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The Challenge of Environmental Protection

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CHAPTER THREE

The Challenge of Environmental Protection

JENNIFER H. MATTEI

Across the United States, environmental degradation and some of the other challenges addressed in this book (e.g., transportation, education, economics, and health) stem in large measure from rapid human population growth. In past years, Connecticut has been no exception to this trend, with a population growth rate that averaged 3.6% during the period 1990 to 2000.¹ However, Connecticut is in the midst of a demographic transition to a period of low population growth, with its population expected to experience minimal change through 2011.² These demographic changes will help check the pressures exerted on the state's natural resources by population growth. They will also afford Connecticut's political leadership a unique opportunity to take steps to protect the state's environmental resources and enhance its environmental protection policies. A decade of relatively slow population growth—which is not to say slow economic growth—may allow Connecticut's politicians time to act on environmental challenges before irreparable damage occurs to the remaining common pool of natural resources.

Water, air, soil, energy sources, food, fisheries, forests, and biodiversity are common pool resources upon which we depend in ways that transcend political boundaries. Such resources, however, are difficult to manage at local, state, and regional levels.³ Of most concern today, worldwide and in Connecticut, is not only that our natural resources are being consumed at increasing rates, but they are

also being filled with our waste, rendering them inconsumable. Garrett Hardin, in his well-known essay entitled "The Tragedy of the Commons," predicted that as the human population grows a cascade of environmental problems will occur, accompanied by a precipitous decline of human health.⁴ Political activist and theorist Noam Chomsky rates environmental degradation as a top threat to human survival, second only to the pursuit of global domination by the United States and the proliferation of weapons of mass destruction.⁵ A common thread in all these prognostications, whether they are viewed as overblown or prescient, is that environmental degradation occurring within any one political jurisdiction can wield its destructive consequences on the citizens of neighboring jurisdictions.

What, then, can Connecticut's political leadership do to protect the state's common pool resources in the face of such interconnectedness? It should make use of the coming decade of opportunity to:

- Participate in coordinated regional planning and resource management efforts, and support the implementation of resulting plans and recommendations, such as the Long Island Sound Study.
- Pursue policies designed to preserve open space and forest (particularly large contiguous tracts) and to channel development in ways that will minimize fragmentation of riparian habitats.
- Provide adequate funding for the enforcement of existing laws regarding the proliferation in Connecticut of non-native invasive species and promote public awareness of the risks posed by such plants and animals.
- Promote partnerships between state government and the many nonprofit conservation organizations, universities, and local conservation groups that can assist in the task of advancing public education and awareness about environmental issues and, in the process, building political support for the pursuit of progressive environmental policies.

- Strengthen Connecticut's emissions standards to exceed federally mandated levels where appropriate, as California has done for some time.

The Responsibility for Protecting the Commons

The two greatest environmental challenges facing Connecticut's political leadership are how to manage and protect the state's natural resources and how to manage and limit pollution. Confronting these challenges effectively will require an atmosphere of cooperation between groups of people advocating competing uses for resources that have open access (i.e., the problem of the commons) or uses of private property entailing the degradation of common pool resources (i.e., the problem of negative externalities). In thinking about these issues, it is useful to conceive of natural resources as falling into four general categories⁶ that define property rights, responsibilities, rules of use, and control:

- *Open Access Property*: This is the classic "commons." Its key attribute is the absence of well-defined property rights. Common resources are freely available to everyone (e.g., parts of Long Island Sound, the atmosphere) and are often effectively unregulated.
- *State Property*: Common pool resources are sometimes owned by government, which may then exert its dominion and control as steward for the population as a whole. Government can regulate access and exploitation. It can use its police powers to enforce laws and can even subsidize use by some (e.g., Mohawk Mountain State Park and Forest in Goshen, Connecticut).
- *Communal Property*: These are resources held by a community of users able to exclude outsiders. A community that includes all users of the resource is able to self-regulate (e.g., exclusive communities, like Fox Hopyard in East Haddam, that only allow homeowners

in the community to utilize the golf course and open space within its specified boundaries). However, the uses of communal property may be constrained by social mores or external regulation (reflecting, for example, policies of nondiscrimination).

- *Private Property*: The opposite of open access property is, of course, private property. Private owners have the right to use their property in any way they deem appropriate, save those uses prohibited by law. Owners have the right to exclude others from the use of their private property, the right to call upon the state to enforce that right of exclusion, and perhaps the right to prevent activities by others that interfere with his/her rights. Private property may be freely sold or rented to others (e.g., most homes and businesses).

Two of these forms of ownership—communal property and private property—are not particularly well-suited to the preservation and management of common pool resources affecting the population at large. Indeed, it is not normally viewed as the responsibility of such property owners to subordinate their interests to those of the larger community. Such responsibility falls to the state.

The Connecticut Forest as a Common Pool Resource

The largest terrestrial common pool natural resource still existing in Connecticut, and surely one of the state's defining characteristics, is its forested ecosystem. However, Connecticut's forests are overwhelmingly in private hands. Of the 3,205,760 acres that make up the state, approximately 56% (or 1.8 million acres) is forested.⁷ However, only 7% of the total land area of the state (or approximately 224,000 acres) is state property preserved as open space, of which approximately three quarters (or 163,000 acres) is wooded and fragmented into thirty-two state forests. Federally owned lands are minimal in Connecticut (at approximately 3,100 acres). Municipalities, private nonprofit land

organizations, and water companies own another 7% of the state's land area (or approximately 230,000 acres) that is presently maintained as forested open space.⁸ Therefore, approximately 1.4 million acres of Connecticut's forested lands (representing approximately 78% of the forested land in the state) is private property susceptible to development.

The key environmental challenge relevant to this ecosystem is preventing the loss of contiguous forest, a phenomenon known as habitat fragmentation. Large contiguous tracks of forest can support balanced ecosystems, enhance species diversity, and protect watersheds. They are more resistant to disease and pollutants than fragmented forests. On the other hand, an equal acreage of forest fragmented into small patches is ecologically unstable, vulnerable to erosion and wind damage, and impaired in its capacity to withstand the effects of air and water pollution. Maps developed by the Center for Land Use Education and Research at the University of Connecticut, utilizing NASA satellite data, have shown that between 1985 and 2002 Connecticut lost an average of 12 acres of forest per day to new buildings, parking lots, and roads, totaling 170 square miles (108,800 acres) of forest. Large tracks of contiguous forest are becoming rare, particularly in Fairfield and New Haven counties, in the expanding suburbs of Hartford, in the areas along I-395 in southeastern Connecticut, and in expanding towns along lower Middlesex County, like Clinton and Westbrook.⁹

An important reason forests are often the first lands to be leveled for development and often succumb to suburban sprawl is that their value as common pool resources tends to be significantly underestimated by town planning boards and by local and state politicians. Although the benefits and importance of wetlands are now well recognized, there is no comparable public awareness of the significance of forests. As a result, there are no environmental laws protecting forests in their own right. Rather, what protection they receive is largely derivative of that afforded to wetlands (in the case of forests that happen to be near a wetland) or to particular endangered species (in the case of forests that harbor such species).

However, scientists now understand that forested ecosystems can regulate local climate by trapping carbon dioxide, expelling

oxygen, and providing cooling shade. Forests are extremely important in hydrological cycles. The severity of floods can be reduced with the preservation of large tracts of forest because rainwater percolates through forest soils rather than sheering off as it does on streets and lawns. Forests slow and reduce water runoff, particularly in heavy downpours, prevent soil erosion, and slow the flow of streams to allow silt and sediment to settle out of the water. Forests capture and store various air, soil, and water pollutants, and thus provide clean water to recharge our wells and serve as natural filters for the water that runs into our reservoirs, estuaries, and inevitably the Long Island Sound.¹⁰ The cost of constructing water filtration plants will run into the billions of dollars, while a forested ecosystem can help keep our water clean for merely the cost of preserving it.¹¹

In addition to clean water, forests provide habitat for beneficial animals (e.g., pollinators, natural predators and parasites of insect pests). For example, bats require tree cavities in large intact forests for roosting during the day and at night they feed on millions of insects, some of which are agricultural pests and others (i.e., mosquitoes) that may carry West Nile virus.¹² Predators like hawks, foxes, bobcats, and owls all depend on forests to survive and they are highly beneficial to humans by reducing rodent populations. Various rodent species are carriers of pathogens that cause human illness (e.g., bacteria that causes Lyme Disease, Hantavirus, plague, and so on).¹³ Forests provide habitat for many organisms from birds and mammals to fungi and bacteria. Therefore, intact forests shelter our local biodiversity and directly benefit human health. When habitats become fragmented, local biodiversity decreases. Many plant and animal species experience population decline (e.g., bobcat, fox, owls, black bear, ground-nesting birds, and understory plants such as trilliums, orchids, and other ephemeral wildflowers). At the same time, other less desirable species (e.g., rodents, white-tailed deer, and crows) may experience dramatic population increases as predator species decline. As rodents, deer, and crows increase in number, so do their parasites and the pathogens they carry. Thus, habitat fragmentation in Connecticut can be directly linked to increases in the occurrence of Lyme disease and now possibly the spread of West Nile virus.¹⁴

Beyond the undervalued ecosystem services provided by forests—clean air, soil, and water—a functional forested ecosystem has immediate economic value by providing renewable forest products (e.g., lumber, pulp and herbal medicines) and can generate millions of dollars annually for Connecticut residents from ecotourism.¹⁵ Large intact forests are also resistant to invasion of non-native species. Invasive plant species such as kudzu and Oriental bittersweet can smother native plant species and cause biodiversity to decline.¹⁶

Connecticut's current policy-makers need to find ways to encourage the owners of forested lands held as private property to preserve or manage them with a view to their common pool attributes. Encouraging the establishment of land trusts by offering greater tax incentives may induce more landholders to participate in such initiatives. It is vastly more cost effective to preserve the forests we have left than to try to restore them after they're gone.¹⁷

Traditionally, development has tended to occur most rapidly along major rivers and water courses. Riparian habitats (forested river banks) are thus in need of immediate attention both in terms of restoration and preservation. When Governor Rowland was in office, he proposed to double, over the next ten years, the state's holdings of land preserved as open space. The current governor of Connecticut should give particular priority to riparian habitats in the expenditure of the funds that have already been set aside for the purchase of open space. Some federal and New York state politicians have learned this lesson and begun buying and preserving forested land around the reservoirs and watersheds that quench the thirst of over nine million inhabitants of New York City.¹⁸

Pollution: The Fouling of the Commons

Clearly, reducing and managing pollution is a major environmental challenge for those governing Connecticut. The sheer volume of pollutants fouling the commons upon which we depend for food, water, and air must be reduced. Increases in human population, consumption rates, and dependency on the

automobile all add to the problem. This aspect of environmental policy can be analyzed from various perspectives, focusing on the type of common pool resource affected or, alternatively, on the source of the pollutant.

Classification by Affected Common Pool Resource

Pollutants are often classified and analyzed according to the common pool resources that they affect (i.e., air, soil, and water pollution). However, often these three can be interconnected. Air pollutants do not necessarily stay in the air and various pollutants can interact, causing even more damage to common pool resources. For example, sulfur dioxide, an air pollutant that can damage lung tissue if inhaled; often mixes with precipitation, causing acid rain. Acid rain or snow damages the soils it percolates through causing nutrient leaching, aluminum mobilization, and plant death.¹⁹ Eventually, the acid rain and leached nutrients run into streams, rivers, and lakes, causing algal blooms and fish die-offs. Acidic waters can interact with mercury, transforming it to the highly toxic methylmercury (CH₃Hg).²⁰

Mercury is itself a significant air pollutant that enters lakes, streams, rivers, and Long Island Sound in precipitation. The majority of mercury pollution in Connecticut is released into the air by electrical plants that burn coal and waste incinerators that burn mercury-tainted garbage. Fish ingest this pollutant, which is then deposited in their fatty tissues. When people eat fish tainted with mercury they suffer neurological disorders and other health problems.²¹

The interactions of pollutants with each other and with the abiotic and biotic components of the environment are complex. If a policy-maker wanted to improve the water quality of a particular lake or river, for example, he/she would need to start with an evaluation of the air and surrounding lands. Additional support and funding at both the state and federal level is needed for the monitoring and study of the pathways traveled by pollutants and the identification of the places where toxins accumulate, both geographically and within the food chain. This support should not only go to the Connecticut Department of

Environmental Protection (CTDEP) and state universities, but also to private sector institutions pursuing research interests aligned with those of the state. Improved communication and coordination among these various groups is needed. Researchers should enhance their methods of communicating research results to government officials and the general public so that sound environmental legislation can be developed and implemented.

Point Source Pollution

Pollutants may also be classified by how they are generated. Pollutants that are generated by one particular source, like a factory, power plant, or landfill, are considered to be point source pollutants. In contrast, non-point source pollutants are usually produced in small quantities by many individuals causing a cumulative negative impact on common pool resources.²²

Point source pollutants may cause major damage locally if left untreated. Danbury has been left with a major point source pollutant, mercury, from the hat factories that once operated in that town. The use of mercury in hat making was banned in the 1940s but even today, sixty years later, the waters in parts of the Housatonic and Still rivers are unsafe for swimming and fishing.²³

Policy-makers in Connecticut should support environmental protection legislation that is tough on industrial polluters to prevent future incidents of severe and long-lasting environmental degradation. Support for increased monitoring and the development of emergency action plans can minimize environmental damage in the event of purposeful or accidental pollution incidents. For example, when a fire broke out at the Latex Foam Products, Inc. facility in Ansonia on May 14, 2001, the CTDEP tracked the fire's impact on fish populations in the Naugatuck River, water quality of the river, and the cleanup of debris.²⁴ The latex products that spilled into the river killed a number of fish and other organisms at the site of the spill. However, after the cleanup, the river ecosystem recovered.

Environmental policy must also address point source pollution events that may have occurred in the past where the point source polluter may not have been identifiable, or may have been

difficult to prosecute. Scientists have just begun to discover past pollution events hidden in sediments and soils of Connecticut.²⁵ Risk assessments will have to be conducted by the CTDEP, and decisions made concerning whether, when, and how these newly discovered pollutants should be cleaned up. In the past, various industrial activities have led to severe pollution events that have made it onto the National Priorities List as Superfund sites. Connecticut has fifteen toxic, federally recognized sites that are in various stages of cleanup.²⁶ Most of these Superfund sites have been listed since the early 1980s. These sites are unlikely to be removed from the list any time soon due to the drastic cuts in funding by the Bush administration to the Department of Environmental Protection. President Bush and Congress refused to reinstate taxes on chemical and petroleum companies which generated revenues that kept Superfund operating. As a result, the cleanup of Connecticut's Superfund sites will almost certainly be the burden of the state taxpayers.²⁷

Non-point Source Pollution

Single pollutants may come from multiple sources and permeate a number of common pool resources. Toxic substances like PCBs (Polychlorinated Biphenyls) and mercury can accumulate in smaller organisms, become concentrated as they are passed along a food chain, and have toxic effects in top predators such as raptors, carnivores, and humans. In other cases, pollutants may be nontoxic in small quantities but deadly in larger quantities:

For example, nitrogen is a seemingly simple element that is atmospherically benign because it is a triple-bonded gas molecule (N_2) and does not easily react with other compounds. However, some bacteria and soil fungi have the ability to alter atmospheric nitrogen to form ammonia (NH_3), ammonium (NH_4^+), and nitrate (NO_3^-). Because nitrates are macronutrients necessary for plant growth, they are not harmful when produced in moderate amounts. However, ammonia and nitrates generated by human activity in large quantities can pollute soil and water. Tons of human nitrogenous waste products are discharged from Connecticut's sewage treatment plants, particularly during storm events. Other

sources of nitrogenous waste or excess nitrogen include effluent from industrial facilities, fertilizers from orchards, farms, lawns, and gardens, as well as waste produced by domesticated animals (from cows to cats and dogs). All this eventually end up in Long Island Sound.

One of the effects of nitrogenous waste is known as hypoxia, i.e., water with very little dissolved oxygen.²⁸ Nitrogenous waste has a fertilizing effect on Long Island Sound waters, causing algal blooms. As the algae die and sink to the bottom, bacteria decompose the organic matter and deplete the oxygen within the bottom two-thirds of the water column. Surface waters contain dissolved oxygen because of the close contact with the atmosphere. Hypoxia usually occurs in the western half of Long Island Sound during the months of August, September, and October. Most of the organisms inhabiting these waters (fish, crabs, shellfish, and other invertebrates) either die or leave the affected area during outbreaks of hypoxia.²⁹

Untreated waste waters are also hazardous because they carry pathogens into Long Island Sound. Humans can become ill from exposure to these pathogens. Gastroenteritis, salmonellosis, and hepatitis A are all caused by waste-related pathogens. Illness can result from ingestion of contaminated water by bathers, or as a result of eating raw shellfish harvested from contaminated waters. Virtually any pollutant that is flushed into one of the many rivers in Connecticut will eventually end up in Long Island Sound. The citizens of Connecticut need to take extra precautions about the fertilizers and pesticides they use around their homes because of the compounding nature of non-point source pollutants and their devastating effects on the Long Island Sound ecosystem.

The Sound is Connecticut's largest and, together with its forest ecosystem, most precious common pool resource, second only to the air that we breathe. It has been designated by the federal government as an "Estuary of National Significance." By its very nature, it is unfortunately the ultimate repository for much of the point and non-point source pollution generated in Connecticut and neighboring states. In view of the fact that the fishing, boating, and tourism industries depend on a healthy Long Island Sound ecosystem, the management of this open access

resource is of paramount importance to Connecticut. This task is complicated by the fact that it is shared by two neighboring states (New York and Rhode Island). However, the work conducted by members of the Long Island Sound Study (LISS)—perhaps the most ambitious and successful effort to date seeking to promote sound and collaborative management of this resource—serves as a model for the formulation and implementation of sound policy. The LISS is a cooperative effort involving researchers, regulators, user groups, and other concerned organizations and individuals. It is funded and administered by the U.S. Environmental Protection Agency with the purpose of protecting and improving the health of the Sound by implementing the Comprehensive Conservation and Management Plan completed in 1994.³⁰

Pollution by Biological Agents—Invasive Non-Native Species

Pollution can generally be defined as any matter or energy whose nature, location, or quantity produces undesirable environmental effects. In fact, the federal Clean Water Act states as one of its provisions that, "No discharges of chemicals, biological agents, or waste materials are allowed into surface waters, groundwater, or soils."³¹ Many people are unaware of the fact that biological agents can act as pollutants. The economic loss by the invasion, destruction, and loss of biodiversity to our natural resources by non-native species is estimated to cost \$78.5 billion annually in the U.S. For example, the zebra mussel (*Dreissena polymorpha*) was first found in North America in 1988. By 1990 it had spread to all of the Great Lakes.³² By 2002 the zebra mussel had invaded several of Connecticut's rivers. A single female mussel can lay 40,000 eggs in one breeding cycle. They can reach densities of 700,000 per square meter. They remove food for fish and other native species and cause thousands of dollars in damage by completely clogging a town's or company's water intake pipes.³³

The CTDEP estimates that nearly one hundred different invasive plant and animal species have become established along the Connecticut shoreline. The federal government has established an Aquatic Nuisance Task Force to help states begin to develop

management plans to comply with the National Aquatic Invasive Species Act.³⁴ The Connecticut General Assembly has recently passed new legislation to fine people \$100.00 per plant if they sell or purchase invasive plant species (Public Act No. 04-203, effective date February 1, 2005). For example, one species that may no longer legally be purchased in Connecticut is Purple Loosestrife (*Lythrum salicaria*). Prior to its recent prohibition, this species was popular with home owners because of its tall stature and showy purple flowers. However, Purple Loosestrife has dominated and clogged many of Connecticut's freshwater wetlands. It overgrows our native cattails, sedges, and rushes, and degrades wildlife habitat. A single plant can produce close to a million tiny seeds that are dispersed by the wind and carried on the feet of waterfowl. It has come to dominate the wetlands in New England and has spread across the United States.³⁵

Purple Loosestrife is but one of many examples of the harm caused by invasive non-native plant species. Many of these invasive plants have escaped from landscaped properties that surround our homes and businesses. Successful invaders of common pool resources inflict enormous ecological and economic damage. It is clear that purchasing and preserving open space from development is only the first step to improve environmental quality in Connecticut. It is equally important to provide funding for the management of our parks and open space, including invasive species eradication and forest restoration.

Global Climate Change

Even climate needs to be thought of as a commons that human activity is changing, the effects of which are just beginning to be revealed. It is now well documented that polluting the atmosphere has local, regional, and global consequences. Climate change in Connecticut can no longer be ignored even though it will take regional and global cooperation to correct the problem. For example, the American lobster an inhabitant of cold coastal water, is found from Maine to Long Island Sound. As the average water temperature of Long Island Sound increases due to global warming, healthy lobsters are becoming scarce. Thus, in a few

years, we could witness the end of the lobster industry in Connecticut if policies are not put in place to reduce emissions generated by the United States and other industrial nations.³⁶ This is just one example of how the polluting of a global commons, the atmosphere, can have a local impact. The price of global economic growth is just now being realized. The continued increase in the human population and consumption of natural resources has led residents of this state to the point where they must pay now to reduce pollution or pay later in the form of property damage due to rising sea levels, increases in storm events, lost coastline, and the loss of economically important species.³⁷ The reduction of air pollution from industry and automobiles in Connecticut has both a positive local and global influence on the environment. New England states should act in concert to toughen air pollution regulations of industries in the area as well as promote better monitoring and restrictions of exhaust from automobiles.

Conclusions

Trying to decide which environmental challenge is most pressing, and deserves the most funding and attention is difficult. Multi-faceted problems often require unique solutions and cooperation between groups of people that normally have limited interactions. A number of the environmental laws from the 1970s are outdated and unable to prevent the air and water pollution of an ever-growing economy and human population. The National Research Council of the National Academies has labeled the Clean Air Act inadequate.³⁸ The Bush Administration instituted new rules that allow coal-fired plants to expand without putting modern pollution control equipment in place, which would significantly increase mercury and other air pollutants.³⁹ It is clear why asthma rates in children are increasing in Connecticut.

Air

The members of the Connecticut Senate and House of Representatives must push for higher environmental standards than what is required by the federal government. The General

Assembly is moving in the right direction by recently passing an act that requires passenger cars, sport utility vehicles, and light trucks to comply with California's Low Emission Vehicle II standards (PA 04-84, sSB 119) for cars manufactured for the model year 2008. The Connecticut General Assembly should consider pushing for regional compliance of these standards as part of a regional plan to reduce greenhouse gas emissions. The challenge will be getting the statewide emissions testing program functional and efficient for motorists and then enforcing compliance. The CTDEP commissioner is required to collect annual information both locally and regionally on direct smokestack greenhouse gas emissions (sSB 595 effective Oct. 1, 2004). Hopefully, after one year of information gathering, the General Assembly will pass an act to reduce these emissions.

Land

It should be a priority for the new governor of Connecticut to continue to purchase land to preserve open space and forests particularly in riparian habitats. Continued support of the Open Space and Watershed Land Acquisition Grant Program administered by the CTDEP is important.⁴⁰ For the past several years it has had no funding. Remarkably, this past spring, 2004, the State Bond Commission authorized \$4.5 million for this program. This grant program provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land to be classified as Class I or Class II water supply property (e.g., forested riparian and watershed habitats). The support for state bonding for acquisition and the creation of incentives to encourage donation of lands is of the highest priority to slow the ongoing forest fragmentation. Upland forests have very few regulations protecting them. A statewide development and management plan is needed to prevent the continued fragmentation of Connecticut's forests and preservation of the existing large tracts of forest.

The restoration of urban contaminated and abandoned commercial and industrial sites, known as brownfields, needs further action. State policy makers need to support the Urban Site Remedial Action Program administered by the CTDEP and the

Department for Economic and Community Development. This program was created to address a key constraint to the conveyance and reuse of contaminated industrial properties: the fear purchasers and investors have of assuming environmental liability for pollution created by others.⁴¹ The utilization of brownfields could save green fields and forests for open space preservation.

The most important aspect of the Non-Native Invasive Plant Species Policy and regulations banning the sale of particular plants involves the identification of invasive species and the education of the public about problem species. Those two tasks alone would require much more funding and staffing than currently exists at CTDEP. To prevent any new releases of invasive plants the fines should be increased after a period of close policing of plant nurseries and educating landscape architects, nurserymen, and consumers about the problem. The funds collected from the fines should be funneled back into the consumer education program.

Water

The monitoring and education of the public about point and non-point pollution of surface water is another Herculean task that needs much more support than it currently receives. Support and participation in the Long Island Sound Study is important as well as implementation of the Sound's Comprehensive Conservation and Management Plan.

Education

Ultimately, policy-makers in Connecticut cannot conserve and protect the common pool resources on their own. By forging new partnerships with nonprofit conservation organizations, universities, and town conservation groups, state agencies like the CTDEP could accomplish more with fewer resources. One example of how this can be done is the "Trees and People Project" spearheaded by the Metro Forest Council and the NYU Wallerstein Collaborative for Urban Environmental Education. This program involves University professors training K-12 educators on basic forest ecology in parks close to public schools.

The objective is to make teachers comfortable conducting science projects in urban forests and to instill in students an appreciation of the forest ecosystem's value and function. Other environmental science research and education programs just beginning in Connecticut are Project Forest Watch, run by the University of New Hampshire, and Project Limulus, operated by Sacred Heart University, involving a consortium of federal, state, and nonprofit groups concentrating efforts on the conservation of the Long Island Sound ecosystem by utilizing horseshoe crab ecology as a case study.⁴² If children learn the importance of the environment from the beginning they will grow up to be more responsible adults.

If every Connecticut politician acted locally, pressuring the members of their district to abide by environmental regulations and push for local environmental conservation measures, then thinking about and developing state, regional, and global plans for environmental protection will not seem so insurmountable. Those governing Connecticut should lead by example and help turn the state into the model for the country of how to manage common pool natural resources by halting forest fragmentation, reducing pollution, and promoting environmental science education.

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