



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

Statewide Inland Wetlands and Watercourses Activity Reporting Program

STATUS AND TRENDS REPORT
For the Year 2008



December, 2011

Bureau of Water Protection and Land Reuse
Inland Water Resources Division
www.ct.gov/deep/inlandwetlands

2008 STATUS AND TRENDS REPORT

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Executive Summary

With the passage of Public Act 87-533, the Commissioner of the Department of Energy and Environmental Protection (DEEP) was given authority to collect reports from Municipal Inland Wetlands Agencies (hereafter called Agencies) regarding impacts affecting inland wetlands and watercourses. While the legislation did not direct the DEEP to analyze the collected reports or publish any findings or conclusions, DEEP believes this report provides the best indication of the general trends regarding inland wetlands and watercourses in Connecticut. The information in this report is used by various state and federal agencies and provides the Connecticut Legislature with critical data on actions affecting wetlands and watercourses.

The total numbers of actions managed by the municipal inland wetlands agencies reflect the pace of development in Connecticut and the reporting rate by individual towns. Agencies reported 3,478 total actions in 2008 (**Table 1**) which is down about 13 percent from 2007 and likely reflects the recent decline in the housing market and subsequent reduction in applications to municipalities. The majority of actions, 86 percent, are related to permitting of regulated activities. Residential development of all types constituted 60.5 percent of the reported activity purposes and the greatest quantity of wetlands impacts. Commercial and industrial actions represented 13 percent of the reported activity purposes. The total number of reported actions by the state of Connecticut were a tiny fraction of all actions in and around wetlands and watercourses.

Formal enforcement actions totaled 75 or 2.1 percent of the total actions. The DEEP believes the small number of enforcement actions reflects the success of municipal administration of the Inland Wetlands and Watercourses Act (Act) and the support of our citizens for the protection of wetlands and watercourses. Many enforcement and compliance issues are managed with informal actions such as phone calls and site visits with property owners.

Statutory knowledge, the evolution of the law, regulatory and permitting process improvements, wetland functions and values, and natural resource science are programmatic topics of emphasis in the Municipal Inland Wetland Commissioners Training program. The DEEP is pleased with several recent trends noted in the 2008 Status and Trends Report which appear to validate the training approach:

- ✓ The recent no-net loss trend¹ (*i.e.* the previous five years) for wetlands acreage continued in 2008 with a reported net gain in wetlands area of 8 acres.
- ✓ The amount of impacts on a wetlands acreage basis for many of the activity categories declined year-over-year.
- ✓ The Agent Approval process which simplifies and speeds up the permitting process for minor activities has been widely adopted and has now grown to about one quarter of all permits issued representing a substantial time-savings for applicants and Inland Wetlands Agencies.

¹ “No-net loss” of wetlands has been a stated policy goal for the last several U.S. administrations (EPA, 2008).

Introduction

There are approximately 510,000 acres of freshwater wetlands and watercourses in Connecticut (Metzler and Tiner, 1992). This acreage comprises approximately 16 percent of the state's surface area. In 1972, recognizing the importance of inland wetlands and watercourses, Connecticut's legislature enacted the *Inland Wetlands and Watercourses Act (Act)*, sections 22a-36 through 45 of the Connecticut General Statutes (CGS). The Act sets forth standards for the protection, preservation, maintenance, and use of inland wetlands and watercourses. Inland wetlands and watercourses ensure an adequate supply of surface and ground waters by maintaining hydrological stability and health of surface and ground waters. They provide critical habitat for animal, aquatic, and plant life, and are a refuge for endangered and threatened species. And they help sequester carbon are important for nutrient cycling in ecosystems. Inland wetlands and watercourse actions (hereafter called actions) affecting wetlands and watercourses are regulated the Agencies, with the exception of state agency projects, which are regulated by DEEP's Inland Water Resources Division.

Pursuant to CGS section 22a-39(m) of the Act, Municipal Inland Wetlands Agencies are required to report their actions to the Commissioner of the DEEP. This information allows the DEEP to formulate strategies to increase the effectiveness of existing programs as well as develop new programs for protecting and restoring the state's inland wetlands and watercourses. The numbers and trends provide insightful baseline information regarding the regulation of wetlands and watercourses across Connecticut.

Statewide Inland Wetlands and Watercourses Activity Reporting Program

In 1987, the DEEP began to implement the statewide reporting program to measure and evaluate actions affecting inland wetlands and watercourses. The 2008 calendar year marked the 19th year of standardized reporting of Agencies actions. Prior to the implementation of the reporting program, there was little information on the extent of inland wetland and watercourse impacts occurring across the state. The environmental information from the reporting program is a unique data set both within Connecticut and nationally.

The DEEP Inland Water Resources Division developed a standardized activity reporting form to provide for systematic and accurate reporting of local agency actions; and to establish useful data on inland wetlands losses, impacts, and management activities. The form and related instruction sheet are shown in **Appendix E**. Actions are reported on a statewide inland wetlands and watercourses activity reporting form and are required to be submitted on a monthly basis no later than the 15th day of each month to the Wetlands Management Section of the DEEP Inland Water Resources Division.

The form has been designed for ease of use. Each of the thirteen items on the form relate to a specific detailed instruction item. The reporting form is revised as necessary to reflect legislative changes or management issues. When filling out the statewide activity reporting form, municipalities and state agencies are asked to provide the following:

- the town, the reporting month, and the name of the applicant
- the purpose, and type of project

- the action taken, and whether a public hearing was conducted
- the United States Geologic Survey (USGS) Quad map name
- the subregional drainage basin number
- the areas of wetland, upland review area, and open waterbody impacts, reported in acres, and stream impacts reported in linear feet
- the area of wetland restoration, enhancement, and creation (hereafter referred to as creation) reported in acres.

All reported actions are classified by codes which identify one or more of 13 activity types (*e.g.* filling, excavation, and culverting) and relate to one of 15 activity purposes (*e.g.* commercial, municipal, or agriculture). It is important to note that for each purpose there is one or more associated activity types. For example, wetlands may have been altered for the purpose of a new residential development that required two types of actions: filling as well as excavation.

Typically, 3,500 to 4,000 activity reports are submitted every year and the DEEP Wetlands Management Section maintains a Statewide Inland Wetlands and Watercourses Activity Reporting Form (SIWWARF) database to hold this information. Each reporting form is entered into a database and compiled to present the data in a useful format. The database is utilized to filter the reported data for egregious errors such as missing data, typographic, and scale errors. Errors are corrected with input from the appropriate municipalities. As a result, the DEEP Wetlands Management Section obtains consistent estimates of the total wetland and watercourse impacts each year along with the associated types of projects and actions.

Inland Wetlands Agency Actions²

For 2008, the DEEP received 3,478 forms. This is the second year that the recent economic downturn was noticeable in the wetlands activity reporting data. **Table 1** below summarizes the actions reported and filed on the Statewide Inland Wetlands and Watercourses Activity Reporting Form.³ **Appendix D** shows Inland Wetlands Agency actions for the 10-year period of 1998 to 2008.

Reported Wetland and Watercourse Impacts and Mitigation⁴

Connecticut's Inland Wetlands and Watercourses Act define "wetlands" and "watercourses" separately. As a result, data on wetland and watercourse impacts are reported separately. In addition, Inland Wetland Agencies are asked to report "open water body impacts" which occurs primarily when dredging or filling occurs within a pond or a lake.

² The data reported in this report are not field verified and strictly based on self-reported information from each of the 170 Inland Wetlands Agencies, and certain Agencies within the State of Connecticut. No functions or values assessment of these impacts has been conducted.

³ The reported information reflects reports submitted before November 1, 2011.

⁴ Mitigation is a collective term for wetlands creation, enhancement, and mitigation. The concepts are not differentiated in the reporting forms submitted by the municipalities.

Table 2 below shows the acreage of reported wetland and open waterbody impacts reported on the SIWWARF form for 2008. Reports on watercourse impacts include the total length of a river, brook, stream, or other watercourse directly altered as a result of an action taken by the agency. Reported stream impacts are reported in linear feet for the Statewide Inland Wetlands and Watercourses Activity Reporting Form and are shown in **Table 3**.

Table 1: Total Actions Reported for 2008

Actions Reported for 2008	Numbers Reported
Permits Issued ⁵	2,206
Permits Denied	81
Permits extended/amended	115
Map Amendments	67
Enforcement Actions	75
Jurisdictional Rulings ⁶	118
Agent Approvals	814
Appeal of Agent Approvals	2
TOTAL	3,478

Table 2: Acres of Reported Wetland and Open Water Body Impacts Reported for 2008

Area Impacts	Acres Reported
Wetlands	57
Open Waterbody	63

⁵ Permits issued may include activities reported in upland review areas which can result in no wetland alteration, conversion, or loss.

⁶ Jurisdictional rulings may include actions determining that no permit is required or that an activity is exempt. Jurisdictional rulings may result in alteration, conversion or loss of wetlands or watercourses.

Connecticut remains a “no-net loss” state in 2008 with 57 acres of reported wetland impacts and 65 acres of reported wetland creation. Since 2002, the acreage of both impacted and created wetlands have generally declined. **Figure 1** below shows a comparison of the acres of reported wetland impacts and creation reported since 1995 based on reported Agency actions.⁷

Table 3: Linear Feet of Reported Stream Alterations Reported for 2008

Impacts	Linear Feet
Streams	24,005

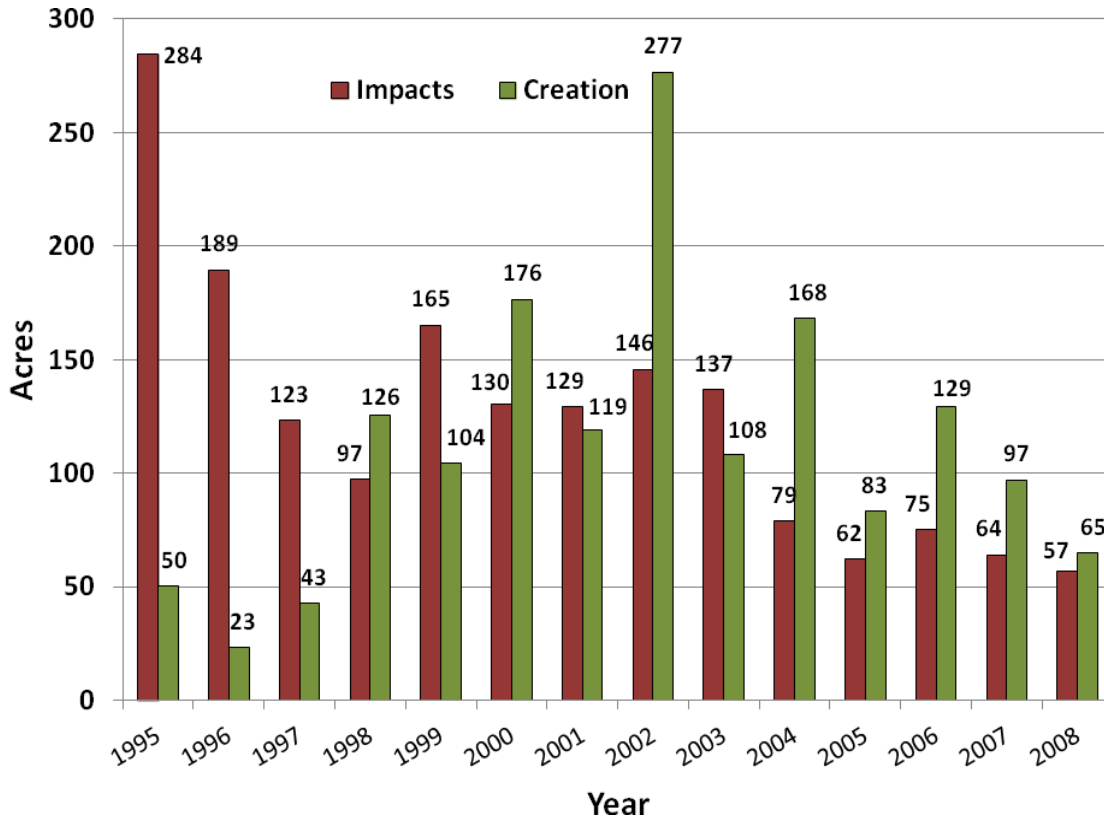


Figure 1: Acres of Reported Wetlands Impacts and Creation per Year

⁷The term “creation” encompasses the restoration, enhanced, and creation of wetlands and watercourses.

Reported Wetland and Watercourse Impacts ActivityTypes

The SIWWARF form provides activity type codes which best characterize the activity being reported such as drainage improvements. **Appendix A** shows the reported wetland and watercourse impact activity types for 2008.

The three activity types accounting for the primary wetland and watercourse impacts for 2008 were excavation, filling, and roadway/driveway construction. Excavation accounted for 19.0 percent of reported activity types, filling accounted for 15.1 percent of reported activity types, and roadway/driveway construction accounted for 10.9 percent of reported activity types. **Figure 2** below shows the acreage associate with reported wetland and watercourse impact actions. Excavation was involved in the impacts of 25 acres, filling was involved in the impacts of 22 acres, and road/drive construction was involved in the impacts of 18 acres for wetlands in 2008. Most activity types have declined in impacted acreage between 2007 and 2008.

In addition, the permits issued for actions in the upland review area and in the uplands beyond the upland review area represent a considerable percentage of total activity types -- approximately 39 percent. The acreage totals noted for Regulated Activity in Upland and Regulated Activity in Established Upland Review Area do not reflect wetland and watercourse impacts. Rather, it indicates indirect effects as a result of actions adjacent to wetlands and watercourses.

Reported Wetland and Watercourse Impact Activity Purposes

Reported actions occur for a single purpose, whether it is a commercial development, municipal improvement, or agricultural activity. **Appendix B** shows the reported wetland and watercourse impact activity purposes for 2008. The three most common reported wetland and watercourse impact activity purposes were residential improvement by a homeowner, new residential development for single family units, and commercial/industrial uses.

Activity Types in Acres per Year

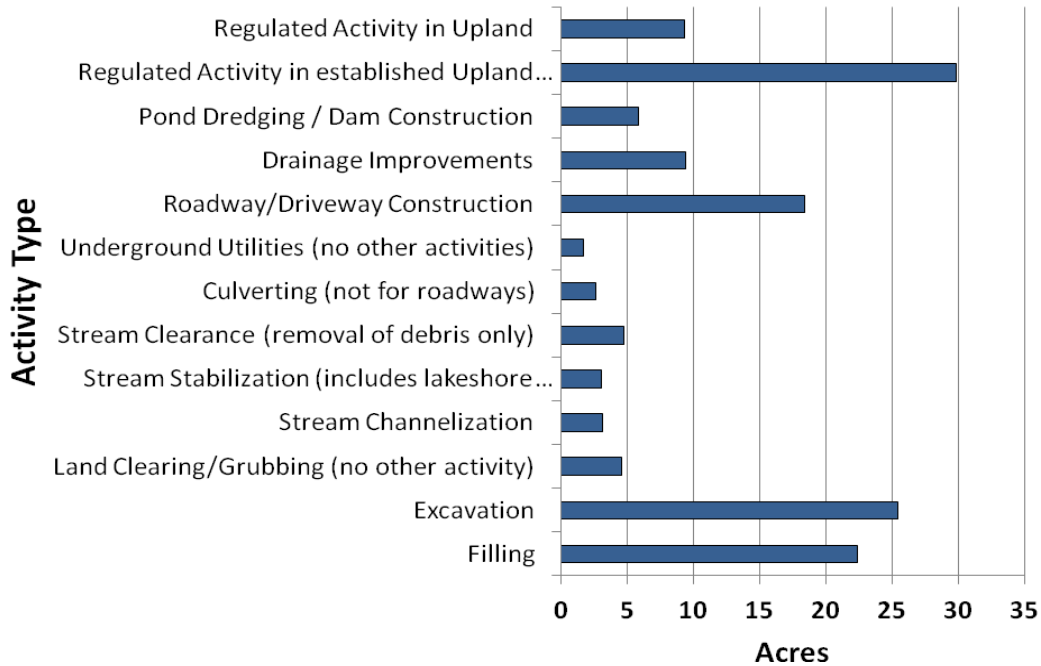


Figure 2: Acres of Wetlands and Watercourses Associated with Reported Activities Types for 2008

Impacts in Acres per Year

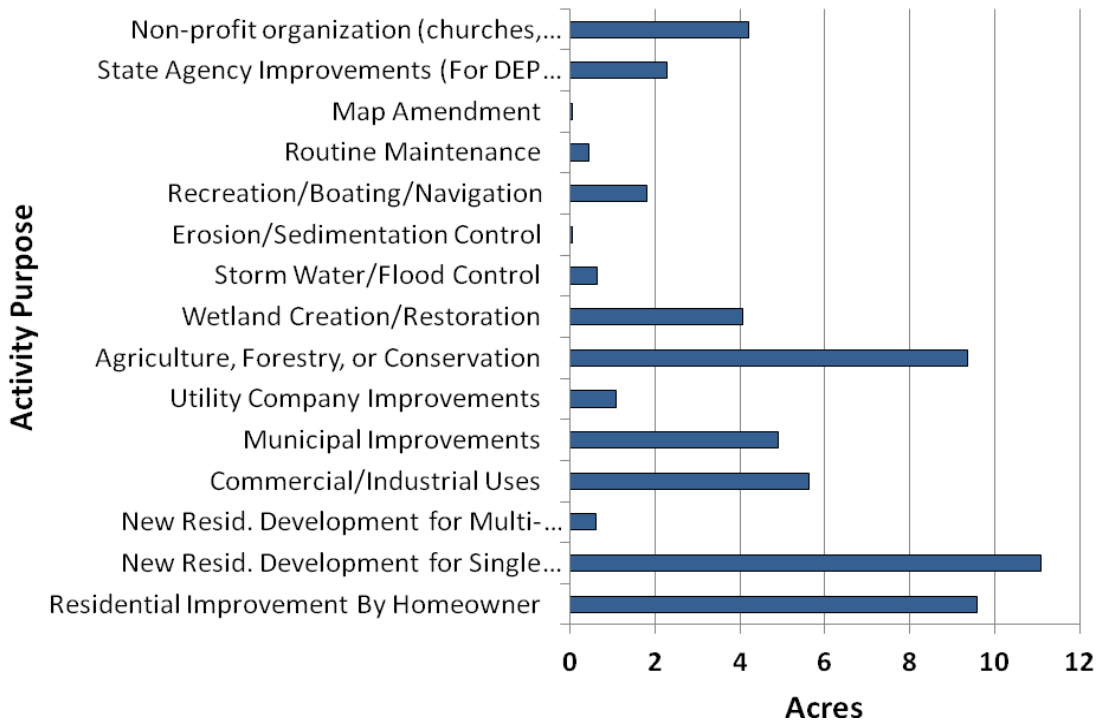


Figure 3: Purposes for Reported Wetlands and Watercourses Impacts in Acres for 2008

Residential improvement by a homeowner accounted for 39.7 percent, new residential development for single-family units accounted for 20.8 percent, and commercial / industrial uses have accounted for 12.5 percent of all reported wetland and watercourse impact activity purposes.

Figure 3 above indicates how many wetland acres were impacted for each activity purpose in 2008. New residential development for single family units accounted for 11 acres, commercial/industrial uses accounted for 6 acres and residential improvement by a homeowner accounted for 10 acres of wetland impacts in 2008. The acreage is reduced year-over-year for most of the listed categories. **Figure 4** shows the impacts to watercourses in linear feet since 2000. The long-term average is around 34,000 linear feet (i.e. the red dashed line) and the past two years, 2007 and 2008, have been slightly above the long-term average.

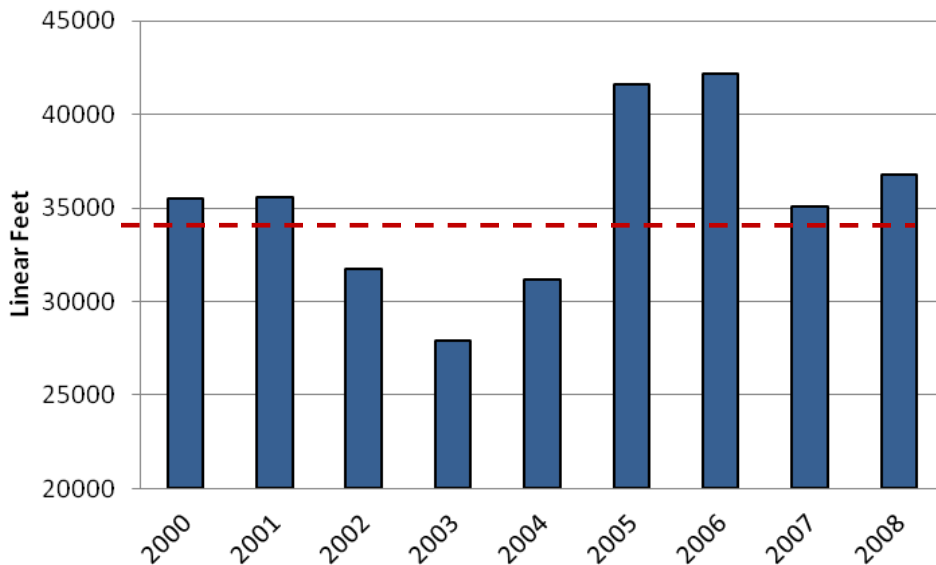


Figure 4: Watercourse Impacts in Linear Feet

Discussion

No Net Losses in Wetland Areas

In 2008, 57 acres of wetlands were reported to be impacted while 65 acres created. The data for 2008 indicates that the mitigation of reported wetland impacts is a continuing trend and Connecticut continues to be a “no-net loss” state (**Figure 5**) based on reported action data.³ Since 1998, the state appears to have transitioned to no-net losses in the wetlands acreage which concurs with the state policy in the Conservation and Development Plan for 2005-2010 (OPM, 2004). **Figure 6** shows the same data as a ratio of wetlands created to wetlands impacted. Any ratio value above one, with a green tag, is a net gain on a yearly basis.

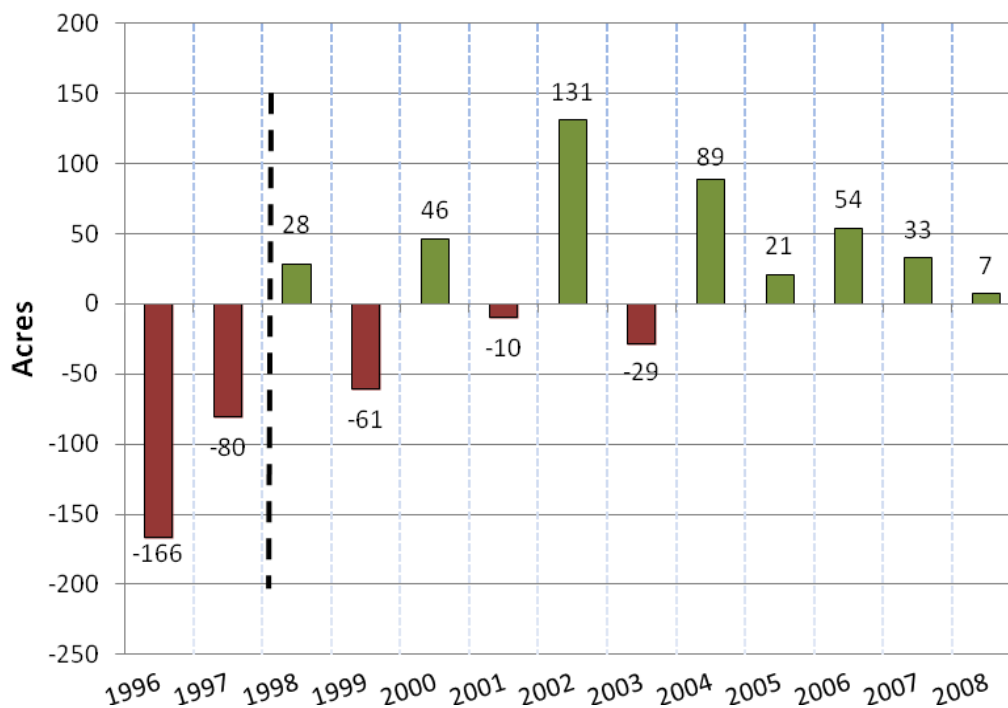


Figure 5: Yearly Net Inland Wetlands Acreage

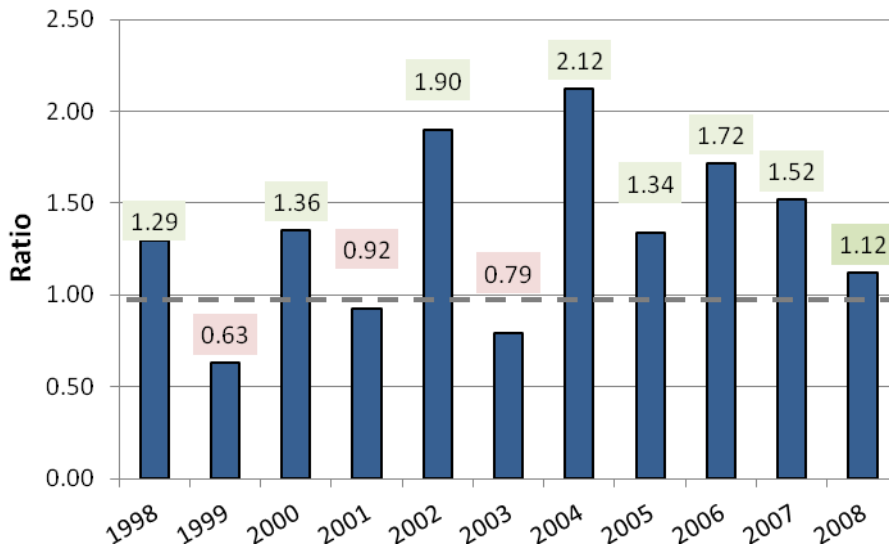


Figure 6: Ratio of Inland Wetlands Creation to Impacts

Impact of Municipal Inland Wetlands Training Program

What happened in 1998 that turned Connecticut from a state with a net loss of wetlands to a state that is now showing an average net gain? The DEEP believes that the foundation of such change began in 1996. In 1996, the Inland Wetlands and Watercourses Act was substantially amended. One such amendment was to section 22a-41(a)(4) of the Act which provided expressed authority to consider mitigation and condition permits to provide for the restoration, enhancement, and creation of wetlands and watercourses. At the same time, the DEEP developed a comprehensive training program for inland wetlands commissioners and agents.

Prior to 1996, the DEEP provided for ad-hoc municipal training. In 1996, a new funding stream from EPA allowed for development of a comprehensive training program focused on the statutory authority of municipal inland wetlands agencies. The comprehensive program provided consistent annual opportunities for the DEEP to explain the authority for mitigation in the Act as a result of the 1996 amendments.

Further, the DEEP revised the Inland Wetlands and Watercourses Model Municipal Regulations to include mitigation as an item in the section of the regulations dealing with application requirements. The majority of municipalities adopted the new model regulations. Regulatory authority reinforced by way of the comprehensive training program has resulted in more municipalities seeking mitigation opportunities through the regulatory process, and the data reflect such change.

Upland Review Areas

Another significant trend is how the regulation of activities outside of wetlands and watercourses occurs. In 1997, DEEP published the guidance document titled “Guidelines Upland Review Area Regulations Connecticut’s Inland Wetlands & Watercourses Act”. This document describes the legal basis for the regulation of activities outside of wetlands and watercourses and recommends that municipal inland wetlands agencies regulate activities within 100 feet of inland wetlands and watercourses. The majority of municipal inland wetlands agencies in Connecticut are routinely regulating activities in the upland review area. As of 2010, about 80% of the towns have an upland review area (URA) of 100 feet. The remaining towns, with only a few exceptions, utilize an URA of between 50 and 200 feet.

The data for 2008 show that 38 percent of the activity types reported were located in the upland review area (**Appendix A**) or in uplands outside of wetlands. This is nearly identical to the number reported in the previous year and suggests that impacts that could occur in wetlands are being moved to upland areas as part of the permit review process by the municipalities.

The number of agent approvals in the Upland Review Area, where many towns allow agents to review *de minimis* activities such as post holes and decks, continues to be far higher than the late 1990s and early 2000s. Agent approvals are about 23% of all actions. This program has grown and become an important administrative tool (**Figure 7**). Municipal inland wetlands agencies are taking advantage of the administrative convenience, utility, and time savings of the agent approval process.

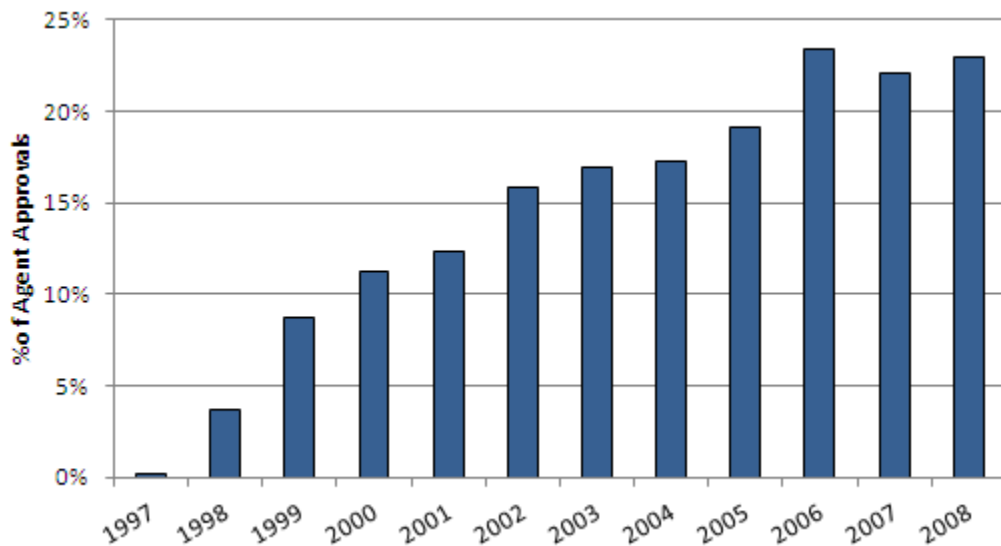


Figure 7: Agent Approvals per Year

Residential Development

According to the Connecticut Department of Economic and Community Development, the 5,220 housing permits in Connecticut's municipalities in 2008 represents a 56 percent decline from the housing market peak in 2005, and about 40 percent below the 20-year average (**Figure 8**). Despite the decline in housing permits, the residential (**Appendix B**), purposes category is by far the largest (60.5 percent), ranking far ahead of the commercial/industrial category (12.5 percent). A large majority of the wetlands alteration impacts are residential as well (**Figure 3**). Given the large declines reported in housing permits since 2003 (CT DECD, 2010), residential wetlands impact acreage will likely decline in the next few years.

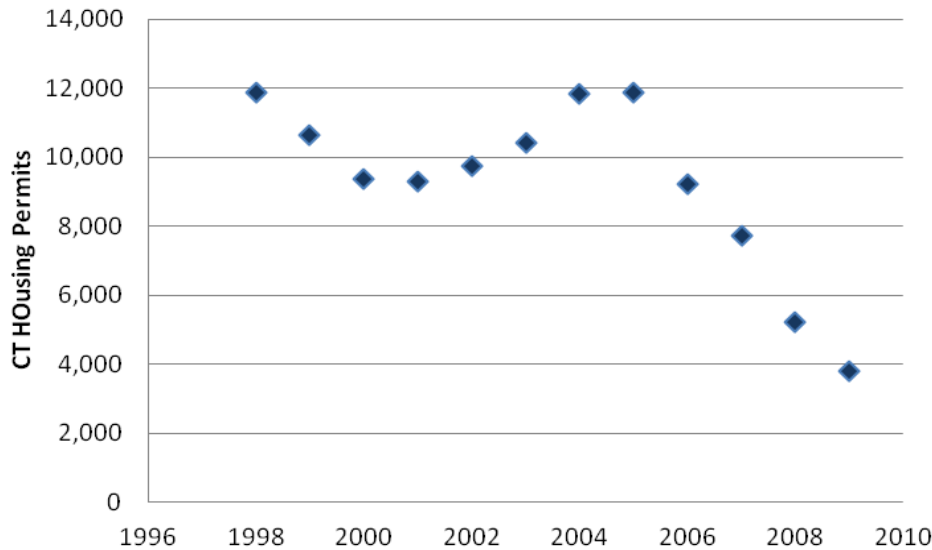


Figure 8: Housing Starts in Connecticut from 1997 to 2008

Agriculture, Forestry, and Conservation

Reported wetlands impacts associated with agriculture, forestry, or conservation has averaged about five acres per year between 2003 and 2008 (**Figure 9**) which is a significant reduction from the 20-acre average for wetlands impacts for the five-year period from 1999 to 2003 shown with the dashed line. Agriculture, forestry, and conservation activities have typically ranked just behind residential and commercial development in impacted wetlands acreage, but are now much smaller. This reduction suggests some success in training on agricultural issues by the Wetlands Management staff.

While some indirect evidence exists for the growth of small-scale agriculture in Connecticut (*i.e.* a 500% increase in farmers markets in the last 20 years) (CT AG, 2011) most farms are very small (78% are less than 100 acres) and federal data suggests no recent growth in agriculture acreage or production (USDA, 2012). Agriculture, forestry, and conservation currently represent a relatively small source of wetlands impacts with only 2.4 percent of the total of activity purposes in 2008 (**Appendix B**). This continues a

recent multi-year trend where agriculture, forestry, and conservation purposes are occurring less often than in the early part of the decade.

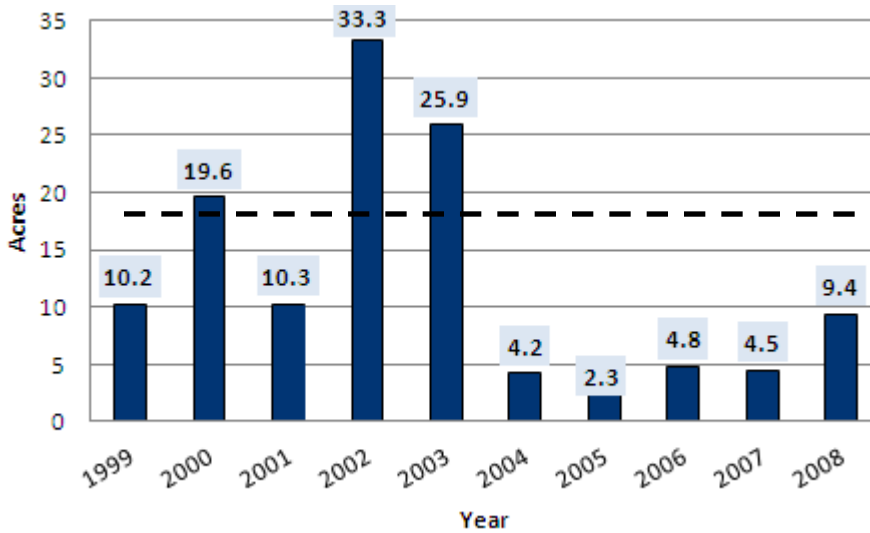


Figure 9: Agriculture, Forestry and Conservation Wetlands Impacts in Acres

Non-Reporting Towns

While a significant majority of towns have complied with the current reporting requirement, there is a need for the DEEP to assure complete reporting of wetland actions and to comprehensively assess state-wide wetland losses. To address this issue, the DEEP notified the non-reporting towns of the reporting requirements and established a date by which all 2008 actions must be submitted.

After such notice by DEEP, 17 municipalities (*i.e.* 10 percent) remained that had not reported any 2008 actions (**Appendix C**). This is the fewest non-reporting number ever and reflects a long-term decline in towns that are not reporting any actions. Towns which fail to report their actions may be subject to revocation of authority to regulate inland wetlands and watercourses pursuant to section 22a-42d-1 of the Regulations of Connecticut State Agencies. Late-filed forms are processed by the DEEP upon receipt.

For More Information

To obtain information regarding the Connecticut Inland Wetlands Management Program contact the DEEP:

- ✓ Call **(860) 424-3706** for assistance
- ✓ Write to :
 - DEEP-Inland Water Resources Division, Wetlands Management Section
 - 79 Elm Street
 - Hartford, CT 06106
- ✓ Go online to the Inland Wetlands website at <http://www.ct.gov/deep/inlandwetlands>

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Appendix A

Reported Wetland and Watercourse Impact Activity Types Reported for 2008

Activity Type	Number	Percent
Filling	803	15.1
Excavation	1011	19.0
Land Clearing/Grubbing	158	3.0
Stream Channelization	32	0.6
Stream Stabilization	91	1.7
Stream Clearance	37	0.7
Culverting	52	1.0
Underground Utilities	82	1.5
Roadway/Driveway Construction	583	10.9
Drainage Improvements	351	6.6
Pond Dredging/Dam Construction	88	1.7
Regulated Activity in established Upland Review Area	1517	28.5
Regulated Activity in Upland	526	9.9
TOTAL	6303	100

Appendix B

Reported Wetland and Watercourse Impact Activity Purposes Reported for 2008

Activity Purpose	Number	Percent
Residential Improvement by Homeowner	871	39.7
New Residential Development for Single Family Units	429	19.6
New Residential Development for Multi-Family/Condos	27	1.2
Commercial/Industrial Uses	275	12.5
Municipal Improvements	201	9.2
Utility Company Improvements	17	0.8
Agriculture, Forestry, or Conservation	77	3.5
Wetland Creation/Restoration	52	2.4
Storm Water/Flood Control	32	1.5
Erosion/Sedimentation Control	39	1.8
Recreation/Boating/Navigation	52	2.4
Routine Maintenance	57	2.6
Map Amendment	5	0.2
State Agency Projects	6	0.3
Non-profit organization	53	2.4
TOTAL	2193	100

Appendix C

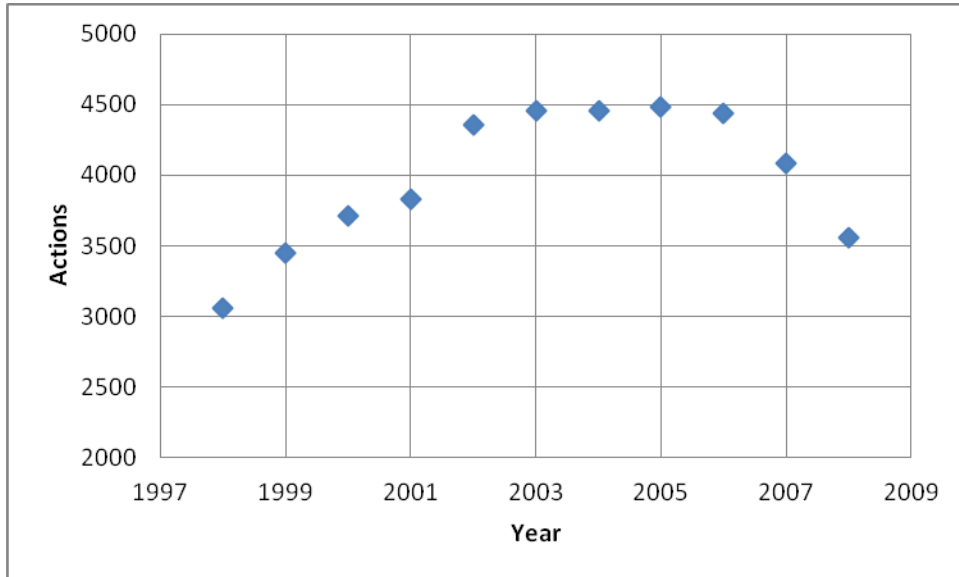
Non-reporting Towns in 2008¹

Count	Town
1	ANDOVER
2	ANSONIA
3	BEACON FALLS
4	BERLIN
5	BROOKLYN
6	DERBY
7	KILLINGWORTH
8	LEDYARD
9	MIDDLEFIELD
10	NORTH CANAAN
11	OLD LYME
12	SALISBURY
13	SCOTLAND
14	SPRAGUE
15	STRATFORD
16	WATERBURY
17	WINCHESTER

¹ List is valid as of Nov. 1, 2011

Appendix D

Reported Municipal Inland Wetland and Watercourse Actions Between 1998 and 2008



Appendix E

Please see the Statewide Inland Wetlands and Watercourses Activity reporting form on the following four pages.