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Welcome to the first paperless edition of *Environmental Quality in Connecticut*. In a change from previous years, the Council has not printed copies in booklet form. A one-page summary is available for viewing and printing.

This report illustrates clear trends in the condition of Connecticut's environment. The Council welcomes any questions or comments you might have.

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April 29, 2009

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

Dear Governor Rell:

I am pleased to submit the official report on the condition of Connecticut's environment for 2008.

The benefit of reporting on consistent indicators year in and year out is the eventual emergence of clear trends. Connecticut's environmental trends now are very clear.

The Council has reviewed these trends and concludes that state residents are reaping massive dividends from the creation and steady enforcement of state and federal regulatory programs:

- Connecticut's air in 2008 was the cleanest it has been in many decades. Last year's cleaner air was the product of rules as well as mostly private sector investment in clean air technology over many years.
- Nearly all of the drinking water delivered by water utilities met all standards, a product of watershed protection regulations that many other states do not have.
- If state and federal regulatory agencies had not prohibited the use of DDT and other chlorinated

hydrocarbons more than 30 years ago, we would not be reporting the surging Bald Eagle population across our state. We scarcely could imagine ten years ago that, as you read this report today, a pair of these magnificent birds would be raising a family in Hartford.

- Our coastal beaches were better for people (fewer closings) and piping plovers (more nests) in 2008, an unlikely result if it were not for several specific laws and regulations and modest public investment.

In contrast to these very positive trends, we can see where the state is lagging: anywhere large sums of public investment are required, including sewage treatment and land conservation. Unfortunately, this was true even before the current financial crisis. Connecticut has been fairly consistent in maintaining its Clean Water Fund, but progress inevitably is slow due to the scale of the sewage problem. When it comes to the conservation of land for future agricultural and public uses, slow and steady investment will not get us to our goals.

A new strategy for land conservation is required, and a new strategy is possible. The Council is not recommending details of a new approach in this report but is calling attention to the need and opportunity. As the New England Governors Conference's Commission on Land Conservation recently concluded:

> *"Every few decades, an opportunity presents itself - a political and economic window - to revisit this vision [of natural landscapes and communities] and renew it. This is such a time… Innovation in land conservation, such as the invention of the land trust, has long been part of the New England tradition. The same*

should be striven for now." (NEGC/CLC Draft White Paper, February 2009)

Citizens already are at work. Many Connecticut towns and organizations are moving forward with conservation even in the absence of state assistance. We wish we could report on the extent of such progress, but such information is not collected. Many thousands of acres of conserved land are not recorded or catalogued in any way at the state level. If Connecticut is to become strategic in its effort to conserve 21 percent of its landscape, it must start with an accurate inventory of conserved land. The state then could tap new data sources and technology to begin a truly strategic effort to protect the jewels of our landscape. The Council looks forward to working with fellow citizens to advance innovative approaches in 2009.

As you know, the Council also reports on several leading indicators which, instead of describing current conditions, illustrate current behaviors that are expected to influence the environment of tomorrow. One trend that stands out is the reduction in electricity use by households and businesses and - here we introduce a new indicator - the increase in households signing up to purchase clean electricity. Still, the electricity indicators show that there remain large gains in efficiency still to be realized. Connecticut is a leader in promoting energy efficiency, and holding to this course will yield great dividends in the years ahead.

This year's report is paperless. The pages that follow summarize the major trends and illustrate each long-term trend in detail. The section titled "Activities of the Council" highlights the unique services this Council provides to our fellow citizens.

As always, the Council looks forward to providing you with any additional information or assistance that you might request.

Respectfully,

Barbara C. Wagner
Chair

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Introduction: This is a report on your portfolio

Every Connecticut resident is a co-owner of many rivers, Long Island Sound, all wildlife, public lands and even the air, and over years has invested in them all. *Environmental Quality in Connecticut* is your annual report on this environmental portfolio: you decide if your expectations are being met.

Environmental Quality in Connecticut is built on a consistent set of reliable indicators. These show that some elements of the portfolio are doing quite well: Air pollution and inland wetlands destruction are at their lowest (best) levels in decades, and Bald Eagles are thriving. These and other products of successful regulation are summarized in the Council's letter to Governor M. Jodi Rell.

That letter also points out that where progress is lagging the common thread is the need for continued large investments of public capital. To get Connecticut back on track toward all of its goals, there is a need for some improved strategies. This is discussed further in New Routes to Progress.

The Council will publish its specific recommendations for legislation and administrative actions in the autumn.

Reviewing the many long-term improvements in Connecticut's environmental portfolio, the Council notes their incalculable economic benefits.

Businesses save enormous sums daily by having cleaner air and water to put into their manufacturing systems, and a healthier workforce likewise saves money. Without the improvements, it is hard to even imagine the state of industries related to recreational boating, fishing, birdwatching and hunting. While it would be interesting to put a number to these incalculable dividends, the Council is confident that the investments of Connecticut residents in their environment have been returned many times over.

New This Year

Two new indicators have been added. The Electricity page now charts the number of households that have signed up to purchase clean electricity. This is presented as a leading indicator: there should be environmental benefits in the future if enrollment continues to climb. The other new item is on the Oxygen in Long Island Sound page. Because the oxygen content of Sound waters is related to temperature, a citizen-reader suggested that the Council add a temperature report. The Council thought that was a great idea and added it this year.

If you have an idea for improving this report (or the environment itself), please do not hesitate to suggest it to the Council. Contact information is to the left.

Arrowheads Explained

Above each environmental indicator on the pages that follow, readers will find an arrow that illustrates improvement (arrowhead up) or decline (arrowhead down) in environmental conditions. There are four variations of the arrow symbols:

The data show a positive change from the previous year. The one-year change is not always consistent with the long-term trend, which is displayed on the chart.

The data show a negative change from the previous year. The one-year change is not always consistent with the long-term trend, which is displayed on the chart.

The data for 2008 (or the latest year available) show a very small change, positive or negative, from the previous year.

Connecticut is not on track to meet its long-term goal. This symbol is used for those indicators that, except in the most unusual circumstances, always will show some progress. ("Preserved Land" is one example.) It would be misleading to label the one-year change as "improved" if the progress is not sufficient to get the state to its goal by the established target date.

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New Routes to Progress

This report shows clearly that many environmental programs are producing desired results and should be maintained until the state's goals are reached. But what of the indicators tagged with "Not on Track" or showing long-term stagnation? Most reflect problems not easily countered by regulation.

Some efforts such as land conservation and sewage reduction would require large investments of public funds, while other inadequacies are the consequence of long-term patterns of not-so-smart growth. The latter include the long rise in traffic and the pollution of streams by rainfall running off pavement and developed land. Across all categories of challenges, from lobster populations to air quality to swimming conditions, the ongoing warming of the climate and surge in heavy rains are making Connecticut's task more difficult.

The current path is not the one that will lead Connecticut to all of its goals. In particular, the state will need one or more new strategies for conserving land. As the pace of land conservation was flagging even before the current recession, it is clear that reliance on state purchases and grants will not be sufficient in the short term. The state needs a way to better harness the collective conservation efforts of municipalities, land trusts and landowners. To start, the state needs a dynamic registry of preserved lands.

Many thousands of acres have been preserved in recent years but are not recorded anywhere at the state level. There needs to be a clearer relationship between preserved lands and new acquisitions. Ideas abound. The Connecticut Audubon Society, for example, in its State of the Birds 2009 report, proposes a promising strategy for conserving the most biologically important lands, called Biological Conservation Units. This strategy emphasizes proactive identification of these lands in contrast to the current approach of evaluating whatever random lands are offered to the state. The New England Governors Conference's Commission on Land Conservation is looking at the challenges of the region and has suggested that now is the very time to build on New England's history of innovation in land conservation (such as the invention of the land trust) and to develop new and even more effective strategies. While the Council is not recommending a specific new strategy in this report, it agrees that there is an immediate need and opportunity.

This annual report includes a chart that shows an estimated 85% of Connecticut's rivers have some pollution problem that causes them to be classified as not completely suitable for swimming or other recreation involving human contact. This assessment, based on federal criteria, might overstate the contamination problem. Nonetheless, as the Council has reported previously, the miles of river in the state polluted by runoff from developed areas exceeds the miles polluted by sewage treatment plants and industrial discharges combined. The solutions to this problem are to be found in many thousands of small decisions and actions, most often at the municipal level. "Low-impact development" techniques are tested and proven means of reducing humans' impacts on nearby waterways, and are often considered important components of smart growth. The University of Connecticut's highly-regarded NEMO

(Nonpoint Education for Municipal Officials) program as well as various DEP programs aim to reduce the impacts of future development. But with no growth there will be no smart growth, and the challenge of existing water pollution remains. When growth returns, Connecticut will need a more effective strategy and a commitment that is commensurate with the challenge.

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Bottom Line: A very brief summary of 2008

Improved or Held Steady at a Positive Level in 2008:

- Air
- Inland Wetlands
- Beach Conditions for People and Wildlife
- Shellfish Beds
- Bald Eagles
- Drinking Water

What these improvements have in common: *They are the results of effective regulatory programs and modest public capital investments.*

Declined or Held Steady at a Level Insufficient to Meet Goals:

- Forests, Fields, Farms
- Oxygen and Lobsters in Long Island Sound
- Sewage-free Rivers

What these deficiencies have in common: *They will require substantial public capital investment and, in some cases, improved strategies before goals will be met.*

Trends in Leading Environmental Indicators (with consequences for the future):

- Connecticut residents took the bus more often, used electricity more efficiently, and might have recycled more -- all good!

———————————

A Note on Environmental Consequences of a Warming Connecticut

Temperatures Rise, Air Conditioners Hum, Connecticut Gasps

The average temperature in Connecticut during 2008 was slightly cooler than 2007 but was above average and extended a long-term warming trend.

The warming climate makes Connecticut's task considerably more difficult: summer air, oxygen in the Sound, and lobster populations are all worse when the temperature rises.

Again the Council notes the effect of inefficient air conditioners on Connecticut's environment.

According to the Connecticut Siting Council, residents appear to be conserving electricity throughout most of the year as its price continues to rise. On hot summer days, however, conservation seems to go out the window (literally, with millions of leaky windows in the state). To meet the demand for electricity for air conditioning, some of the state's most polluting power plants start up, worsening the air when it is already violating standards that were set to protect residents' health. According to the most recent data available (from 2007), nearly half of the room air conditioners sold in Connecticut are not ENERGY STAR labeled, which means they needlessly consume extra electricity and cause added air pollution. With similar consequences, nearly two-thirds of the refrigerators sold in Connecticut are not ENERGY STAR models.

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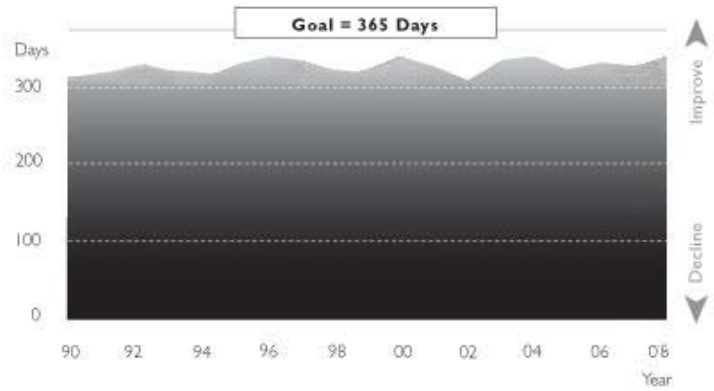
Indicators: Air

Good Air Days

In 2008, Connecticut had the second-highest number of Good Air Days it has had in decades. Nonetheless, levels of ground-level ozone violated the standard that protects human health on 22 sunny summer days. Fine particles violated the standard on three of those same days and on six other days.



A Good Air Day is a day when 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, particles, nitrogen dioxide, and ground-level ozone.

Connecticut’s goal is to have air that meets health-based

standards for all pollutants. Violations of 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. In the past 40 years, only 2004 had fewer violations of the ground-level ozone standard than 2008.

Last year's report noted the odd pattern of ozone pollution in 2007, when coastal communities suffered fewer bad days than many inland cities and towns. In 2008, the pattern returned to normal, with southern cities and towns recording more bad days than most inland towns. With normal summertime air movement from the southwest, this pattern is to be expected.

Fine particles, such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can form when gases emitted from power plants, industries and automobiles react in the air. Violations of the standard occur mostly in summer and winter, rarely in spring and fall. All of Connecticut except for Fairfield and New Haven counties meet this standard for fine particles. Those counties must meet the new air quality goals for fine particles by 2015.

Technical Note: The federal government modified the standards for fine particles in December 2006 and for ground-level ozone in early 2008. The chart above was redrawn to illustrate the state's historical pattern of good air days by applying the new, stricter standards to all years.

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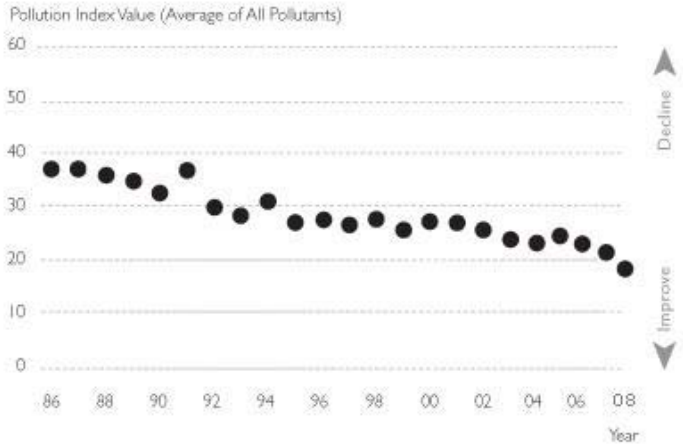
Indicators: Air

Clearing the Air

Connecticut's air in 2008 was the best in decades. Every pollutant except carbon monoxide showed improvement.



Six air pollutants -- sulfur dioxide, lead, carbon monoxide, particles, 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 particles showed improvement, and in 2007 all pollutants except ground-level ozone showed improvement. Every measure except carbon monoxide showed improvement in 2008.

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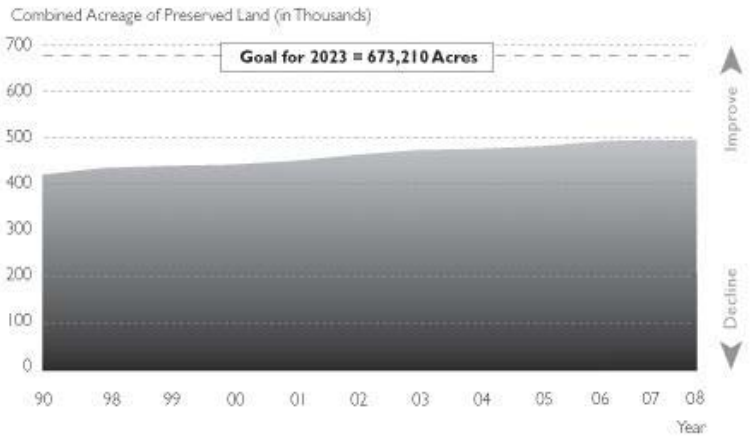
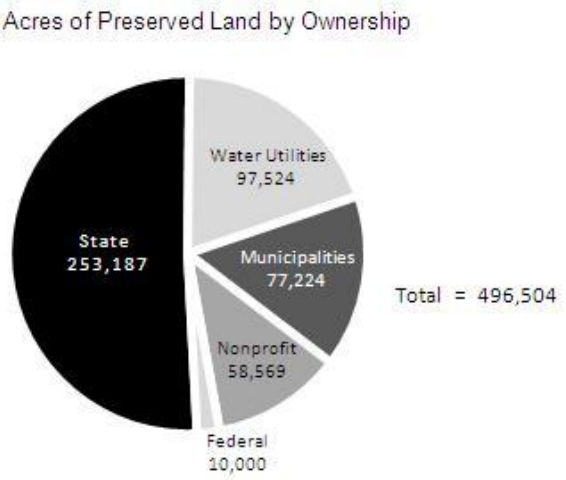
Indicators: Farm, Forest, Wetland

Preserved Land

Connecticut's land-saving organizations, the state, cities and towns preserved about 3,000 acres in 2007 and again in 2008. To meet its preservation goal for 2023, Connecticut must preserve more than 11,000 acres every year.





State law (C.G.S. 23-8(b)) sets a goal of conserving 21% of Connecticut's land area. The Green Plan, Connecticut's official land conservation plan, establishes 2023 as the target date. 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 (technically not part of the state's 21% goal, but nonetheless important to conservation of the landscape)

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 2008.

The Council received comments during 2008 that suggest this indicator fails to take into account certain categories of protected land. This criticism is well-founded. Two categories of uncounted open space are 1) parcels acquired by land trusts and municipalities with no state assistance, and 2) conservation easements donated by landowners in association with development. The absence of an accurate inventory of protected land in Connecticut is a serious deficiency. The Department of Environmental Protection has been working on an inventory for many years, but the data will be static and not up to date when and if the project is completed. To make land preservation more strategic and cost-effective, Connecticut needs a reliable registry of protected lands.

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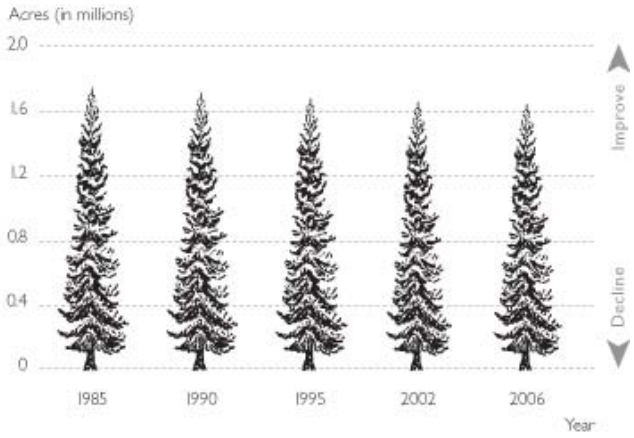
Indicators: Farm, Forest, Wetland

Forest

Latest Data
Declined

After a century of growth and relative stability, Connecticut's forests have been shrinking for two decades.



Most of Connecticut's forests were cleared for agriculture and industry in the 19th century and then allowed to regenerate. From 1960 to 1980, 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 late 20th century 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 88 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 often are the trees in residents’ back yards and cannot be considered fully functioning forests, and therefore are not included here.

Technical Note: Beginning with the 2007 annual report, data for this indicator were produced by the Center for Land Use Education and Research (CLEAR) at the University of Connecticut as part of the Connecticut’s Changing Landscape Project. The Council finds these data, derived from CLEAR's analysis of satellite imagery, to be more accurate than the estimates provided previously by the U.S. Forest Service. All previous years’ data have been changed to reflect CLEAR’s historical data in order to make the data comparable across time.

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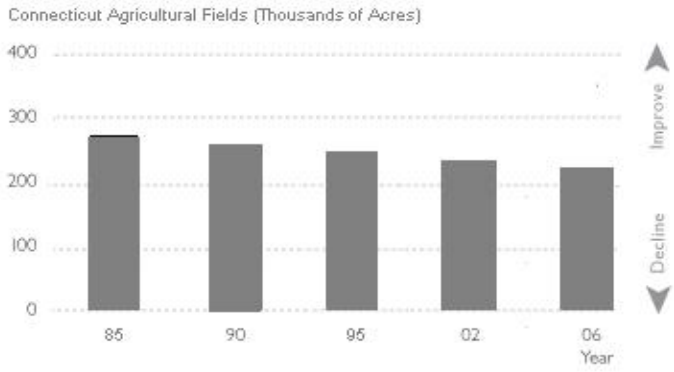
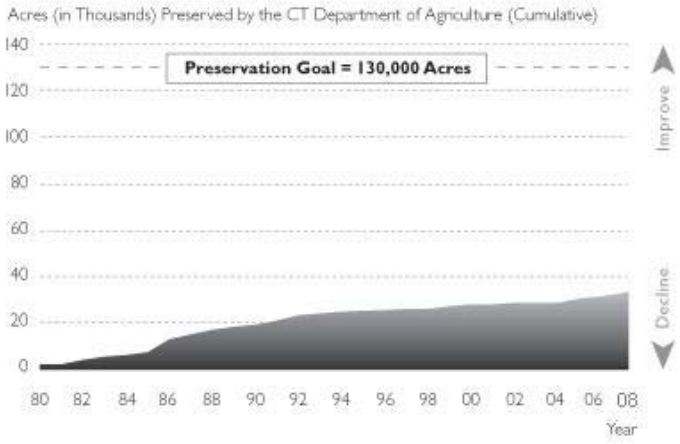
Indicators: Farm, Forest, Wetland

Farmland

Not on Track

Connecticut preserved 675 acres of farmland in 2008. The state's goal cannot be reached at this pace because farmland loss continually outpaces preservation.





To preserve land for future agricultural use, the state Department of Agriculture purchases the development rights to farmland from volunteer sellers. This keeps the land in private ownership with severe restrictions on future nonagricultural development. After no farms were preserved in 2003, nine farms totaling about 1,100 acres were approved for preservation in 2004, six farms comprising 666 acres in 2005, eight farms comprising 968 acres in 2006, and 11 farms comprising 1,186 acres in 2007. In 2008 the state acquired development rights to seven farms totaling 675 acres. A greater number of farms are reported to be pending closure in 2009. Funds are mostly from state bonding and the Community Investment Act.

Connecticut's farmland preservation goal is based on the amount of land needed for food production needs (though non-food crops including potential biofuel crops could cause the goal to be raised). Mathematical projections of the current preservation rate show the goal being reached in the late 22nd century, but in reality there will not be that acreage of agricultural land remaining in the state by the end of the current century if the recent rate of loss continues. Preservation of at least 2,000 acres annually should result in success.

Technical Note: In previous years, the upper chart showed the total acreage of land in Connecticut farms as counted by the U.S. Department of Agriculture (USDA). The Council has found a superior data source in the University of Connecticut's Center for Land Use Education and Research (CLEAR). CLEAR staff analyzes satellite imagery to measure the actual area of fields, pastures, orchards and vineyards. In contrast, the UDA data counted all land in farms, even that which was not used for agriculture.

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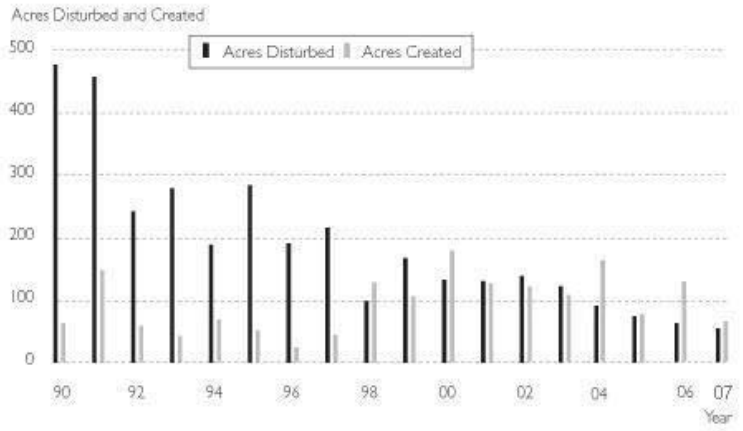
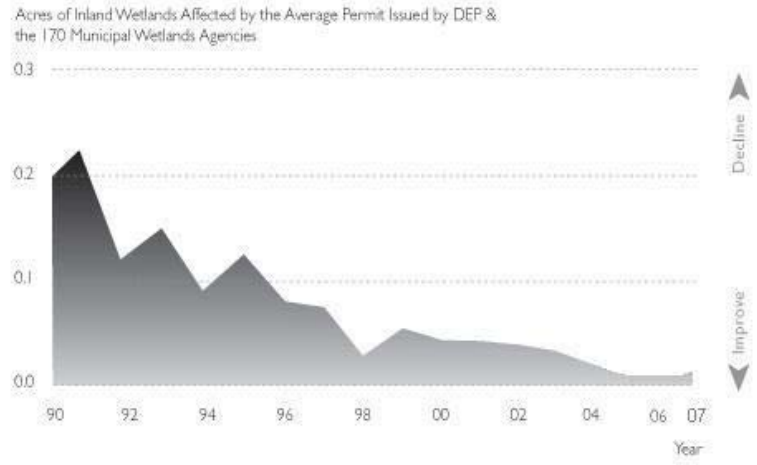
Indicators: Farm, Forest, Wetland

Inland Wetlands

No Change

Cities and towns have permitted destruction of fewer wetland acres nearly every year since 2000. In a special 2008 report, the Council credited better training for the improvement.





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 (when, for example, a shallow swamp is dredged to create a small 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 15 percent of Connecticut's surface. More than 95 percent of the development activity in and around wetlands is regulated by municipalities with minimal oversight or supervision by the Department of Environmental Protection (DEP). Some of the ups and downs in wetlands loss since 1990 are directly related to changes in the economy and the number of wetlands applications received. However, the graph showing the “Area of Inland Wetlands Affected by the Average Permit Issued” indicates that wetlands agencies have also become more conservative since 1990. Since 2004, the average permit has resulted in disturbance of less than .02 of an acre.

In October 2008 the Council published *Swamped* , a special

report that analyzed performance of numerous aspects of the state's inland wetlands program, including training. State law requires every municipal wetlands agency to have at least one member or staff person complete the DEP's comprehensive wetlands training program, but many municipalities do not comply with this requirement. A thorough statistical analysis found that cities and towns that had at least one trained member or staff person allowed less wetlands disturbance than towns that were not in compliance with the training requirement. State-sponsored training is more thorough and convenient than it was in the 1990s.

The “no change” for 2007 (the latest data available for analysis) reflects a mix of slightly more wetland disturbance per permit and slightly less disturbance in sum.

Technical Note: The data in the top graph might underestimate wetlands loss. There are numerous municipalities that fail to submit reports of permit decisions to the DEP as required by law. The Council adjusts the reported data to account for the non-reporting towns, but inaccuracies are inevitable. (The Council is confident that the statistical adjustment is reasonable, because *Swamped* also examined differences in performance between towns that report to the DEP and towns that don't and confirmed that non-reporting towns are similar to reporting towns in the average amount of wetlands destruction they permit.)

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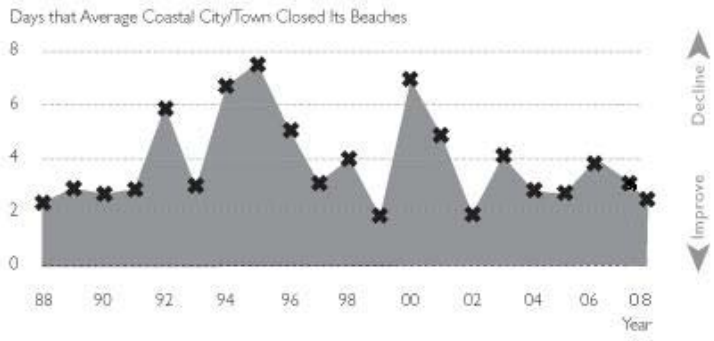
Indicators: Sound + Shore

No Swimming at the Beach

The average coastal town has had to close its beaches for two to four days in each of the past six years, usually because of pollution washed into the water by heavy rains. Most closings are in the western half of the state.



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. Yearly variations are products of rainfall patterns and incidents such as sewer-line ruptures. Dry summers will see fewer closings. 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. Such precautions accounted for the majority of beach closings in 2008. Other documented causes included bacterial contamination from septic systems and wildlife.

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. Some beaches along the western coast of Long Island Sound experienced closings for several days in 2006, 2007 and again in 2008.

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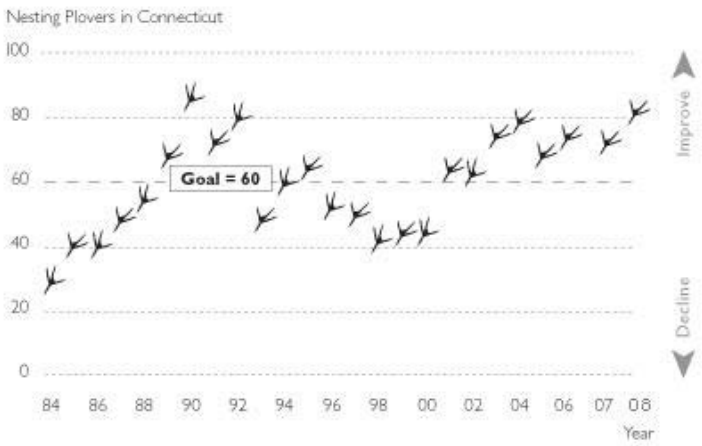
Indicators: Sound + Shore

Piping Plovers on the Beach

Latest Data Improved

Eighty-two of these small, threatened shorebirds nested on 15 coastal beaches from Stratford to Stonington



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.

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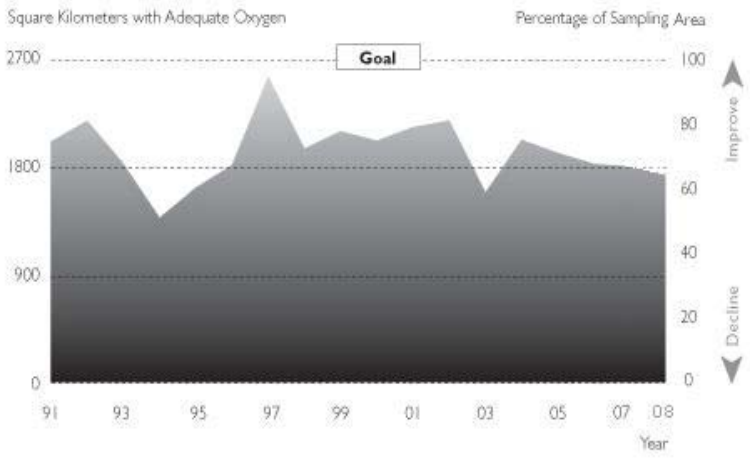
Indicators: Sound + Shore

Oxygen in Long Island Sound

Latest Data Declined

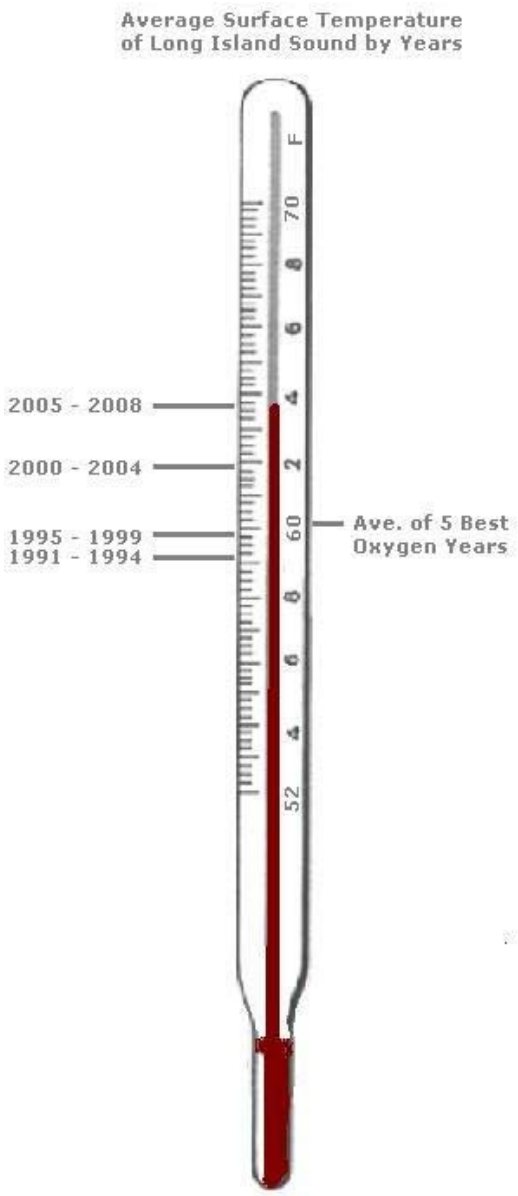
The area of western Long Island Sound affected by hypoxia (oxygen levels too low to support marine life) was the largest since 2003.



Hypoxia is a condition in the water when oxygen levels are too low to fully support desirable forms of life, including fish and lobsters. (For this indicator, hypoxia is defined as less than or equal to 3.5 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.” Hypoxia occurs predominantly in the western portions 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.

Does the Sound have a fever?



All of the five past years saw a warmer-than-average Sound. The warmest year to date was 2006. The second largest area of hypoxia was observed in 2003, which scientists attribute to an expansive brown algae bloom most likely fueled by a large amount of rain and nitrogen-bearing runoff. A cool beginning to the summer of 2004 led to less hypoxia, and favorable weather led to another small improvement in 2005. The first week of August 2006 saw a return of hypoxia to a larger area. The hypoxia of 2007 was not as severe (i.e., the oxygen levels did not go as low) but it lasted longer and affected a greater area. The area of hypoxia in 2008 was the largest since 2003, and the duration (not shown) was the longest on record.

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.

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.

Technical Note: 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). The areas of adequate oxygen displayed on the graph are the recalculated areas for all years.

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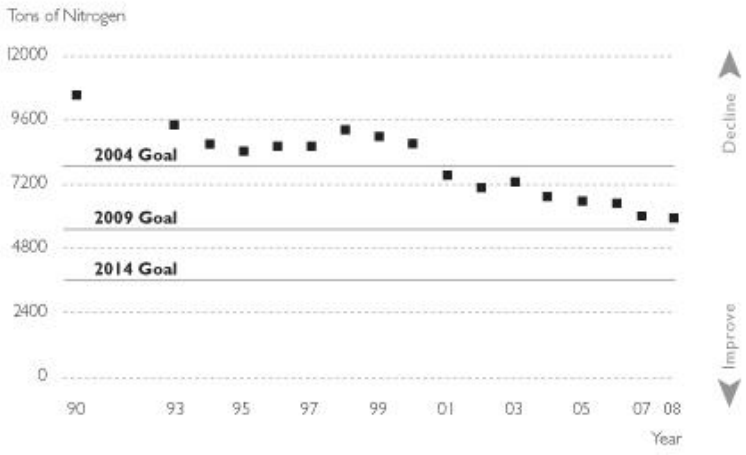
Indicators: Sound + Shore

Nitrogen in Long Island Sound

Connecticut's campaign to reduce nitrogen from sewage treatment plants and large factories has been going well.



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 3,837 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. Also there are large uncontrolled quantities of nitrogen entering Long Island Sound in the rain that runs off lawns and pavement.

The goal for 2004 was met three years ahead of schedule. The next milestone is a goal of discharging 5,505 tons (or less) in 2009. The 2008 level of 5954 tons was a reduction of 40 tons from 2007. Achievement of the 2009 goal will require a further reduction of 449 tons.

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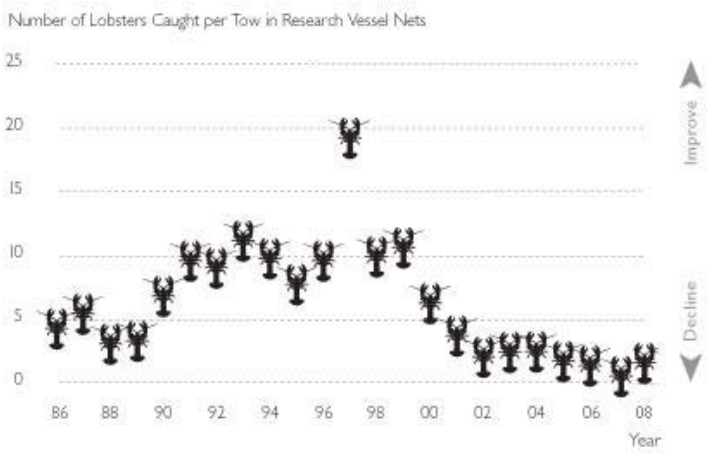
Indicators: Sound + Shore

Lobsters

No Change

The lobster population of Long Island Sound remained low in 2008.



The DEP samples lobster populations every spring and 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 climatic 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. The autumn 2007 trawl yielded the lowest number in at least 20 years. While the autumn 2008 trawl (illustrated on the chart above) showed improvement, the spring 2008 trawl showed the same low population as other recent spring trawls.

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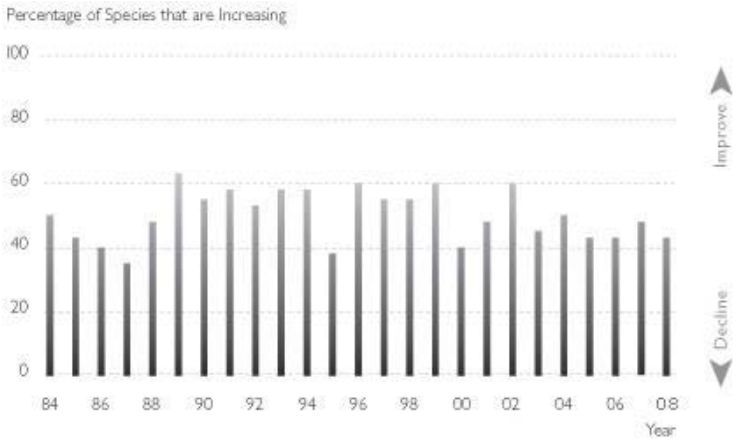
Indicators: Sound + Shore

Seafood Sampler

No Change

Of the 40 marine species sampled in Long Island Sound, about 40 percent had growing populations in 2008.



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 through 2008, fewer than half of these species were as common as they were in the 1980s and 1990s. From 1984 through last year, about half of the 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. Some colder-water species such as Winter Skate and Atlantic Herring have declined as warmer-water species such as Scup and Northern Sea Robin

	have increased along with the average annual temperature of the Sound.

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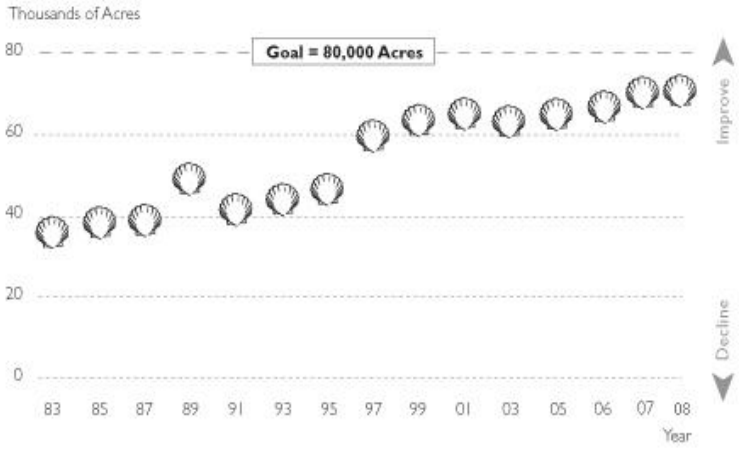
Indicators: Sound + Shore

Clean Shellfish Beds

No Change

The acreage of coastal waters clean enough to support shellfish for human consumption remained the same.



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. In 2006, Branford began to lease out hundreds of acres of town-owned beds that had been closed.

Aquaculture experts believe 80,000 acres is a realistic target.

Technical Note: Minor improvements in water quality can lead to shellfish production changes that are not reflected in the chart above. If, for example, a clam-producing area becomes suitable for oyster production, the chart will not show a change. Major water quality changes that lead to areas being put into or taken out of legal shellfish production will be reflected in the chart.

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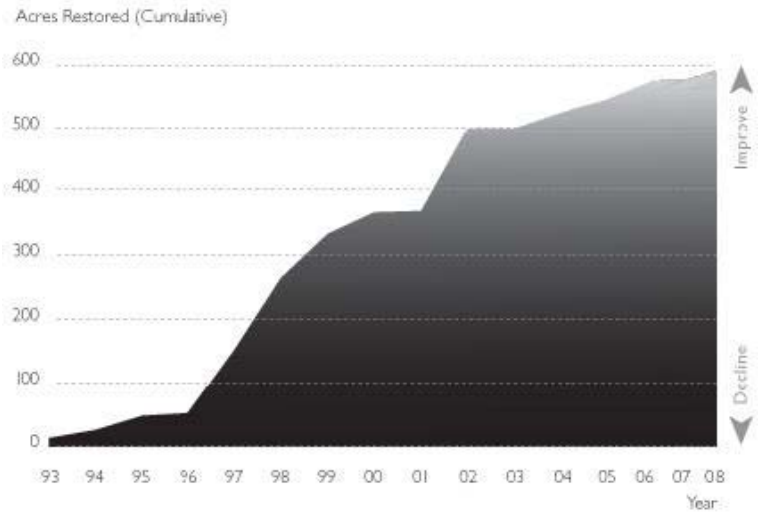
Indicators: Sound + Shore

Reviving Tidal Wetlands

No Change

Restoration has slowed dramatically as the relatively simple projects have been completed leaving the less accessible areas and more complex restorations to tackle.



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. 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. In 2002, more than 100 acres were restored, mostly associated with the Connecticut and Quinnipiac Rivers. In 2005, about 40 acres were brought back to life (in Stratford and Old Saybrook). Three acres were restored in 2007 and twelve in 2008. Restoration has been outpacing development: less than one acre of tidal wetlands has been lost each year to permitted development.

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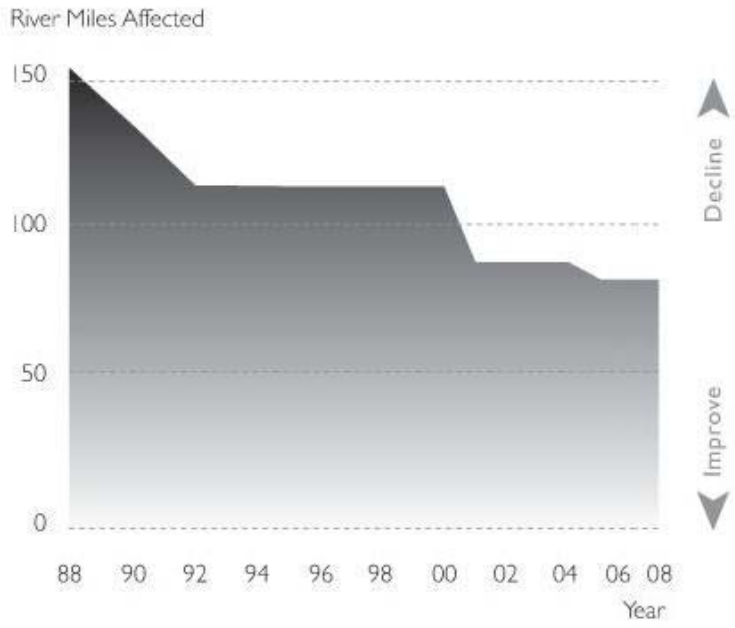
Indicators: Rivers and Reservoirs

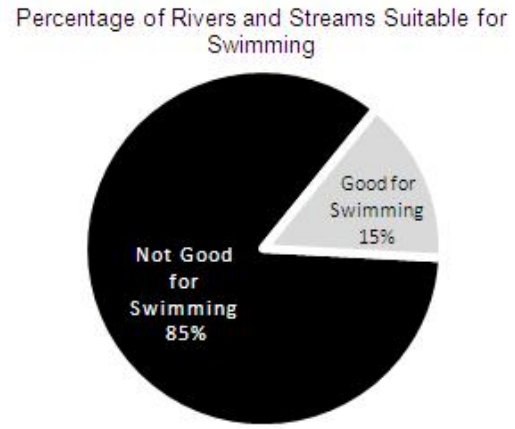
No Swimming in the River

No Change

About 80 miles of rivers still receive overflows of raw sewage during storms.



Throughout the state, only 15% of rivers and streams are classified as being clean enough for swimming and other water contact sports.



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 extraordinary expense of separating the sewers. In 2005, the Jewett City project was completed, eliminating overflows of raw sewage into the Quinebaug River.

The pie chart illustrates the percentage of the state's rivers that fully support recreation. This is an estimate based on sampling and statistical analysis by the DEP. Most streams are not monitored directly.

Technical Note: The pie chart above is changed from last year's report which reported only the quality of *wadeable* streams. The new chart is based on the DEP's sampling of 61 randomly selected rivers and extrapolation of the data to *all* rivers. The criteria for determining a river's suitability for human contact are set by the federal government.

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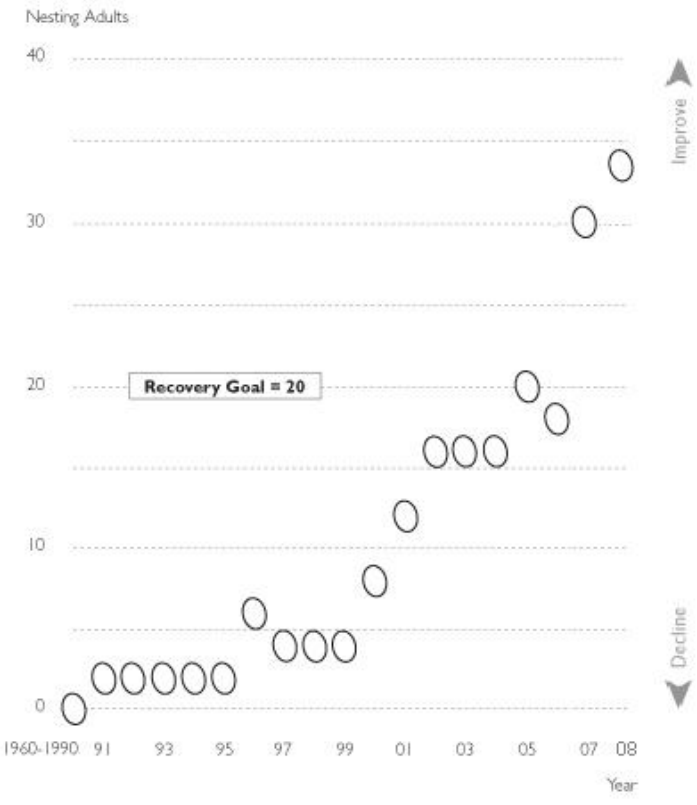
Indicators: Rivers + Reservoirs

Bald Eagles

Latest Data Improved

Bald eagles have come back to Connecticut, even to cities. The chemical pollutants that interfered with their reproduction have been controlled, and large trees along fish-rich rivers offer good nesting sites.



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 reintroduced into nearby states in the 1980s, and a pair found their way to Connecticut in 1991 and successfully raised a family in 1992. Many 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. The federal government removed the bald eagle from its list of threatened and endangered species in August 2007. 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 fish and other prey that are – very importantly – only minimally contaminated.

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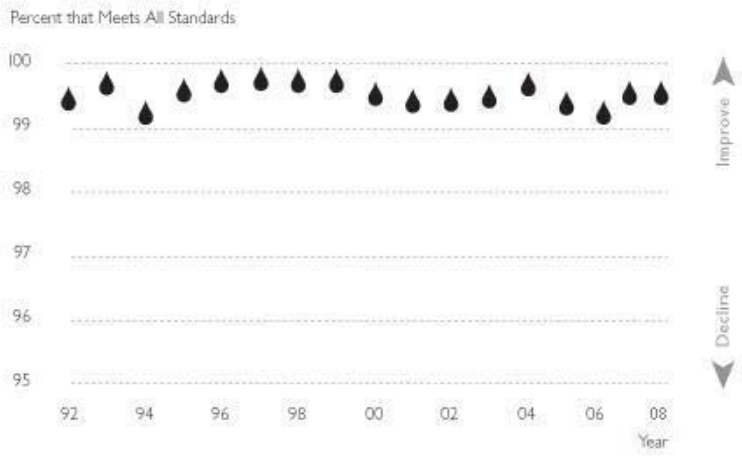
Indicators: Rivers + Reservoirs

Drinking Water

No Change

All of the large water companies delivered water that met all standards in 2008. Violations occurred only in small and a few medium-sized systems.



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 pattern was similar in 2007 but showed improvement and in 2008 was unchanged. The most commonly encountered contaminants included bacteria and byproducts of disinfection, with an assortment of other chemicals and radioactive substances.

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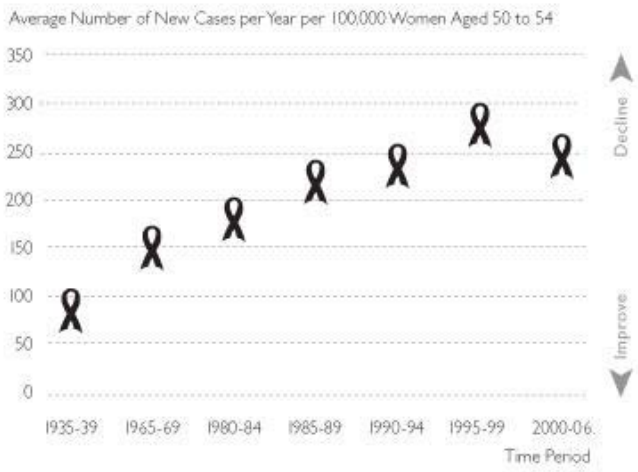
Indicators: Human Health

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.



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. (The council presents data on this one age group, rather than on the entire female population, to control for factors such as changes in the average age of the larger population; age 50 to 54 was selected as a representative age group and is used in each year's report.) 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 to six 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 2006 (the most recent years for which data are available), the rate of new cases showed improvement.

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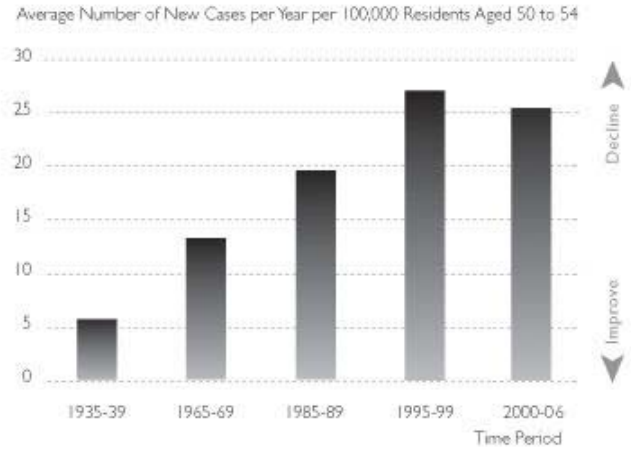
Indicators: Human Health

Non-Hodgkin's Lymphoma

Latest Data Improved

The reasons for the steep increase in this cancer are not well understood, but many reports cite exposures to specific chemicals as potential factors.



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. (Please see the note on the previous page, under Breast Cancer in Connecticut, about the use of the 50 to 54 age group.) 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 2006 (the most recent years for which data are available), the rate of new cases showed improvement.

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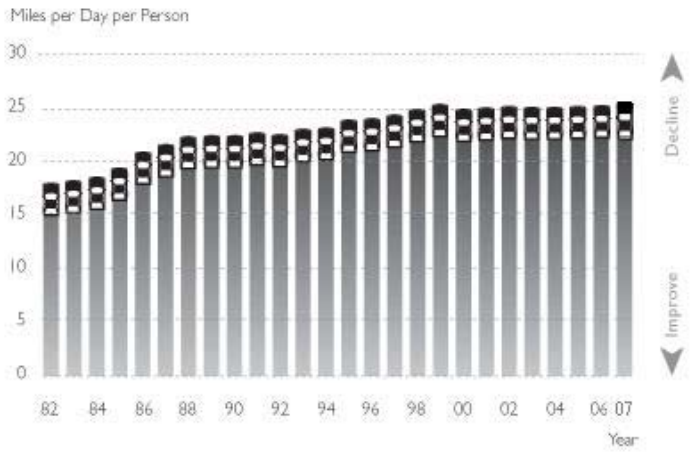
Indicators: Leading Environmental Indicators*

Driving Our Cars

Nearly every year, the average Connecticut resident drives several more miles than he or she did in the previous year.



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. Through 2007 (the latest year for which data are available), the average Connecticut resident drove 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 .

* 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.

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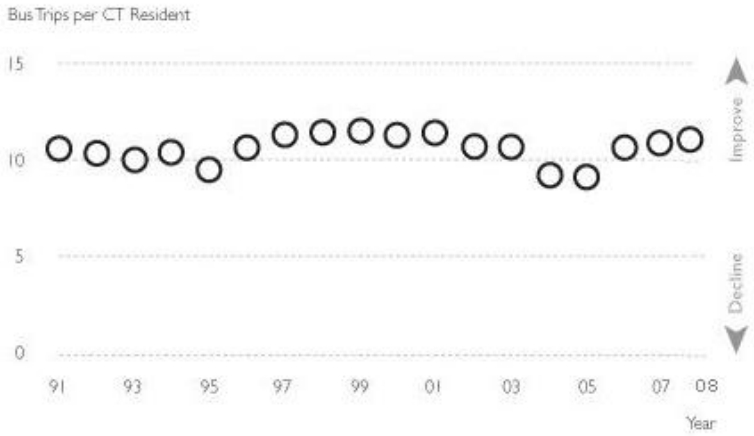
Indicators: Leading Environmental Indicators*

Taking the Bus

The average Connecticut resident took the bus slightly more often in 2008



After a four-year slide in bus riding, the average Connecticut resident took six percent more bus rides in 2006. 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, and improved again slightly in 2007 and 2008.

* 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.

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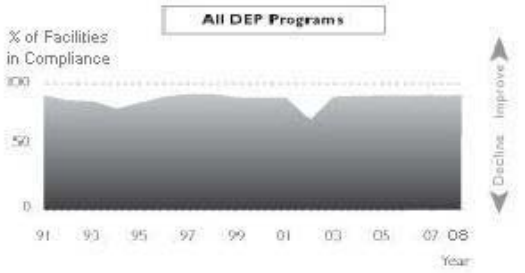
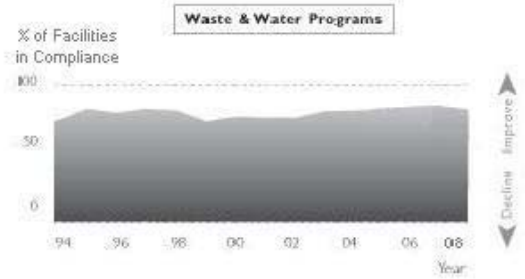
Indicators: Leading Environmental Indicators*

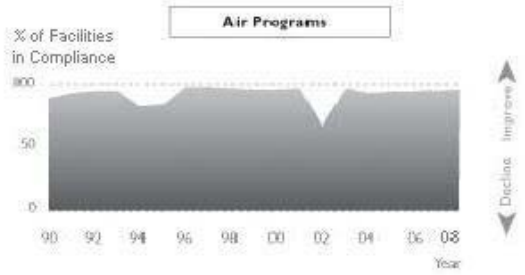
In Full Compliance

No Change

Since 2004, state inspectors have found about 90% of facilities to be in compliance with pertinent environmental regulations .







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. (Monitoring data self-reported by permit holders are not included.) The sharp downturn in 2002 was due to a large number of minor violations in one air quality program (Stage Two Vapor Recovery at gas stations). Short-term downturns might not reflect serious problems if the long-term trend is toward full compliance.

The overall compliance rate rarely has been better than 90%. Generally, compliance with air quality regulations is higher than with waste and water regulations . The number of inspections conducted by the DEP declined every year between 1997 and 2003, and has since increased modestly. The relationship between the number of inspections and rate of compliance is not clear. The number of inspections and the overall compliance rate both rose slightly in 2006. Inspections increased again in 2007 and 2008 but the compliance rate held steady. The 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 relationship of compliance to inspections, the

failure of the state to advance affirmatively toward the goal of full compliance is apparent.

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Indicators: Leading Environmental Indicators*

Recycling

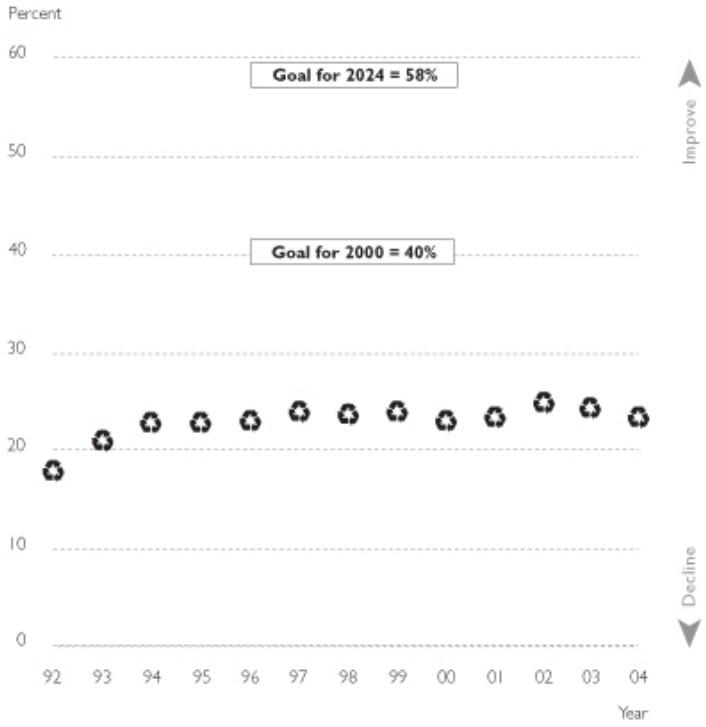
?

This indicator has not been updated because statewide recycling data are not available for the years since 2004.

Some municipalities and regional waste authorities have reported greater participation in recycling programs since adopting single-stream recycling in the last two years. However, the statewide average surely is well below the recycling goal.

The remainder of this page is copied from last year's *Environmental Quality in Connecticut*:

After failing to meet its goal for 2000, Connecticut set a more ambitious goal in 2006. More effort from everyone – individual residents, municipalities, schools, state agencies and the private sector – will be needed to reach the new goal.



The General Assembly established a goal of reducing and recycling 40% of Connecticut's municipal solid waste stream by the year 2000 (Sec.22a-220(f)). This goal was never 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 many hundred miles. In December 2006, the DEP amended the State Solid Waste Management Plan to include a goal of diverting 58% of Connecticut's municipal solid waste stream from disposal by 2024. This would be accomplished through recycling and composting. If this goal is met, Connecticut will be able to manage all of its garbage without exporting it.

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 and non-reported recycling (such as bottle redemptions) 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 2004 are not available. Regardless of the fine points of the data, this indicator shows that progress appears to have halted.

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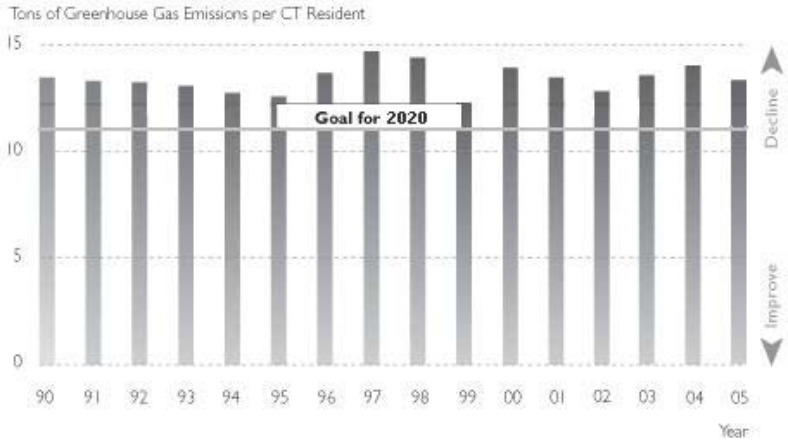
Indicators: Leading Environmental Indicators*

Climate Watch

The most recent data for Connecticut's emissions of carbon dioxide and other greenhouse gases are from 2005.



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.

Public Act 08-98 set two new goals for reducing greenhouse gas emissions: reduce statewide emissions to 10 percent below 1990 levels by 2020, and 80 percent below 2001 levels by 2050. The chart above shows the average Connecticut resident's share of greenhouse gas emissions. The goal line shows the level of the average resident's share of emissions that must be achieved if the 2020 goal is to be reached. Because there probably will be at least 300,000 more people living in Connecticut in 2020 than there were in 1990, each person's share of emissions will have to drop below 1990 levels to reach the 2020 goal. Most human-generated carbon dioxide results 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.

There have been improvements in some emission sources since 2001, such as a reduced use of natural gas in commercial buildings, but those gains were countered by sharp increases in fuel combustion in homes and vehicles. According to Falling Behind , a report published in March 2008 by the Environment Connecticut Research and Policy Center and the Clean Water Fund, home energy use increased substantially between 2001 and 2005 along with consumption of diesel fuel and gasoline.

New emission data should be available by December 2009.

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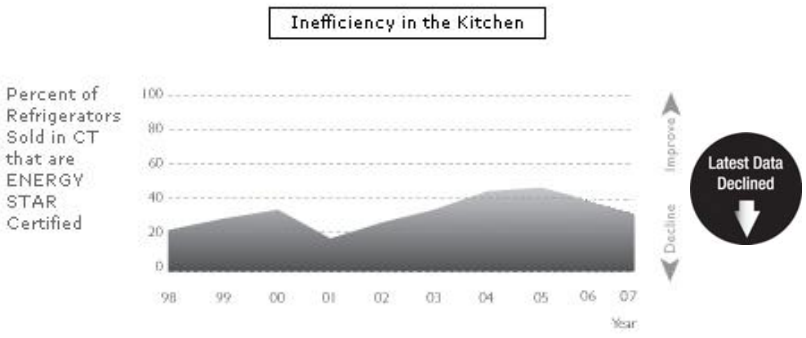
Indicators: Leading Environmental Indicators*

Electricity

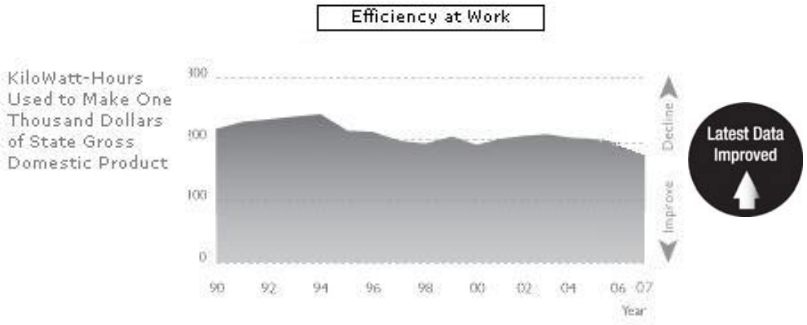
For the first time in four years, the average Connecticut resident reduced electricity use at home during 2008.

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

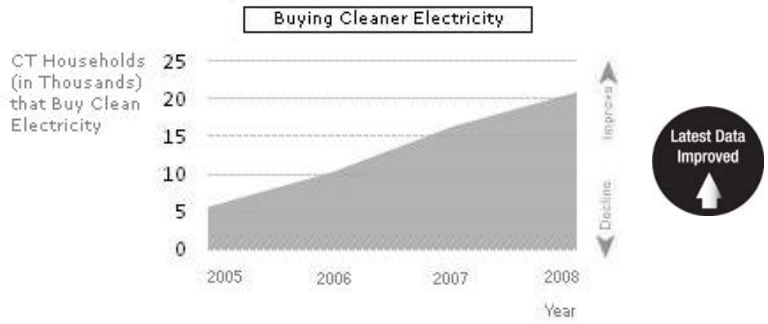


For four years in a row, Connecticut businesses have used electricity more efficiently to produce goods and

services.



About 5,000 households have been signing up annually to buy electricity generated by renewable energy sources through the CTCleanEnergyOptions program.



Electricity: Inefficiency At Home: In 2003, households surpassed the commercial sector as Connecticut's greatest consumers of electricity.

According to the Connecticut Siting Council, many Connecticut residents have been using electricity more efficiently in recent years except during summer heat waves. The result has been growth in peak summertime consumption even as growth in year-round electricity use has been slowing. The increase in summertime consumption has significant environmental consequences. On the hottest days, Connecticut's basic power plants are unable to meet the additional demand, and older fuel-burning plants are brought on line. Because they are used sporadically, many of these older plants are permitted to operate with more lax pollution control requirements. As a result, state residents generate the most air pollution on the hottest summer days when air quality is already bad.

The vast majority of Connecticut's electricity is generated from nuclear energy and the combustion of natural gas, oil and coal. Hydropower, solar 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: 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 federal standards for household appliances set forth 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 state by state by ENERGY STAR for each quarter. In 2007 (the most recent data available) about 36% of refrigerators bought by Connecticut consumers were ENERGY STAR efficient. This percentage had increased from 2001 through 2005 but dropped in 2006 and 2007.

Sales trends for other ENERGY STAR appliances have been similar. ENERGY STAR clothes washers were 44% of sales in 2007, down from 48% in 2006. ENERGY STAR dishwashers were 80% of sales, down from 94% in 2006. Room air conditioner trends ran contrary: up to 55% in 2007 from 46% in 2006).

Public surveys show conclusively that most people are aware of the ENERGY STAR label and what it means, so reasons other than awareness must be addressed to boost ENERGY STAR labeled products and stem the ongoing waste of electricity in homes.

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 products help to reduce air pollution and greenhouse gas emissions.

Electricity: Efficiency at work: The third graph shows trends in the efficiency with which Connecticut's economy uses electricity to produce goods and services. Connecticut generally produced more goods with less electricity from 1995 to 2000, when the trend reversed for three years, then reversed again, favorably, in 2004.

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 2006 (the most recent data available), Connecticut's GDP was $176 billion (in 2000 dollars), a three percent increase from the previous year, while electricity consumption decreased for the second straight year. In other words, the economy used electricity more efficiently; more efficiently, in fact, than it had in decades, demonstrating that with advances in energy efficient technology it is possible for Connecticut's economy to continue growing while using less electricity.

Electricity: Buying Cleaner Energy: The CTCleanEnergyOptions program enables customers to sign up to purchase electricity from renewable sources that include water

(low-impact hydroelectric), wind, solar, biomass and landfill gas . The bottom chart shows the number of Connecticut households that have signed up in the past four years. The electricity that actually enters these houses is not necessarily from renewable sources. The consumer who elects this option is paying for the generation of renewable electricity on the regional electric grid. This reduces the amount of electricity that otherwise would be generated by nuclear, coal, oil and natural gas-fired generating plants, all of which generate pollution. The CTCleanEnergyOptions is a program of the Connecticut Clean Energy Fund.

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Activities of the CEQ in 2008

Research and Reports

Following two years of research that was prompted by citizen complaints, the Council issued a special report in October 2008 that analyzed the effectiveness of the state's inland wetlands laws. *Swamped* established that municipalities with trained wetlands commission members or staff (a requirement of state statute) allow less wetlands destruction than municipalities that have not completed the required training.

The report also documented other problems including deficiencies in municipal reporting of wetlands decisions. The Council's recommendations included a mix of administrative remedies and legislation; the latter is under consideration by the Connecticut General Assembly.

At the end of 2008, the Council published a one-page Checklist of Recommended Legislation to Remedy Connecticut's Biggest Environmental Deficiencies. This is intended to be an annual supplement to *Environmental Quality in Connecticut*.

Reviewing State Projects

The Council is 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.

The procedures for siting of communications towers continued to be a concern. The Council received many comments and questions about these installations from citizens and local officials. The Council continues to look into

apparent gaps in relevant state law and policy, particularly where scenic resources are at stake. A Council intern completed a review of the numerous places in state law that require consideration of scenic impacts and associated deficiencies.

Commissioner of Environmental Protection Gina McCarthy told the Council in July that she had issued a Directive on Exchanges of Land or Interests in Land. She explained that previously the Department had only a "policy" but under her administration this has been elevated to a directive which is the strongest tool a commissioner has. The new directive lists the conditions under which a transfer can be made. She added that future transfers will be well documented to be clear to anyone reviewing the record why the transfer was made and how the conditions were met. Commissioner McCarthy said that this change was a consequence of the Council having brought this issue to her attention, which the Council did in response to citizen complaints and a subsequent investigation. At the same meeting, Commissioner McCarthy discussed the Department's new Encroachment Enforcement Response Policy, which was prompted by the Council's 2005 special report on encroachments, *Preserved But Not Protected*.

Complaints

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.

The numerous complaints of 2008 led to much Council action. A sampling includes:

- The proposed Plainfield Renewable Energy facility was the subject of many complaints about the public notice and hearings for a relocation of the proposed water intake and discharge component of the facility. The Council wrote to the Connecticut Siting Council (CSC) about these and related concerns. The CSC provided an opportunity for

the citizens to present their case.

- Runoff and visible pollution of the Connecticut River from the Kleen Energy construction site along the prompted phone calls, e-mails and presentations to the Council. Staff in turn contacted the DEP and the Siting Council who visited the site with local officials to assure that proper controls were put in place.

- A complaint was received regarding the use of “emergency authorizations" for more than ten years to allow continued water discharges from a nuclear power plant. That situation is now being addressed by the DEP, and a proper water discharge permit application process is now ongoing.

The Council published the first notice of a state land transfer pursuant to Public Act 07-213 that mandates public notice of these transactions in the Council's on-line Environmental Monitor. The law was adopted in 2007 partly in response to recommendations of the Council, which had investigated complaints about transfers that occurred with insufficient environmental review or public notice.

The Word from New London

One way the Council fulfills its responsibility to hear its fellow citizens is through public forums that are held in different areas of the state. The information presented at these forums has been extremely useful to the Council. The forum held in the New London City Hall in October 2008 elicited many questions and concerns.

Improvements to rail commutation were a popular topic. Several people asked about the Department of Environmental Protection's (DEP's) role in scheduling bridge closings along the Shoreline East Railroad; they suggested that restrictions on the frequency and duration of railroad bridge closings were inhibiting expansion of service on this line. The Council reviewed the laws that govern the bridge closings, and pledged to involve itself as required as the plans to expand service expand.

One innovative citizen suggested that the

railroad causeways that impair the water quality of small coves could be opened, and generators installed to produce electricity for the trains from the tidal flow.

An engineer expressed concern regarding the lack of explicit and stringent controls in Connecticut on the discharge of possible carcinogens during the installation of "cured in place pipe" (CIPP). Staff investigated and informed the engineer that Connecticut's regulations governing this were in conformance with the regulations of the U.S. Environmental Protection Agency. Massachusetts and Virginia have stricter controls, and there is nothing to prevent stricter controls from being written into contracts for CIPP installation.

In response to an inquiry on procedures of the Department of Transportation (DOT) to prevent contamination of water supplies as part of the routine maintenance of highways in the New London areas, staff obtained the DOT's records and procedures.

People questioned specific activities on state lands. One complaint was about the removal of 45 trees at a state park. Investigation determined that the cutting was approved by the DEP at the request of the Department of Transportation to reduce a potential hazard to aviation at a nearby airport and that the timber was subsequently used by the state.

Several citizens inquired about various aspects of state agricultural policies and offered suggestions for improvement. Staff researched their questions and was able to respond to them regarding the following: Minimum farm size for property tax reductions are set by towns, not by the state. Community gardens are in fact eligible for open space grants. "Biodiversity farming" is not an agricultural activity that is eligible for property tax reductions in Connecticut, though it is in some other states and warrants further research by the Council.

A more complete list of topics raised at the forum in New London can be found in the minutes.

———————————

Many people across the state expressed their concerns during 2008. 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 2009.

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Council Duties

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 scoping notices and environmental impact evaluations for state projects under CEPA; and the official publication for notice of intent by state agencies to sell or transfer state lands.

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CEQ Members

Barbara C. Wagner (Chair)
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. Former member, State Open Space and Watershed Land Acquisition Board.

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.

Janet P. Brooks (Appointed 2/09)
Resident of Middletown. Partner and member of the law firm D'Aquila & Brooks, LLC, with a practice in environmental, land use, municipal and

real estate law. Member of the Connecticut Bar Association Planning & Zoning Section and Environment Section. Co-author of *Connecticut Environmental Protection Act*, Volume 15 of the Connecticut Practice Series published by Thomson West. Formerly Assistant Attorney General in the Environment Department of the Connecticut Attorney General's (AG's) Office for 18 years enforcing the state's environmental laws running the gamut from noise, odor, water pollution, air pollution, pesticides to habitat protection and preservation of land. While at the AG's Office, coordinated the wetlands appeal practice and developed the legal training for wetlands commissioners for DEP's annual training. Recipient of 1984 German Marshall Fund grant to study the effect of citizen participation on hazardous waste clean-ups in four European countries. Based on those experiences, author of chapter published in *America's Future in Toxic Waste Management: Lessons from Europe.* Staff Attorney for five years at the Connecticut Fund for the Environment, Inc., representing citizens groups in administrative and court proceedings. Began practice of law assisting the Middletown City Attorney in the city's opposition to the utility company's burning of PCB waste oil within the city boundaries.

Bruce R. Fernandez
Resident of Farmington. Technical and Marketing Executive and Entrepreneur. Former President and CEO of insurance software and energy efficiency companies, including AMS Rating Group, Savage Rating Services, and BTU's Inc. Served in United States Army Corps of Engineers as small unit commander; served in Viet Nam and ten years in Army Reserves.

Thomas F. Harrison (Served through 12/08) Resident of Avon. Retired partner of the Hartford-based law firm of Day Pitney LLP. Chairman, Avon Board of Finance. Board of Directors, Connecticut League of Conservation

Voters Education Fund. Executive Committee and Past Chairman, Environmental Law Section, CT Bar Association. Board of Directors and Former Chair, CT Chapter, Air & Waste Management Association. Former member of Board of Directors, National Audubon Society/Connecticut. Environmental Professionals Organization of CT. CT Environmental Forum. Adjunct Instructor of Environmental Law, Rensselaer Polytechnic Institute (Hartford Graduate Center). Former Member, Avon Inland Wetlands Commission.

John M. Mandyck
Resident of West Hartford. Vice-President of Government and International Relations, Carrier Corporation. Directs environmental sustainability activities on domestic and international levels. Former Director of Government Relations for the Greater Syracuse Chamber of Commerce. International Advisor to the China Green Building Council.

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 and Utility 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.

Ryan Suerth (Appointed 12/08)
Resident of Madison. Attorney with the law firm of Saxe Doernberger & Vita, P.C., where he represents insurance policy holders in disputes with their insurers. Served for four years in the U.S. Army, including a one year deployment to Baghdad, Iraq. Served in Washington, D.C. as legislative aid to former Connecticut Congressman Rob Simmons advising Mr. Simmons on a variety of issues, including transportation. Member, Madison Land Trust.

Norman VanCor (Served through 2/09)
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 34 gallons of whole blood and platelet donations. Former Volunteer Hunter Safety Instructor for the DEP Conservation Education Program. Certified Master Gardener.

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.

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

Mail:
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Acknowledgments

PHOTO CREDIT: The photo at left was taken on the Connecticut shoreline by David Kroodsma during the 2007 "Ride for Climate USA," a coast-to-coast bicycle ride that raised awareness of climate change. Used here by permission, it can be found with additional photos and information about similar rides at www.rideforclimate.com.

The Council appreciates the work of its Executive Director, Karl Wagener, and Environmental Analyst Peter Hearn in drafting this report for review by the Council and preparing the final version for publication.

The Council notes the valuable contributions of interns Britney Holmgren of the University of South Carolina and Nathaniel Danforth of the University of Connecticut.

The Council also appreciates the assistance of the many people in the Departments of Agriculture, Environmental Protection, Transportation and Public Health and the Connecticut Siting Council who provided data. Researchers at the Center for Landuse Education and Research (CLEAR) at the University of Connecticut provided new and very valuable data.
The Council especially thanks the many citizens, businesses, and organizations who offered information and viewpoints to the Council throughout the year.

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