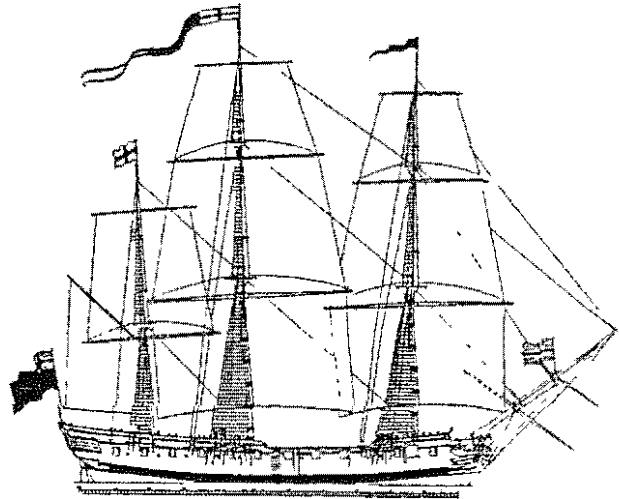


Environmental Quality in Connecticut

Review and Forecast



THE 1995 ANNUAL REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY



STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

February 15, 1996

The Honorable John G. Rowland
Governor of Connecticut
State Capitol
Hartford, CT 06106

Dear Governor Rowland:

I am pleased to submit the annual report of the Council on Environmental Quality for calendar year 1995. Two sections may be of particular interest:

First, the Council concludes that Connecticut must continue to improve environmental regulation but at the same time place more attention on the quality of everyday life. Part One contains recommendations for four priority requirements: a proposed Community Park, Forest, and Greenway Trust, great state parks, effective programs for clean-up and redevelopment of contaminated properties, and effective permit procedures.

In Part Two, the Council has expanded its successful use of Environmental Indicators as the preferred way to report changes in our air, water, land, and wildlife. These indicators are bottom-line statements on the actual condition of Connecticut. The focus is on long-term results, rather than on government budgets, enforcement activity, or new laws.

As always, the Council stands ready to assist you. If you desire additional information on any topic in this report, please call me or the Council's very capable staff.

Respectfully,

Ronald J. Thomas

Chairman

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SUMMARY OF RECOMMENDATIONS

1. Support for Community Parks, Trees, and Greenways

The General Assembly should create a Community Park, Forest, and Greenway Trust to offer matching grants to municipalities and non-profit organizations. Revenue should come from at least two sources: 1) Net revenue from enhanced forestry operations on state land, and 2) Compensation paid by private parties cutting trees on public land.

Proper forest management improves the health and value of state forests and yields a profit to the state, yet is habitually ignored in the state budget.

2. Great State Parks

The DEP should support volunteer organizations working to improve state parks.

The General Assembly should double general-fund appropriations for state parks (currently about two dollars per resident).

Connecticut spends less of its budget on parks than almost any other state.

3. Clean-up and Redevelopment of Contaminated Properties

The DEP and General Assembly took giant steps in 1995 to improve the bureaucratic procedures that were hindering private-sector clean-ups. If a significant backlog of clean-up plans submitted under the Transfer Act remains at the end of this year, the DEP should launch an intensive effort to eliminate that backlog over two years.

4. Efficient Permit Procedures

As the DEP's permit backlog shrinks and its Permit Application Management System becomes fully operational, the public will expect efficient response to applications, making 1996 a critical test year.

PART ONE

MAKING ENVIRONMENTAL PROGRAMS WORK FOR A BETTER QUALITY OF LIFE

INTRODUCTION

Four Requirements for a Better Environment and Quality of Life

The Council's review of environmental trends leads to this conclusion. Connecticut must continue to improve the quality of environmental regulation, but at the same time place more attention on the quality of everyday life.

Twenty-five years of environmental action have resulted in cleaner air and water (Please see Part Two of this report for a complete review of environmental trends.) However, this partial success in controlling pollution has not necessarily resulted in a better quality of life in many communities. Two long-term trends have had damaging effects on everyday life in Connecticut. First, certain land, tax, and environmental policies of the past three decades inadvertently left cities and older towns with declining economies and abandoned properties. Second, Connecticut residents have been witnessing a continuous decline in the quality of their parks and in other physical components of communities such as trees and public spaces.

These negative trends could be reversed if environmental programs were better integrated with the overall mission of state government. Consider the example of job creation and development, a perennial goal of the state. At a minimum, the DEP's regulatory programs must be operating smoothly, so that no unnecessary obstacles are placed in the way of desirable economic development. Just as important, however, is the question of where development should be encouraged. The Council's annual report for 1994 offers many reasons for stimulating job creation in cities and town centers. One more is added here: The financial burden of further improvements in air

The financial burden of further improvements in air and water quality will fall on cities and older, larger towns.

and water quality will fall on cities and older, larger towns. Without a prosperous tax base, or an overhaul of the state-local relationship for funding capital improvements, these municipalities will be hard-pressed to make the necessary improvements in sewage collection and treatment, mass transit, parks, trees, and greenways. Therefore, all state programs, including environmental ones, should be helping to remove obstacles that lie in the path of economic development in cities and town centers.

Similarly, traditional economic development initiatives such as grants and loans for industrial expansion should be accompanied by support (not necessarily financial) for parks and other fundamental elements that communities require to be successful.

In this report, the Council focuses on four priority requirements for a better environment and quality of life:

- 1. Support for community parks, forests, and greenways,**
- 2. Great state parks,**
- 3. Effective programs for the clean-up and redevelopment of contaminated properties, and**
- 4. Efficient permit procedures.**

Throughout 1995, the Council benefitted from the perspectives of many citizens and organizations. Among the guest speakers at Council meetings were representatives from the Connecticut Business and Industry Association, Connecticut Forest and Park Association, Connecticut Construction Industries Association, Connecticut Fund for the Environment, General Dynamics' Electric Boat Division, United Technologies Corporation, Sikorsky Aircraft Corporation, Friends of Connecticut State Parks, The Greenways Committee, and the Department of Environmental Protection.

1. Support for
community
parks, forests,
and greenways

*Dollar for dollar,
no public
investment returns
more value to the
community than
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in tree planting and
tree care.*

Safe, attractive parks are essential elements of every successful community. Likewise, street and other public trees -- the "urban forest" -- are universally regarded as being essential components of communities considered desirable. Dollar for dollar, there is probably no public investment that returns such value to the community -- in terms of improved aesthetics, environmental quality, energy savings, and property values -- than modest investments in tree planting and tree care.

Park services and maintenance can rarely compete in municipal budget battles with more immediate needs, so expenditures are "postponed." After years, the decay becomes apparent, and conditions fall below the expectations of park visitors; park visitation declines and conditions worsen further.



In recent years, the DEP has allocated seven million dollars in matching grants to cities for park improvements, but the state and federal programs that provided those funds are defunct.

Programs aimed at improving the sorry "urban forest" have enjoyed considerable vitality since 1989. The DEP's community forestry programs, together with the University of Connecticut Cooperative Extension System, the non-profit Connecticut Urban Forest Council, and many other organizations produced a true partnership within many Connecticut communities. However, as with urban parks, the modest grant programs (largely federal in origin) used by municipalities to procure and plant thousands of trees are now gone or much reduced. In most municipalities, the annual budget for tree care and maintenance is well below \$20,000, illustrating the importance of even modest grants. (For more information on municipal tree departments, readers are referred to the 1994 Urban and Community Forestry Survey Results published by the University of Connecticut Cooperative Extension System.)

Greenways...

...are corridors of open space that link towns, cities, and rural areas to existing parks and other points of interest. They usually follow linear landscape features such as rivers or abandoned railroad beds, and sometimes include bikeways and walking trails. For many Connecticut communities, they are a new way of organizing open space and recreational facilities.

More than 100 greenway projects have been started in our state, and many more are possible. Some projects completed in the last two years already see thousands of visitors every week. Most importantly, these projects have been imagined, designed, and created by people working at the local level. More than 20 million federal "transportation enhancement" dollars have been used for local greenways.



The General Assembly and Governor Rowland took a big step in 1995 by adopting and signing An Act Concerning Greenways (P.A. 95-335). This law places responsibility for future encouragement and coordination of local greenway activity in the hands of a new Connecticut Greenways Council. This Council met for the first time in December, 1995, and operates with no budget. The General Assembly should continue to support greenways in whatever way is necessary. Greenways promise to be the most cost-effective means to provide the public with convenient access to the outdoors and improve daily life in every community.

The Council has identified a potential source of money for local parks, trees, and greenways.

It is to be found in the forest resources of the state, owned by every citizen. Proper forest management will, in most years, yield a profit to the state. This profit is derived from the sales of timber harvested by commercial logging firms in furtherance of the DEP's own forest management plans. Approximately \$700,000 is returned to the state's general fund from such operations. Far less than half of the available state forest land is managed in this way, clearly, the DEP can vastly increase the harvest and the revenue. In fact, doing so will improve the quality, growth, and value of the remaining trees substantially. What prevents the DEP from managing state forests more intensively is a shortage of staff foresters, who must develop management plans before any parcel can be put out to bid for cutting. The situation is ironic: forestry is one of the few profit centers in state government, yet it is shortchanged year after year in the state budget.

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Recommendations for Supporting Community Parks, Forests, and Greenways

1. The Council recommends establishment of the Community Park, Forest, and Greenway Trust.

The primary source of revenue should be the net proceeds of enhanced forest management on state lands. It should be administered by the DEP with input from the CEQ and the Greenways Council. The CEQ estimates this potential income to be between \$500,000 and \$800,000 per year.



The Council envisions matching grants from this trust being used by municipalities and non-profit organizations to improve local parks, public trees, and greenways. A small portion of the funds could also be used to make annual grants to the Greenways Council, which currently operates with no budget.

(Two years ago, the Council might have hesitated to make this recommendation because of the potential expansion of environmental impacts that occur when logging is performed poorly. This Council has received valid complaints from citizens who have observed erosion, trail destruction, and other products of poorly executed timber harvests. Now, however, private-sector loggers are tested and certified by the DEP, pursuant to P.A. 91-335; this should give the DEP more effective tools for controlling private loggers operating on state lands.)

2. As an additional source of funds for the Community Park, Forest, and Greenway Trust, the Department of Transportation should collect a fee for every tree that a private party removes from public lands along highways.

Specifically, parties who apply to the DOT for permission to remove trees from state rights-of-way for their own personal benefit should be required to deposit in the Trust an amount equal to fifty dollars per tree removed. This would raise an additional several thousand dollars in most years, and would encourage judicious cutting by private parties. At present, the public is not compensated when private parties remove trees from public property along highways, yet at the same time the public pays many thousands of dollars for new trees to be planted in rights-of-way.

2. Great State Parks

Connecticut spends next to nothing to maintain and operate its state parks, and it shows. This negligence can be measured in several ways:

- Each year, only **two** state tax dollars are spent per Connecticut resident on the operation of the entire state park system. (This is the total general fund appropriation minus the sum of park fees that are deposited in the general fund, this remainder represents actual tax dollars.)
- Only three states spend a smaller percentage of their state budgets on their park systems (and those states, like most states other than Connecticut, have national and county parks where residents can find nature and recreation). In Connecticut, this percentage is less than one-tenth of one percent, or half the national average.
- Staffing by professionals and seasonal employees has declined by more than 25% since 1990, a year when parks already had far fewer employees than in the 1970s.
- To make up for insufficient taxpayer support of parks, the DEP charges entrance fees to shoreline parks that are among the highest in the nation. These high fees, in turn, might be one of the reasons there is little apparent support for the park system when the budget is debated.
- Connecticut spends less per park visitor (\$1.19) than any other northeastern state, and in fact spends less than half the average (\$2.53). Nationally, only a few midwestern and northwestern states spend the same or less per park visitor. Connecticut's capital expenditures in parks are also far below average.

Only three states spend a smaller percentage of their state budgets on their park systems

The Connecticut State Park system evidently is efficient in the delivery of services. Few states have a higher ratio of field staff to central office staff. Connecticut has only **six** full-time office staff in Hartford.

The important role of volunteers.

Energetic individuals have helped several parks maintain services to the public even as taxpayer support dwindled. "Friends" groups at Sleeping Giant, Dinosaur, Fort Griswold, Harkness, and West Rock Ridge State Parks, as well as at the Heublein Tower, have made substantial contributions. In 1995, additional Friends groups started to form. These are encouraged and coordinated by a new volunteer, non-profit organization, the Friends of Connecticut State Parks, Inc. The efforts of these dedicated volunteers should be supported by the state in every way possible. However, their services should be regarded as valuable supplements to, not replacements for, taxpayer support, and they should not be exploited to provide routine services that are properly the responsibility of state government.

Recommendations for State Parks

1. The DEP should provide necessary support for innovative partnerships that help improve the parks at little cost.

These include the Friends of Connecticut State Parks and the long-term volunteer efforts of groups like the Connecticut Forest and Park Association. Early experiences with greenways in Connecticut have proved that a modest amount of organizational support given to citizen organizations will help yield highly productive results. Recognize, however, that this is not the whole solution.



State parks have suffered ever since their 1971 inclusion in the DEP.

2. The General Assembly should increase general fund support of the state park system by an amount equal to two dollars per resident

Seemingly a tiny amount, this would double taxpayer support of the parks. The Council makes this recommendation with full understanding of how the state budget cap, pressured by growing “non-discretionary” spending, has robbed legislators of the ability to spend much money on items of great importance to their constituents. Nonetheless, state parks are such highly visible symbols that the Council is confident two more dollars per resident can be found. This recommendation is for minimal operating expenses, capital needs are likely to be far greater.

3. If no progress is made in the short term, the Council will investigate the feasibility of separating the parks management function from the rest of the DEP.

The concept of a comprehensive DEP that includes environmental quality programs as well as conservation and recreation responsibilities is widely viewed as having many benefits. Nonetheless, one cannot overlook the fact that parks have suffered ever since their 1971 inclusion in the DEP. Previous Council analyses of state spending have documented this relationship.

3. Effective Programs for Clean-up and Redevelopment of Contaminated Properties

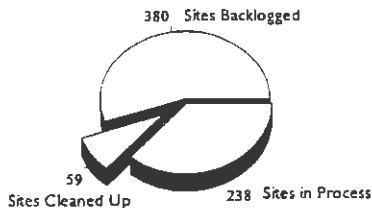
Private-sector investment in contaminated properties has been hindered by the DEP's slow, case-by-case review of clean-up plans.

The Connecticut "Transfer Act" (P.A. 85-568) requires certain commercial property owners to disclose the presence of contamination to the DEP and to accept liability for clean-up prior to transferring the property. The program was intended to identify contamination in the environment without impeding private-sector transactions, but experience has demonstrated buyers' and sellers' reluctance to consummate real estate deals without the active involvement and approval of the DEP. Without predictable numerical standards, parties had to wait for the DEP to complete its review of each case or risk exposing themselves to undetermined future liability.

The DEP and the General Assembly made major changes to the laws and regulations in the past year.

- Two laws (P.A. 95-183 and P.A. 95-190) were adopted to amend the Transfer Act. These laws were based, in part, on a proposal that was the product of government, industry, and citizen groups working together at the request of DEP Commissioner Sidney Holbrook.
- Under the new statutes, a private party will be able to hire a Licensed Environmental Professional to design and approve the clean-up of a property without waiting for the DEP's approval, at least in some cases.
- After a delay of five years, the DEP finally proposed standards and regulations for the clean-up of contaminated properties. Predictable standards are essential for investors to make decisions. They were approved by the General Assembly's Regulation Review Committee in January, 1996. Their usefulness in encouraging clean-ups will become apparent in the next year.

Contaminated Properties
Status of Sites Filed Since 1985



- The DEP is spending 30 million dollars through the Urban Sites Remedial Action Program to study and, in some cases, clean up sites that have high economic development potential in distressed communities. Funds have been used for nine sites, including four high-profile ones: Veeder Root in Hartford, Century Brass in Waterbury, Swiss bank in Stamford, and the Center for the Performing Arts (the "amphitheater") in Hartford. This is a substantial level of funding for a program begun in 1993.
- The City of Bridgeport was one of only five U.S. cities to receive a grant from the federal Environmental Protection Agency to conduct an inventory of contaminated sites (or "brownfields") to determine which ones have greatest potential for redevelopment.

If implemented fully, these changes could lead to substantial improvements in the investment climate. However, most of the new provisions cannot be fully operational until well into 1996 or later, and in the meantime the backlog of 380 sites will grow by another 30. (For comparison, 59 sites have been completely cleaned up since the Transfer Act was adopted eleven years ago.)

Recommendations for Encouraging Remediation and Redevelopment

1. **The DEP should launch an intensive effort (similar to the one used to reduce the permit backlog) to eliminate the backlog in the Property Transfer program.**

The remediation standards adopted in January, 1996 will allow companies to clean up some of these backlogged sites with the advice of a Licensed Environmental Professional and without review by the DEP. The DEP's efforts to encourage the use of LEPs is commended. However, many of the backlogged cases are certain to require individual attention.

2. The General Assembly should place high priority on funding the Urban Sites Remedial Action Program.

4. Efficient permit programs

A backlog of 3,000 permit applications hung like a cloud over the Department of Environmental Protection (DEP) in the early 1990s. The origins of the backlog can be traced to inadequate staffing and antiquated information systems. This cloud damaged the DEP's reputation, and commanded all available resources, making it difficult for the Department to improve its programs that more directly affected the quality of life in Connecticut. Permit review and issuance is a basic program that must work effectively before the DEP can fulfill its broader mission.

Recent Progress. The backlog has been reduced to 9 percent of pending applications. (In June, 1995, for example, 145 of the 1563 pending applications were classified as backlogged, meaning they had languished for at least 60 days with no action). Much of this reduction was achieved when hundreds of permit applications were made eligible for general permits. Other reductions were obtained by re-assigning enforcement and planning staff to work on permits. The DEP capped its statistical progress by redefining backlog. (Prior to the redefinition, all pending

The real test will be the speed with which individual applications are processed; 1996 will be the critical year

applications were classified as backlogged, but now only those that sit for 60 days without action are so classified)

The real test will be the speed with which individual applications are processed. To enhance and monitor that speed, the DEP is implementing a multi-million dollar **Permit Application Management System (PAMS)**. PAMS is a computerized system that assists applicants, supervisors, and the interested public by making status information available on computer screens. Other improvements include clearer application forms, central fee processing, and integration with natural resource and other data bases. Anticipated data-reporting and public-access functions are not yet fully operational. When they are, they will help bring the DEP to the twentieth century and help it gain more respect from Connecticut companies, out-of-state businesspeople, and citizen groups.

An accurate comparison of current application processing times with those of the pre-PAMS years is not possible, since the earlier data is not comprehensive. Any evaluation of PAMS' success will rely on measurements of public satisfaction, making 1996 a critical year.

Conclusion

Effective regulation, property clean-up and redevelopment, parks, the local environment: Each of these is complicated. (And more information about each can be obtained from the CEQ). The redevelopment of contaminated urban properties, for example, involves factors far beyond the remediation of chemical pollution. Urban decline and revitalization depend on the interaction of a large set of social, economic, and environmental questions. As the Council has noted in previous years, the present tax structure favors investment and commercial development in suburban locations, and this factor could be too powerful for any one environmental program to overcome. While the Council stands ready to assist in implementing all of the recommendations in this section, it must conclude with the following:

Urban vitality, economic development, and environmental quality are linked so inherently and inescapably that any effort to address one without the other two will fail the state eventually.

PART TWO

INDICATORS OF ENVIRONMENTAL TRENDS

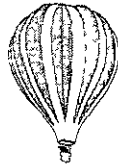
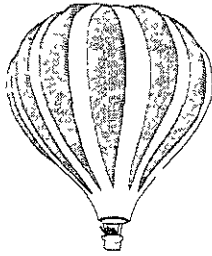
A Status Report and Forecast

These indicators are bottom-line statements of the actual condition of our air, water, land, and wildlife.

These indicators are bottom-line statements of the actual condition of our air, water, land, and wildlife. The focus is on results, rather than on government programs, budgets, enforcement action, or new laws. Each indicator includes a graph, a description of the indicator (the actual thing being measured or counted), some background and a discussion of recent trends.

Where possible, each graph illustrates progress (or lack of it) toward a specific goal or objective of the Environment 2000 Plan. Where that plan is not relevant, the Council uses goals from other state planning documents.

AIR

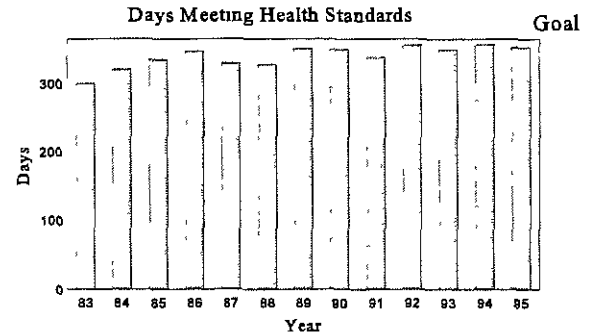


Indicator: Number of days each year that every monitoring station in the state recorded satisfactory air quality.

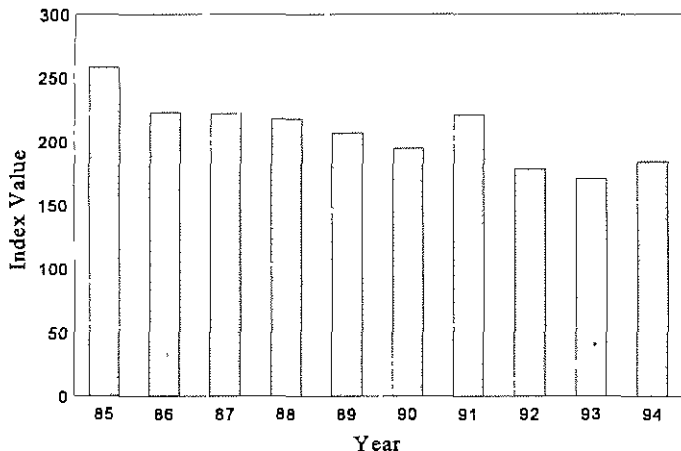
Background: "Satisfactory air quality" is defined here as air that meets or is better than the health-based ambient air quality standards for all of the following five pollutants: sulfur dioxide, lead, carbon monoxide, nitrogen oxides, and ground-level ozone. Connecticut's goal is to have air that meets health-based standards 365 days a year by the year 1999 (or, in Fairfield County, by 2007).

Recent Trends: Connecticut's air has shown continuous improvement. Violations of the health-based ambient air quality standards have been virtually eliminated for all pollutants except ground-level ozone. Ground-level ozone is created when nitrogen oxides and volatile organic compounds react in the presence of sunlight. While Connecticut's air fails to meet the standard on only a few summer days, this state is considered by the federal government to be a "serious" non-attainment area (and "severe" in Fairfield County). Automobiles remain a major source of ozone-forming emissions despite great improvements in tail-pipe standards, and Connecticut is taking many steps to reduce emissions from the transportation sector to comply with the 1990 Federal Clean Air Act.

Good Air Days



Average Air Pollution Levels



Indicator: Average level of air pollution (six major pollutants combined)



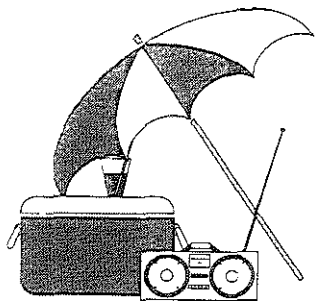
Background: Six air pollutants -- carbon monoxide, ground-level ozone, lead, particulates, nitrogen oxides, and sulfur dioxide -- are measured daily by the DEP. The level of each pollutant is expressed on a numerical scale (Pollutant Standards Index or PSI) that takes into account the levels at which each pollutant, by itself, is considered unhealthy. In this somewhat complicated indicator, the average levels of all six pollutants are added together.

Recent Trends: Progress continues. Much of the drop in total pollutants since 1984 is due to reductions in lead emissions.

SOUND AND SHORE

Indicator: Average number of days coastal municipalities closed one or more of their beaches.

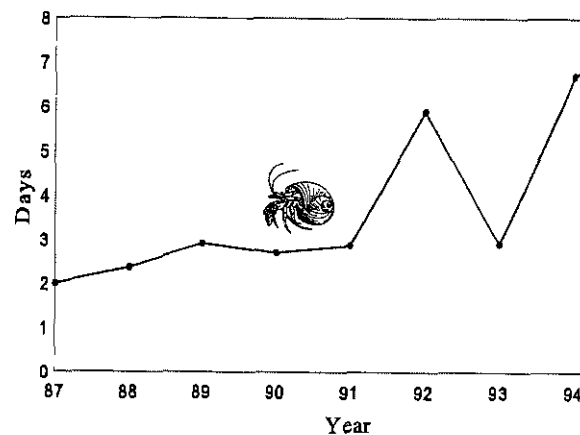
Background: Connecticut's goal is to eliminate beach closings caused by discharges of untreated or poorly treated sewage, the most common cause of elevated bacteria levels. After rain storms, overflows from combined sanitary and storm sewers are presumed to contaminate the water, and some towns close beaches automatically before the water can be tested for bacteria.



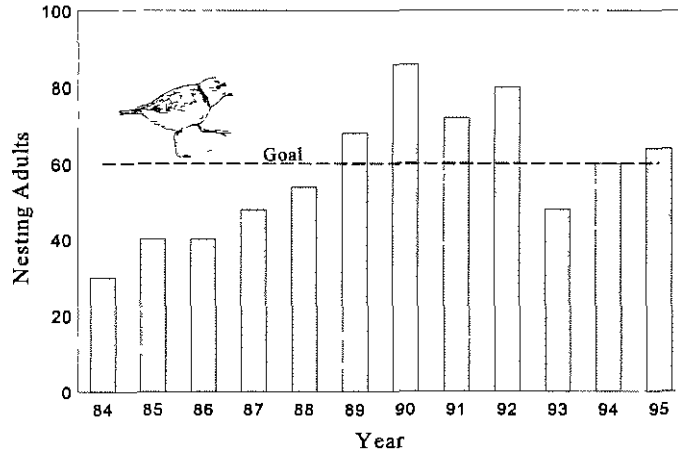
Recent Trends: Yearly variations are a product of rainfall patterns and incidents such as sewer-line ruptures. In 1995, a sewage spill in eastern Connecticut closed area beaches for as many as 63 days. On the positive side, almost three-quarters of our coastal communities had no closings at all. (Note: Data was not available from the City of Norwalk.)

Beach Closings

Ave. # of Days Towns Closed Beaches



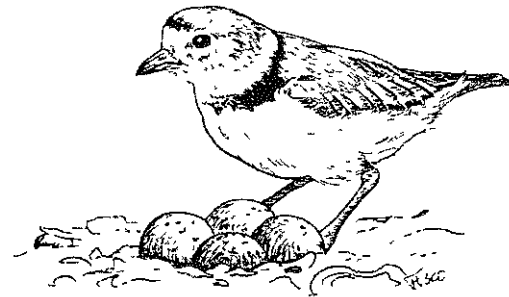
Piping Plover



Recent Trends: Since protection and monitoring efforts began in 1984, nesting success has improved, resulting in more returning adults in subsequent years. Yearly variations can occur when adult birds move from one state to another. Predators took a heavy toll in 1993. Rats and vandals reduced nesting success in 1995.

Indicator: Number of piping plovers nesting in Connecticut

Background: Piping plovers are thrush-sized shorebirds that nest on beaches, often with least terns. Nests are frequently destroyed by human intrusion, storm tides, and predators. Nesting adults are counted (and in some cases, protected) every spring by the DEP and volunteers working with The Nature Conservancy. The piping plover's status is "threatened".



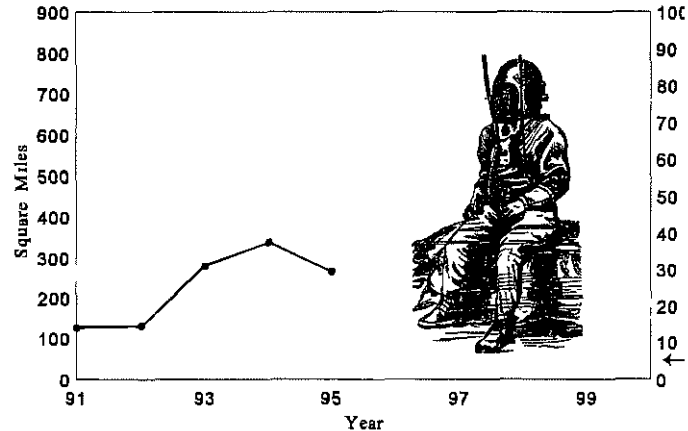
Indicator: Square miles (and percent) of the Sound that hypoxia affects each year.

Background: Hypoxia is the condition in the water when oxygen levels are too low to support desirable forms of life. (For this indicator, hypoxia is defined as less than or equal to 3 mg/l of dissolved oxygen) Hypoxia occurs when nitrogen stimulates excessive growth of aquatic plants, which die and are consumed by oxygen-using bacteria. Weather greatly influences hypoxia, making year-to-year changes less important than long-term trends. Connecticut's goal is to eliminate the effects of hypoxia.

Recent Trends: More years of data are required to assess true trends. Year-to-year fluctuations mainly reflect weather patterns. All of the hypoxia has occurred in the western two-thirds of the Sound. Connecticut and New York adopted a comprehensive management plan in 1994

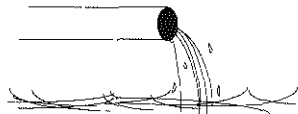
The Sound in Summer

Area Affected by Hypoxia

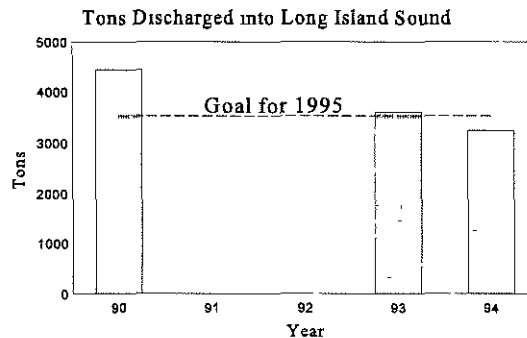


Indicator: Tons of nitrogen discharged into Long Island Sound from Connecticut's coastal sewage treatment plants and large industrial facilities

Background: Connecticut's 18 coastal sewage treatment plants from Greenwich to Branford, along with the three largest industrial nitrogen dischargers, contribute 10% of the nitrogen enrichment going to Long Island Sound (see description of hypoxia on previous page) Connecticut had an initial goal in 1990 of "no net increase", or keeping nitrogen discharges at or below 1990 levels. The mid-term goal to reduce nitrogen discharges from these sources by 20% by 1995 was already achieved by 1994. A long-term goal will be based on the scientific modeling now underway.



Nitrogen

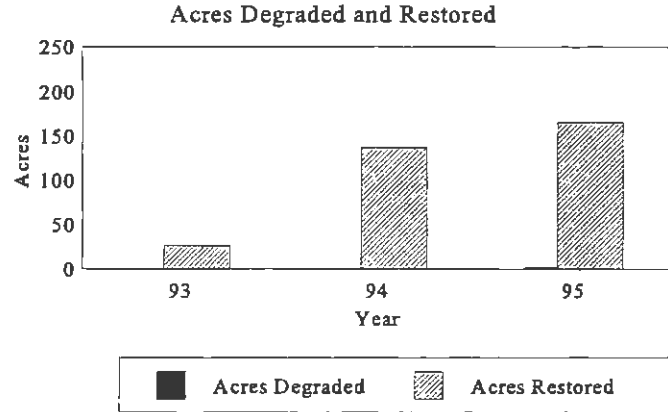


Recent Trends: Connecticut's "no net increase" policy and investments in nitrogen-removal technology have put the state on track toward its goals.

Indicator: Acres of tidal wetlands degraded and acres restored.

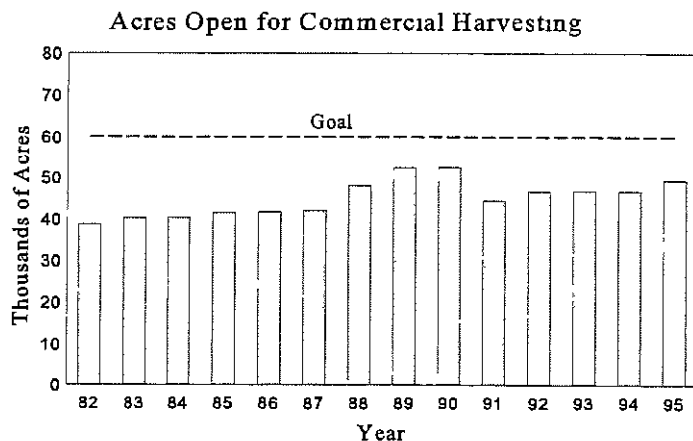
Background: Degraded acreage is the area permitted for development activity by the DEP. Restoration includes activity by the state, as well as by landowners required by the DEP to restore wetlands as conditions of their permits. Improvements might or might not add to the state's total wetlands acreage, depending on the land's classification as wetlands or non-wetlands prior to restoration. Tidal wetlands are estimated to cover 17,500 acres of Connecticut, though no precise inventory has been completed. Connecticut's goal is to produce net increases in tidal wetlands acreage and function.

Tidal Wetlands Conservation



Recent Trends: Data are available from only the past three years. In 1993 and 1994, less than *one acre* of tidal wetlands was lost to permitted development, and many degraded acres were restored. The apparent increase in degradation in 1995 is a statistical recording of damage that actually occurred more than 20 years ago. The DEP's restoration efforts continue to expand.

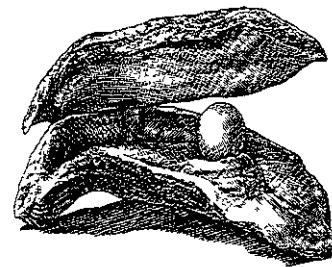
Shellfish Beds



Indicator: Acres of commercial shellfish beds that are clean enough and monitored sufficiently to allow them to be open for harvesting.

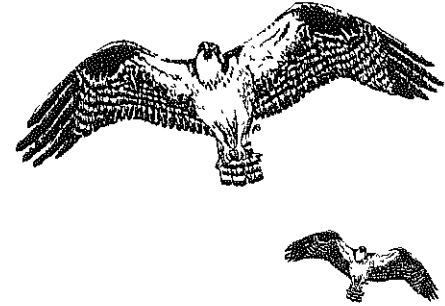
Background: Connecticut's goal is to have 60,000 acres open by the year 2000, which is far fewer acres than were open a hundred years ago. The primary impediments to opening more acres are the presence of sewage discharges and the need to conduct frequent monitoring to satisfy federal health-assurance requirements.

Recent Trends: Although the commercial value of Connecticut's harvest has risen substantially over the past decade, opening additional beds has been difficult because of long-term sewage discharge problems. In 1995, the industry expanded into some areas that previously were closed, after the waters there were upgraded. The Department of Agriculture's Aquaculture Division plans to work with coastal towns to better assess some beds that are now closed; more monitoring might show that some beds are clean enough to allow harvesting during periods of low precipitation.

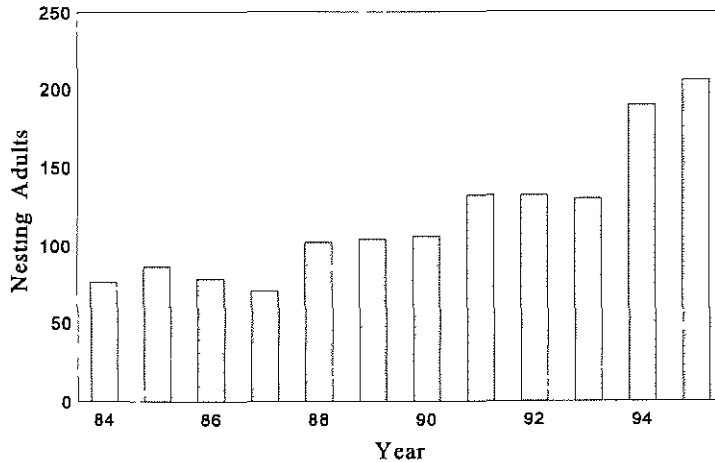


Indicator: Number of adult osprey that nest each year in Connecticut

Background: Ospreys are fish-eating birds of prey that live throughout the world. Locally, they nest mostly along the shoreline of eastern Connecticut, with potential to nest inland along rivers and large lakes. They require ample food supply, secure nesting sites, and an environment low in certain pesticides. The osprey's status in Connecticut is "special concern". Nesting adults are counted each year by the DEP.

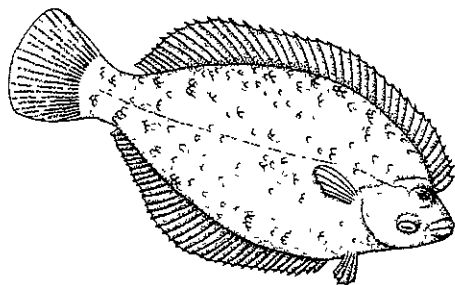


Osprey



Recent Trends: The osprey continues to rebound from its low point in the 1960s. Now, with less DDT in the food chain, and after years of cooperative ventures to erect nesting platforms along the coast, nesting success continues at a rate that will sustain positive growth.

Indicator: Average number (geometric mean) of winter flounder caught per tow.

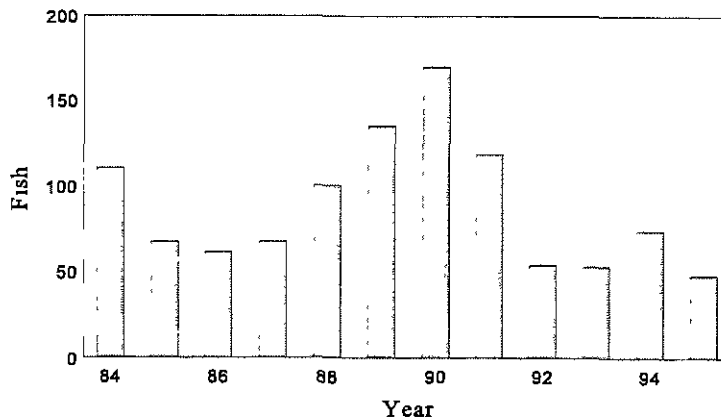


Background: The DEP samples marine fish populations every April, May, and June by towing nets from a research vessel. Winter flounder was selected as an indicator species because it is commercially important, is counted regularly, and does not migrate far beyond Connecticut's shores

Recent Trends: The downturn in winter flounder populations is attributed by the DEP to increases in harvest, caused in part by harvest restrictions on other species. Some year-to-year variation can be caused by variations in the weather. The modest 1994 increase was caused by a surge of two-year-old fish, but adult flounder were at their lowest levels ever, and fell even farther in 1995.

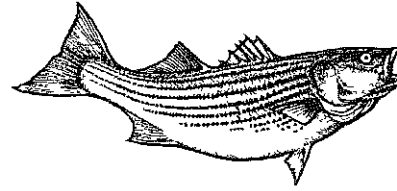
Winter Flounder

Catch Per Tow



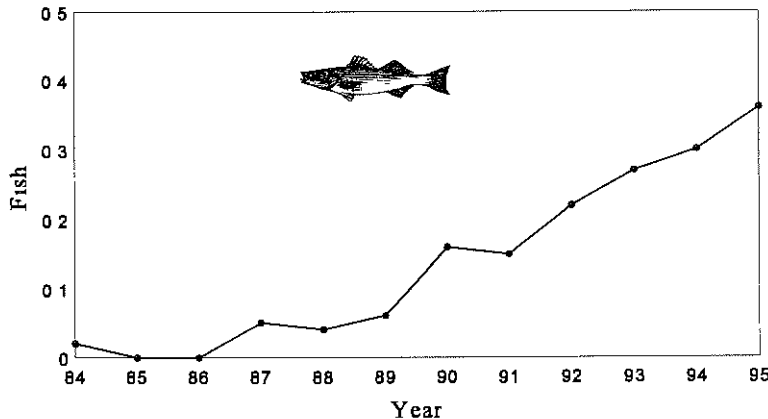
Indicator: Average number (geometric mean) of striped bass caught per tow

Background: The striped bass is a predatory fish that migrates along the eastern shore of North America and enters major rivers to spawn. It is an important game fish. Much of what happens to the striped bass population is beyond Connecticut's control,



Striped Bass

Catch Per Tow



but this state cooperates in regulating harvest. The DEP samples fish populations every April, May, and June by towing nets from a research vessel.

Recent Trends: Low population levels in the early 1980's spurred cooperation among coastal states to impose conservative restrictions on fishing. Current regulations allow an angler to keep only one striped bass of legal size (28 inches) per day. Regulations were even more restrictive in recent years, and were successful in allowing the striped bass' recovery.

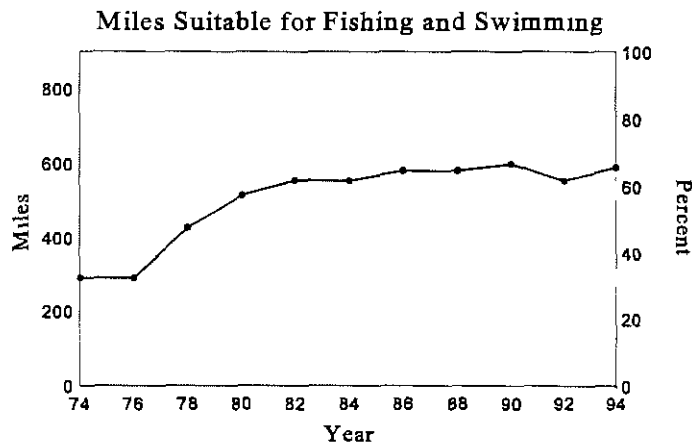
RIVERS

Indicator: Miles of major Connecticut rivers and streams classified as suitable for both fishing and swimming

Background: Of the state's 5800 miles of river and stream, about 900 miles are defined as "major" and are considered in this indicator. The definition of "major" and the water quality data are from the DEP's biennial Water Quality Report to Congress. This indicator is a good, but not perfect, measure of water quality. Some miles are clean enough for swimming and to support fish but cannot be classified as "fishable" because the fish

contain chemicals from industrial discharges that have long ceased. Also, some "fishable" miles are not considered "swimmable" because of intermittent sewage overflows. The state goal is to have all major miles fishable *and* swimmable by 2005.

Clean Rivers



Recent Trends: Progress was rapid in the 1970s, when federal grants for sewage treatment plants were available. Connecticut established its own Clean Water Fund in 1986, which has enabled some treatment plants to be upgraded and some combined sewer systems to be separated (see next indicator). The 1992 downturn was a change in definitions, not actual water quality. Recent improvements occurred on the French, Shetucket, Farmington, and Willimantic Rivers.

Indicator: Miles of river affected by "combined sewer overflows "

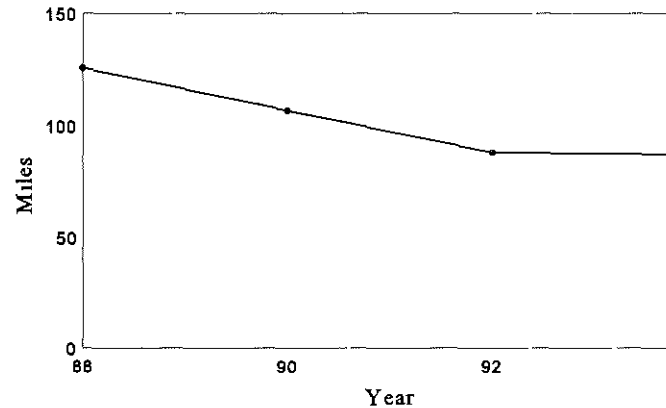
Background:

Sewer systems in fourteen Connecticut cities and towns were built with sanitary and storm sewers combined. During storms, these systems carry more water than their treatment facilities can handle, and a combination of storm water and untreated sewage overflows directly to the rivers. The number of days when raw sewage actually is in the rivers varies with the weather and can be quite low in some years. Several systems have been separated, and Connecticut's goal is to eliminate combined sewer systems.



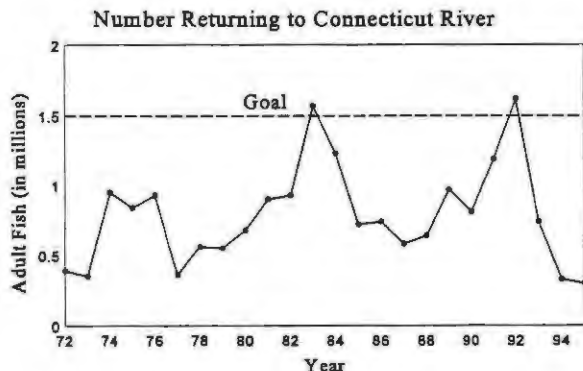
Sewage Overflows

*Miles of River Affected by Overflows



Recent Trends: Several of the combined sewer systems have been wholly or partly separated, reducing the impact of untreated sewage on rivers.

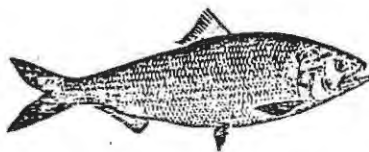
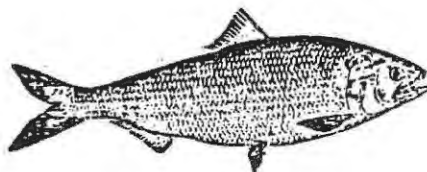
Shad



Recent Trends: The decline of shad in recent years was observed over most of its range (East Coast rivers). Scientists are uncertain of the cause.

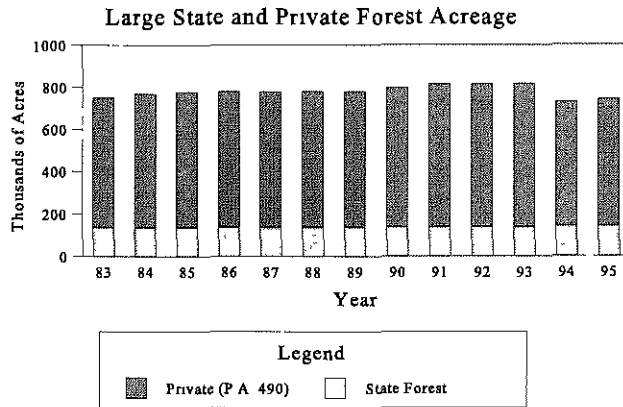
Indicator: Estimated number of American shad that return each year to the Connecticut River.

Background: The shad is an anadromous fish: born in fresh water, it lives in the ocean and returns to fresh water to spawn. Shad numbers used to be limited by dams that blocked access to spawning areas, but most major potential spawning areas in the Connecticut River and its tributaries have been made accessible with fish ladders and other improvements.



LANDSCAPE

Forest



Indicator: Combined acreage of 1) state forest and 2) privately-owned forest that is enrolled in Connecticut's preferential property tax-rate program (P A 490)

Background: Connecticut's goal is to conserve forests for multiple use, which can only be accomplished on parcels of sufficient size. Much forest is owned in small parcels which often are of limited value for wildlife, wood production, and other uses. To be eligible for P A 490, a landowner must own 25 or more acres of forest. Landowners enroll for ten years. Though imperfect, this indicator can show trends in the state's most healthy and beneficial forests, which are those in large tracts.



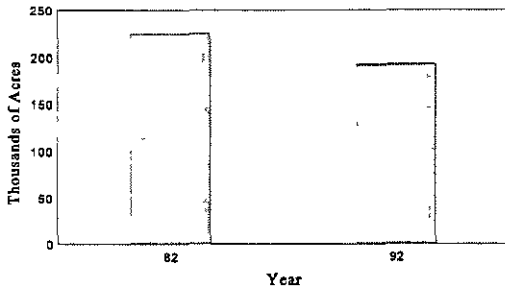
Recent Trends: The apparent upward trend in forest acreage during the 1980s is believed to be a product of property revaluations, which prompted many landowners to enroll their land in P A 490 for the first time. Surveys of forest landowners show an average age of more than sixty years, the realities of inheritance will probably result in significant break-ups of large land holdings, which might be an important cause of this indicator's negative turn in 1994.

Indicator: Acreage of agricultural land preserved by the Department of Agriculture

Background: The graph at right illustrates cumulative totals. Land is preserved when the Department purchases the development rights to farmland (from volunteer sellers only), which keeps the land in private ownership with strict restrictions on future development

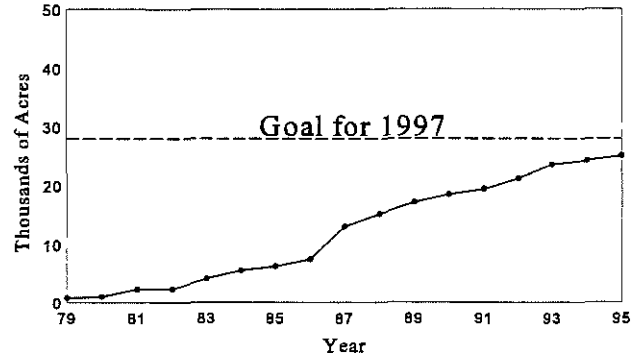
Cropland

Total Acres in Production



Farmland

Farmland Preserved by CT D O A



Recent Trends: The State of Connecticut has continued to provide funds for purchasing development rights during the recent recession, which itself lowered property values and gave the state more acres for its dollars. However, as the graph at left reflects, economic pressures continue to drive more acreage out of production than is preserved

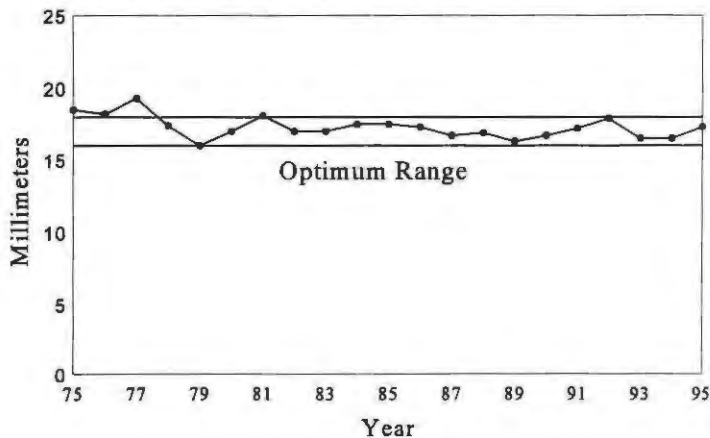
Indicator: Average diameter of antlers on yearling deer (i.e. deer one to two years old.)

Background: Healthy, robust young deer have thicker antlers than those which receive less nourishment. Antler beam data reflect the relative health of the deer herd as well as the condition of their habitat. Since deer share woodland and edge habitats with many wildlife species, this indicator is doubly useful. Connecticut's goal is to maintain a statewide average of at least 16-18 millimeters, and to let the average in no region of the state fall below 16 millimeters.



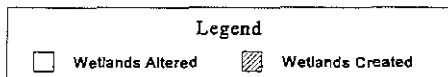
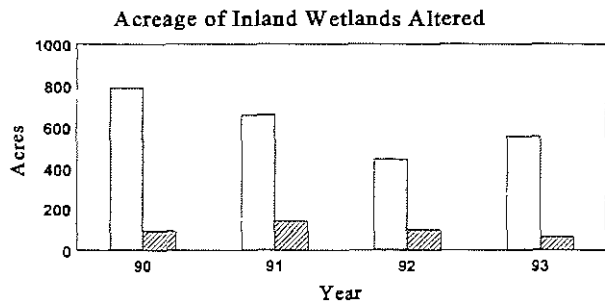
White-Tailed Deer

Ave. Diameter of Yearling Antler Beams



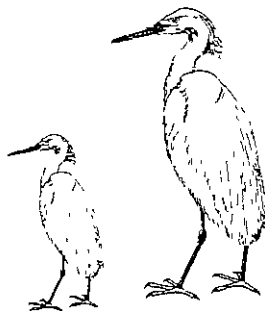
Recent Trends: Connecticut's deer population appears to stay within the targeted range. The recent increase in antler beam diameter is due primarily to plentiful acorn crops in the last two years.

Inland Wetlands Loss



Indicator: Acres of inland wetlands altered by development activity permitted by the DEP and 169 municipal wetlands agencies

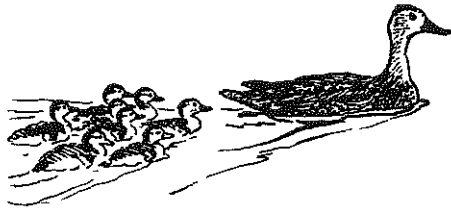
Background: The graph shows the acres altered and the number of those acres replaced by human-made wetlands. No attempt is made here to evaluate the success of the created wetlands or their value relative to the natural wetlands altered. There is no goal for wetland loss, inland wetlands are estimated to cover about 450,000 acres, or about 15% of Connecticut's surface.



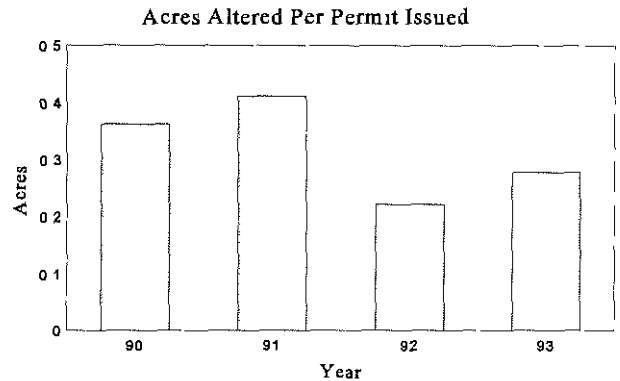
Recent Trends: Some of the decrease in wetlands loss since 1990 is related to the decline in applications received (which is why the following indicator is also included) Data for the last two years have not been tabulated by the DEP

Indicator: *Average* area of inland wetlands affected by each permit issued by the DEP and the 169 municipal inland wetlands agencies.

Background: This data gives some indication of the relative strictness or permissiveness of these agencies from year to year, regardless of the number of permits sought

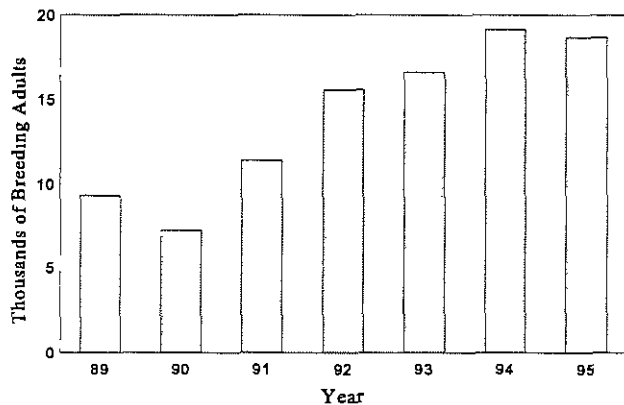


Inland Wetlands Conservation



Recent Trends: Averaging less than one-third of an acre lost with each permit issued, the DEP and municipalities have apparently become more protective of wetlands since 1990. Data for the last two years have not been tabulated by the DEP.

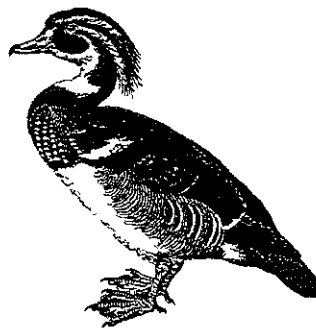
Wood Duck



Indicator: Estimated number of adult wood ducks that nest each year in Connecticut.

Background: Wood ducks are medium-sized fowl that nest in hollow trees and human-made boxes near fresh water throughout inland Connecticut. They require relative seclusion, unpolluted inland wetland habitat, and protection from over-hunting (which almost caused the bird's extinction earlier this century). This is a good indicator because many other species share similar habitat requirements. Population estimates are made annually by the DEP.

Recent Trends: Recent increases in wood duck numbers are due to favorable weather conditions and to the placement of artificial nesting boxes near ponds and wetlands. Many citizens have assisted in this effort.



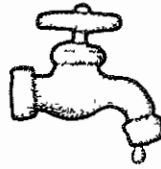
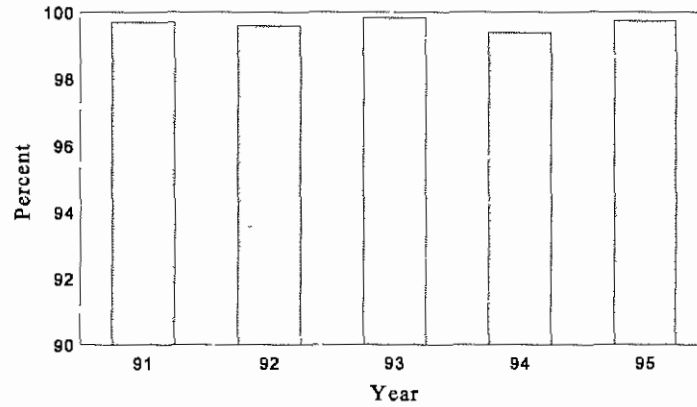
Indicator: Percentage of public water being delivered that meets the standards

Background: Each public water utility reports water quality monthly. This indicator shows the percentage of monthly reports that show full compliance, after weighting reports to account for the number of people each company serves

Recent Trends: Though problems persist, they tend to occur more frequently with small systems. Such problems do not greatly affect this indicator, which is intended to take into account the number of people each system serves

Drinking Water

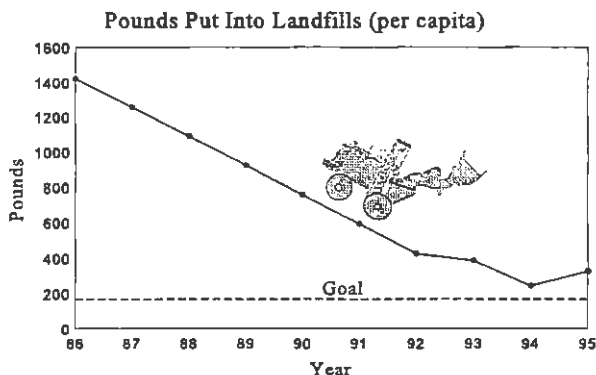
% of Public Water Meeting Standard



DAILY LIFE

These last five indicators do not show trends in the condition of Connecticut's environment. Rather, they report trends in activities of Connecticut residents which can be expected to affect the environment.

Garbage Burial



Indicator: Average resident's share of municipal solid waste that gets buried in landfills within Connecticut.

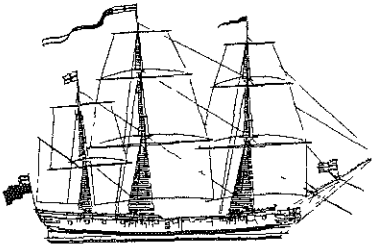
Background: Disposal of municipal solid waste by burial in landfills is the least desirable management option; it ranks behind recycling, source reduction, and resource recovery (i.e., incineration for energy recovery). This indicator charts progress toward the goal of reducing reliance on landfills, which has been the goal of state solid waste policy since the 1970s. Connecticut's plan calls for reducing the average resident's landfill contribution to about 170 pounds per year.

Recent Trends: Since 1986, five resource recovery plants have begun operation, collection of recyclables has zoomed to 23% of municipal waste, and some consumers have altered buying habits. These factors allowed dozens of landfills to close as they became full or as federal regulations prohibited their continued operation.

Indicator: Percentage of municipal solid waste collected for recycling

Background: The General Assembly established a goal of reducing and recycling 40% of Connecticut's municipal solid waste stream by the year 2000, the DEP has calculated that this would require 33% of the waste to be recycled

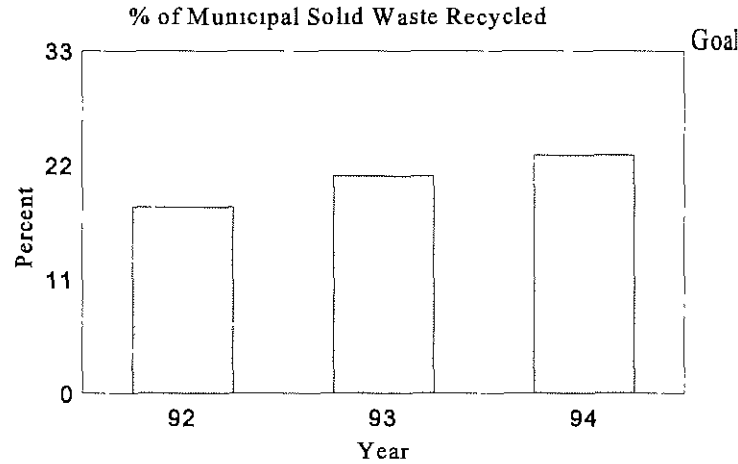
Recent Trends: The statewide average continues to increase. Some municipalities exceed 25%. Market demand for some recyclables increased drastically in 1994, and should help support further progress.



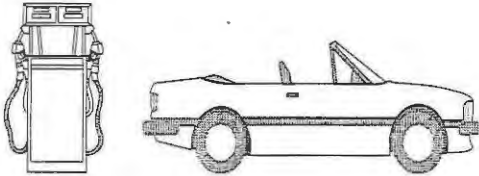
Recycling Technology at its Best!

The tall ship *HMS Rose*, also featured on the cover, has its 17,000 square feet of sails made from 100% recycled polyester, a material produced from plastic car fenders and more than 126,000 plastic bottles. *Rose* is home-ported in Bridgeport, Connecticut.

Recycling



Indicator: Number of miles the average Connecticut resident drives a vehicle every day.

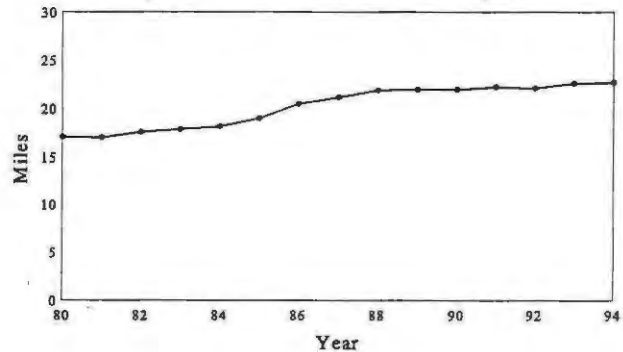


Background: Driving a car is probably the most environmentally damaging activity a Connecticut resident will engage in. Trucks and the increasingly-popular sport utility vehicle cause even greater damages. Impacts are direct (air pollution, oil leakage, etc.) and indirect (stimulating demand for new roads). DOT estimates total miles driven each year in Connecticut.

Recent Trends: Each year, the average Connecticut resident drives more miles than he or she did the previous year. The reasons are complex, and include the fact that most new development is accessible only by car.

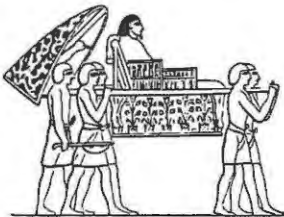
Driving Our Cars

Daily Vehicle Miles Traveled Per Capita



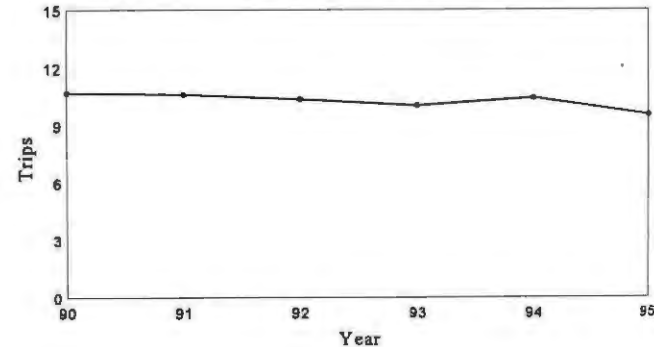
Indicator: Number of local bus trips taken by the average Connecticut resident during a year.

Background: Riding a bus is just one alternative to driving a car. Ridership data are collected by the DOT.



Taking the Bus

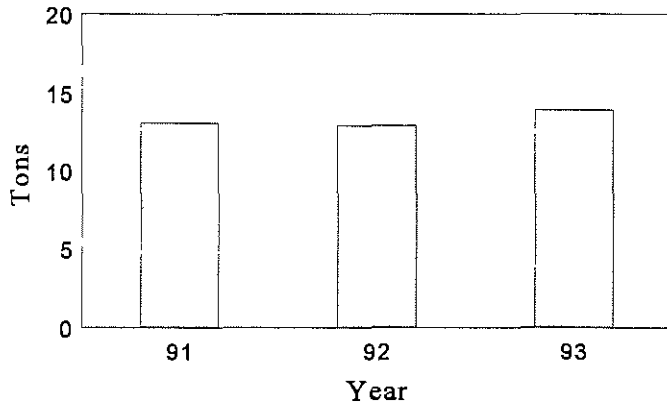
Per Capita Bus Trips



Recent Trends: Mass transit has not been successful in displacing the single-occupant vehicle which, though wasteful and damaging to the environment, appears to have deep historical roots (see above). The year 1994 saw the first increase in bus ridership in several years. Perhaps it was the product of employers' efforts to reduce driving by employees. The general trend still appears to be a slow descent, as new destinations continue to be developed in places that are accessible only by automobiles, away from transit lines.

Tons of CO₂ Emitted

Per Capita



Indicator: Average Connecticut resident's contribution of carbon dioxide (CO₂) to the atmosphere, from all types of fuel combustion

Background: Carbon dioxide is added to the atmosphere primarily through the burning of fossil fuels. These fuels are used in manufacturing, electricity generation, transportation, and the heating of buildings. Carbon dioxide, along with other gases, may play an important role in global warming, which could contribute to a rise in sea level over time.

Recent Trends: The goal for CO₂ emissions is the 1990 level, which has not been calculated. In 1992, use of residual oil by power utilities decreased. However, progress was reversed in 1993 when oil and coal combustion increased.



FORECAST

Some additional issues the Council will be watching and working on in 1996

Enforcement: Some traditional measures of DEP enforcement activity, such as the number of cases referred to the Attorney General, are down considerably from 1990 levels. However, these may not be useful measures of the DEP's effectiveness in enforcing the law, nor are they measures of compliance, the goal of enforcement. The Council on Environmental Quality intends to work with interested parties in 1996 in determining what *are* good measures of enforcement and compliance, and monitor progress in those measures in subsequent years.

Supplemental Environmental Projects (SEPs) are beneficial projects that violators fund as part of their settlements with the DEP. Examples include investments in advanced pollution control or prevention equipment, donations to community environmental projects, and flood plain mapping. The DEP is working on improved guidelines for SEPs, and the Council looks forward to reviewing the Department's progress in 1996.

The urban environment: Recent declines in cities' grand lists, such as Hartford's drop to pre-1990 levels, could have serious consequences for the environment. The Council will continue to work with interested citizens on matters pertaining to property tax structure, public spaces, and funding for environmental protection.

Connecticut and the rest of the world: Many nations and international business organizations are increasingly interested in *sustainable development* as an important ingredient of long-term prosperity. A set of international environmental standards, ISO 14000, promises to give marketing advantages to those companies able to comply. How will Connecticut's own regulations compare with these international standards and with those of other states? How can one state's environmental policies be applied proactively to improve economic development *and* the environment? The CEQ is interested in finding these answers.

And the question no one can answer: Will he be back in '96?



C.E.Q. MEMBERS

Ronald J. Thomas (Chairman). Resident of Darien Attorney with the law firm of Buckley, Treacy, Schaffel in Stamford and New York City (NYC) Special Master, U.S. District Court of Connecticut. Co-founder and co-chairman, state Federalist Society, Lawyers Division Co-founder, Connecticut Bar Association's Corporate Counsel Section. Past President, The Corporate Bar Association. Founder and President, American Corporate Counsel Assn., NYC, and member of national board of directors. Founder and Chairman, Republican National Lawyers Assn., CT Admitted to Bar, CT and NY. Member, Darien Environmental Protection Commission

Daniel J. Alfieri. Resident of Hebron Senior Associate, Environmental Risk Limited Member, Hebron Board of Education. Former Chair, Hebron Public Safety Committee. Member and Chair, Hebron Republican Town Committee. Member, American Littoral Society, Association for Gravestone Studies, CT Business and Industry Association Environmental Policies Council

Stephen A. Bolton. Resident of Andover Project Engineer, Pratt & Whitney Aircraft. Graduate studies in Operations Research at the University of Hartford. Member, Andover Conservation Commission.

Stephen H. Broderick. Resident of Eastford. Extension Forester, UConn Cooperative Extension System. Co-founder and director, Eastern CT Forest Landowners' Association. Director, Southern New England Forest Consortium, Inc. Member, CT Urban Forest Council, CT Forest Stewardship Committee. Past Chair, CT Forest Legacy Program Committee, CT Tree Farm Program, Northeast Forest Resources Extension Council, Brooklyn Conservation Commission

Marian R. Chertow Resident of New Haven. Director, Partnership for Environmental Management, Yale School of Forestry and Environmental Studies consisting of two areas: the Industrial Environmental Management Program and the Program on Solid Waste Policy Editorial Board, *BioCycle* Magazine and *Compost Science and Utilization* Advisory Committee, Connecticut Environmental Industry Initiative Board of Directors, Technology for Connecticut, Inc., Tax-Exempt Proceeds Fund, Shubert Theater, National Urban Fellows, Inc.

Roberta Fusari. (CEQ member until 10/95.) Resident of the Moodus section of East Haddam. Director, Government Affairs for the New England Cable Television Association. Former clerk, Environment Committee of the Connecticut General Assembly. Former member, East Haddam Economic Development Committee, Stonington Planning and Zoning Board of Appeals. Graduate of the University of Connecticut.

Donal C. O'Brien, Jr. Resident of New Canaan. Partner in the law firm of Milbank, Tweed, Hadley & McCloy. Former member, Connecticut Council on Environmental Quality (1971-1976). Former member, Connecticut Fish and Game Commission (1971-1972). Chairman, Board of Directors, National Audubon Society. Board of Directors, Waterfowl Research Foundation and American Bird Conservancy. Chairman, Atlantic Salmon Federation. Former Vice-Chairman, Board of Governors, The Nature Conservancy. Former President, International Council for Bird Preservation and former Chairman of American Bird Conservancy. Former Director/Trustee, Delta Waterfowl Foundation, Connecticut Waterfowlers Association and Theodore Gordon Flyfishers.

Richard A. Sherman. Resident of Mansfield Center. Architectural designer and construction manager. President, Mansfield Commonground. Charter Member, Transit Alliance of Eastern Connecticut. Chairman, Mansfield Transportation Advisory Commission. Member, Mansfield Planning and Zoning Commission Design Review Panel, Kirby Mill Advisory Commission. Host, "A Distant Shore", WHUS Radio.

ACKNOWLEDGMENTS

The Council appreciates the work of its staff -- Karl Wagener (Executive Director) and Melissa Ryan (Environmental Analyst) -- in drafting this report for review by the Council and preparing the final version for publication. The Council also appreciates the assistance of the many people in the Departments of Environmental Protection, Agriculture, Transportation, and Public Health and Addiction Services who provided data. Special thanks to Paul Fusco for the use of his plover drawings, and to the HMS Rose Foundation, Inc. for the use of the cover drawing. The Council especially thanks the many citizens, businesses, and organizations that offered information and viewpoints to the Council throughout the year.

COUNCIL ON ENVIRONMENTAL QUALITY

The duties of the Council on Environmental Quality are described in Sections 22a-11 through 22a-13 of the Connecticut General Statutes. The Council is a nine-member board that works independently of the Department of Environmental Protection (except for administrative functions). The Chairman and four other members are appointed by the Governor, two members are appointed by the President Pro Tempore of the Senate and two by the Speaker of the House. The Council's primary functions include

- 1) Submittal to the Governor of an annual report on the status of Connecticut's environment, including progress toward goals of the "Environment 2000" statewide environmental plan, with recommendations for remedying deficiencies of state programs,
- 2) Review of state agencies' construction projects, and
- 3) Investigation of citizens' complaints and allegations of violations of environmental laws.

In addition, under the Connecticut Environmental Policy Act and its attendant regulations, the Council on Environmental Quality reviews Environmental Impact Evaluations that state agencies develop for major projects, the Council must be consulted when disputes arise regarding any agency's finding that its project will not cause significant environmental impact.

COUNCIL MEMBERS --- 1995

Ronald J. Thomas (Chairman)
Darien

Daniel J. Alfieri
Amston

Stephen Bolton
Andover

Stephen H. Broderick
Eastford

Marian R. Chertow
New Haven

Roberta Fusari (through 10/95)
East Haddam

Donal C. O'Brien, Jr.
New Canaan

Richard Sherman
Mansfield Center

Karl J. Wagener
Executive Director

