  
John Cipriano  
John L. Ciriello  
Citizens for a Clean  
Hammonasset River  
Mr. & Mrs. Merrell E. Clark, Jr.  
William & Marjorie Coleman  
Katharine T. S. Coley  
Charles & Jacqueline Collimore  
Collinsville Canoe & Kayak  
Collinsville Savings Society  
Scott & Joanne Conant  
CT Conservation Assoc.  
CT Forest & Park Assoc.  
CT River Salmon Assoc.  
CT River Watershed Council  
Connecticut Water Co.  
David & Diane Cooper  
Peter B. Cooper  
Eric Corbin & Helen Sweeney  
Marianne & John Corona  
Sandra Cox  
George W. Coxeter  
James & Sharon Creighton  
Tom & Mieke Crider  
Peter M. Curry  
Michael & Margaret Curtis  
Ruth B. Cutler  
Paul & Joan Czaplicki

Maggie Daly  
Stuart Daly  
David & Cynthia Damer  
Barbara O. David  
Renee David  
Marybeth Dean  
Raul & Emilie de Brigard  
Robert deCourcy  
Barbara S. Delaney  
Laurence & Mabel Diamond  
Russell & Krista Dirienzo  
Elizabeth M. Dock  
Paul. W. Douglas  
Dr. & Mrs. David M. Dressler  
A. J. DuBois, Jr. & Sarah E. Gager  
Cheryl Dunson  
Elisha & Natalie Dyer  
Jane L. Edgerton  
Diane & Paul Edwards  
Pamela Edwards  
Louis S. Ehrich, Jr.  
Mary H. Eller  
Environment & Human Health, Inc.  
Dan & Elizabeth Esty  
Fairfield Conservation Commission  
Edith Fairgrieve  
Patricia & Robert Falkenhagen  
Farmington River Anglers Assoc.  
Farmington River Coordinating  
Committee  
Farmington River Watershed Assoc.  
Sarah Faulkner  
Federated Garden Clubs of CT  
Eric & Wendy Federer  
Frederick Feibel  
Jeff Feldmann  
John & Eileen Field  
Eileen Fielding  
Michael & Alice Fischer  
Bruce Fletcher  
Matthew S. Forelli  
Jacqueline Fowler  
Patricia Fowler  
Paul & Linda Frank  
Judith & Louis Friedman  
Valerie Friedman  
Friends of the Farm River Estuary  
Lynn & John Fulkerson  
Liba H. Fuhman  
Fuss & O'Neill, Inc.  
Peter & Dorothy Galant  
Carol Garbarino  
Rick & Linda Gault  
Garden Club of Darien  
William J. Gemmell, M.D.  
Geomatrix, LLC  
Stephen Gephard  
Laurie Giannotti &  
Robert Butterworth  
Elizabeth Gilson & Joel Cogen  
Betsy Glassman  
Arthur Glowka  
Barrie Goldstein  
Edward B. Goodnow  
Harold & Bobbie Gootrad  
Anthony & Cynthia Gorman  
Keith Granell  
Jeanie & William Graustein  
Wallace & Helen Gray  
Martin & Gloria Greenstein  
David F. Gregorski  
Griswold Inland Wetland &  
Watercourses Conservation  
Commission  
Groton Open Space Assoc.  
Steve Grover  
Peter & Molly Gurney  
Teresa Gutowski  
Susan Haber  
Mr. & Mrs. Marshall Hamilton  
Eric Hammerling  
Nancy & Brendan Hanrahan  
Astrid T. Hanzalek  
Judith H. Harper  
Ernest S. Harris, Jr.  
Richard & Patricia Harris  
Bill & Jane Havemeyer  
Megan & Damon Hearne  
Robert & Lisette Henrey  
Dr. & Mrs. Michael Herman  
John & Anne Herrmann, Jr.  
Dorothy Hill  
Janet Hill  
John & Marge Hiller  
Daniel & Sarah Hincks  
Edmund & Rheta Hinman  
Diane Hitchcock &  
Ronald McMahon  
Diana & Peter Hiza  
Hockanum River Watershed Assoc.  
Bruce Hoheb & Susan Menconi  
Richard Hokin  
Kathleen & William Hopf  
Robert Hopkins  
Bill Horne  
Marjorie L. Hoskin  
Housatonic Fly Fishermans Assoc.  
Housatonic Valley Assoc.  
William A. Howes  
Huck Finn Adventures, Inc.  
Dr. & Mrs. Ralph Hunt  
Anthony Irving & Deborah Lees  
Eric Jackson & Catherine Linton  
Michael C. & Pamela Jackson  
Rick & Sue Jacobson  
Jim & Jan Jekel  
Mr. & Mrs. R. Kirk Jewett  
Horton A. Johnson

Charlie Kammerer  
 Scott & Marjorie Kania  
 Jessica Kaplan  
 Mary Keane  
 Stewart Kellerman &  
 Patricia O'Conner  
 Kenneth & Judith Kells  
 Richard H. Kessin  
 Meg Kilgore  
 F. Richard King  
 Louise W. King  
 Robert E. King, CPA  
 Charles & Jane Klein  
 Stewart E. & Leila Larson Klein  
 Fred Klingener & Marilyn Mehr  
 Franklin & Barbara Klion  
 Helen Koehn  
 Charlotte & David Koskoff  
 Charles D. Koteen  
 Dave Kozak  
 Charles L. & Helen Kroll  
 Lee & Anne Kuckro  
 Dr. William R. Kueffner  
 Jill Lacedonia  
 Mr. & Mrs. E. J. Landrigan  
 Rusty Lanzit  
 Jean M. LaVecchia  
 Marta Jo Lawrence  
 Martha K. Layman  
 Kenneth & Sarah Lerman  
 Ann C. Letendre  
 Mark & Renee Lewis  
 Henry Link  
 Litchfield Bancorp  
 Litchfield Hills Audubon Society  
 William T. Lloyd  
 Brian Lockhart  
 James Lockhart  
 Gordon Loery  
 Dr. & Mrs. Ted Loewenthal  
 Bon Lombardi  
 Betty Lovastik  
 Elaine Luckey  
 Eric Lukingbeal & Sally King  
 Lyme Land Conservation Trust  
 Harriet M. MacGregor  
 Iain & Cynthia MacKay  
 Martin Mador  
 George M. Madsen  
 Maurice J. Mahoney  
 Jonathan & Philippa Malkin  
 Ecton & Betsy Manning  
 Gwen E. Marrion  
 Sarah Lee Martin  
 Richard & Judith Martindale  
 Susan Masino & David Galt  
 Massachusetts Riverways Program  
 Mr. & Mrs. Lee Mather, Jr.  
 Martha Matthews  
 Ellen McCourt  
 Suellen Kozey McCuin  
 Bill & Barbara McCullough  
 Phyllis M. McDowell  
 Mr. & Mrs. James McInerney, Jr.  
 Molly N. McKay  
 Geoffrey L. Meissner  
 Robert & Elaine Melvin  
 Maria E. Mendes

Dwight & Susan Merriam  
 Michaud Company, Inc.  
 Chris & Amalia Michos  
 Georgiana L. Middlebrook  
 Mill River Wetland Committee  
 Barbara S. Miller  
 John & Edwina Millington  
 Inga-Britta Mills  
 Mary E. Miner  
 Peter & Diane Miner  
 Wendell & Florence Minor  
 Jane-Kerin Moffat  
 Meg Mongin  
 Bob & Diane Moore  
 Leamon & Deborah Moore, Jr.  
 John Moorhead  
 C.A. Morgan, III & Sean P. Duffy  
 Morris Democratic Town Committee  
 Deborah Moshier-Dunn  
 Peter Moss  
 John Mundy  
 Mystic River/Whitford Brook  
 Watershed Assoc.  
 Naubesatuck Watershed Council, Inc.  
 Naugatuck River Watershed Assoc.  
 New Canaan Garden Club  
 Jane Napieracz  
 Bernard Noonan  
 North Central Conservation District  
 Norwalk River Watershed Assoc.  
 Northwest Conservation District  
 Katharine & Donal O'Brien, Jr.  
 Lenka O'Connor  
 Old Lyme Conservation Trust  
 Park River Watershed  
 Revitalization Initiative  
 Susan & John Payne  
 Kirsten M. Peckerman  
 Henry & Marion Pennell, III  
 Pequabuck River Watershed Assoc.  
 Albert C. Perrino  
 Guy & Janie Peterson  
 Karen & Tony Pierson  
 Anne B. Pierson, M.D.  
 Ronald Pizzarelli  
 David & Dana Platt  
 Elliott B. Pollack  
 Naomi & William Pomper  
 Pomperaug River Watershed  
 Coalition  
 J. Lawrence & Gloria D. Pond  
 Priscilla Manning Porter  
 Robert Porter  
 The Potatuck Club, Inc.  
 Peter & Elaine Pratt  
 Betsy P. Prudden  
 Elizabeth L. Raisbeck  
 David & Joyce Raymes  
 Curtis S. Read  
 Redniss & Mead  
 Jean M. Richards  
 Tessa Ried  
 Sally S. Rieger  
 Dr. Ronald A. Ripps  
 Pamela W. Ritter  
 Mary J. Roberts  
 Barbara Paul Robinson &  
 Charles Raskob Robinson

Dorothy K. Robinson  
 Richard Rohr  
 Rachel Rosen & Michael Collins  
 Jeremiah K. Ross, Jr.  
 Carol Russell  
 Rose Ryan  
 Salmon Brook Watershed Assoc.  
 Christie Sanders  
 Gail A. Sangree  
 Lisa SanSoucie  
 Henry & Helen Savage, Jr.  
 Ron & Deborah Savaria  
 Scantic River Watershed Assoc.  
 Dr. & Mrs. George Schaller  
 Paula L. Schiller  
 Donna Schlegel &  
 Gregory Knowles  
 Frederick Schroeder  
 Robert F. Schumann  
 Richard & Patricia Sears  
 Lee Seidler  
 Alice Shaber  
 Jerome Shaffer  
 Anne W. Shaw  
 Jocelyn T. Shaw  
 Marc Sherman  
 Daniel D. Sherr &  
 Margaret M. Ferguson  
 Jerry & Roberta Silbert  
 Jeffrey & Amy Silverman  
 Nathan M. Silverstein  
 Charles W. & Marilyn T. Slate  
 Ruth & Gilbert Small  
 Ann D. Smith  
 James & Mary Smith  
 Marlene & Christopher Smith  
 Martha Smith  
 Richard Sonder &  
 Susan Monserud  
 Linda & Frank S. Sousa  
 Southbury Land Trust  
 Clark & Cheryl Spencer  
 Irene G. Stahl  
 Stamford Garden Club  
 Steep Rock Assoc.  
 Annabel Stehli  
 Missy Stevens  
 Carol Stoddard  
 Jane T. Stone  
 Stonington Garden Club  
 Daniel Stowell &  
 Lucinda Hunt-Stowell  
 Arthur Sweeton, III  
 Deb Swigart  
 Jane & Thomas Talamini  
 Joan Talbot  
 Janet Tanner & Peter Poskas  
 Dr. & Mrs. Marc Taylor  
 Dr. & Mrs. George Terranova  
 Thomaston Inland Wetlands  
 Commission  
 Thompson Conservation  
 Commission  
 Douglas Thompson &  
 Rebecca Nash  
 Town of East Windsor  
 Town of Greenwich -  
 Conservation Commission

Town of Plainville  
 Town of Watertown -  
 Planning & Zoning  
 Trout Unlimited -  
 Farmington Valley Chapter  
 Naugatuck Valley Chapter  
 Nutmeg Chapter  
 Richard Tomeo  
 Corey Tucker  
 William B. Upholt &  
 Mary Lee Morrison  
 Jerry Van Duinen  
 Sandy & Sidney Van Zandt  
 Alvin von Auw  
 Ken Wagner  
 Steve Wagner  
 Jonathon Walker  
 Washington Garden Club  
 Donald R. Watson, FAIA  
 David Weintraub  
 Jay & Sandra Weintraub  
 Lynn Werner & Kevin Honan  
 Mark & Barbara Wetzell  
 Dan Whalen  
 Jane White-Lewis, Ph.D.  
 Marcia Wilkins  
 Cynthia C. Willauer  
 Benjamin Williams  
 Willimantic River Alliance  
 Roberta & William Willis  
 Richard Windels  
 Wintonbury Land Trust  
 Robert Woods  
 James Worth  
 Mary Young  
 Nancy & John Ziac  
 Anne Zinsser

**In Celebration of the  
 Austin & Wagner Wedding**

Erica Collins  
 Robert Katchen  
 Merle D. Vassar

**In-Kind Services**

Norm Berg  
 Jeff Feldman Photos  
 McCarter & English  
 Minor Memorial Library  
 Northeast Utilities  
 Hugh Rawson

**In Memoriam**

**Mary E. Miner**  
 David & Charlotte Koskoff  
 Mr. & Mrs. E.J. Landrigan  
 Matthew M. O'Connell



RIVERS ALLIANCE OF CONNECTICUT  
7 WEST ST., P.O. BOX 1797  
LITCHFIELD, CT 06759  
Ph: (860) 361-9349 Fax: (860) 361-9341  
www.riversalliance.org  
rivers@riversalliance.org

Nonprofit Org.  
U.S. Postage  
PAID  
Litchfield, CT  
Permit #158

IN THIS ISSUE:

STREAM FLOW REGULATIONS

SHEPAUG RIVER CELEBRATION

2009 ENVIRONMENTAL CHAMPION

ALTERNATE TREATMENT SYSTEMS (ATS)

RIPPLES

*Rivers Alliance of Connecticut, Inc., is the statewide coalition of residents, watershed and river groups, and local businesses working together for river conservation. It is the only group addressing all the rivers and streams of the state. Rivers Alliance protects the rivers of the state by strengthening local groups, working as their advocate at the state and regional levels, developing supportive public policies, and educating the public about the importance of river conservation.*