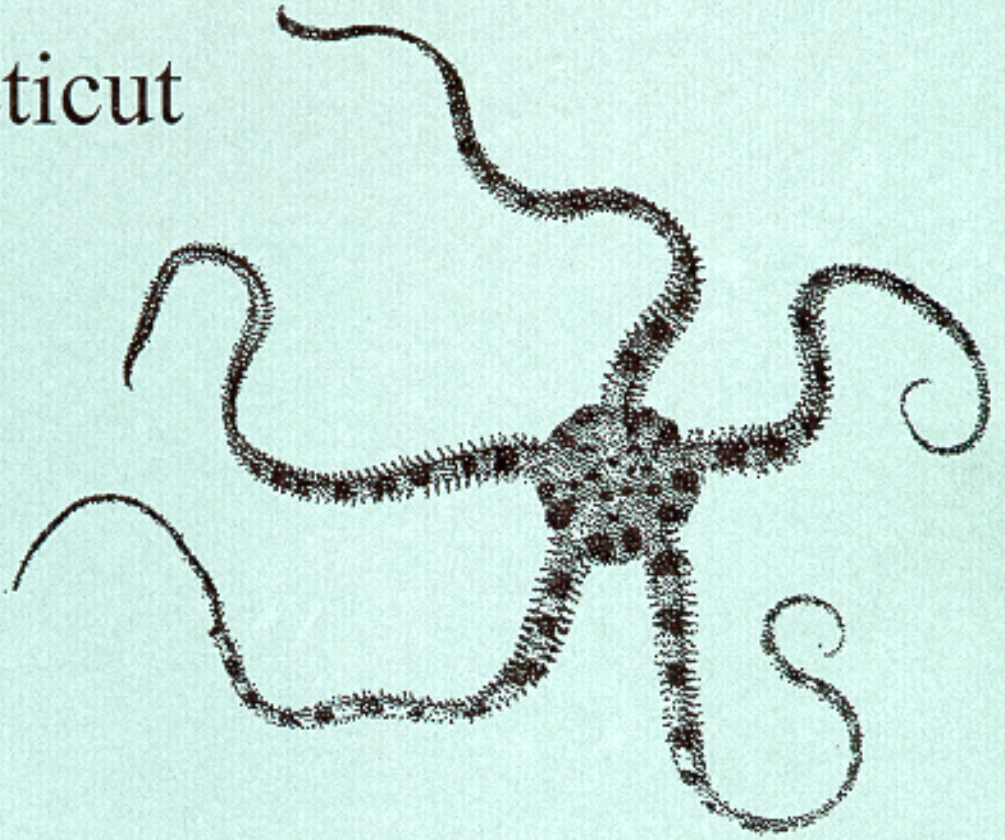
Environmental Quality in Connecticut



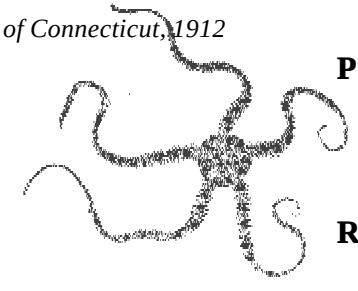
THE 1999 ANNUAL REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY

On the Cover

Daisy Brittlestar
(*Ophiopholis aculeata*)

"This is without question the most beautiful and most conspicuous of all our native ophiurans [a genus of starfish]…and occurs only in the deeper areas toward the eastern portion of Long Island Sound."

Echinoderms of Connecticut, 1912



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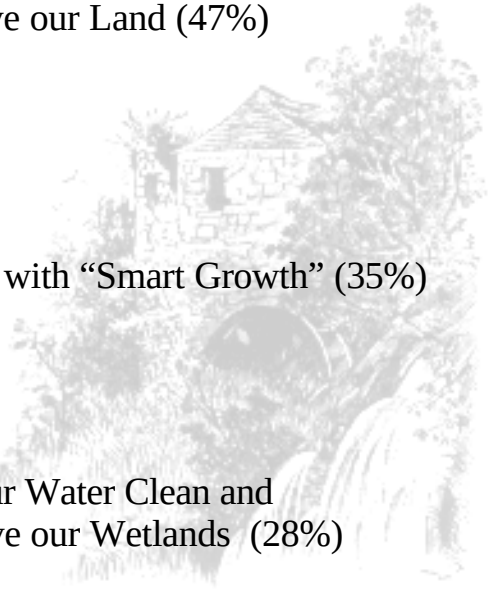
PART I

People Are Talking

"If you could comment on the state's progress
in protecting your environment,
what would you say?"

From Darien to Putnam, people have answered this question with candor. In 1999, the Council on Environmental Quality (CEQ) concluded its three-year "Tour of the Towns": a series of public forums where people – individuals, municipal and regional officials, and organization spokespersons – told the Council what they thought the state's environmental priorities should be. If issues were candidates, the Council could declare three big winners:



#1 Conserve our Land (47%)

Forty-seven percent of speakers applauded the state's new open space initiative, and people favored even more conservation of open space as well as agricultural land (see page 9).

#2 Help us with "Smart Growth" (35%)

Over one-third of the citizens argued that Connecticut needs to develop in a more attractive and functional way, emphasizing:

- better-designed development
- greater re-use of contaminated lands ("brownfields") in cities and towns
- conservation of rural landscapes
- containment of sprawl, and less traffic congestion
- more training for planning and zoning commissions

#3 Keep our Water Clean and Conserve our Wetlands (28%)

More than one-fourth of speakers wanted more attention paid to protecting our rivers, wetlands and drinking water.

Other environmental challenges were mentioned at the forums:

- ❖ Improve our public parks, forests, and greenways
- ❖ Pay close attention to the siting of new power plants, and reduce the need for new power plants by developing sustainable sources of energy (see page 7)
- ❖ Prevent pesticides from entering our drinking water

Detailed summaries of the 1999 forums held in Middlefield and Putnam can be found in Part IV of this report (page 40). Summaries of earlier forums can be found in Council reports of the last two years.

CEQ's
"Tour of the Towns"
1996-1999

Darien
Norwich
New Haven
Litchfield
Middlefield
Putnam

Some Unique Suggestions Raised at the Forums

Fiber Optic Revenue For Greenways

When a company pays the state for the right to place fiber optic cable in abandoned rail rights-of-way, the state should dedicate the revenue to greenway improvements. Great idea. Upon investigation, the Council found a related problem: cable companies can elect to use state *road* rights-of-way for no fee at all!

Pay Towns For Being "Green"

If the State Plan of Conservation and Development envisions a rural town staying rural, then the state should find a way to make it financially unnecessary for a rural town to attract industrial and commercial development that it does not truly need.

Update the Connecticut Environmental Policy Act (CEPA)

The CEPA regulations, which require state agencies to evaluate the impacts of proposed actions, have not been updated in twenty years, and do not seem to fit well with the newer structure of public-private partnerships.

PART II

Progress Reports

Eat. Drink. Be Wary?

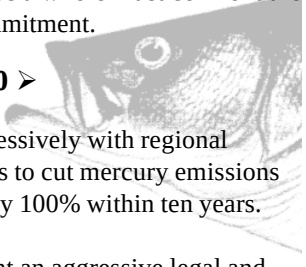
Residents spoke to the Council about unwanted exposures to toxic contaminants. The Council's investigations led to publication of a special report, "Eat. Drink. Be Wary?" which concluded that tens of thousands of Connecticut residents are drinking, eating, or breathing small quantities of chemical contaminants every day. Most of these exposures could be prevented, but people usually do not know where they are likely to encounter pesticides, toxic metals, and other contaminants. The Council examined five examples where residents' exposure to toxic contaminants is largely avoidable, and where the State of Connecticut can and should do more to prevent such exposures.

Mercury

Mercury enters the air when coal, garbage, medical waste, or sewage sludge is burned. It falls on land and makes its way into every stream and lake. Ultimately, it enters the food chain, posing health threats to the 160,000 Connecticut citizens who eat fish from local waterways. High levels of mercury can affect prenatal development.

The state's attempts to notify the public about mercury have fallen significantly short. More than 50% of Connecticut residents are unaware that state agencies have issued advisories about local fish consumption.

The Department of Environmental Protection (DEP) has been working with regional organizations to reduce mercury in the environment, but the long-term prognosis is not clear. Mercury poses a serious environmental health problem, and the state as a whole must confront the threat with a more serious commitment.



➢ Action for 2000 ➢

◆ The DEP should work aggressively with regional pollution control organizations to cut mercury emissions by 50% in five years and nearly 100% within ten years.

◆ Connecticut must implement an aggressive legal and Congressional strategy to force reductions in mercury emissions in coal-burning states to our west.

◆ The DEP and Department of Public Health (DPH) should design and implement a long-term campaign for informing the public about mercury and other contaminants in the aquatic food chain.

MTBE

MTBE (methyl-tertiary-butyl-ether) is a chemical added to gasoline to improve performance, increase oxygen content, and yield less air pollution. It enters the ground water from leaking underground fuel tanks and piping, fuel spills, and the exhaust of incomplete combustion in engines.

The U.S. Geological Survey found MTBE to be the most common organic chemical in wells in the Housatonic, Connecticut, and Thames River Basins. One quarter of the wells tested contained MTBE. Most of the detections were in shallow wells within a quarter mile of gas stations. However, nearly a third of the shallow wells and a striking 86% of deeper water supply wells with MTBE were not near gas stations or storage tanks.

In 2000, the General Assembly was considering several bills that would ban the use of MTBE in Connecticut, and the U.S. Environmental Protection Agency was recommending reductions in MTBE use.

➢ Action for 2000 ➢

◆ The General Assembly should adopt a law prohibiting MTBE that would take effect when three or more other northeastern states with sizable populations adopt comparable laws.

Drilling Wells in Polluted Water

In 2000, the DEP will publish long-awaited draft regulations that should help to prevent the development of high-risk pollution sources in areas of significant ground water resources. Continued delay would be a serious threat to the health of Connecticut=s citizenry.

There is also a converse of the prevention problem: people drilling new wells into ground water that is already contaminated. The DEP has data for almost all of the old landfills, gas stations, storage tanks, and other likely sources of contamination. These data could alert landowners and local health directors to potential problems, but for various reasons the information does not always reach people before they construct new dwellings in the affected areas.

Council research uncovered four cases in recent years where multiple new homes were built over contaminated ground water. Just in the past three years, however, the DEP and the DPH have taken important steps that could help prevent future cases. The DEP has mapped known sources of contamination and presented these maps to

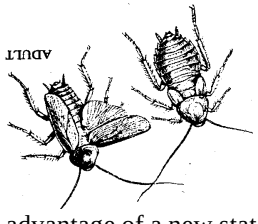
local officials in western Connecticut. In late 1999, the DEP was extending this work into the Thames River basin. The DEP faces a whole new opportunity: putting up-to-date information on the world wide web for immediate use by everyone who needs it.

➢ Action for 2000 ➢

◆ State agencies should adopt a goal of preventing new wells in contaminated areas.

◆ The DEP should be equipped to use currently available technology to manage data on sources of contamination.

◆ The DEP should adopt effective aquifer protection regulations in 2000.



Pesticides in Schools

By taking advantage of a new state law that goes into effect in July 2000, state agencies have a unique opportunity to foster the reduction of pesticide use in schools. The new law requires schools to use only certified professional pesticide applicators, and prohibits pesticide application while school is in session.

Integrated Pest Management (IPM) involves a combination of strategies to reduce pest populations while also reducing the need for pesticide applications. As part of a DEP-coordinated pilot project, pesticide use in one school was reduced by an impressive 98%. IPM is being implemented by a few other schools, and the DEP has assisted by preparing model plans and bid specifications. However, if many years pass before IPM is implemented statewide, many thousand pounds of pesticides will be applied needlessly in schools.

➢ Action for 2000 ➢

◆ The DEP should adopt a goal of having 100% of public schools practicing IPM by 2005.

◆ The DEP should be given the resources to hire additional staff to work with schools , training them in IPM, and helping them comply with the 1999 legislation.

Pesticides in Private Drinking Water Wells

About 500,000 Connecticut residents get their drinking water from private wells. Very few of them have their water tested for pesticide contamination, as pesticides are not among the contaminants for which state agencies require or recommend testing routinely.

In 1999, a Connecticut nonprofit organization, Environment and Human Health, Inc., tested drinking water wells in a residential suburban community. Eleven percent (or 6) of the 53 homes were found to have pesticides in their wells. Five of the six wells had more than one type of pesticide. There is limited research on the interactions of these chemicals with each other, or on their compounded effects on human health. Pesticides were found to have traveled from the location where they were applied, contaminating the wells of homeowners who did not even use them.

➢ Action for 2000 ➢

◆ The DEP should conduct additional studies to determine the magnitude of pesticide contamination in wells.

◆ The UConn Cooperative Extension System should receive the resources necessary to launch a public education campaign that informs homeowners about the ways pesticides enter drinking water, and how many of these pesticides could be eliminated from everyday use.

◆ The DPH should create effective campaigns to inform the public of widespread chemical contamination and the wisdom of testing well water.

Copies of the report, "Eat. Drink. Be Wary?" are available from the CEQ office.

Connecticut: Light Years Ahead?

Governor John Rowland and the General Assembly adopted the most important environmental legislation of the last decade when they restructured Connecticut's electric utility market in 1998 (P.A. 98-28). At the time, the Union of Concerned Scientists commended the law's exemplary provisions for protecting the environment.

The potential environmental benefits of restructuring are not inevitable, and at best will not be realized for many years. Nonetheless, in the spate of economic and regulatory activity that was stimulated by restructuring, the Council finds three very positive developments:

The replacement of monopolies with competitive markets has created opportunities for companies to sell environmentally superior "green" electricity. At least one non-profit corporation, the Connecticut Energy Cooperative, Inc., has been created to sell "green" electricity and energy-conserving products to its members. (Green electricity will be certified by an independent organization as having been derived from sustainable, low-polluting sources.) Prior to restructuring, the importation and sale of wind-generated electricity and other sustainable power sources looked to be decades away.

Connecticut's existing utilities have been selling their generating plants, and several parties expressed their concern to the Council that the restructuring law could result in utilities selling much of their undeveloped land as well. Many of the parcels are waterfront lands that are critical open spaces in their communities. In 1999, the Department of Public Utility Control approved Northeast Utilities' plan to retain some land and transfer conservation interests to the DEP, a decision that was in the long-term public interest of Connecticut's environment.

Before the deregulation law was even signed, investors were rushing into Connecticut to develop new gas-fueled power plants. More than a dozen have been proposed, generally where gas pipelines intersect major power lines. These locations do not always coincide with an available water source. Some of these plants have been designed to consume several million gallons of water per day, which their investors proposed to buy from water utilities. The Council is pleased to report that the Connecticut Siting Council, in approving the first six plants, has generally discouraged the use of potable water for cooling.

Problems Ahead

If all of the proposed power plants were to be approved and constructed, Connecticut would have considerably more electric-generating capacity than it needs. Though gas-fueled plants are more efficient and produce less air pollution than older oil-fired and coal-fired plants, they still have environmental consequences. Probably, some of the plants will not be built. However,

one factor that could lead to excessive building of new power plants is a growth in electricity consumption. The Connecticut Siting Council predicts a 10 percent increase in the average Connecticut resident's consumption of electricity by 2015 because of greater use of electric appliances. This prediction illustrates the inadequacy of current and projected electricity conservation programs. With rapid advances in the efficiency of new appliances, and the extent to which electricity is still wasted on inefficient buildings, lighting, and appliances, Connecticut should be able to *reduce* its per capita electricity consumption and avoid the need for some of the proposed power plants.

➢ Action for 2000 ➢

◆ The General Assembly should establish a goal for statewide per capita electricity consumption, which would decline from 2002 forward. Specifically, the goal should call for improving the ratio of energy consumption to personal income by at least 15 percent by 2010.

◆ The General Assembly should do more to help make Connecticut the Fuel Cell State where skilled workers in modern factories manufacture these clean sources of electricity.

Specifically, the State of Connecticut should power some of its high-profile buildings with fuel cells, exempt fuel cells from siting regulations, authorize state agencies to pay a price preference for "Green Power," and award double "credit" toward renewable energy requirements to fuel cells that consume methane from landfills. Fuel cells, which produce electricity with minimal emissions, are a huge growth industry with some of the world's major manufacturers based in Connecticut.

◆ The DPUC should maintain its broad vision of public interests, so that utilities are not required to sell undeveloped land.

◆ The Connecticut Siting Council should continue to scrutinize the effect of its decisions on water resources.

◆ Tell your friends to buy certified "green" electricity.

A Record Pace for Open Space

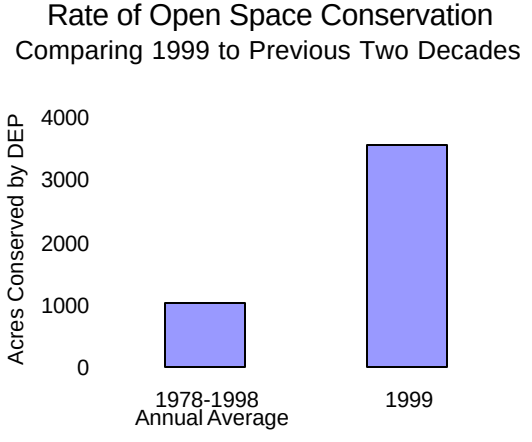
The Department of Environmental Protection's efforts to buy land used to be shackled
by bureaucratic redundancy and uncertainty.
In 1998, Connecticut revived its land protection programs.
In 1999, it set a new conservation record.

There are four reasons for the recent unparalleled success:

1. Clear targets – In 1997, the General Assembly adopted a goal for the network of state-owned lands: 10% of Connecticut's total land area. In 1998, Governor John Rowland expanded the vision to include all open space, including land owned by municipalities, nonprofit organizations, and water utilities; that goal is to set aside 21% of the state's landscape by 2023. In turn, the legislature put that broader 21% goal into law (P.A. 99-235). The Council notes, however, that the DEP still has not completed its required comprehensive plan for guiding future land conservation.

2. Less red tape – Since 1998, the DEP has been receiving its land acquisition funds in semi-annual allotments. Prior to that, each acquisition had to be approved by the Bond Commission after the DEP completed its own multi-stage approval process. The procedure often took so long that frustrated landowners cancelled prospective sales to the state.

3. Constant financial support – The recent substantial and steady budget authorizations for open space have allowed the DEP and landowners alike to negotiate confidently with the knowledge that money would be available at the closing of the sale. Previously, the DEP never knew in advance how much money it would have.



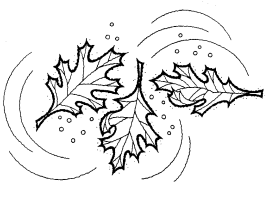
4. Eager partners – Since 1998, matching grants have been available to help cities, towns, and land trusts purchase open space. In 1999, the DEP was able to provide funds for 45 local projects totaling 4200 acres. Cities, towns, and land trusts have requested more funds than are available.

➢ Action for 2000 ➢

◆ The DEP should complete its comprehensive plan for open space conservation. "Connecticut's Green Plan," which will guide the DEP's land purchases, was mandated by P.A. 97-227 but still is in draft form.

◆ The General Assembly should streamline the Department of Agriculture's Farmland Preservation Program. As people at the CEQ's public forums expressed many times, the state's program of acquiring development rights to agricultural properties suffers from the same procedural delays that once slowed the open space program. The next step is to streamline the agricultural program so it may achieve the levels of success that it warrants.

The Council will continue to monitor the state's progress in the indicator section of its annual reports. *(Please see page 28 of this report.)*



PART III

Indicators of Environmental Trends

A**Is the environment getting better?**@

This is the question most frequently asked of the CEQ. To help answer it without bias, the Council established a set of environmental indicators which display progress (or lack of it) in 27 important areas.

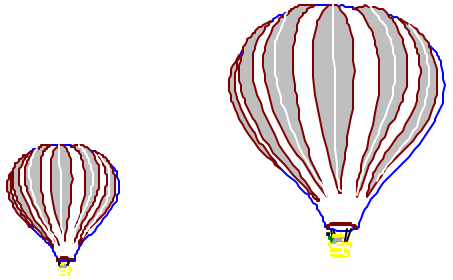
These indicators are bottom-line statements of the actual condition of our air, water, land, and wildlife. The focus is on results, rather than on government programs, budgets, enforcement action, or new laws. When reviewing any indicator, the reader should note that the subtitle appearing under the title describes exactly what is being measured.

Where possible, each graph illustrates progress 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.

The overall story told by these indicators is one of slow but steady progress. In 1999, more indicators than usual **C** including shad, air pollution, wood ducks, farmland, winter flounder, sewage overflows, and forests **C** showed downward or static trends and will receive additional attention from the CEQ in the months ahead. However, even a quick review of the pages that follow will reveal that most aspects of our air, water, and wildlife have improved measurably in the last ten years.

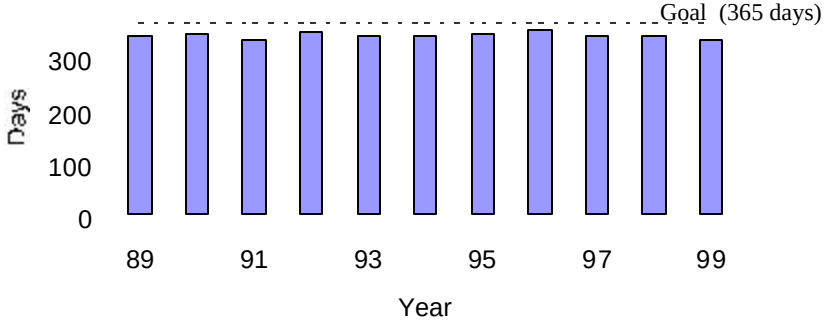
Good Air Days

Number of days that every monitoring station recorded satisfactory air quality



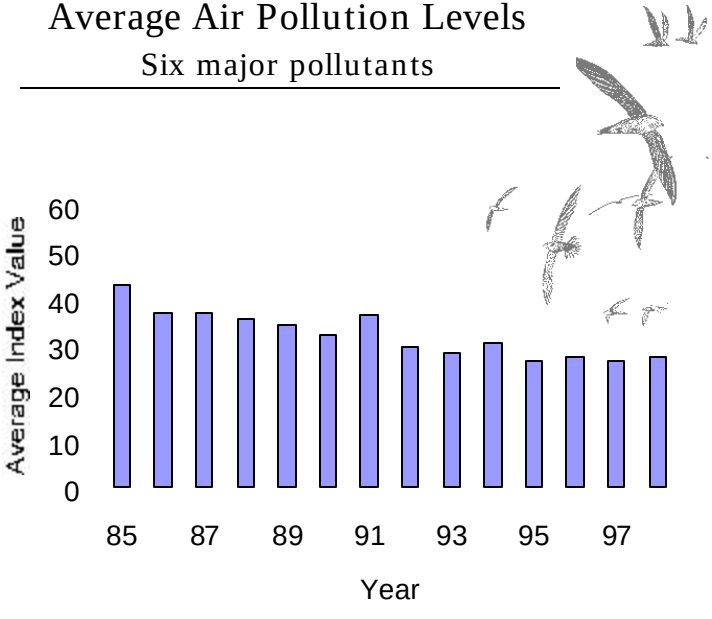
Background

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



Trends

Violations of the health-based ambient air quality standards have been 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.) Motor vehicles remain a major source of ozone-forming emissions despite improvements in tailpipe standards. Much ground-level ozone originates in states to Connecticut's west. Minor fluctuations over the last five years are the result of variable weather conditions.



Background

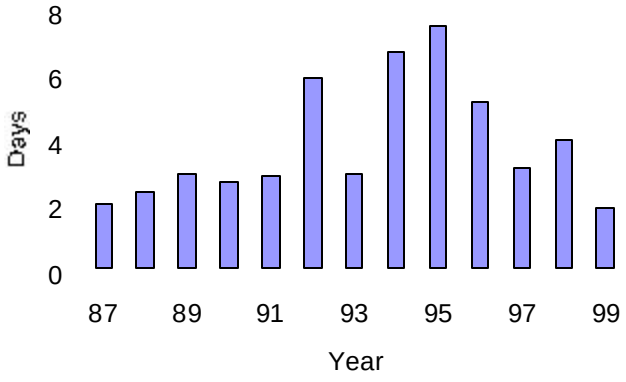
Six air pollutants -- carbon monoxide, ground-level ozone, lead, particulates, nitrogen oxides, and sulfur dioxide -- are measured across the state by the DEP. At the end of every year, the average level of each pollutant is expressed on a numerical scale, where zero would equal no pollution, and 100 would equal the health standard for the pollutant in question. This somewhat complicated indicator shows the average level of the six pollutants.

Trends

Most of the improvement since 1987 is due to reductions in carbon monoxide, sulfur dioxide, and particulate emissions. Levels of lead in the air have dropped so low that in 1997 they were not measured. Several pollutants increased slightly in 1998, in part because electric utility plants burned more fuel to compensate for the extended shutdown of several nuclear power plants.

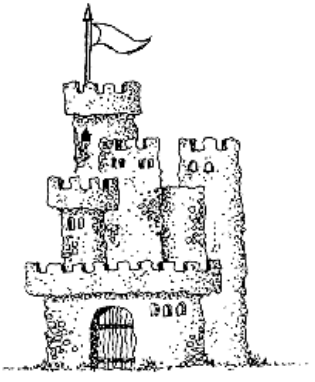
Beach Closings

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, prompting some towns to close beaches automatically as a precaution. (See page 24 for more information about combined sewers.)

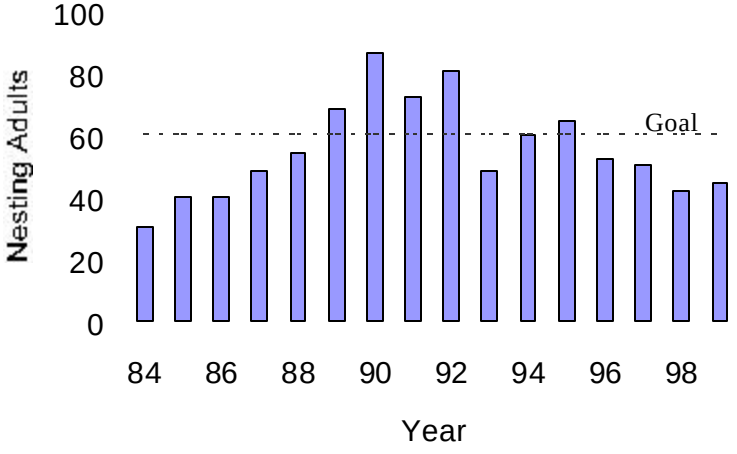


Trends

Yearly variations are a product of rainfall patterns and incidents such as sewer-line ruptures. In 1999, the relatively dry summer led to significantly fewer closings than in previous years. More than half of our coastal communities had no closings at all.

Piping Plover

Number of adults nesting in Connecticut



Background

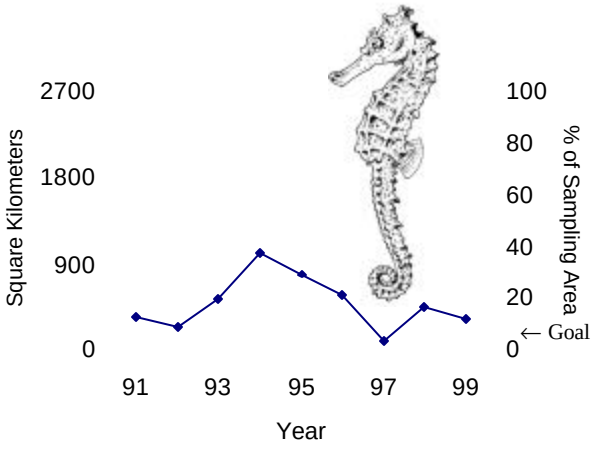
Piping plovers are thrush-sized shorebirds that nest on beaches, often with least terns. Nests are frequently destroyed by human intrusion, storm tides, and predators. Nesting adults are counted and in most cases protected every spring by the DEP and volunteers working with The Nature Conservancy. The piping plover's status is "threatened." The protections afforded these plovers benefit other nesting species, including the black skimmer.

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. In 1996, adverse weather delayed breeding, and predators destroyed many nests before hatching could occur. The population has been increasing *regionally*, suggesting that some of Connecticut's plovers might have moved.

The Sound in Summer

Area (and percent) of Long Island Sound affected by hypoxia



Background

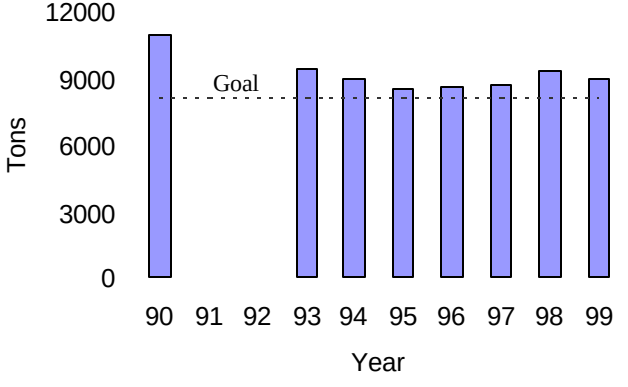
Hypoxia is the condition in the water when oxygen levels are too low to support desirable forms of life. (For this indicator, hypoxia is defined as less than or equal to 3 mg/l of dissolved oxygen.) Hypoxia occurs when nitrogen stimulates excessive growth of aquatic plants, which die and are consumed 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.

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 significant improvement in 1997 was caused by a mild winter and a relatively cool summer, resulting in fairly uniform water temperatures. The improvement in 1999 might be the result of less nitrogen from runoff entering the Sound during the unusually dry weather.

Nitrogen

Tons discharged into Long Island Sound from Connecticut's sewage treatment plants and large industrial facilities

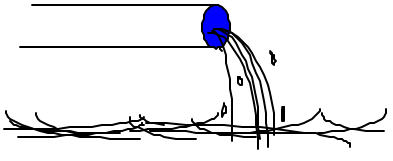


Background

Major sewage treatment plants, along with the largest industrial nitrogen dischargers, account for 56% of Connecticut's contribution of nitrogen to Long Island Sound. (See description of hypoxia on previous page.) Overall, Connecticut's total share of nitrogen pollution is about one-third, while New York contributes two-thirds. 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 achieved in 1994. In 1999, Connecticut, New York, and the federal Environmental Protection Agency began a 15-year effort that will reduce nitrogen loads from human sources by about 36% from 1990 levels. Connecticut's target for 2004 is 8134 tons or less per year.

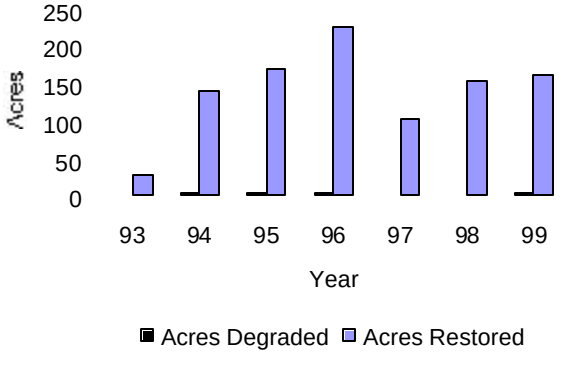
Trends

Connecticut's "no net increase" policy and investments in nitrogen-removal technology have been successful. The improvement in nitrogen discharge was achieved by installing nitrogen removal technology at several sewage treatment plants. Increases in 1996 through 1998 were the result of plant construction and reconstruction which caused the plants to lose some of their nitrogen removal capability during rebuilding.



Tidal Wetlands Conservation

Acres Degraded and Restored

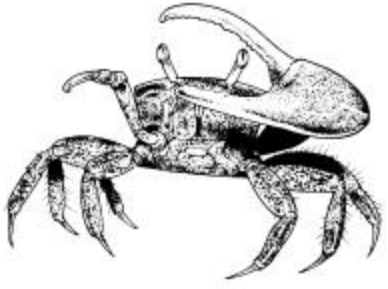


Background

Degraded acreage is the area permitted for development activity by the DEP. *Restoration* includes work performed 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.

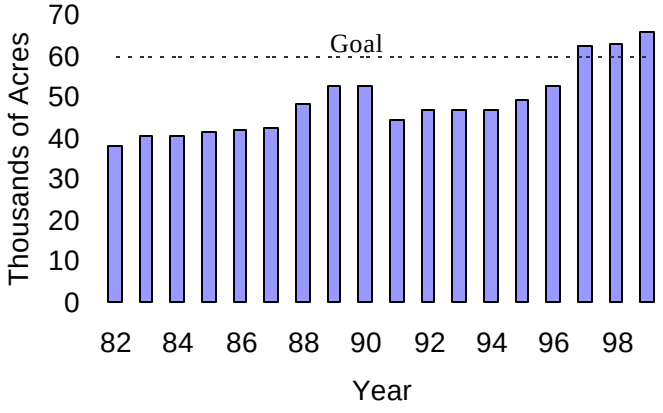
Trends

With the exception of 1995, less than one acre per year of tidal wetlands was lost to permitted development, and many degraded acres were restored.



Shellfish Beds

Acres open for commercial harvesting



Background

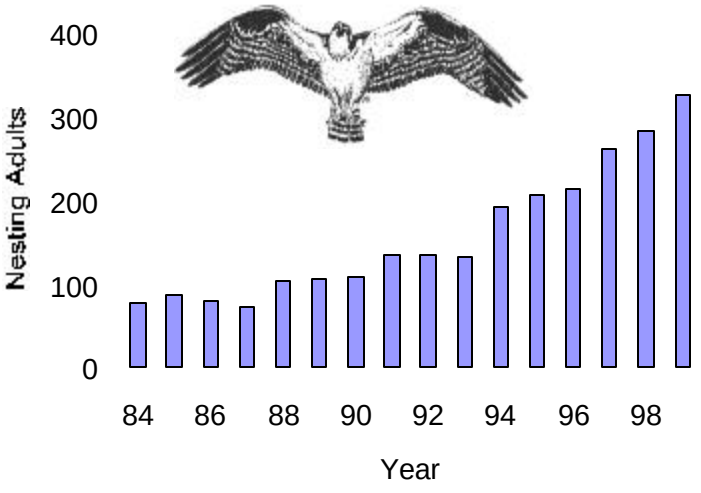
Connecticut's goal was to have 60,000 acres open by the year 2000, which is far fewer acres than were open a hundred years ago. The primary impediments to opening more acres are the presence of sewage discharges and the need to conduct frequent monitoring to satisfy federal health-assurance requirements. Beds are counted as open when they are clean enough and monitored sufficiently.

Trends

The dramatic increase in 1997 was attributed largely to the increase in the commercial value of Connecticut's harvest over the past decade, which prompted investments in expansion. Expansion has been a cooperative venture of industry and state government. Water quality and monitoring improvements led to modest expansion in 1998 and 1999, even as the industry saw oyster stocks depleted by disease in 1998.

Osprey

Number of adults nesting in Connecticut



Background

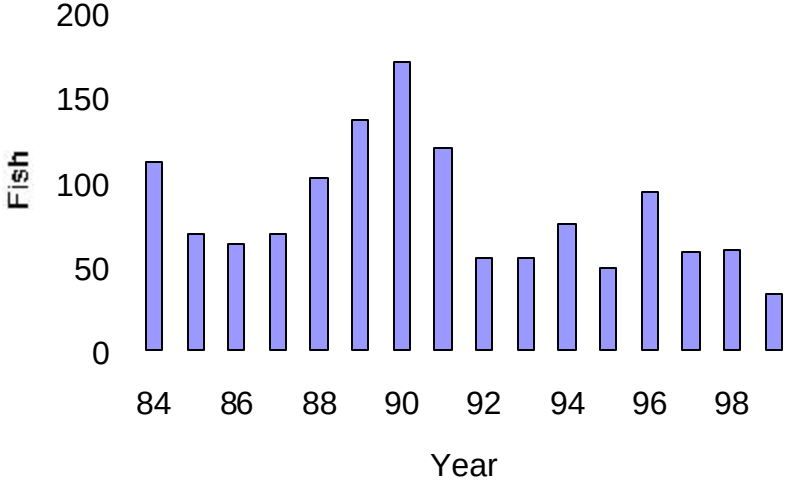
Ospreys are fish-eating birds of prey that live throughout the world. Locally, they nest mostly along the shoreline of eastern Connecticut, with potential to nest inland along rivers and large lakes. They require ample food supply, secure nesting sites, and an environment low in certain chemicals. The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

Trends

The osprey continues to rebound from its low point in the 1960s. Now, with fewer chlorinated hydrocarbons in the food chain, and after years of cooperative ventures to erect nesting platforms along the coast, nesting success continues at a rate sufficient to sustain positive growth. Several factors led to the highest number of breeding ospreys in recent history: a record number of fledglings in recent years, installation of new predator guards on many nesting platforms, and a surge in breeding success at an area in Old Lyme considered to be the stronghold of Connecticut's osprey population.

Winter Flounder

Average number caught (per tow) in nets of research vessel



Background

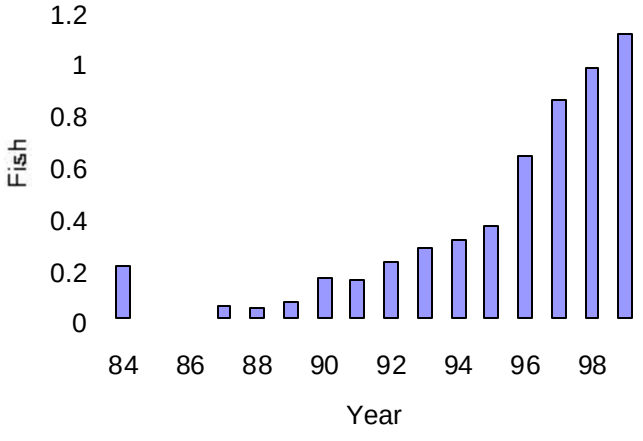
The DEP samples marine fish populations every April, May, and June by towing nets from a research vessel. Winter flounder was selected as an indicator species because it is commercially important, is counted regularly, and does not migrate far beyond Connecticut's waters.

Trends

The downturn in winter flounder populations in the 1990s 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 weather changes. Scientists are uncertain of the cause of the continued low levels, but suspect that the high commercial harvest of Long Island Sound fish in federal waters outside of the Sound is affecting the population.

Striped Bass

Average number caught (per tow)
in nets of research vessel

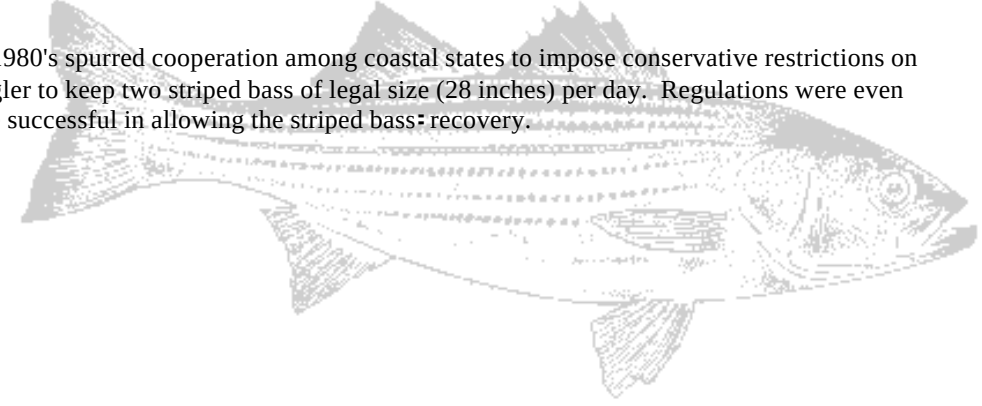


Background

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

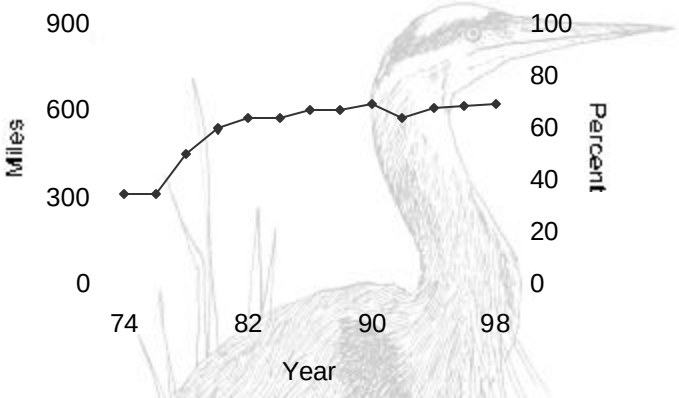
Trends

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



Rivers

Miles classified as suitable for both swimming and supporting aquatic life



Background

Of the state's 5800 miles of river and stream, about 900 miles are defined as "major" and are considered in this indicator. It has been revised in an important way: in previous years, rivers were counted if they were both swimmable *and fishable*. However, since 1996 Connecticut residents have been advised to limit their consumption of fresh water fish (see page 3), so no river in the state is technically “fishable,” even if it sustains large populations of trout, bass, and other aquatic life.

Miles of Connecticut rivers in which the fish are *not* contaminated with mercury:

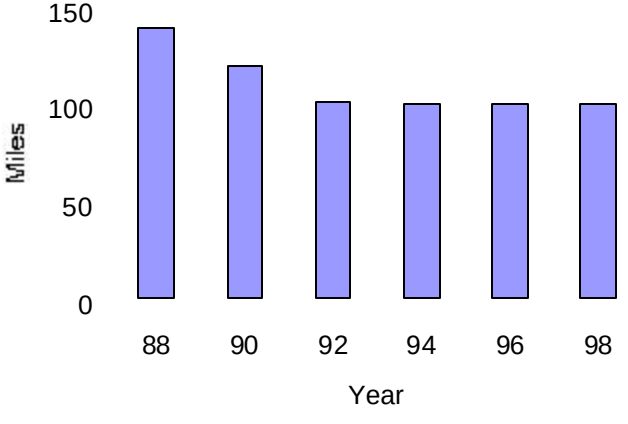
0

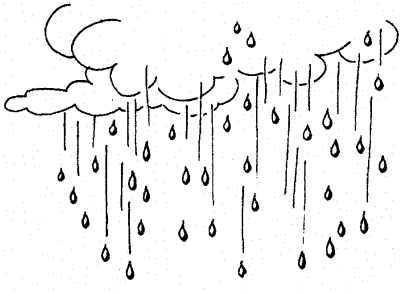
Trends

Progress began with the passage of the state’s clean water law in 1967, and accelerated 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. Subsequent improvements occurred on the French, Shetucket, Farmington, Willimantic Rivers and, most recently, the Naugatuck River.

Sewage Overflows

Miles of river affected by
"combined sewer overflows"





Background

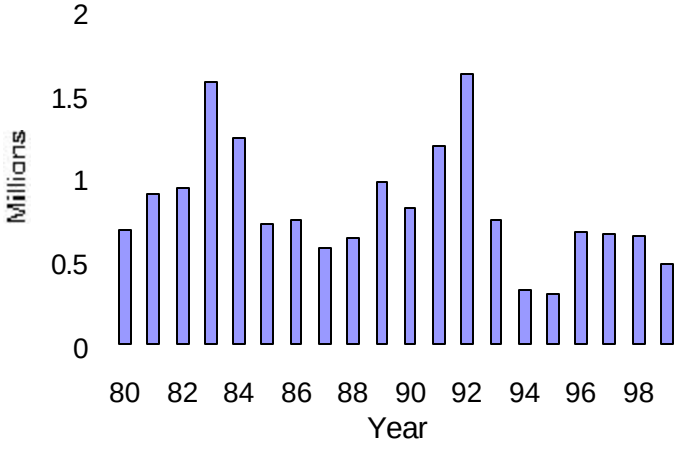
In fourteen Connecticut cities and towns, sanitary sewers were built in combination with storm sewers. During storms, these systems carry more water than their treatment facilities can handle, and a combination of storm water and untreated sewage overflows directly to the rivers and Long Island Sound. 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.

Trends

Several of the combined sewer systems have been wholly or partly separated since 1990, reducing the impact of untreated sewage on rivers.

Shad

Number returning to the Connecticut River

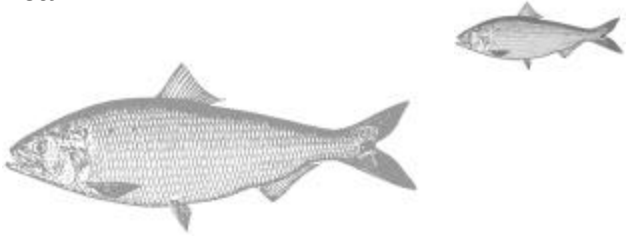


Background

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.

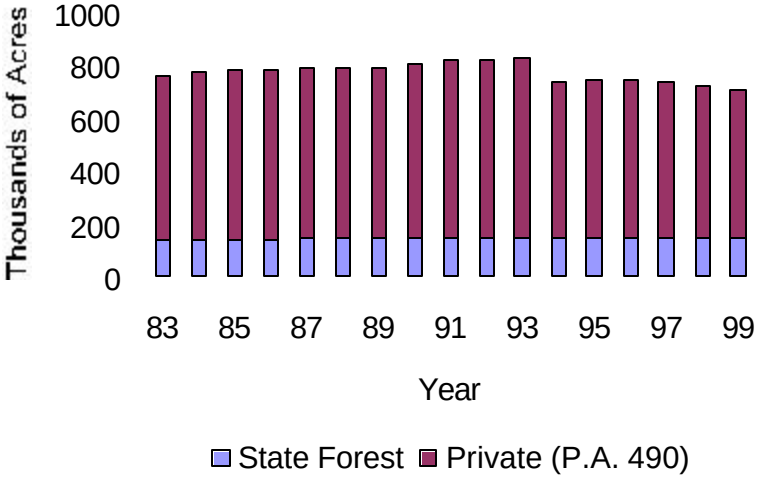
Trends

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



Forest

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



Background

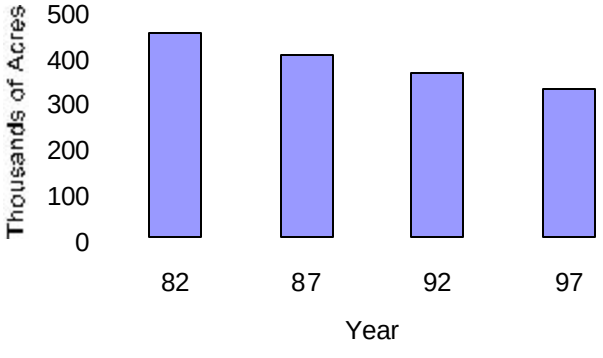
Connecticut's goal is to conserve forests for multiple use, which only can be accomplished on parcels of sufficient size. Much forest is owned in small parcels which often have limited value for wildlife, wood production, and other uses. To be eligible for P.A. 490, a landowner must own 25 or more acres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

Trends

The apparent upward trend in forest acreage during the 1980s was 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 one important cause of this indicator's negative turn since 1994. A major reason for the steep drop in 1998 and 1999 is improvement in the DEP's data management; much private land that was developed years ago was not deleted from the DEP's P.A. 490 records until 1999.

Farmland

Acres of land in farms



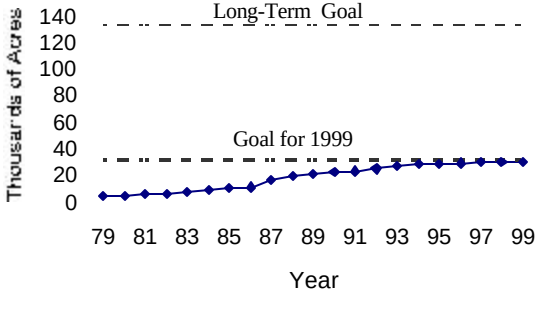
Trends

The graph above shows that farmland continues to decline at about two percent per year. The graph at right shows that the state=s progress toward its preservation goal has slowed. Two farms were approved for preservation by the Bond Commission in 1998 and none in 1999. Three farms were preserved in early 2000.

Background

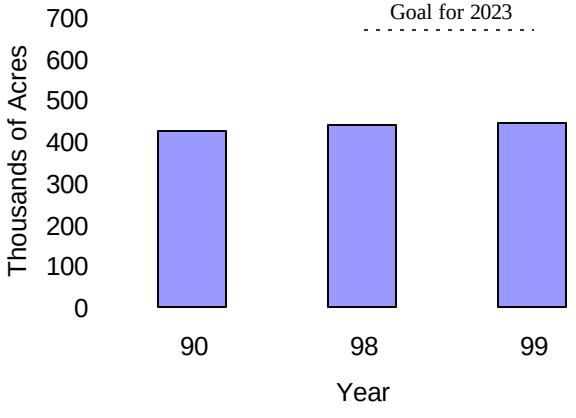
The graph at left illustrates the total acreage of land in Connecticut farms, as estimated every five years by the U.S. Department of Agriculture. To preserve land for future agricultural use, the state Department of Agriculture purchases the development rights to farmland (from volunteer sellers only). This keeps the land in private ownership with strict restrictions on future nonagricultural development.

Acres Preserved by the Department of Agriculture



Land for Life

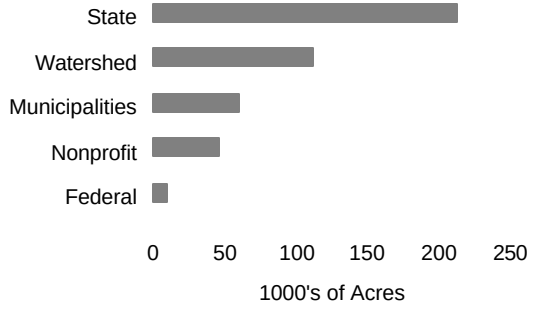
Combined acreage of five categories of preserved land



Background

In 1998, Governor John Rowland declared a goal of conserving 21% of Connecticut's land area by 2023. P.A. 99-235 reinforced this goal. The graph at right shows the combined acreage of the five types of land that are included in this 21% goal. Current acreage of each land type is shown in the chart below. The types of land are: federal, estimated municipal open space, Class I and II watershed lands owned by water utilities, estimated nonprofit lands (land trusts, The Nature Conservancy, etc.), and state-owned forests, parks, and wildlife management areas.

Acres of Conserved Land
By Category (1999)

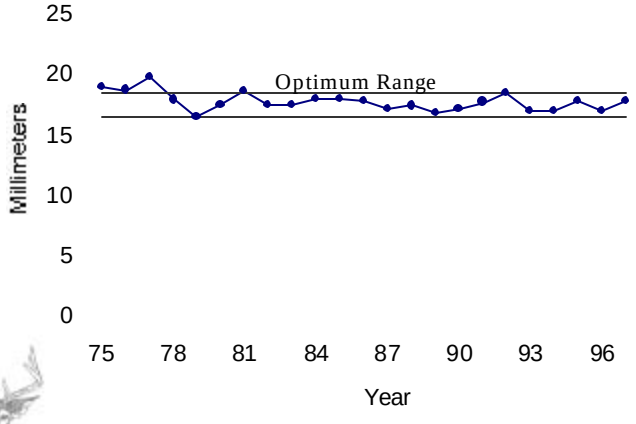


Trends

Modest areas of land were preserved in the early 1990s. After Governor Rowland and the General Assembly improved the open space statutes and committed substantial funds in mid-1998, the DEP acquired nearly three times the typical number of acres over a six-month period, and acquired record acreage in 1999. Also in 1999, the open space grant program helped municipalities, nonprofits, and utilities conserve 4200 acres.

White-Tailed Deer

Average diameter of antlers on yearling deer (one to two years old)



Background

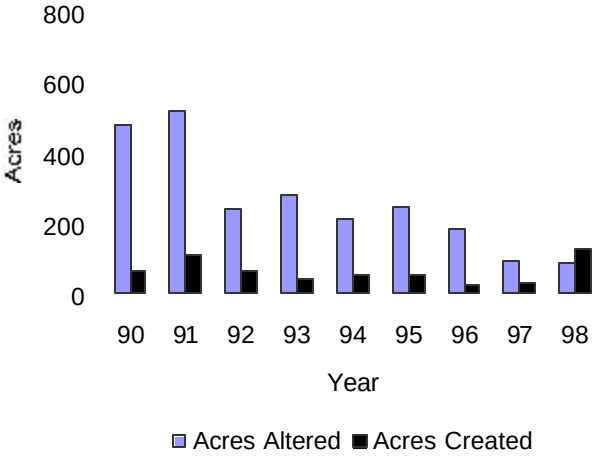
Healthy, robust young deer have thicker antlers than those which receive less nourishment. Antler beam data reflect the relative health of the deer herd as well as the condition of their habitat. Since deer share woodland and edge habitats with many wildlife species, this indicator is doubly useful. 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.

Trends

Connecticut's deer population appears to stay within the targeted range. Minor fluctuations in herd health from year to year probably reflect fluctuations in food availability and winter conditions. The herd remained in good health over the past few years. There are no data available for 1998 because the DEP did not operate wildlife check stations.

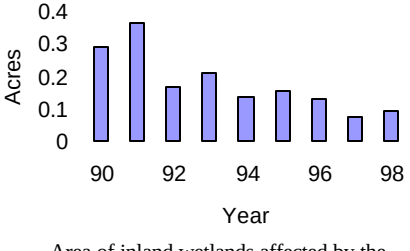
Inland Wetlands Loss

Acres altered each year by development activity permitted by the DEP and 169 municipal wetlands agencies



Background

The graph at right shows the acres altered and the number of those acres replaced by human-made wetlands. "Altered" wetlands are those affected directly by human activity, which can range from total destruction (when the wetlands are filled and built upon) to conversion from one type to another (as, for example, from shallow marsh to open water). 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.



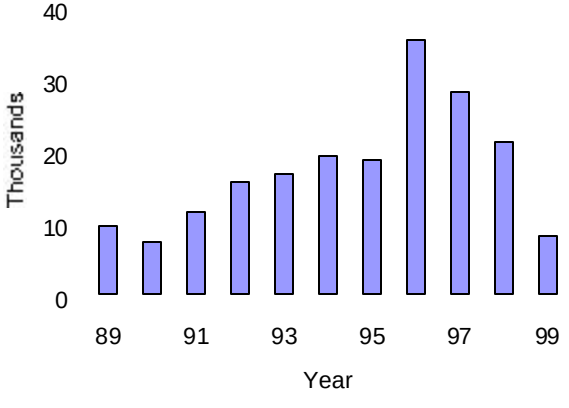
Area of inland wetlands affected by the *average* permit issued by the DEP and the 169 municipal wetlands agencies

Trends

Some of the ups and downs in wetlands loss since 1990 are directly related to changes in the economy and the number of applications received. However, the graph at left indicates that wetlands agencies also have become more conservative.

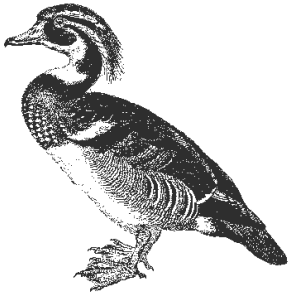
Wood Duck

Estimated number of adults nesting in Connecticut



Background

Wood ducks are medium-sized waterfowl that nest in hollow trees and human-made boxes near fresh water throughout eastern North America, including 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). Many other species share these habitat requirements. Population estimates are made annually by the DEP.

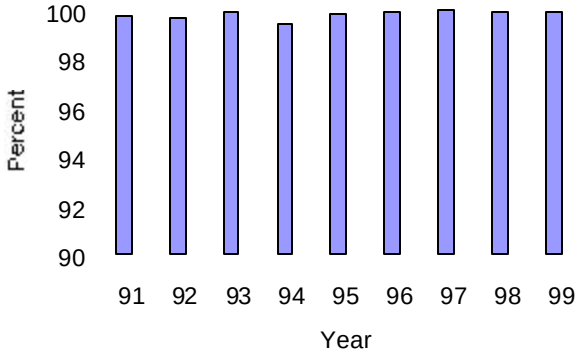


Trends

Increases in wood duck numbers through 1996 were due to favorable weather conditions and the placement of nesting boxes near ponds and wetlands. Many Connecticut citizens have assisted in this effort. Although the 1998 numbers appear to show a downturn, it is likely that a concentration of ducks at one of the sampling plots led to estimates that were too high in 1996 and 1997. The apparent sharp drop in 1999 numbers also might be due to a change in sampling techniques.

Drinking Water

Percentage of public water being delivered that meets all standards

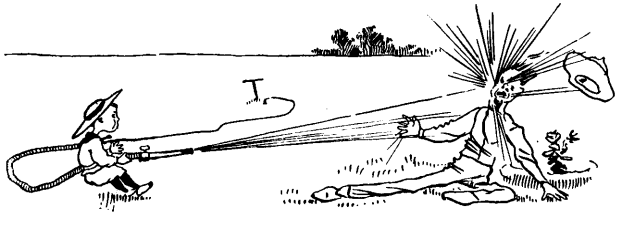


Background

Every public water utility submits monthly water quality reports to the Department of Public Health. This indicator shows the percentage of monthly reports that show full compliance, after weighting the reports to account for the number of people each utility serves.

Trends

Though problems persist, they occur most frequently with small systems serving relatively few households. This indicator would show more fluctuations if the larger systems failed to deliver good water, since it takes into account the number of people served by each system.

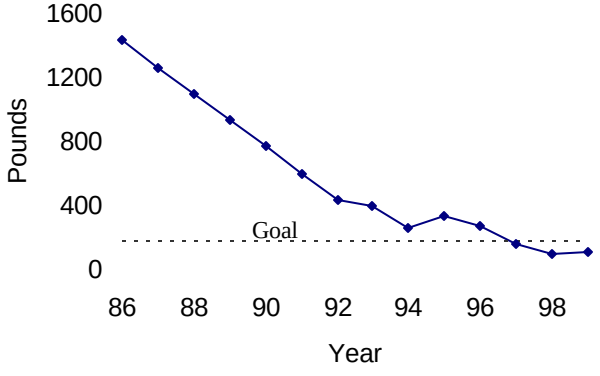


Garbage Burial

Average resident's share of municipal solid waste 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.

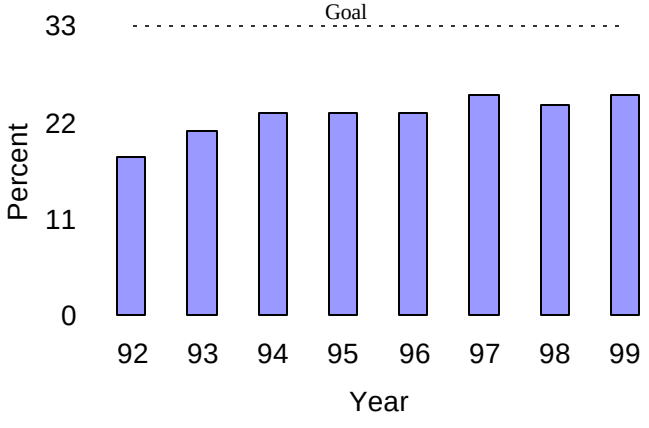


Trends

Since 1986, six resource recovery plants have begun operation, collection of recyclables has improved to account for at least 24% of municipal waste, some manufacturers have reduced the wieght of products and packaging, 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.

Recycling

Percentage of municipal solid waste collected for recycling



Background

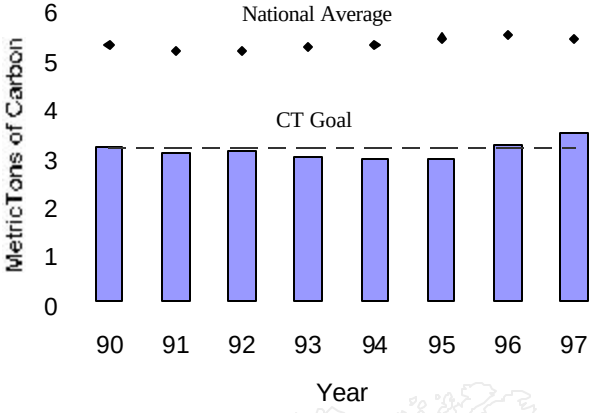
The General Assembly established a goal of reducing *and* recycling 40% of Connecticut's municipal solid waste stream by the year 2000; the DEP has calculated that this would require 33% of the waste to be recycled (with the other 7% disappearing through waste *reduction*).

Trends

The statewide average has been creeping upward, and some municipalities have exceeded 25%. More stable markets for collected materials are expected as manufacturers continue to invest in factories that use recycled materials.

Carbon Dioxide Emissions

Per Connecticut Resident



Background

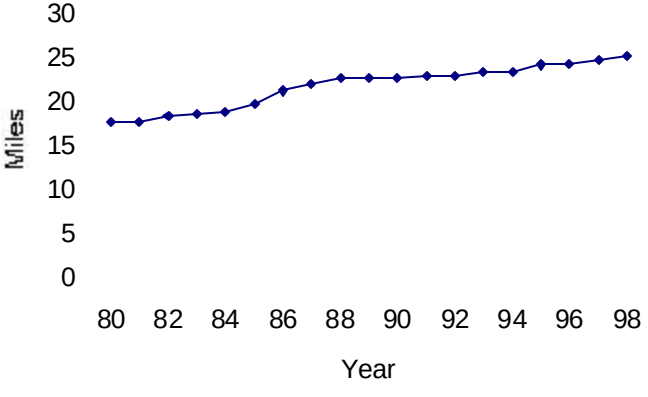
Carbon dioxide is added to the atmosphere primarily through the burning of oil, coal, and gas. These fuels are used in manufacturing, electricity generation, transportation, and the heating of buildings. Carbon dioxide is called a Agreenhouse gas@ because it traps heat near the earth=s surface, like the glass roof of a greenhouse. It might play an important role in global climate change, which could contribute to a rise in sea level over time. Carbon dioxide emissions are calculated annually by the federal government, based on estimates of fuel consumption. The graph shows the average resident's contribution of carbon to the atmosphere.

Trends

Connecticut's goal for CO_2 emissions is the 1990 level. A reduction in the consumption of residual oil by power utilities is the most probable reason for the downward trend in CO_2 emissions until 1996, when electric utilities increased their consumption of fuel to compensate for the shutdown of some nuclear power plants. Data are not yet available for the past two years.

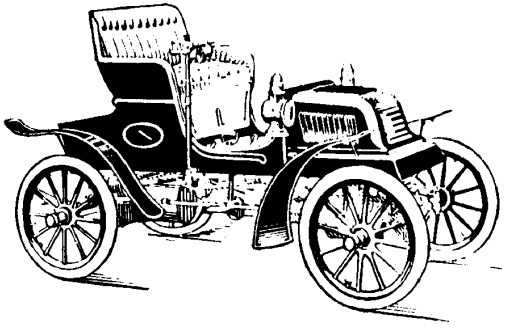
Driving Our Cars

Number of miles that 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). The Department of Transportation (DOT) estimates total miles driven each year in Connecticut.

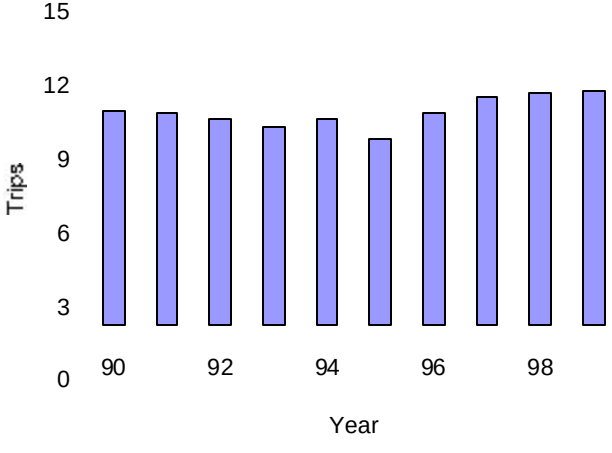


Trends

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.

Taking the Bus

Number of local bus trips taken by the average Connecticut resident



Background

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

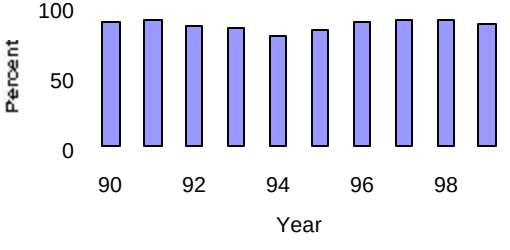
Trends

Bus ridership continued to increase in 1999. Reasons for this progress probably include improvements in bus routing and the successful efforts of some companies to encourage transit use by their employees.

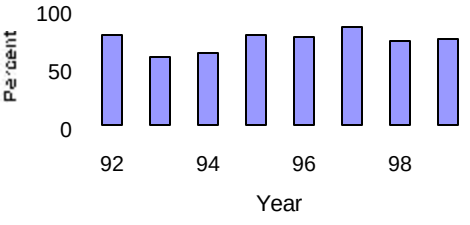
Compliance

Percentage of facilities found to be in compliance with environmental laws

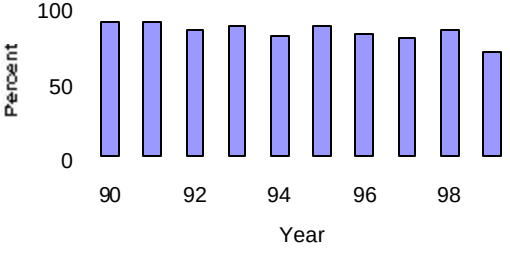
All DEP Programs



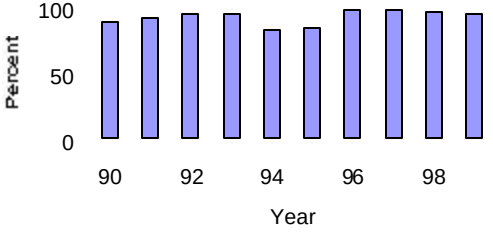
DEP Water Bureau



DEP Waste Bureau



DEP Air Bureau



Background

This new indicator shows the approximate percentage of inspections performed by the DEP that found the inspected facilities in full compliance with pertinent environmental laws and regulations.

Trends

The overall downturn in compliance appears to be due to the discovery of more violations in waste programs. Year-to-year fluctuations can occur when the DEP turns its attention to types of facilities where non-compliance is common. Short-term downturns might not reflect serious problems if the long-term trend is toward full compliance.

PART IV

1999 Activities of the Council on Environmental Quality

Research and Communication

Veteran readers of CEQ reports will recall when the annual report used to be the Council's primary outlet for its policy research. Since 1996, however, the Council has released the products of its research in interim reports. Each interim report is published in long and short versions. The annual report now includes summaries of these interim reports, as well as progress reports on the recommendations from recent years.

In November, the Council published AEat. Drink. Be Wary? Preventing Needless Exposure to Toxic Chemicals in Connecticut@ This interim report is summarized briefly in Part I of this report.

Prior to publication of each interim report, a draft version is circulated to representative agencies and organizations known to have an interest in the report's topic. These organizations, which include businesses and non-profit organizations, are invited to comment at public meetings on the Council's conclusions and recommendations while these are still in draft form.

Meeting With the Public

The Council continues to rely greatly on the informed public to help identify possible deficiencies in state environmental policy as well as corrective actions. At regular monthly meetings, the Council heard from representatives of Connecticut Envirothon, Connecticut League of Conservation Voters, National Audubon Society, Environment and Human Health, Inc., National Electric Manufacturers Association, Connecticut Resources Recovery Authority, Sierra Club, Connecticut Petroleum Council, Toxics Action Center, Environmental Industry Council, Connecticut General Assembly, and Department of Environmental Protection.

In April, the Council held a meeting and forum in the Connecticut Forest and Park Association's headquarters in Middlefield **C** its first public meeting in Middlesex County **C** and invited the public to speak. Municipal officials, representatives of conservation groups, and interested individuals told the Council what they saw as the biggest environmental problems in that region. In November, it held a similar forum at the Putnam Town Hall.

The meetings in Middlefield and Putnam were the last in the Council's first tour around the state (see page 2). The public's participation has been so useful to the Council's mission that a new series of public forums is being planned.

Solving Problems

The Council received and helped solve complaints on a variety of complicated problems in 1999. This is one of the Council's most important statutory obligations. Alert citizens helped to identify unresolved problems ranging from MTBE contamination of drinking water wells to invasive plant species on state lands to a wetlands exemption granted erroneously by a municipality.

The Council stands ready to work with Governor Rowland, the General Assembly, other agencies, and fellow citizens in meeting environmental challenges that confront Connecticut.

What the Council Heard

Topics Addressed at CEQ Public Forums in Middlefield and Putnam

	% of Speakers*
Land Use (Sprawl vs. Smart Growth, brownfield redevelopment)	52%
Water Quality (MTBE in drinking water, ash landfills, Long Island Sound)	48%
Continue Land Conservation (preserve farmland, open space, greenways)	36%
Public Lands Management (improve parks, forests, etc.)	16%
Creative Financing for the Environment	12%
State Policies for Renewable Energy	4%
Siting of New Power Plants	4%
Need for Environmental Education	4%
Connecticut Environmental Policy Act	4%
Hunting and Public Safety	4%

*some speakers addressed more than one topic

Forecast 2001

The End of Sprawl

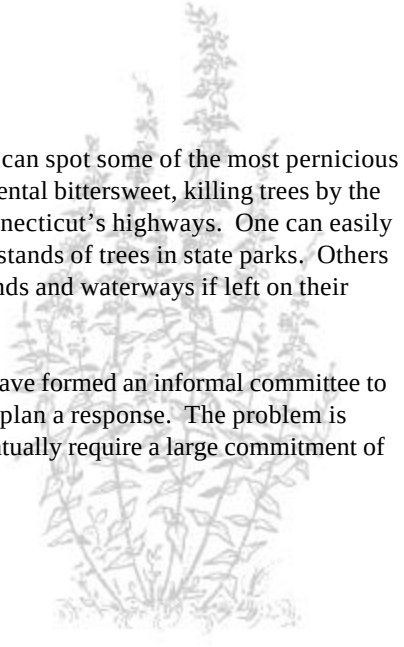
Sprawl is not inevitable, and a conscious application of good state policies can do a lot to direct desirable development to city, town, and village centers that are equipped to handle it. A visit to a city such as New London reveals that Connecticut has embraced many principles of so-called "Smart Growth" by stimulating the development of businesses, parks, and public attractions in areas that were previously built upon and contaminated. The challenge for Connecticut is to figure out how to replicate the success stories in every community that wants to grow and develop.

Alien Invaders

Most people would call them weeds: Plants from other continents that were planted in Connecticut and threaten to take over entire ecosystems. Some of these species were planted on purpose. Their propensity to form dense thickets made them good for erosion control on steep slopes. Others were planted in gardens and roadsides for beauty, and soon took over. Some hitchhiked as seeds and started to grow here. They all share the common feature of thriving in an environment free from their normal diseases and competitors.

The practiced eye can spot some of the most pernicious varieties, such as Oriental bittersweet, killing trees by the thousands along Connecticut's highways. One can easily see them overtaking stands of trees in state parks. Others threaten to choke ponds and waterways if left on their own.

Several agencies have formed an informal committee to assess the threat and plan a response. The problem is serious, and will eventually require a large commitment of resources.



C.E.Q. MEMBERS

Donal C. O'Brien, Jr. (Chairman) Resident of New Canaan. Original charter member of CEQ, 1971. Retired partner in the law firm of Milbank, Tweed, Hadley & McCloy. Former member, CT Council on Environmental Quality (1971-1976). Former member, CT 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, CT Waterfowlers Association and Theodore Gordon Flyfishers.

Marian R. Chertow. Resident of New Haven. Director, Industrial Environmental Management Program, Yale School of Forestry and Environmental Studies. Director, Environmental Reform: the Next Generation Project, Yale Center for Environmental Law and Policy. Editorial Board, *The Journal of Industrial Ecology* and *BioCycle* Magazine. Board of Directors, Technology for CT, Inc., Tax-Exempt Proceeds Fund, Shubert Theater, National Urban Fellows, Inc. Advisory Board, Alliance for Environmental Innovation.

Thomas F. Harrison. Resident of Avon. Partner in the Hartford-based law firm of Day, Berry & Howard. Member, Avon Board of Finance. Board of Directors, Connecticut League of Conservation Voters. Executive Committee and Past Chairman, Environmental Law Section, CT Bar Association. Board of Directors, CT Chapter, Air & Waste Management Association. Advisory Council on the Environment, MetroHartford Chamber of Commerce. Environmental Professionals Organization of CT. Small Business Compliance Advisory Panel, CT Department of Environmental Protection. CT Environmental Forum. Editor, Environmental Outlook. Former Member, Avon Inland Wetlands Commission.

Susan B. Mendenhall. Resident and Three-Term Town Councilor of Ledyard. Member, Land Use/Planning/Public Works Committee. Former Member, Finance Committee. Council Liaison to Inland Wetlands and Watercourses Commission, Zoning Commission, Ledyard Emergency Planning Council. Former Council Liaison to Senior Citizens Commission, Economic Development Commission, Board of Education. Member, Board of Directors of The Connecticut Institute for Municipal Studies. Member, Property Tax Reform Commission. Former Stock Trader with Investment Corporation of Virginia. Former Tax Consultant. Member, Navy League.

Susan D. Merrow. Resident and First Selectman of East Haddam. Former President, CT Conference of Municipalities. Member, Advisory Committee, Silvio Conte National Fish and Wildlife Refuge. Former President, National Board of Directors, Sierra Club. Author, *One for the Earth: Journal of a Sierra Club President*. Former Executive Director, Common Cause in CT. Former Co-Chair, CT Greenways Committee.

Richard A. Miller. Resident of West Simsbury. Manager, Environmental Regulatory Affairs, Northeast Utilities. Member, Edison Electric Institute's Energy & Environment Committee, Policy Committee of the Utility Solid Waste Advisory Group and Clean Air Strategy Group. Adjunct Faculty, Rensselaer at Hartford (Environmental Law, Regulation and Management courses). Past Member, various DEP rulemaking and legislative advisory committees, including: Remediation Standards, Environmental Permitting, Environmental Industry Initiative, Water Quality Standards, and Land Use/Aquifer Protection. Past Member, State Emergency Response Commission and CT Advisory Commission on Intergovernmental Relations. Member, Simsbury Conservation and Inland Wetlands Commission, Simsbury Land Conservation Trust. Past Director, CBIA's Environmental Policies Council. Editorial Advisory Board, New England's Environment. Member, New England Council's Environment Committee. Member, CT Bar Association's Environmental Section, Executive Committee.

Earl W. Phillips, Jr. Resident of Middle Haddam. Partner with the law firm of Robinson & Cole LLP and Chair of its Environmental Practice. Commissioner of Environmental Protection's E2000 Advisory Board. Executive Committee, Environmental Section of the CT Bar Association. Executive Steering Committee, Environmental Policies Council of the CT Business and Industry Association and Chairman of its Hazardous Waste Section. Author of the CT Chapter on Environmental Law for Matthew Bender's *Brownfield Law and Practice: The Cleanup and Redevelopment of Contaminated Land*. Adjunct Instructor of Environmental Law, Rensselaer Polytechnic Institute (Hartford Graduate Center). Chairman, Environmental Section, National Institute of Municipal Law Officers.

Cecil Ursprung (through 2/00). Resident of West Hartford. President and CEO, Reflexite Corporation. Charter Member, Washtenaw County (MI) Parks and Recreation Commission. Former Chair, Ann Arbor Transportation Authority. Former Business Director, Ecology Center of Ann Arbor. Former Member, Transportation and Land Use Subcommittee, Southeast Michigan COG. Former Board Member, New Britain YMCA. Member, Scholarship Development Group, Talcott Mountain Science Center and Academy.

Wesley L. Winterbottom. Resident of West Hartford. Professor and Coordinator of Environmental Toxicology Programs and Director, Center for Teaching Excellence, Gateway Community Technical College. Registered Professional Engineer; Diplomate American Academy of Environmental Engineers; Advisory Board Member, The Sound High School, Ward College of Technology (University of Hartford), New England Board of Higher Education; Advanced Environmental Technology National Science Fellow, Univ. of Northern Iowa; National Science Foundation Faculty Advisor, Mt. Rainier National Park. ANSI/GETF Certified ISO 14000 Trainer; President, CT Consortium for Enhancing Learning and Teaching; Former Administrative Supervisor, CT DEP. Member, West Hartford Conservation Commission. Director, New Haven Board of Education Summer-Tech Program.

Acknowledgments

The Council appreciates the work of its staff **C** Karl Wagener (Executive Director) and Melissa Ryan (Environmental Analyst) **C** in drafting this report for review by the Council and preparing the final version for publication. Interns provide valuable assistance, and the Council notes the special contributions of Bryan Cheever and Carolyn Stone (Trinity College) and David Thomas (University of Connecticut). Special thanks to Ms. Daisy Brittlestar. The Council also appreciates the assistance of the many people in the Departments of Environmental Protection, Agriculture, Transportation, and Public Health who provided data. The Council especially thanks the many citizens, businesses, and organizations that offered information and viewpoints to the Council throughout the year.

The Council also extends its gratitude to the many people who responded to last year=s report. Several readers suggested ways to improve the environmental indicators. They cannot be acknowledged here by name, but most of their suggestions have been included (or will be soon).

Memo to Readers:

We would like to hear from you. Does this report give you the information on Connecticut's environment that you need? Is something missing?

Mail: 79 Elm Street, Hartford, CT 06106

Phone: 860-424-4000 (Staffed 8:30 to 4:30; messages can be left 24 hours a day)

Fax: 860-424-4070

E-mail: karl.wagener@po.state.ct.us

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 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 --- 2000

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