Environmental Quality in Connecticut

Council on Environmental Quality
2006 Annual Report

STATE OF CONNECTICUT
COUNCIL ON ENVIRONMENTAL QUALITY

June 12, 2007

The Honorable M. Jodi Rell
Governor of Connecticut
State Capitol
Hartford, CT 06106

Dear Governor Rell:

I am pleased to submit the Council's Annual Report on the status of Connecticut's environment for 2006.

The Council uses a set of graphs, or environmental indicators, to chart long-term trends and yearly progress. It is apparent that Connecticut's citizens will not see all of their environmental goals fulfilled if current trends continue. The Council sees a need to refocus and enhance our collective efforts to reduce and recycle waste, reduce water pollution, preserve farms, forests and grasslands, use electricity more efficiently and improve compliance with environmental laws.

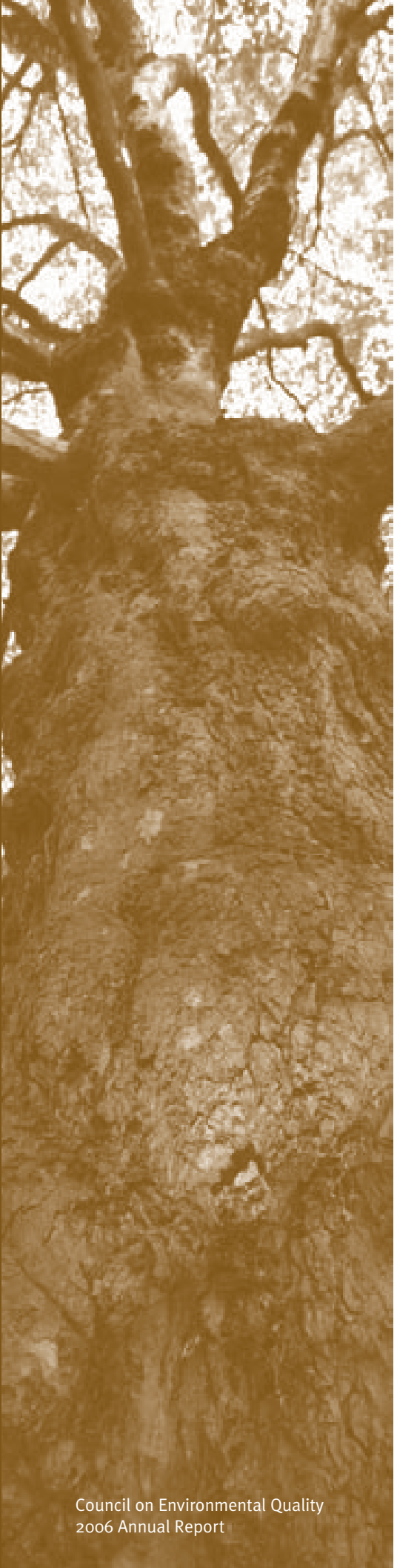
The good news is that the goals are within reach if we choose to act. Among the many conditions for success, two stand out: Adequate funding must be in place year in and year out and, as you state in your own Responsible Growth initiatives, future patterns of development must be more harmonious with Connecticut's natural landscape.

The Council looks forward to working on these challenges in the coming year. As always, the Council stands ready to provide you with any additional information or assistance that you might request.

Respectfully,

Thomas F. Harrison
Chairman

79 Elm Street, Hartford, CT 06106
Phone: (860) 424-4000 Fax: (860) 424-4070
http://www.ct.gov/ceq



Council on Environmental Quality
2006 Annual Report

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Introduction

Despite past successes in restoring water, air and wildlife, Connecticut residents will fail to achieve their environmental goals unless there is greater and more sustained effort.

Connecticut's citizens have set goals that are both challenging and realistic:

- healthful air every day
- sewage-free waters
- conservation of farms, fields, forests and beaches
- a sustainable future where materials are recycled and energy is used efficiently

These goals are within reach. However, the trends depicted on the following pages are not encouraging. Progress has slowed. Connecticut is not on track to achieve its goals:

- Farmland preservation has been so slow that, if current trends continue, the farms actually will be gone before the money becomes available to preserve the land, and the goal will never be reached (p. 10).

- To meet its goal of conserving 21% of the natural landscape by 2023, Connecticut must secure more than 10,000 acres per year. In 2005 and 2006, the combined efforts of cities, towns, nonprofit land conservation organizations and the state preserved about 6,000 acres per year (p. 8).

- There is no specific goal for forests, but they are losing ground after a century of growth and stability (p. 9).

- Prospects for Long Island Sound are unclear. With substantial investment in sewage treatment plants, Connecticut met short-term goals for removing nitrogen from sewage. The condition of the Sound has improved but hypoxia (low levels of oxygen in the water) continues (p. 14). Hypoxia is expected to persist at least through 2014, the year that Connecticut and New York have pledged to meet their ultimate nitrogen-removal goals. Beach closings have been fairly constant (p. 12), and lobsters hit a new low in 2006 (p. 16).

- Sewage affects more than the Sound. About 80 miles of rivers, 270 square miles of harbors and hundreds of basements receive untreated waste from overflowing sewers. The graph on page 20 shows how slowly this problem is being corrected. Elimination of these sewage overflows will take many decades if recent rates of funding continue.

- After a strong start in the early 1990s, recycling leveled off and stagnated at a level well below the statutory goal, with significant consequences (p. 28). The Department of Environmental Protection adopted a Solid Waste Management Plan in December 2006 that illustrates the need for a far greater rate of recycling and waste reduction. Hundreds of thousands of tons of garbage are being trucked out of state. Most recycling, while cost effective in comparison to disposal, requires a stimulus of public funds to drive up participation.

- State agencies are projecting continued increases in population, new land development, traffic and electricity consumption, all of which work against the state's goal of reducing greenhouse gas emissions to 1990 levels by 2010 (p. 29). (Greenhouse gases are carbon dioxide, methane, and other gases that contribute to global warming.) Despite the state's active participation in the Regional Greenhouse Gas Initiative and the voluntary actions of many citizens, businesses and local governments to reduce carbon dioxide emissions, the projections above put the state's goal in serious jeopardy.

Progress Made But Goals Not Met

Connecticut has made measurable progress over three decades:

- Connecticut reduced air pollution even as the state gained people, traffic and power plants (p. 7). Progress came at considerable expense, but the largest costs fell on consumers and private companies rather than on the public purse. There is only a small chance, however, that Connecticut will be able to meet the 2010 federal deadline for keeping ground-level ozone at healthful levels for nearly an entire summer.

- The treatment of sewage is much better than it was a generation ago, and about half of the major sewer overflows were corrected by two decades of reconstruction (p. 20).

- State government and the shellfish industry invested several million dollars since 1987 in the improvement and monitoring of oyster beds, and the result has been a fairly constant expansion of the areas suitable for shellfish growth (p. 18). Oyster stocks were hit hard by two diseases in 1997 and 1998 and have not yet recovered.

- More than 500 acres of compromised tidal wetlands have been restored to ecological health by direct action of the state and many partners since 1994 (p. 19). During that time, only a few acres were lost to permitted activities. (Many old unpermitted disturbances and structures remain, however.)

- Each year, the DEP finds about 90 percent of inspected facilities to be in compliance with pertinent regulations (p. 27). This rate has stayed much the same for ten years, even as the DEP reduced by half the number of inspections it conducted. It is difficult to judge the degree of success. The ideal trend would show improvement toward full compliance. In 2006, when the DEP increased the number of inspections slightly, the compliance rate improved slightly.

- Bald eagles have returned to Connecticut because their habitat now is relatively free of the harmful chemicals that led to their disappearance in the 1950s (p. 21).

In pursuit of its goals, Connecticut deployed a varied arsenal:

- protective standards and regulations: air, water, waste and wetlands
- prohibitions: certain pesticides, fuel additives, and other harmful products
- public investment: sewage treatment, land conservation, greenways
- public involvement: willingness of citizens and businesses to get involved in recycling, compliance, service on local commissions and innumerable voluntary projects

The overall result was slow and steady progress, but not enough to reach most statewide goals and not across all programs. Some of the greatest improvements have been achieved in programs that require only small amounts of public funding, such as wetlands conservation, air pollution control and industrial waste management. Meanwhile, programs that require substantial state investment are lagging.

To attain most of the goals that remain, there is no realistic alternative to adequate state funding. This is particularly true for the conservation of land and improvement of water quality. The full cost of meeting the state's goals for farmland, natural lands, clean rivers and a productive Long Island Sound, as well as waste recycling and efficient energy use, can be calculated with some certainty. That, in fact, is the good news: most of the state's environmental shortcomings can be corrected with a defined amount of public funding. (A major exception is the challenge of creating a more land-conserving pattern of new development, though that also has a fiscal element.) The task at hand is to calculate that amount and produce a financial blueprint for Connecticut's environmental success. The Council will take on that task in the coming year, and looks forward to working with other citizens, organizations and agencies.

Bottom Line

For decades Connecticut residents have sought clear air, sewage-free waters and a protected green landscape. Those goals are in sight. With significantly more effort, Connecticut will succeed. With current effort, it will fail.

A Note About Global Warming: It's Working Against Us

The land, air and water of New England have been getting warmer. Regrettably, this warmth is making Connecticut's task considerably more difficult:

- Summer heat leads to more polluted air for two reasons: First, heat and sunlight cause various air pollutants to react and generate ground-level ozone. The air frequently becomes unhealthful when the temperature goes over 90 degrees. Then, on the hottest, most polluted summer days, Connecticut residents use more air conditioning, prompting old power plants to start up and pollute the air further.

- Connecticut residents are using more air conditioning as the climate changes, but most still buy systems that operate at minimum levels of efficiency. Unless residents begin to purchase a far higher percentage of efficient air conditioning units, Connecticut will be hard pressed to reduce electricity use, air pollution and greenhouse gas emissions in a warming climate.

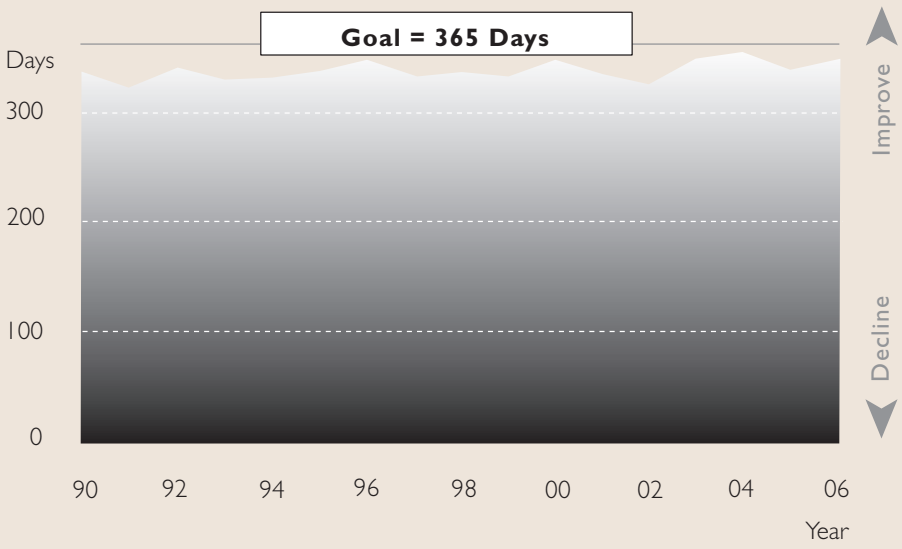
- Warm surface water leads to less oxygen in the deep waters of Long Island Sound. The lobster die-off of 1999 coincided with warmer waters, and the diseases that kill lobsters and oysters thrive in warmer waters. Several warm-water marine species are moving in as native cold-water denizens disappear, and few residents will view a surge in jellyfish as compensation for the loss of winter flounder.

- The climate is changing in other deleterious ways. Connecticut is seeing many more storms that bring at least two inches of rain. These are the storms that push raw sewage, soil and other pollutants into waterways and cause beaches to be closed to swimming.

PART I: Indicators

Good Air Days

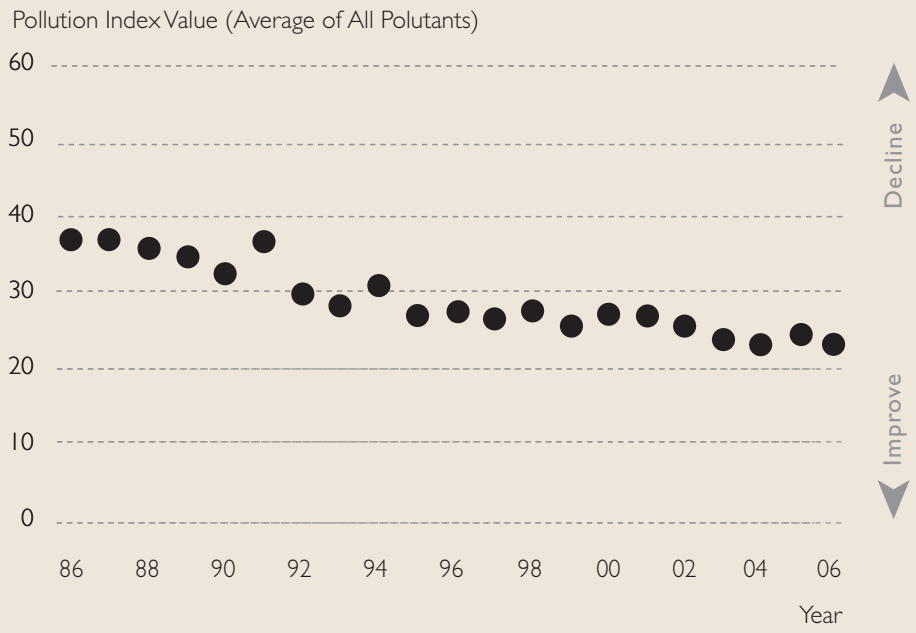
The summer air of 2006 was better than average. Connecticut's air met all daily health-based standards except on 13 sunny days when levels of ground-level ozone violated the standard.



For more information about this indicator please see page 31

Clearing the Air

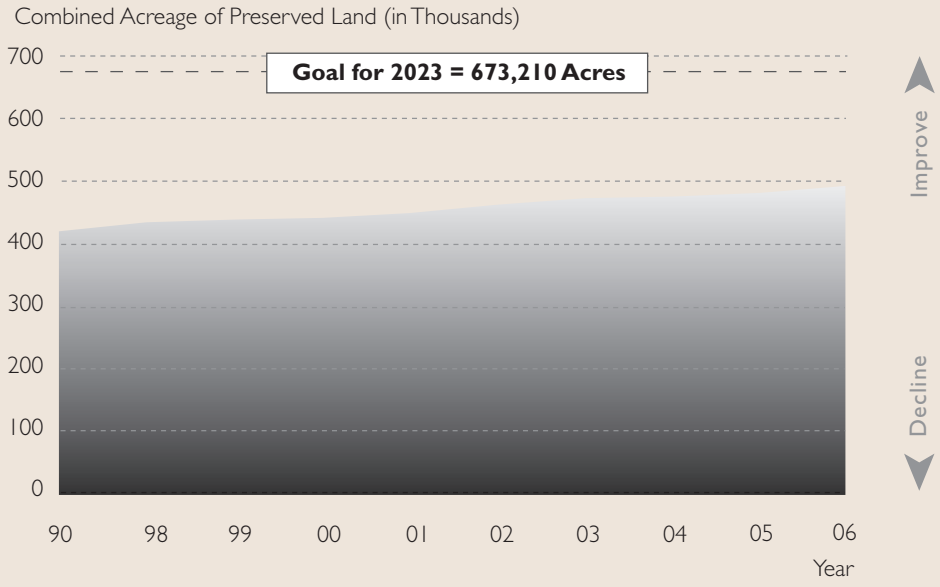
The total amount of pollution in Connecticut' s air has improved gradually over two decades.

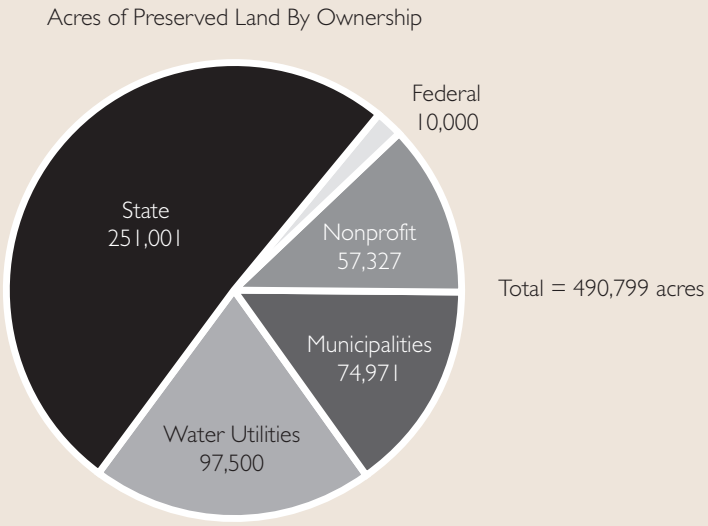


For more information about this indicator please see page 31

Preserved Land

Land-saving organizations, the state, cities and towns collectively preserved about 6,000 acres in 2006, the same as in 2005. To meet its goal for 2023, Connecticut must preserve more than 10,000 acres every year.

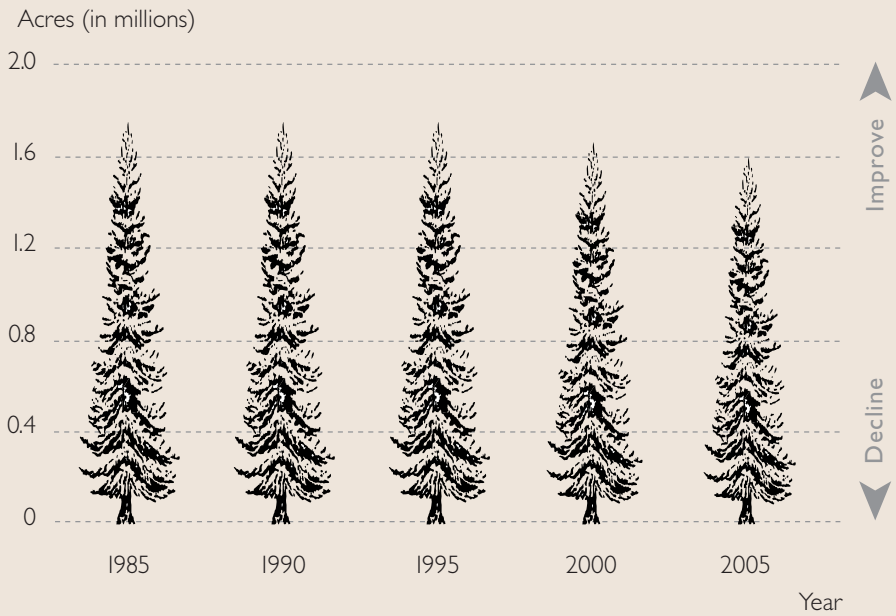




For more information about this indicator please see page 32

Forest

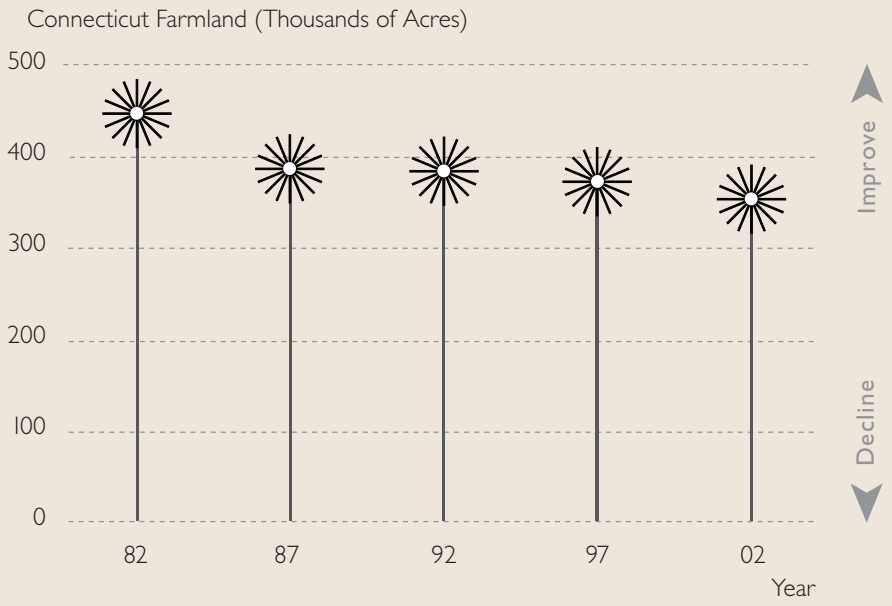
After a century of growth and relative stability, Connecticut's forests are losing ground.

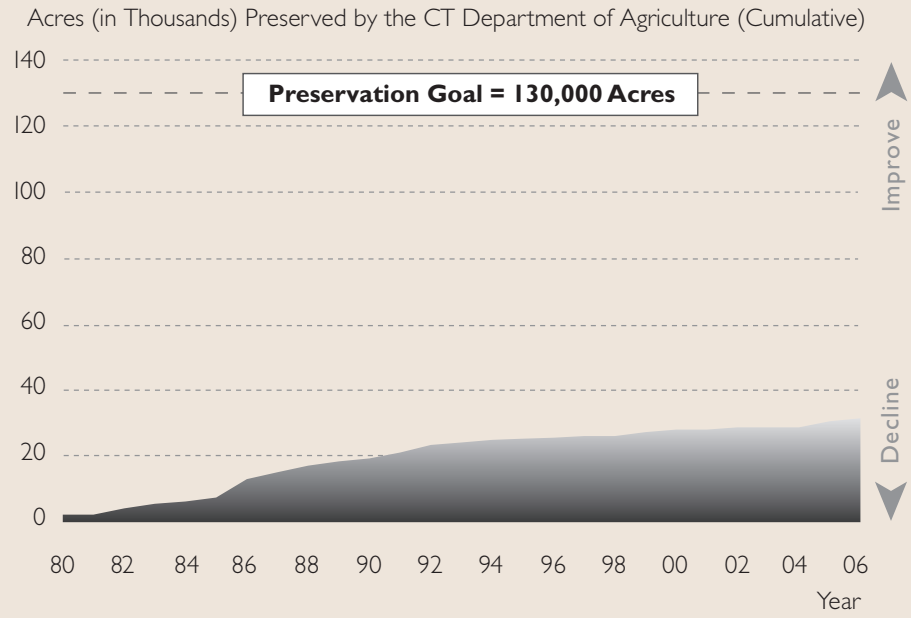


For more information about this indicator please see page 32

Farmland

Without substantial acceleration in the pace of preservation, Connecticut's agricultural goals will not be met.

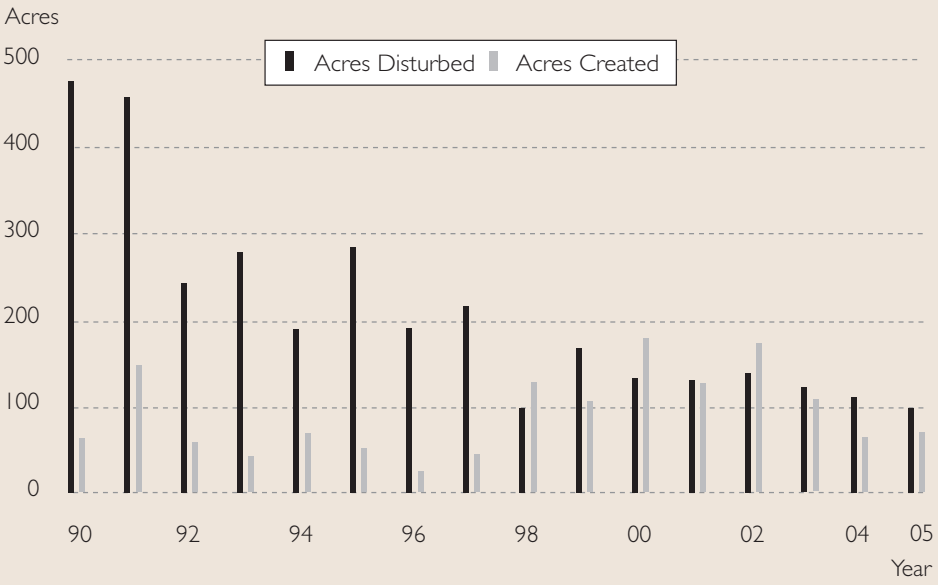




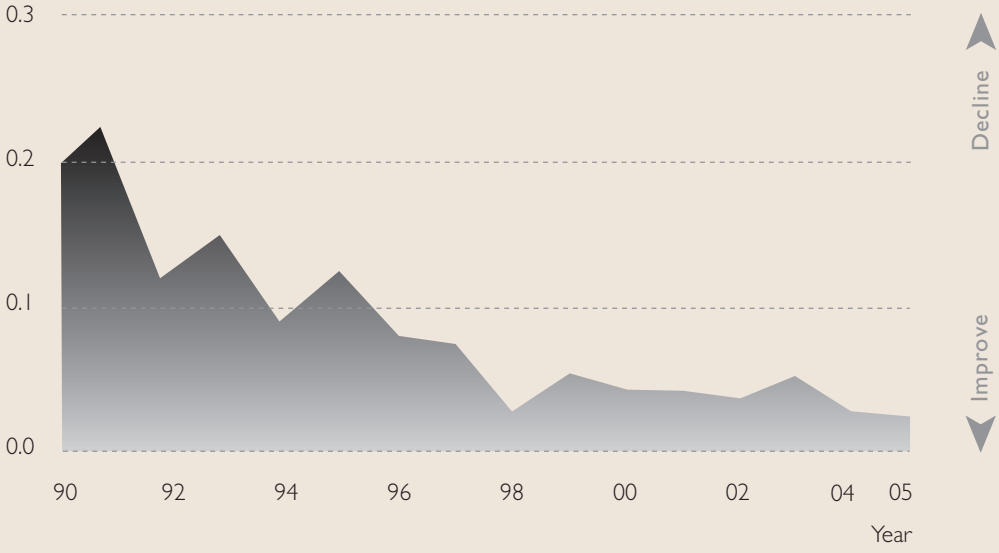
For more information about this indicator please see page 33

Inland Wetlands

Disturbances of inland wetlands have kept a fairly constant pace over the past seven years.



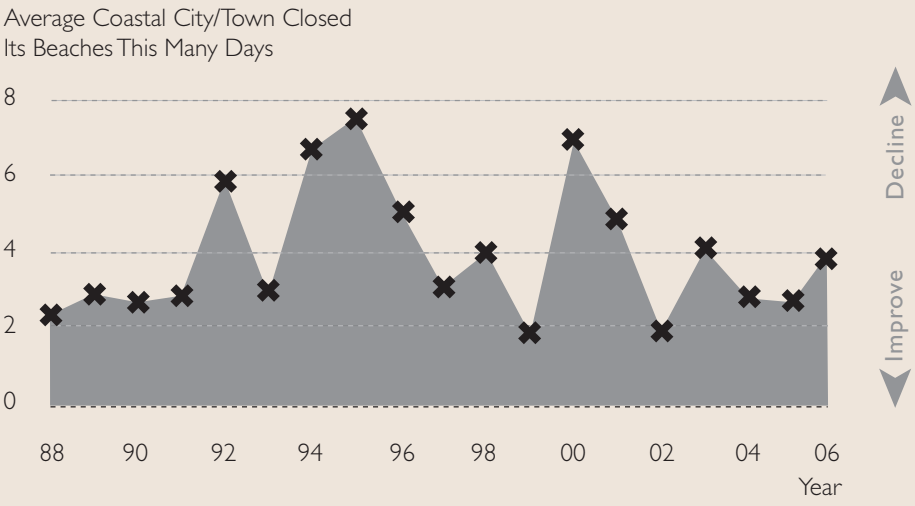
Acres of Inland Wetlands Affected by the Average Permit Issued by DEP & the 170 Municipal Wetlands Agencies



For more information about this indicator please see page 33

No Swimming at the Beach

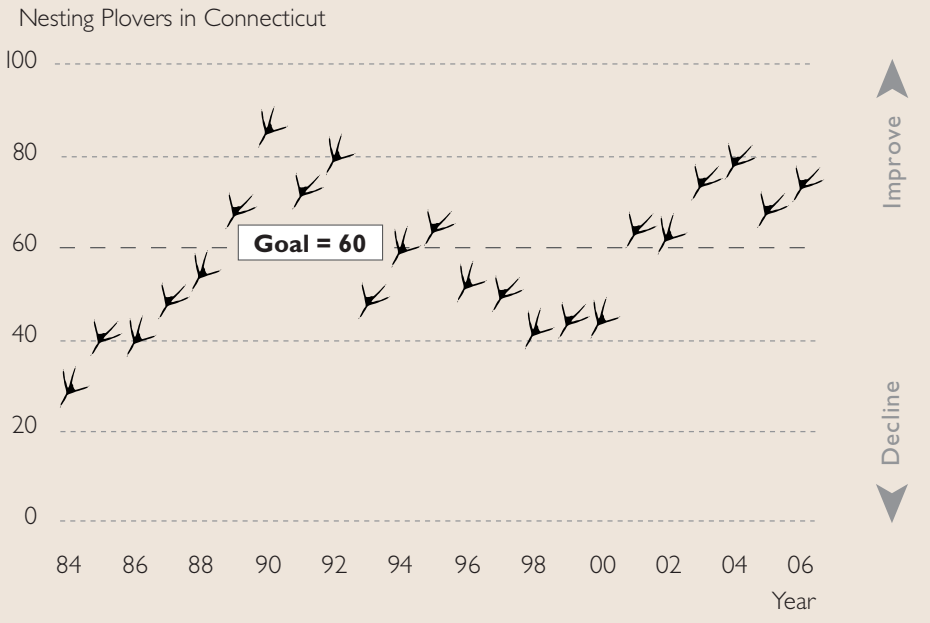
Many coastal towns and cities must close their beaches after heavy rains because of the pollutants that are washed into Long Island Sound, and 2006 was a rainy year.



For more information about this indicator please see page 34

Piping Plovers on the Beach

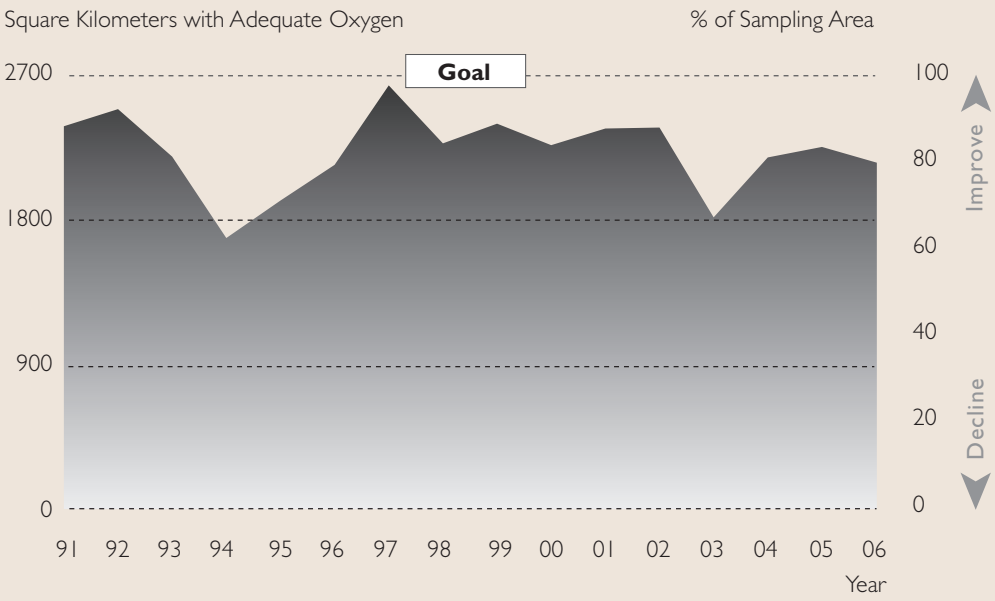
Seventy-four of these small, threatened shorebirds nested on 15 coastal beaches, including beaches in Groton, Stonington, and Westbrook where they had been absent for decades.



For more information about this indicator please see page 34

Oxygen in Long Island Sound

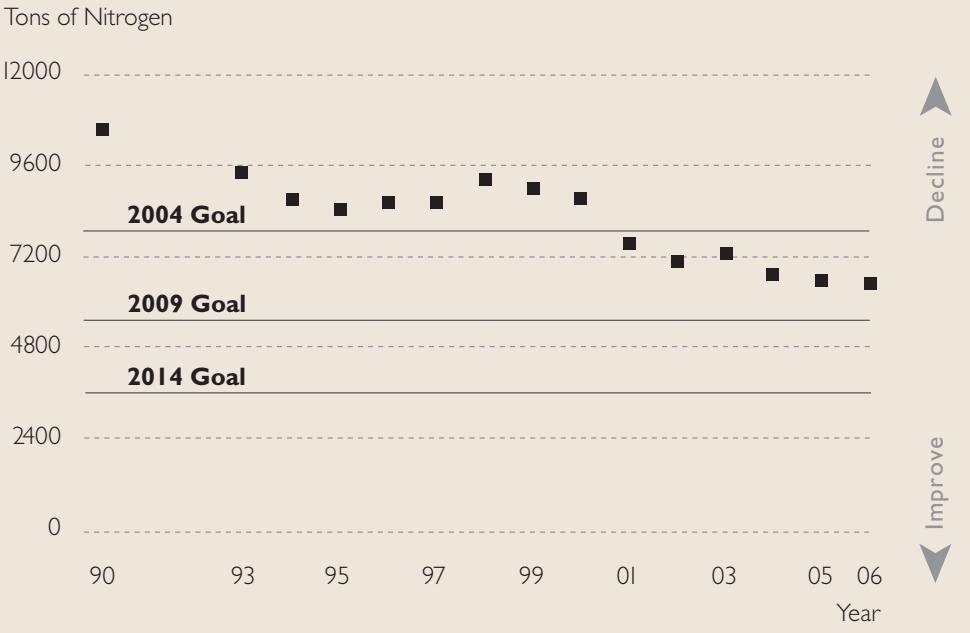
A large area of western Long Island Sound was affected by hypoxia (oxygen levels too low to support aquatic life) in August 2006.



For more information about this indicator please see page 34

Nitrogen in Long Island Sound

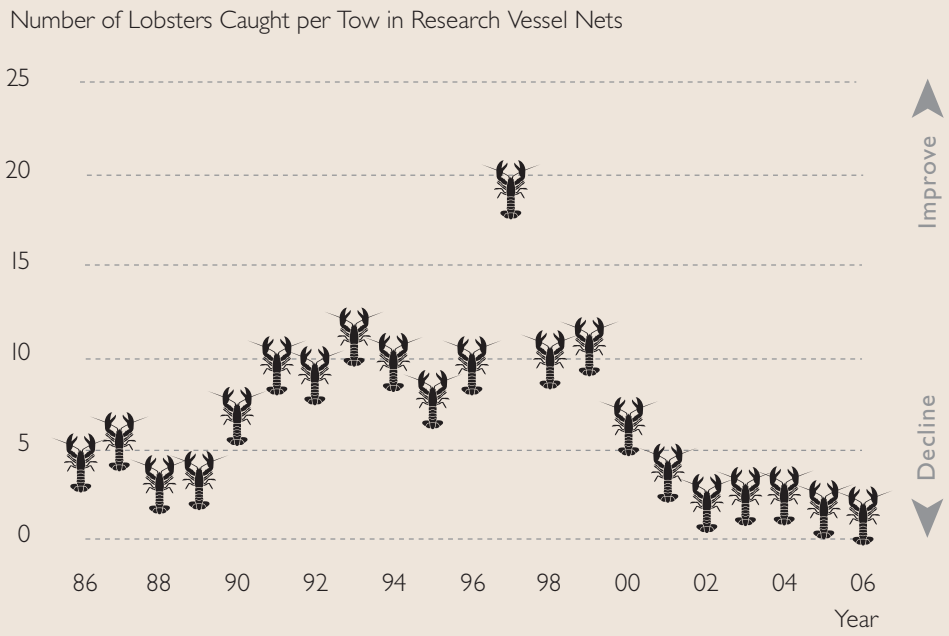
Connecticut's campaign to reduce nitrogen from sewage treatment plants and large factories has been going well, but progress could be slowing.



For more information about this indicator please see page 35

Lobsters

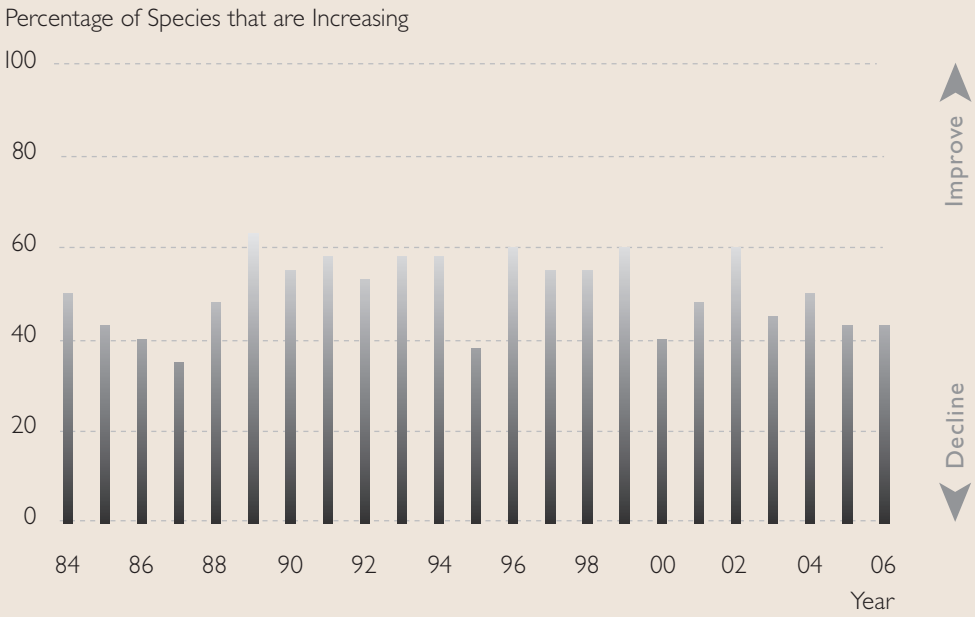
The lobster population of Long Island Sound hit a new low in 2006.



For more information about this indicator please see page 35

Seafood Sampler

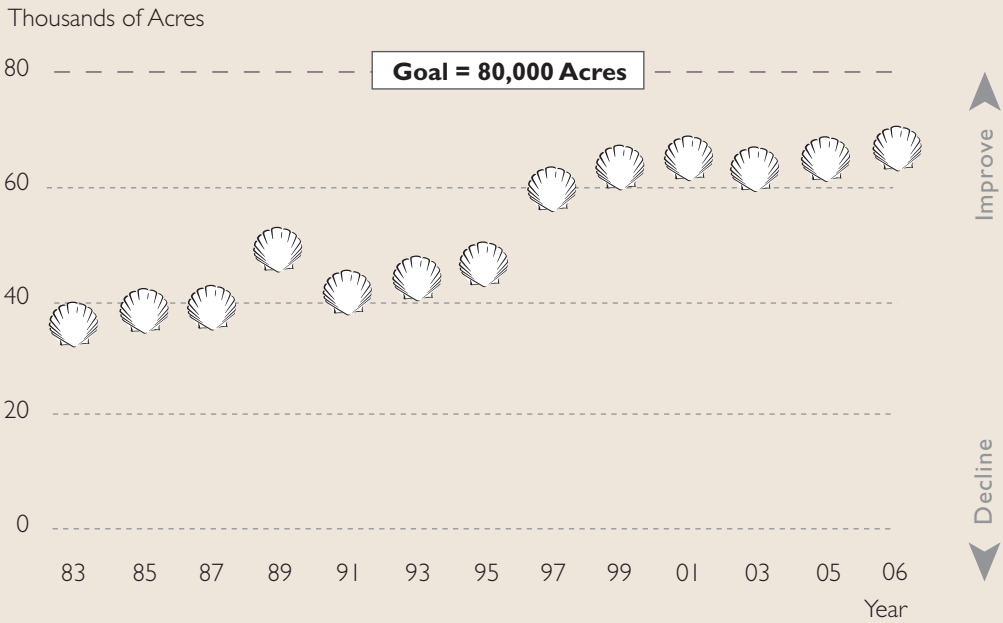
Fewer than half of the 40 marine species sampled in Long Island Sound were found to have growing populations in 2006.



For more information about this indicator please see page 35

Clean Shellfish Beds

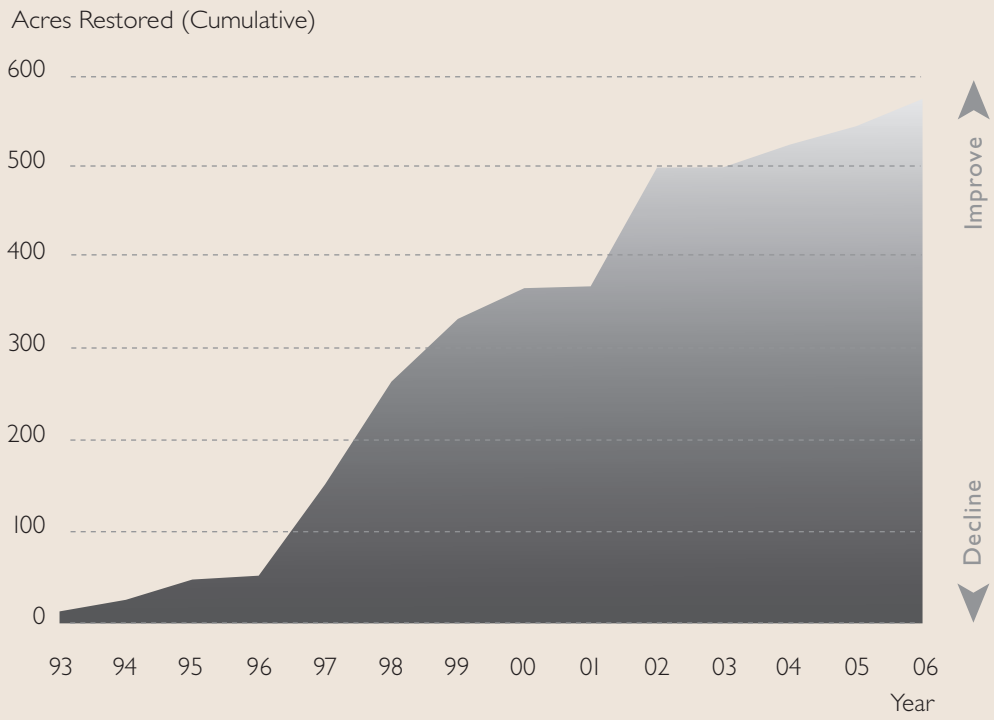
Cleaner water and active management have allowed the leasing of more underwater acreage to commercial shellfish companies.



For more information about this indicator please see page 36

Reviving Tidal Wetlands

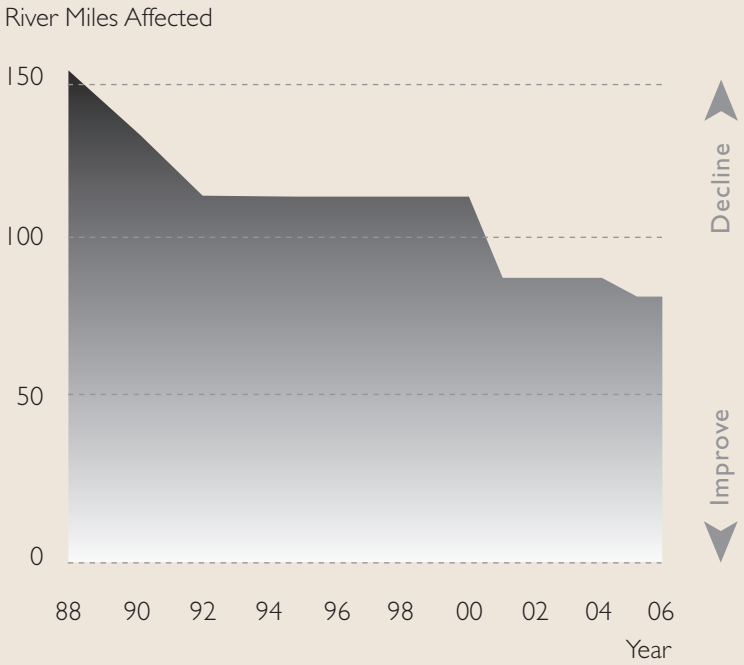
Each year, less than one acre of tidal wetlands is lost to permitted development (not shown here), while on average more than 35 acres of degraded wetlands are restored.



For more information about this indicator please see page 36

Sewage Overflows

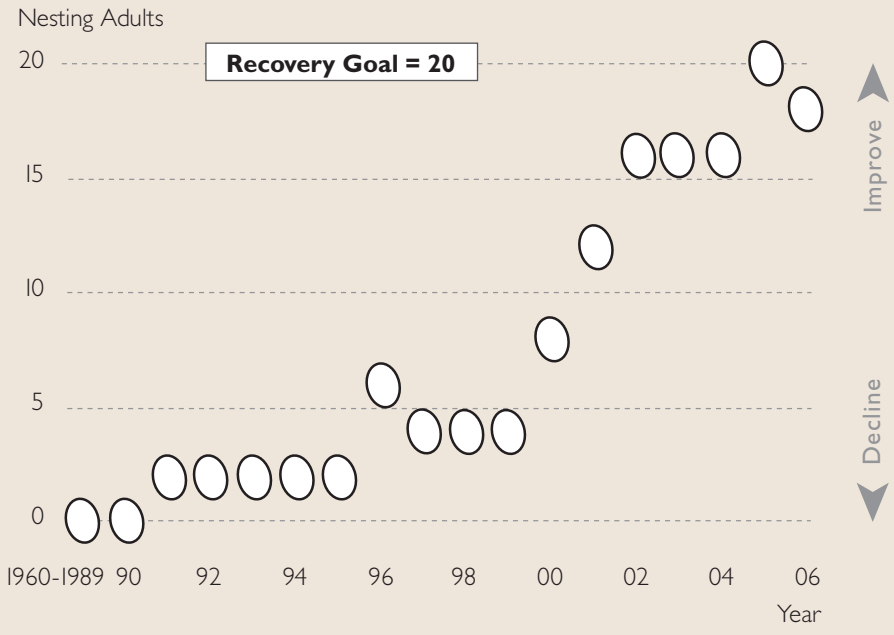
Connecticut's cities have been separating their sanitary sewers from their storm sewers to prevent overflows of untreated sewage during storms. The Jewett City separation was completed in 2005, protecting about seven miles of the Quinebaug River from sewage overflows.



For more information about this indicator please see page 36

Bald Eagles

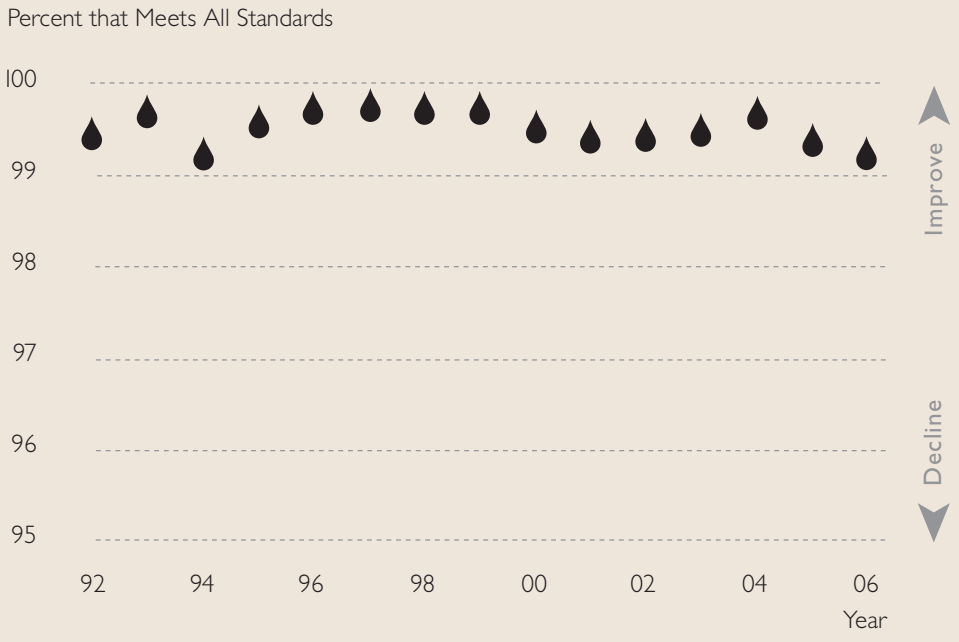
Bald eagles have come back to Connecticut. The chemical pollutants that interfered with their reproduction have been controlled.



For more information about this indicator please see page 37

Drinking Water

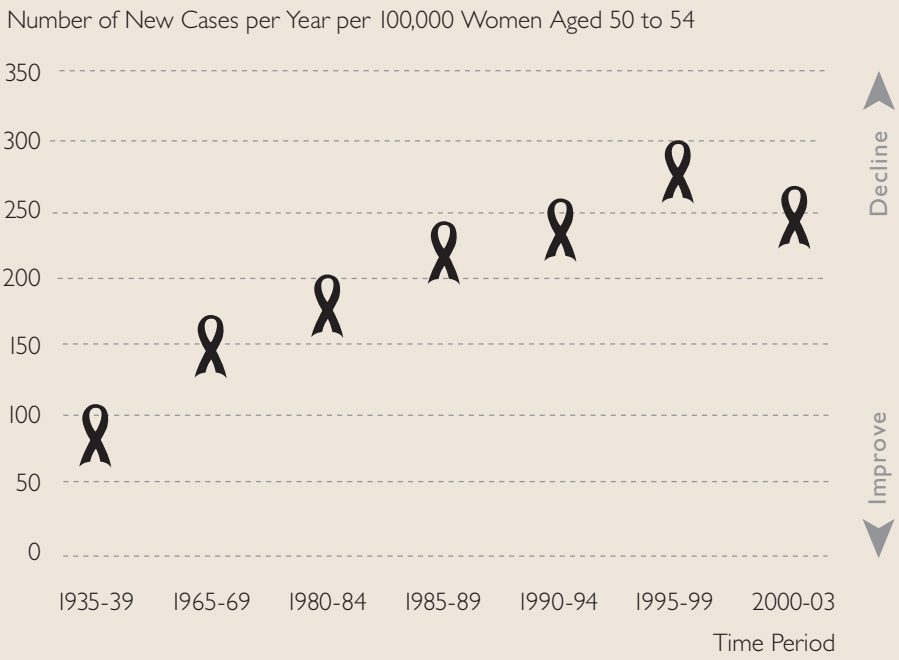
Most large water companies delivered water that met all standards in 2006, but a few short-term problems led to a decline for a second year in a row.



For more information about this indicator please see page 37

Breast Cancer in Connecticut

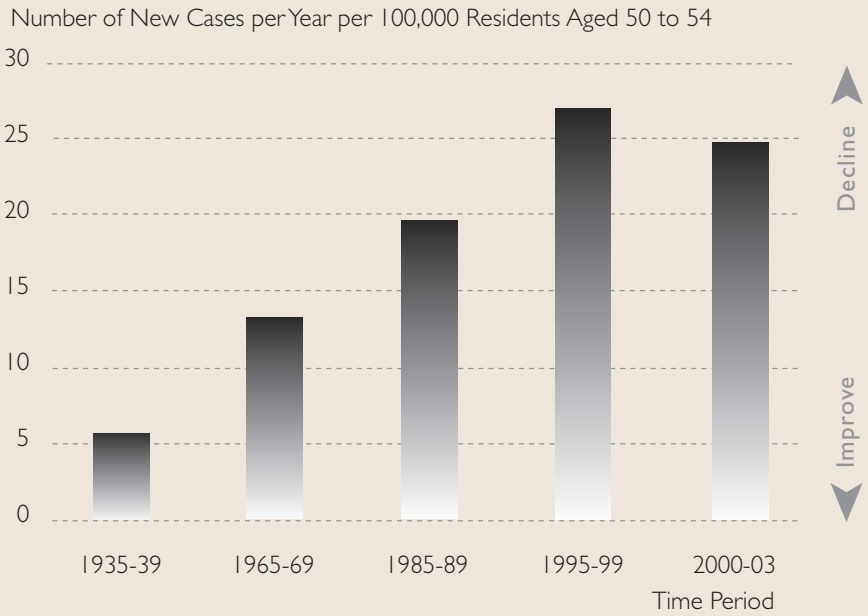
Connecticut has the third highest incidence of breast cancer among the 50 states, but has seen improvement since a peak in the late 1990s.



For more information about this indicator please see page 37

Non-Hodgkin's Lymphoma

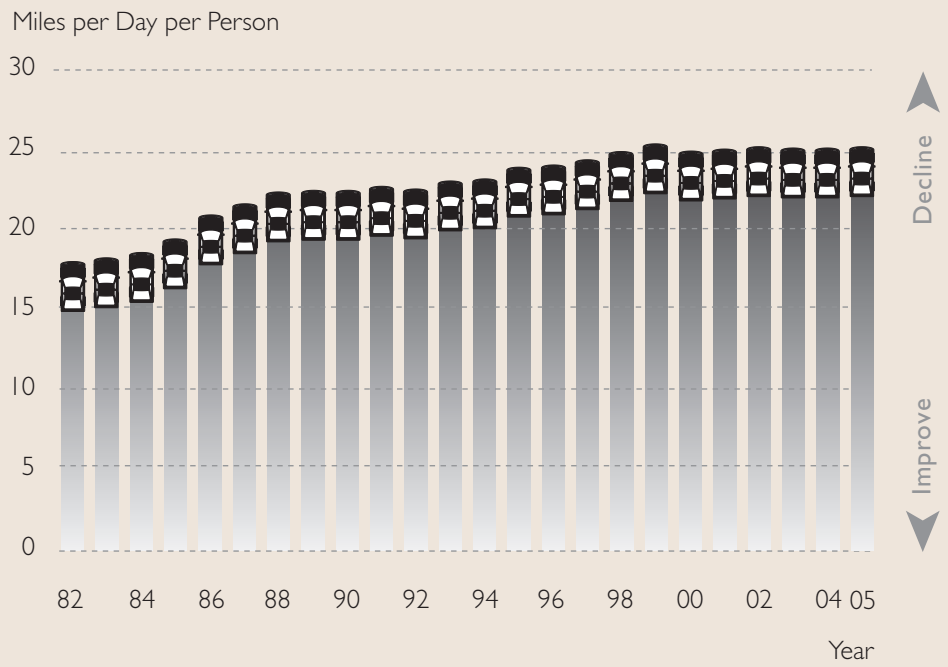
The reasons for the marked increase in this cancer are not well understood, but some reports cite exposure to certain fertilizers, pesticides and other chemicals as potential factors. Rates might have peaked in the late 1990s.



For more information about this indicator please see page 38

Driving Our Cars

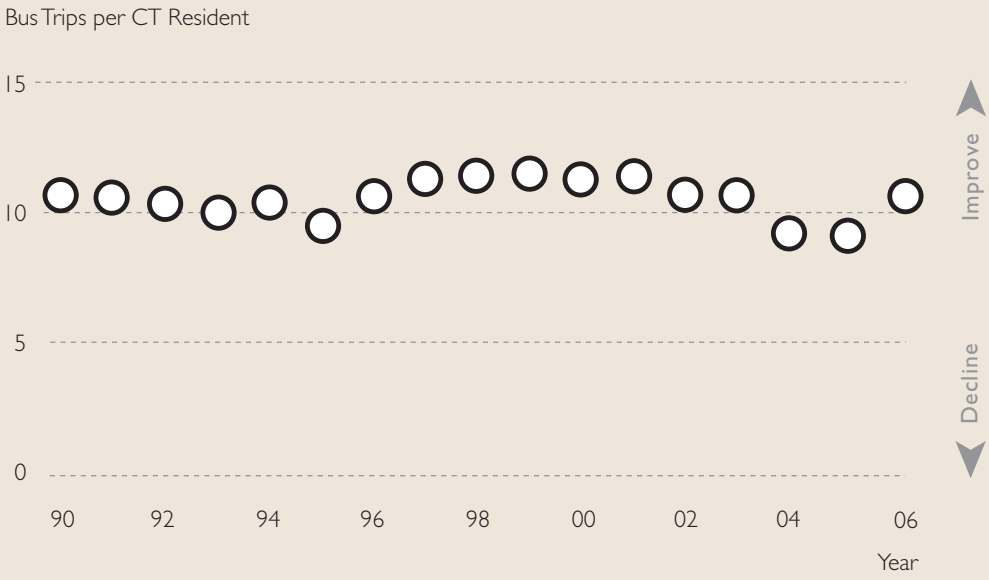
The average Connecticut resident drives
more miles nearly every year,
but this trend might be leveling off.



For more information about this indicator please see page 38

Taking the Bus

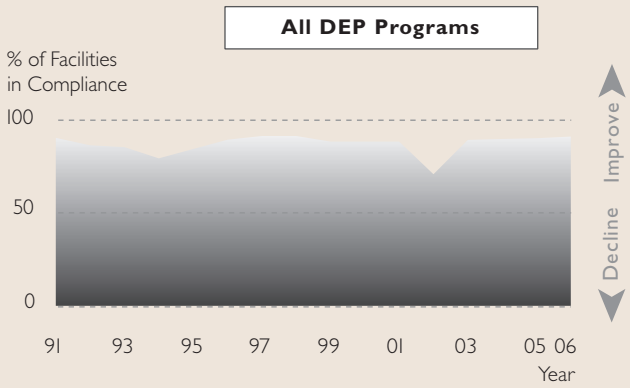
After a four-year slide in bus riding, the average Connecticut resident took six percent more bus rides in 2006.

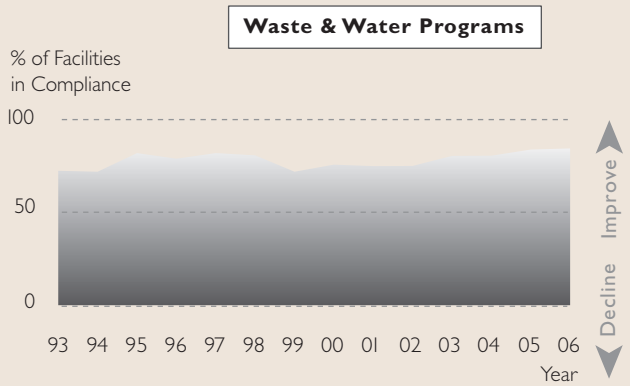


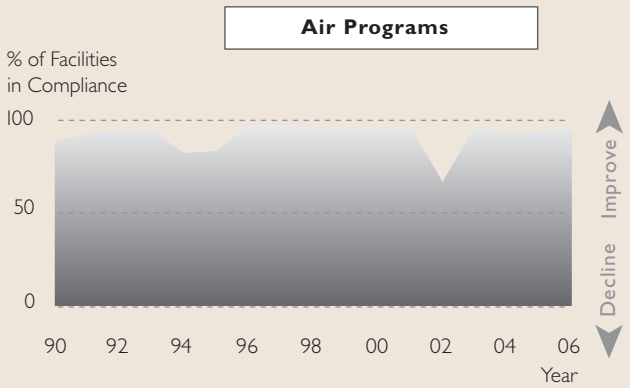
For more information about this indicator please see page 38

In Full Compliance

As usual, inspectors found about 90% of facilities in compliance with pertinent regulations. Inspections increased slightly in 2006 after declining by more than 50% from 1997 to 2005 (not shown).







For more information about this indicator please see page 38

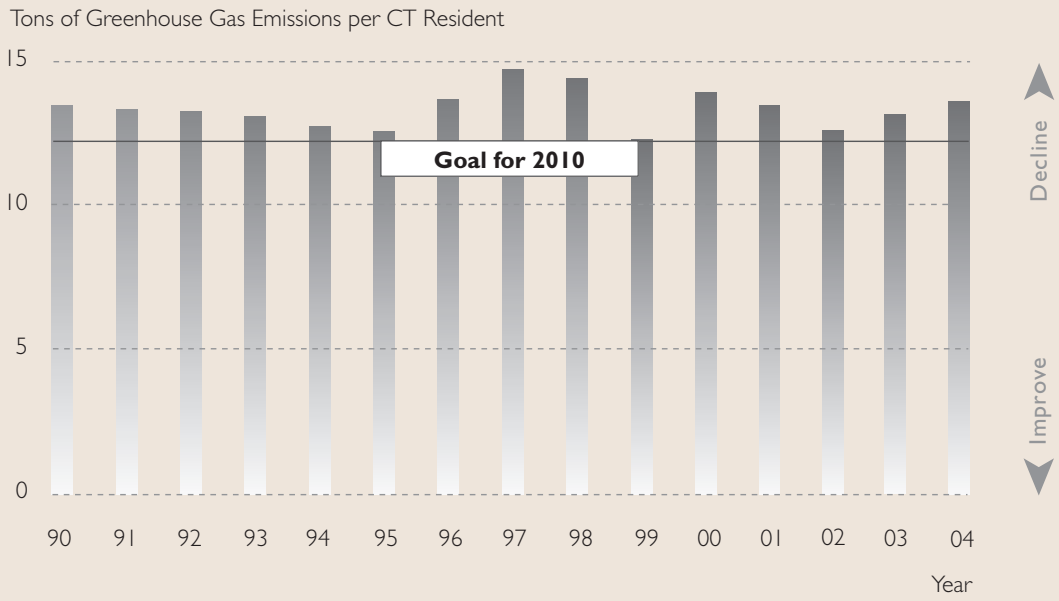
Recycling

In 1993, Connecticut set a recycling goal for 2000 which it has not yet met.

For more information about this indicator please see page 39

Climate Watch

Connecticut has set ambitious goals to reduce emissions of "greenhouse gases," primarily carbon dioxide, that trap heat in the earth's atmosphere and alter global climate. Growing energy consumption threatens to undermine the state's efforts to reach its goal.

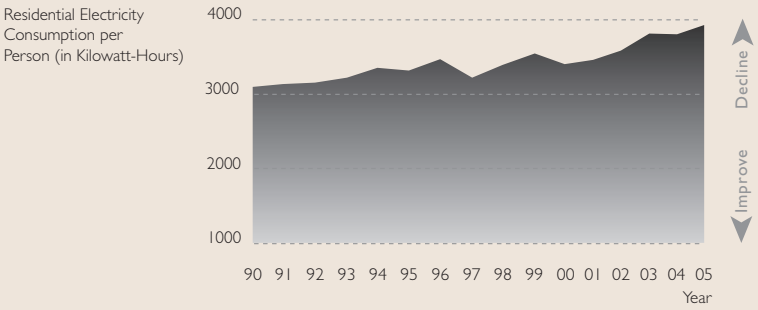


For more information about this indicator please see page 39

Electricity

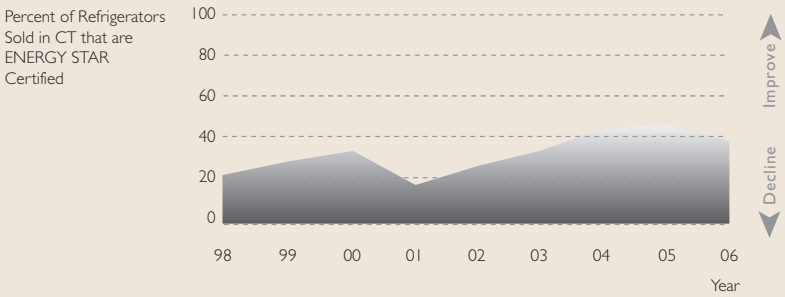
The average Connecticut resident uses more electricity every year

Inefficiency at Home



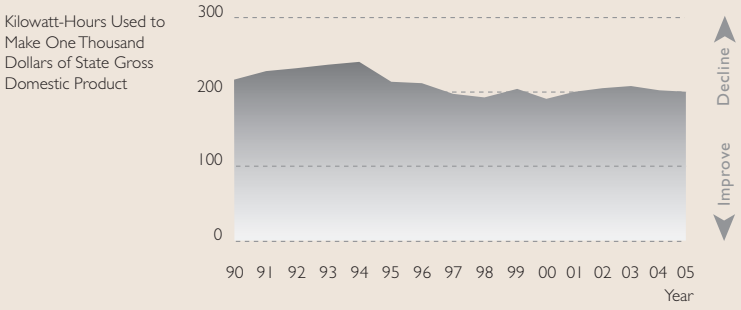
Most appliances bought in Connecticut are not the most efficient models.

Inefficiency in the Kitchen



Since 1995, Connecticut's businesses have been using electricity more efficiently to produce goods and services.

Efficiency at Work



For more information about these indicators please see pages 40 - 41

PART II: Details

The previous section of this report shows important environmental trends at a glance. The following pages contain more complete descriptions of each indicator and the sources of the data used.

Air

Good Air Days (page 6)

On a Good Air Day, every monitoring station in the state records satisfactory air quality. "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 dioxide, and ground-level ozone. Connecticut's goal is to have air that meets health-based standards for all pollutants except particulates by the year 2010.

Violations of the health-based air quality standards have been eliminated for all pollutants except ground-level ozone and fine particulates.

Ozone is created when nitrogen oxides and organic compounds in the air react in the presence of sunlight. Weather is a big factor in year-to-year fluctuations. 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. Looking at ground-level ozone data from the past seven years, we see that 2005 was worse than average but that 2006, with 13 days when health standards were violated, was a little better than average.

The graph on page 6 does not reflect any "bad air days" for particulates, but it probably will in future reports. In December 2006, the federal government tightened the daily standard for fine particulates in the air. (A "fine" particulate is less than 2.5 micrometers in diameter.) Monitoring records from recent years show that the levels of fine particulates at some coastal Connecticut locations would have been considered violations if the tighter standard had been in effect during those years. Because the new standard was not in effect, the number of "good air days" counted in this indicator was not affected. Beginning next year, this indicator will be revised to take into account the new standard. Connecticut must meet the new air quality goals for fine particulates by 2015.

Clearing the Air (page 7)

Six air pollutants -- sulfur dioxide, lead, carbon monoxide, particulates, nitrogen dioxide, and ground-level ozone -- are measured across the state by the DEP. At the end of every year, the Council expresses the average level of each pollutant on a numerical scale, where zero equals no pollution and 100 represents the "unhealthful" level of the specified pollutant. The Council then takes this annual number for each of the six pollutants and averages them to yield the single index value on this graph. Levels of lead in the air have dropped so low that they barely register in this indicator. Following several years of measurable improvement, 2005 was the first year since 1994 to see all of the pollutants (excluding lead) get worse. In 2006, all pollutants except particulates showed improvement.

Preserved Land (page 8)

State law (C.G.S. 23-8(b)) sets a goal of conserving 21% of Connecticut's land area. In 1998, Governor John Rowland established 2023 as the target date for meeting this goal. The graph titled "Combined Acreage of Preserved Land" displays progress toward the 21% goal. Current acreage of each type of land is shown in the chart labeled "Acres of Conserved Land by Ownership." The types of land are:

- State-owned forests, parks, and wildlife areas
- Class I and II watershed lands owned by water utilities
- Estimated municipal open space
- Estimated nonprofit lands (land trusts, The Nature Conservancy, etc.)
- Federal conservation land.

From 2000 through 2003, the pace of land preservation was sufficient to keep Connecticut on track toward its 2023 goal, but acquisition slowed in 2004 through 2006.

Forest (page 9)

Most of Connecticut's forests were cleared for agriculture and industry in the 19th century and then allowed to regenerate. From 1960 to 2000, the overall acreage of forest did not change much, even with the rapid spread of roads, housing and commercial development. According to the U.S. Forest Service, the spread of forests on abandoned farms equaled the conversion of forested land to other uses. The 21st century has brought a change, with forest acreage now declining.

This indicator shows the total acreage of forests in Connecticut that occur in patches larger than 50 acres. Property boundaries are not considered; a patch might be owned by one landowner or many. About 93 percent of the forested acres in Connecticut occur in these larger patches (i.e., those greater than 50 acres). By excluding the smaller patches we remove from consideration the many thousands of "forest" patches that are an acre or two in size. While wooded patches as small as one acre are counted by the U.S. Forest Service, these are often the trees in residents' back yards and cannot be considered fully functioning forests, and therefore are not included here. Data are obtained from the U.S. Forest Service, which estimates forest acreage annually. This is a new data source; prior to 2004, the Service measured Connecticut's forests once a decade. The new annual analyses have a greater potential for errors, but these will be corrected in subsequent years.

NOTE: This indicator was introduced last year, replacing the forest indicator used through 2004. The old indicator was based in part on forest classification data connected to Public Act 490 (preferential property tax rates for forest land). Those data are no longer being collected by the DEP because of statutory changes and staff reductions, and will no longer be available. Readers' comments on this new indicator are welcome.

Farmland (page 10)

The graph titled "Connecticut Farmland" illustrates the total acreage of land in Connecticut farms, as counted by the U.S. Department of Agriculture (DOA). The inventory is conducted every five years. The 2007 inventory is expected to show a loss of several thousand acres.

To preserve land for future agricultural use, the state DOA purchases the development rights to farmland from volunteer sellers. This keeps the land in private ownership with severe restrictions on future nonagricultural development. As illustrated by the graph, "Acres Preserved by the CT Department of Agriculture," preservation has slowed significantly. No farms were preserved in 2003. Nine farms totaling about 1100 acres were approved for preservation funding in 2004, six farms comprising 666 acres in 2005, and eight farms comprising 968 acres in 2006.

If the development and preservation rates of the last eight years continue, Connecticut will never meet its preservation goal. (This goal is based on the amount of land needed for food production needs, but non-food crops including potential biofuel crops could cause the goal to be raised.) Simple projections show the goal being reached in the late 22nd century, but by the end of the current century there will not be that acreage of agricultural land remaining in the state. Public Act 05-228, the Community Investment Act, is expected to generate up to five million dollars per year for agricultural programs including land preservation.

Inland Wetlands (page 11)

The “Acres Disturbed and Created” graph shows the acreage of wetlands disturbed by development and the number of those acres replaced by human-made wetlands. “Disturbed” 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 swamp to deep pond). 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 wetlands conservation. Inland wetlands are estimated to cover about 450,000 acres, or about 15% of Connecticut's surface. 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 showing the “Area of Inland Wetlands Affected by the Average Permit Issued” indicates that wetlands agencies had also become more conservative since 1990. Municipal wetland agency members and staff have many more opportunities for state-sponsored training than they did in 1990, though several commissions have ignored the legal requirement to have at least one member or staff person complete training. More than 95 percent of the development activity in and around wetlands is regulated by municipalities with minimal oversight or supervision by the DEP.

NOTE: The data in the top graph probably understates wetlands loss. There are numerous municipalities (40 in 2005) that failed to submit reports of permit decisions to the DEP as required by law. The Council adjusted the reported 2005 figures upward to account for unreported data, but did so conservatively.

No Swimming at the Beach (page 12)

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, runoff and overflows from combined sanitary/storm sewers are presumed to contaminate the water, prompting towns to close beaches automatically as a precaution. The Council adds up the number of days that each city and town closes one or more of its public beaches, and calculates an average for each year. Yearly variations are products of rainfall patterns and incidents such as sewer-line ruptures. The dry summer of 2002 brought far fewer closings, but significant rainfall in 2003 elevated the number of closings. Rainfall, sewage spills and boat discharges led to some beaches being closed for several days in 2005 and again in 2006, almost all in the western half of the state.

Piping Plovers on the Beach (page 13)

Piping plovers are small shorebirds that nest on sandy, vegetation-free beaches. Human intrusion, storm tides, and predators frequently destroy nests. 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 also benefit other nesting species, including least terns, which are also threatened in Connecticut. 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. Diminishing habitat and more disturbances are forcing many birds to nest within the vegetation zone and below the storm tide line where predation and washout took a toll in 2002. There was an increase in plovers in 2003, with nests in two locations that had not been used in recent years, and again in 2004 when birds nested in three new locations. In 2005, birds did not return to the new sites, but pairs again tried three new locations in 2006.

Oxygen in Long Island Sound (page 14)

Hypoxia is the condition in the water when oxygen levels are too low to support desirable forms of life, including fish and lobsters. (For this indicator, hypoxia is defined as less than or equal to 3 mg/l of dissolved oxygen.) Hypoxia occurs when the nitrogen in pollution stimulates excessive growth of aquatic plants, which die and are consumed by oxygen-using bacteria. Connecticut's goal is to “eliminate the adverse impacts of hypoxia resulting from human activities.” All of the hypoxia has occurred in the western two-thirds of the Sound. Weather greatly influences hypoxia, making year-to-year changes less important than long-term trends. Mild winters followed by relatively cool summers result in fairly uniform water temperatures and less hypoxia in the depths.

The second largest area of hypoxia was observed in 2003, and scientists believe it is attributable to an expansive brown algae bloom in the western end of the sound, which was most likely fueled by a large amount of rain (and nitrogen-bearing runoff) early in the summer. A cool beginning to the summer of 2004 led to less hypoxia, and favorable weather led to another small improvement in 2005 (but see technical notes below). The first week of August 2006 saw a return of hypoxia to a larger area.

To reduce the nitrogen inputs that cause hypoxia, Connecticut and New York adopted a comprehensive management plan in 1994 and built upon that Plan with an expanded agreement in 2002. Connecticut’s progress in reducing nitrogen pollution is illustrated in the Nitrogen indicator (page 15).

Technical notes: The graph shows the area of Long Island Sound that had adequate oxygen levels throughout the year. The sampling area (2700 square kilometers) does not include the whole sound (3400 square kilometers). The areas not sampled are shallow waters (less than two meters deep) near shore, which generally do not experience hypoxia; embayments; the eastern end of the sound, which is not expected to experience hypoxia; and an area in the far western end, which probably becomes hypoxic in most years.

In 2004, the DEP redefined hypoxia to include waters with less than or equal to 3.5 mg/l of dissolved oxygen (replacing the older 3.0 mg/l standard). There has not been time to re-calculate past years' data to reflect the new standard, so this indicator still uses the older 3.0 mg/l standard.

Nitrogen in Long Island Sound (page 15)

The amount of nitrogen dumped into Long Island Sound and its tributaries affects oxygen levels in the water. Overall, Connecticut's share of the total nitrogen pollution in Long Island Sound is about one-third, and New York's is two-thirds. In April 2001, the federal Environmental Protection Agency approved the New York and Connecticut joint plan for implementing a Total Maximum Daily Load (TMDL). The TMDL is the maximum amount of pollutants that can be discharged while still allowing water quality standards to be attained. Connecticut's target for 2014 is 3837 tons (or less) of nitrogen per year. This indicator tracks the nitrogen discharged to the Sound and major rivers by 79 sewage treatment plants, 3 large coastal industrial facilities, and a group of industrial sources in the Naugatuck River watershed. Connecticut's investments in nitrogen-removal technology have been successful. The goal for 2004 was met three years ahead of schedule. The next milestone is a goal of 5505 tons (or less) in 2009. There are large uncontrolled quantities of nitrogen entering Long Island Sound in the rain that runs off lawns and pavement.

Lobsters (page 16)

The lobster is the third most economically important marine species in Connecticut (behind hard clams and sea scallops). The DEP samples lobster populations every autumn by towing nets from a research vessel at randomly selected sites throughout Long Island Sound. Researchers are focusing on a combination of four possible causes for the dramatic downturn since 1999: disease, changes in water quality, changes in climactic conditions, and human impacts to the Sound. Research to date suggests that a trend toward warmer water temperatures is an important factor in the decline of lobsters. While the lobster population appeared to stabilize in 2003, the autumn 2006 trawl yielded the lowest number in at least 20 years.

Seafood Sampler (page 17)

The DEP samples marine fish and invertebrates every spring and fall by towing nets from a research vessel. This indicator includes lobster, squid and 38 species of fish and shows general trends in their collective populations. In 2005 and 2006, less than half of these species were as common as they were in the 1980s and 1990s. From 1984 through last year, the majority of species showed a decline. Scientists are unsure of the reasons behind the declines and fluctuations of recent years. One possible explanation for the decline of some prey species is the population growth of striped bass and other predators. There also appears to be a decline is some colder-water species as warm-water species increase.

Clean Shellfish Beds (page 18)

Connecticut met its goal of having 60,000 acres open by the year 2000, which are 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. The dramatic increase in 1997 was attributed largely to a decade-long increase in the commercial value of Connecticut's harvest, 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. The expansion of shellfish beds in 2000 reflected even greater interest in the oyster industry as some lobstermen, responding to declining lobster populations, switched to harvesting oysters. The slight decrease in 2003 reflected a 15-month moratorium on new leases and fluctuations in the acreage of private beds. In 2004, progress resumed, and many shellfish beds that were already open with restrictions were upgraded because of better water quality and monitoring. Aquaculture experts believe 80,000 acres is a realistic target.

Reviving Tidal Wetlands (page 19)

Restoration includes work performed by the state as well as by coastal landowners required by the DEP to restore wetlands as conditions of their permits. Restoration acreage is counted only where tidal flow has been restored permanently, and does not include minor enhancements or simple vegetation management. Restored wetlands support native vegetation and wildlife. 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. Restoration has been outpacing development: with the exception of 1995, less than one acre of tidal wetlands has been lost each year to permitted development.

Rivers and Reservoirs

Sewage Overflows (page 20)

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. Several of these combined sewer systems have been completely or partly separated since 1990, reducing the impact of untreated sewage on rivers. The improvement in 2001 can be attributed to the completion of projects in the towns of Waterbury and Naugatuck. It also reflects greater precision in the DEP's data collection and analysis. Connecticut's goal is to eliminate the effects of raw sewage discharges from combined sewer systems. Progress is slow because of the expense of separating the sewers. In 2005, the Jewett City project was completed, eliminating overflows of raw sewage into the Quinebaug River.

Bald Eagles (page 21)

Bald eagles stopped breeding in Connecticut in the 1950s. The species declined throughout the lower 48 states and was declared endangered in 1967. A variety of environmental conditions harmed the eagle, including the widespread use of certain chemicals (chlorinated hydrocarbons) that accumulated in its prey (mostly fish). When those chemicals were banned and polluted waterways were improved, the bald eagle was able to reproduce again. Young eagles were re-introduced into nearby states in the 1980s, and a pair found their way to Connecticut in 1991 and successfully raised a family in 1992. Several more pairs have since found acceptable nesting habitat on land protected by government and private landowners including utility companies. The DEP monitors the eagles with the assistance of the Bald Eagle Study Group and other volunteers. The bald eagle is listed as endangered in Connecticut and threatened nationally, but eagle population growth has prompted the federal government to propose removing it from the federal list. The Northern States Bald Eagle Recovery Plan established a goal for Connecticut of 20 breeding birds (10 nests), which was reached for the first time in 2005. The population of bald eagles is included as an indicator because the eagle is representative of species, especially predators, that share similar habitat requirements: large areas of relatively undisturbed land near rivers or lakes where the birds can find adequate supplies of prey that are – very importantly – only minimally contaminated.

Drinking Water (page 22)

Every public water utility submits monthly quality reports to the Department of Public Health. This indicator shows the percentage of monthly reports that demonstrate full compliance, after weighting the reports to account for the number of people served by each utility. Though long-term problems persist, they occur most frequently with small systems serving relatively few households. This indicator would show greater fluctuations if the larger systems failed to deliver good water. As in most years, most of the contamination problems of 2006 occurred in small systems, but a few short-term problems in larger systems caused this indicator to show a downturn for a second consecutive year. The most commonly encountered contaminants included bacteria and byproducts of disinfection, with an assortment of other chemicals and radioactive substances.

Human Health

Breast Cancer in Connecticut (page 23)

Of every 100,000 women in the state aged 50 to 54, a number will discover each year that they have breast cancer. That number is depicted in this graph. To minimize year-to-year fluctuations, groups of years are averaged together. (In other words, each data point on the graph shows the number of new cases in a single year, but that year is actually the average of five years.) While some breast cancers are linked to genetic factors, most are associated with non-genetic factors including diet, reproductive history, lifestyle, and external agents. There are numerous studies connecting certain chemicals and other environmental factors to breast cancer. These factors, if significant, do not appear to be as important statistically as a woman's own reproductive history, but it is important to note that breast cancer rates vary greatly in different parts of the country. Among the fifty states and Washington, D.C., Connecticut has the third highest incidence of breast cancer. (Source: American Cancer Society) There is little doubt that some of the increase since 1980 is attributable to better detection methods. But better detection, which might save lives by allowing for earlier treatment, cannot be responsible for all of the apparent increase in new cases. In 2000 through 2003 (the most recent years for which data are available), the rate of new cases showed significant improvement.

Non-Hodgkin's Lymphoma (page 24)

Non-Hodgkin's lymphoma is a cancer of the lymphatic system. It begins in the lymphoid tissue which contains lymphocytes, white blood cells that help the body fight infections. Lymphocytes travel throughout the body and can carry abnormal lymphocytes, spreading the cancer. The data for this indicator are from the Department of Public Health's Tumor Registry, which records all known cancer cases in the state. Non-Hodgkin's lymphoma has increased markedly since record keeping began. The reasons are not well understood, though the rise of Acquired Immune Deficiency Syndrome (AIDS) since the 1980s accounts for some cases. Several studies also cite environmental factors, including exposure to certain fertilizers, pesticides, and chemicals. In 2000 through 2003 (the most recent years for which data are available), the rate of new cases showed improvement.

Leading Environmental Indicators...

…illustrate trends in behavior or practices that can be expected to influence the condition of tomorrow's air, water, land and wildlife.

Driving Our Cars (page 25)

Driving a car, truck or sport utility vehicle is probably the most environmentally harmful activity a Connecticut resident will engage in personally. Impacts are direct (air pollution, oil leakage, etc.) and indirect (stimulating demand for new roads). The Department of Transportation estimates the total miles driven each year in Connecticut. Nearly every year, the average Connecticut resident drives more miles than in the previous year. The reasons are complex and include the fact that most new development is accessible only by private vehicle.

Taking the Bus (page 26)

Riding a bus is just one way to avoid the negative environmental consequences of driving a car. Ridership data are collected by the Department of Transportation. There was a 20% decline in per capita bus ridership from 2001 through 2005. Fares were increased in 2004 and 2005. Ridership rose about six percent in 2006, perhaps in response to high gasoline prices. Improvements to bus service are planned for 2007.

In Full Compliance (page 27)

This 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. Overall, compliance rates rarely have been better than 90%. The number of inspections conducted by the DEP has declined every year since 1997 with the exception of 2004 and 2006 (the latter after a sharp decline in 2005). The relationship between the number of inspections and rate of compliance is not clear. In 2002, many inspectors were assigned to assess compliance in a single air quality program (Stage Two Vapor Recovery at gas stations); numerous violations were discovered and were the main source of the steep drop in compliance rates that year. In 2006, the number of inspections rose slightly, and so did the compliance rate. The general stability of the compliance rate in the face of ever-diminishing staff resources might be regarded as a success for the DEP. However, some industrial sectors require fewer inspections than they did a decade ago because the number of active facilities has declined. Regardless of the uncertain relationship of compliance to inspections, the failure of the state to advance further toward the goal of full compliance is apparent.

Recycling (page 28)

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). This goal was not met, and the consequences have been enormous: hundreds of thousands of tons of waste are shipped out of state each year, putting thousands of diesel trucks on the highways for trips of hundreds of miles.

Technical note: In 2002, the DEP changed the way its data are calculated. In the past, numbers were based solely on annual municipal recycling reports. They were changed to include recycling facility market reports as well as the municipal reports. This more accurate data probably accounts for the small increase in the statewide average that year. If some composting were also counted, the number would be higher but still short of the goal. Because of staff reductions at the DEP, data for the years after 2003 are not available. Regardless of the fine points of the data, this indicator shows that progress appears to have halted.

Climate Watch (page 29)

Certain gases in the air function like the glass of a greenhouse: they allow the sun's energy to pass through, then trap the heat that radiates from the ground. They often are called "greenhouse gases." Worldwide, a build-up of greenhouse gases is contributing to the ongoing rise in temperature. Carbon dioxide is the greenhouse gas emitted in greatest volume, but it is not the most powerful. Methane and other less common gases have much greater ability to trap heat. In 2003, the Department of Environmental Protection (DEP) estimated Connecticut's emissions of all greenhouse gases for the years 1990 through 2000. The quantity of each gas was adjusted according to the strength of its greenhouse characteristics and then reported in a common unit, the Metric Ton of Carbon Dioxide Equivalents.

A state law adopted in 2004 (P.A. 04-252) established goals for future greenhouse gas emissions: return to 1990 levels by 2010, cut back another 10% by 2020, and ultimately achieve a reduction of 75% to 85% from 1990 levels at a date still to be determined. The graph on page 29 shows the average Connecticut resident's share of greenhouse gas emissions. The goal line on the graph shows the level of the average resident's share of emissions that must be achieved if the 2010 goal is to be reached. Because there probably will be at least 300,000 more people living in Connecticut in 2010 than there were in 1990, the per capita emissions will have to go below 1990 levels to reach a total state emission level equal to 1990. Most of the carbon dioxide comes from the combustion of fuels in houses, businesses, power plants, and vehicles, and the last of these is the largest source. Connecticut is more energy-efficient than the nation as a whole, and the average Connecticut resident's contribution to global climate change is less than the average American's.

Note: The DEP is required by statute (C.G.S. 22a-200b) to update the emission inventory every three years. However, the 2006 update included data only through 2001 because essential federally produced data were not available for later years. For the years 2002 through 2004, the Council used different data sources to estimate emissions. These estimates are believed to be accurate but will be reviewed in future years.

Electricity: Inefficiency At Home (Page 30)

The top graph on page 30 shows that the average Connecticut resident uses more electricity at home each year than he or she used in the previous year. In 2003, households surpassed the commercial sector as Connecticut's greatest consumers of electricity. The Connecticut Siting Council attributes this increase to the large size of new homes and greater use of consumer electronics and appliances, especially air conditioners.

When residents turn on their air conditioners, statewide electricity consumption increases substantially. On the hottest days of summer, Connecticut's primary power plants are unable to meet the additional demand and older plants are brought into service. Because they are used sporadically, many of these older plants are permitted to emit higher concentrations of pollution during the limited time they operate. In Hartford, for example, several jet engines linked to generators operate on hot days with no emission control equipment. As a result, Connecticut residents generate the most air pollution on the hottest summer days when air quality already is the most unhealthful.

Residents' demand for electricity is projected by utilities and state agencies to increase substantially. This rising electricity use will create immediate impacts including more air pollution, greenhouse gas emissions and effects on fish and other aquatic animals near the power plants, as well as indirect impacts. Indirect impacts include demand for new power plants, fuel pipelines and power lines. The vast majority of Connecticut's electricity is generated from nuclear energy and the combustion of natural gas, oil and coal. Hydropower and other renewable resources are small but growing sources of electricity. Each source, renewable or not, has its own negative environmental consequences. Reducing those consequences will require Connecticut households to use electricity much more efficiently. Such efficiency can be attained in part with ENERGY STAR appliances.

Electricity: Inefficiency in the Kitchen (page 30)

The ENERGY STAR program was created in 1992 as a joint effort of the U.S. Environmental Protection Agency and the U.S. Department of Energy to identify and label energy efficient products. By consuming less electricity, ENERGY STAR appliances help to reduce air pollution and greenhouse gas emissions. In a typical home, the refrigerator consumes more electricity than any other appliance. (Central air conditioning uses more but is not in everyone's home.)

To be labeled ENERGY STAR efficient a refrigerator must operate using at least 15% less energy than the basic standard set by the U.S. Department of Energy. It also must use 40% less energy than 2001 conventional refrigerator models.

ENERGY STAR appliance sales are tracked by the federal ENERGY STAR program for each state. In 2006, 40% of refrigerators bought in Connecticut were ENERGY STAR efficient. This percentage had increased from 2001 through 2005 before dropping in 2006.

Trends have been similar for other ENERGY STAR appliances including (in descending order of ENERGY STAR models' market share) dishwashers, air conditioners and clothes washers.

Electricity: Efficiency at work (page 30)

The bottom graph on page 30 shows trends in the efficiency with which Connecticut's economy uses electricity to produce goods and services.

State Gross Domestic Product (GDP) represents the total amount of goods and services produced within the state in a single year. Payment to employees constitutes about 60% of the GDP. In 2005, Connecticut's GDP increased 3.2% from the previous year (to $172 billion in 2000 dollars) while electricity consumption increased 2.4%.

To produce a dollar's worth of goods and services, Connecticut's economy has been using electricity more efficiently every year since 1995, with the exception of 2001 through 2003.

With rapid advances in energy efficient technology, it should be possible for Connecticut's economy to continue growing while using less electricity.

Activities of the Council on Environmental Quality in 2006

Connecticut residents who encounter problems with state environmental programs are encouraged to bring their complaints to the Council on Environmental Quality. The Council is charged by statute to investigate these complaints and is further charged to identify deficiencies in state environmental programs and to recommend legislation for correcting them. Some recent issues brought to the Council's attention include:

- Abuse of Preserved Lands. The Council worked closely with the General Assembly in 2006 to update state laws that protect preserved lands from destructive illegal activities. Public Act 06-89, An Act Concerning Encroachment on Open Space Lands, became effective in October 2006 and already has been put to use in defense of parks, forests and preserves. The bill's roots were in a 2005 complaint to the Council. That year, representatives of the Farmington Land Trust described the deliberate destruction of large trees on one of its preserves and the lack of compensation available under the law. As described in last year's annual report, the Council concluded that the relevant laws were very outdated and issued a special report, *Preserved But Not Protected*. The Council worked with the DEP, Attorney General, and numerous nonprofit conservation organizations to shape the recommended legislation.

  Analysis of the problem showed the Farmington case to be one of hundreds across Connecticut. The state itself was found to have dozens of illegal structures, roads and activities in its parks and forests. In *Preserved But Not Protected*, the Council recommended the hiring of land surveyors to document such encroachments in state parks and forests. The DEP was able to hire surveyors in early 2007. With surveyors at work and a meaningful law to serve as a deterrent to future encroachments, the citizens of Connecticut can look forward to greater protection of their parks and forests.

  Some additional work remains to be done, such as amending the law that allows people to re-open and pave discontinued roads that run through state parks and land trust preserves.

- Surplus State Lands. Current law does not provide for public notice when the state transfers land out of state ownership to a municipality or private landowner. The Council has documented occasions when undeveloped lands have been transferred with little or no environmental review. In 2006, the Council recommended legislation to provide for public notice and environmental review. The bill received unanimous approval in the State Senate but was not considered by the House of Representatives. The Council is working with numerous agencies and organizations on similar legislation in 2007.

- Wetlands. A single citizen complaint led the Council to begin a detailed review of the DEP's oversight of municipal regulation of inland wetlands. The DEP has only two staff persons in its Inland Wetlands Management section, and long delays in investigations are not unusual. The original complaint remains unresolved after two years. The Council concluded that the DEP's Inland Wetlands Management section should have at least six staff persons to provide effective assistance to municipal wetlands commissions and to provide necessary oversight as required by law. The Council is continuing its review. At present, the Council is trying to determine why many municipalities ignore the statutes that require them to report permit and enforcement decisions to the DEP and to have at least one member or agent who has completed the DEP's training program. The Council also is evaluating the effectiveness of the handful of local inland wetlands agencies that also serve as their municipalities' zoning commissions.

- UConn, Drinking Water, and Local Rivers. When students returned to the University of Connecticut Storrs campus in September 2005, the additional demand for water from wells near the Fenton River caused the river, which was already low because of extended dry weather, to run dry. Several organizations, local officials and UConn representatives presented information to the Council about the problem. One proposed solution involved transferring more water from wells near the Willimantic River, which led to concerns about potential impacts to that river.

  In March 2006, the University completed its long-awaited Long-Term Impact Analysis of the University of Connecticut's Fenton River Water Supply Wells on the Habitat of the Fenton River. The University has committed itself to a plan to manage its drinking water supply in a comprehensive way to avoid negative impacts to the rivers. Relevant state agencies approved this plan in 2006. The University also is conducting further studies of the Fenton and Willimantic Rivers and their aquifers.

- No Public Hearings. Residents and officials of Rocky Hill were dismayed to learn that the DEP would not be holding a public hearing during its evaluation of a permit application for commercial activity in the Connecticut River floodplain. The Stream Channel Encroachment Line permit program is unusual in not providing for a public hearing even if one is requested. The old statute that guides that program predates most other environmental laws and does not allow for a hearing. The Council joined with the town and other organizations in recommending an update to that law. Legislation was introduced but has not yet been adopted by the General Assembly.

- Trees again. The Council has repeatedly received complaints about tree removal on rights-of-way along state roads. In some instances, the cutting was done illegally by nearby landowners. In some instances, the nearby landowners obtained permits from the Department of Transportation (DOT), but local officials were not notified. The Council recommended to the DOT that it require all permit applicants to present evidence that they have notified the appropriate municipal officials of their plans. The DOT assured the Council that it follows the notification procedures for very large trees as required by state law, though not necessarily for trees less than eighteen inches in diameter, and also has implemented additional review procedures for sensitive areas.

The Word From Simsbury

The Council periodically holds public forums in different parts of the state to learn what aspects of the environment are most on residents' minds. The information presented at these forums has been extremely useful to the Council. For example, at a forum in Torrington in late 2005, several officials and citizens cited the widespread problem of road sweepings. When sand and debris are swept from the roads by cities and towns, there are insufficient places to dispose of them that are environmentally acceptable. If left on the roads, the sand and debris pollute rivers and streams. The Council communicated repeatedly with the DEP and DOT on this matter, and commended the DOT for adopting an anti-icing strategy in 2006 that resulted in much less sand on the roads and in Connecticut's waterways.

In February 2006, the Council heard from numerous citizens and public officials at the Simsbury Town Hall. State assistance in preserving open space and farmland topped the list of concerns. This is consistent with the results of virtually every forum held by the Council across Connecticut over the past nine years.

Residents also raised sprawl as a major concern. In fact, almost all of the other concerns, from aquifer protection to rare species conservation to deer overpopulation, were related to this concern about land use and development. Citizens raised questions about their towns' abilities to regulate inland wetlands and watercourses, a concern that also is heard at every forum.

Students from Farmington attended and presented persuasive evidence in support of expanding the state's bottle-deposit law.

Reviewing State Projects

The Council is also charged by statute to advise state agencies on their construction projects. Generally, the Council does this when it reviews the Environmental Impact Evaluation for a capital project, or in response to complaints such as those raised above. One such project was a sewer expansion project in New Hartford. Because the DEP does not have enough money in its Clean Water Fund to correct all existing sewage problems, the Council questioned the wisdom of providing state funds to accommodate new development outside of the town center. Plans for that project have been revised.

The Council commented on a project in 2006 that could result in a loss of state park acreage in Rocky Hill, and recommended that the project include a plan to purchase replacement land.

The Council has been documenting for some years the failure of Connecticut to meet its recycling goals. The impact of that failure was made clear in 2006 when the DEP released a draft Solid Waste Management Plan that showed hundreds of thousands of tons of garbage being hauled out of Connecticut by truck. If recycling goals had been met, then Connecticut's in-state disposal capacity would be adequate. The Council submitted detailed comments and recommended a new goal for improving waste reduction and recycling so that Connecticut will no longer need to export garbage by truck. In December 2006, the DEP issued its final Plan, which adopted such a goal. Meeting the goal will require a well-focused effort over many years.

The Council heard many concerns in 2006 from people across the state. The Council worked to address them all, and truly appreciates the efforts people made to bring environmental problems to light. The Council looks forward to helping citizens and agencies solve new challenges in 2007.

CEQ MEMBERS

Thomas F. Harrison (Chairman) Resident of Avon. Retired partner of the Hartford-based law firm of Day, Berry & Howard LLP. Chairman, 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 and Former Chair, CT Chapter, Air & Waste Management Association. Board of Directors, National Audubon Society/Connecticut. Environmental Professionals Organization of CT. Small Business Compliance Advisory Panel, CT Department of Environmental Protection. CT Environmental Forum. Adjunct Instructor of Environmental Law, Rensselaer Polytechnic Institute (Hartford Graduate Center). Former Member, Avon Inland Wetlands Commission.

M. Howard Beach Resident of Simsbury. Conservation & Zoning Compliance Officer / Planning Analyst, Town of Simsbury. Member, Simsbury Conservation / Inland Wetlands Commission from 1980 to 2004, Chairman from 1994 to 2004. Member, Board of Directors, The Farmington River Watershed Association. Life Member and past Board Member, Simsbury Land Conservation Trust. Founding Member, Farmington Valley Biodiversity Project. Member, Town of Simsbury Open Space Committee, 1999 to 2004. Member, CT Developers Council. Member, Government Affairs Committee, Simsbury Chamber of Commerce. In 2004, completed a Masters Degree in Environmental Law at Vermont Law School.

John M. Mandyck Resident of West Hartford. Vice-President of Government and International Relations, Carrier Corporation. Directs public policy and environmental sustainability activities on domestic and international levels. Former Director of Government Relations for the Greater Syracuse Chamber of Commerce. Member, Board of Visitors, Syracuse University College of Arts and Sciences.

Susan B. Mendenhall Resident and Mayor of Ledyard, former Four-Term Town Councilor. Past Member, Board of Directors of The Connecticut Institute for Municipal Studies. Member, Property Tax Reform Commission. Former Stock Trader, Investment Corporation of Virginia. Former Tax Consultant. Member, Navy League.

Earl W. Phillips, Jr. Resident of Middle Haddam, village of East Hampton. Partner with the law firm of Robinson & Cole LLP and Chair of its Environmental Practice. Executive Committee, Environmental Section of the CT Bar Association. Member, past and present DEP Advisory Committees, including E-2000, Waste, and Water. Executive Steering Committee (15 years), CBIA Environmental Policies Council and past Chairman of its Hazardous Waste Section. Multiple publications, including: *Brownfields Law and Practice: The Cleanup and Redevelopment of Contaminated Land*, CT Chapter (Matthew Bender), *Environmental Law Practice Guide*, Connecticut Chapter (Matthew Bender). Past Adjunct Instructor of Environmental Law, Wesleyan University, University of Connecticut, and Rensselaer Polytechnic Institute (Hartford Graduate Center). Former Chairman, Environmental Section, National Institute of Municipal Law Officers.

Richard Sherman Resident of Chaplin. Architectural designer and construction manager of earth sheltered, passive solar and energy efficient residences. Former CEQ Representative to the Route 6 Advisory Committee (during previous term on CEQ). Charter Member, Transit Alliance of Eastern CT, and Citizens for a Sensible Six. Former Organizer, the Progress and Equity Partnership. Member of CEPA Working Group, League of Conservation Voters of CT. Former President, Northeast Chapter of ACLU-CT Board of Directors. Member of Peoples Action for Clean

Energy (PACE) and Northeast Sustainable Energy Association (NESEA). Former Chair, Mansfield Transportation Advisory Committee. Former President, Mansfield Commonground. Member, Mansfield Planning and Zoning Design Review Panel. Former Chair, Mansfield Democratic Town Committee. Host and producer of the radio show, "A Distant Shore" on WHUS (91.7 FM, Storrs). Former Public Affairs Director of WHUS. Stopover host, American Tour d'Sol solar electric car race.

Norman VanCor Resident of Harwinton. Owner of Buy Safe Home Inspection, LLC, and Mizzentop Antiquities. Served in United States Marine Corp in Viet Nam. Awarded the Navy Cross, Vietnamese Cross of Gallantry and other decorations. One of first ten inductees to CT Veterans Hall of Fame. Former Director, Yankee Energy in sales, marketing, government relations, communications. Founding member and President Emeritus, Quinnipiac River Watershed Association. Former member Rivers Advisory Committee. Former Chairman, Southington Conservation Commission. Former host of radio program on environmental topics. Former President, Southington Water Works. Former member, Board of Directors of Operation Fuel. Active Pheresis donor at American Red Cross with over 33 gallons of whole blood and platelet donations. Former Volunteer Hunter Safety Instructor for the DEP Conservation Education Program. Certified Master Gardener.

Barbara C. Wagner Resident of Glastonbury and Minority Leader of Glastonbury Town Council. Attorney with law office in Glastonbury, specializing in commercial and residential real estate. Co-Founder and Board Member of Town Center Initiative, addressing walkability issues in Glastonbury's center. Board of Trustees, Diamond Lake Land Trust. Council Liaison, Great Pond Stewardship Committee. Former member, State Open Space and Watershed Land Acquisition Board.

Wesley L. Winterbottom Resident of West Hartford. Professor of Science and Coordinator of Environmental Programs, Gateway Community College. Instructor of Environmental Issues, Eastern Connecticut State University. Fulbright China Seminars Abroad Program Scholar. Fulbright-Hayes Fellow. Registered Connecticut Professional Engineer. Diplomat, American Academy of Environmental Engineers. National Science Foundation Fellow Advanced Technology Environmental Education Center, University of Northern Iowa. ANSI/GETF Certified ISO 14000 Trainer. Faculty Advisor, Mt. Rainer National Park, Rocky Mountain National Park, Western Arctic National Parklands. Board Member, Northeast Partnership for Environmental Technology Education. Past President, Connecticut Consortium for Enhancing Learning and Teaching. Past Director, Gateway Community College Center for Teaching Excellence. Certified FEMA Trainer – Awareness Level – Homeland Security.

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 responsibilities include:

1. Submittal to the Governor of an annual report on the status of Connecticut's environment, including progress toward goals of the statewide environmental plan, with recommendations for remedying deficiencies of state programs.

2. Review of state agencies' construction projects.

3. Investigation of citizens' complaints and allegations of violations of environmental laws.

In addition, under the Connecticut Environmental Policy Act (CEPA) and its attendant regulations, the Council on Environmental Quality reviews Environmental Impact Evaluations that state agencies develop for major projects. The Council publishes the Environmental Monitor (http://www.ct.gov/ceq/monitor.html), the official publication for state project information under CEPA.

COUNCIL MEMBERS

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Avon

M. Howard Beach
Simsbury

John M. Mandyck
West Hartford

Susan Mendenhall
Gales Ferry

Earl W. Phillips, Jr.
Middle Haddam

Richard Sherman
Chaplin

Norman VanCor
Harwinton

Barbara C. Wagner
Glastonbury

Wesley Winterbottom
West Hartford

Karl J. Wagener
Executive Director

Acknowledgments

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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
(messages can be left 24 hours a day)

Fax: 860-424-4070

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

Find up-to-date information about Council meetings, forums and reports throughout the year at www.ct.gov/ceq. Sign up for e-alerts to receive announcements of all meetings, forums, publications, etc.

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