



Department of
ENERGY & ENVIRONMENTAL PROTECTION

Comprehensive Open Space Acquisition Strategy

2016-2020 Green Plan

Section II. Land Protection Challenges

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II. Land Protection Challenges

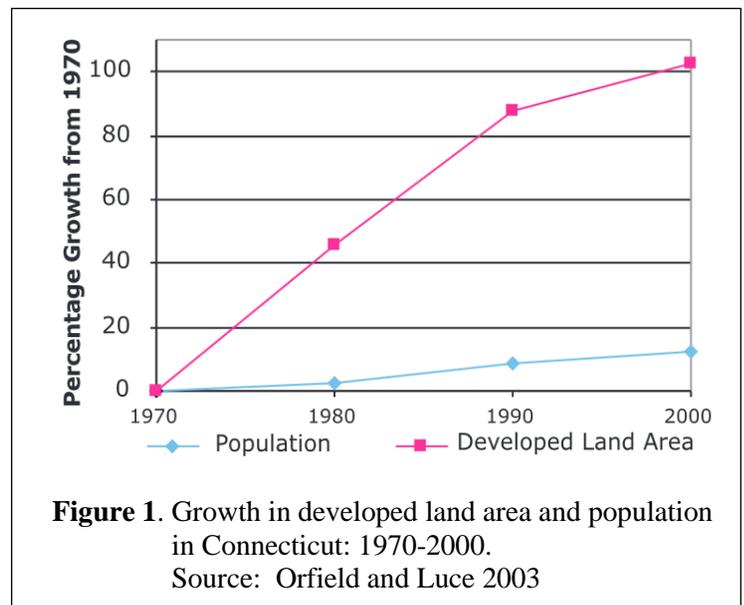
The progress DEEP and its partners have made towards reaching Connecticut's open space goal has not been made without difficulties. A number of challenges persist against both the acquisition of lands for new open space and already-dedicated open space lands.

A. Economic and Development Pressures

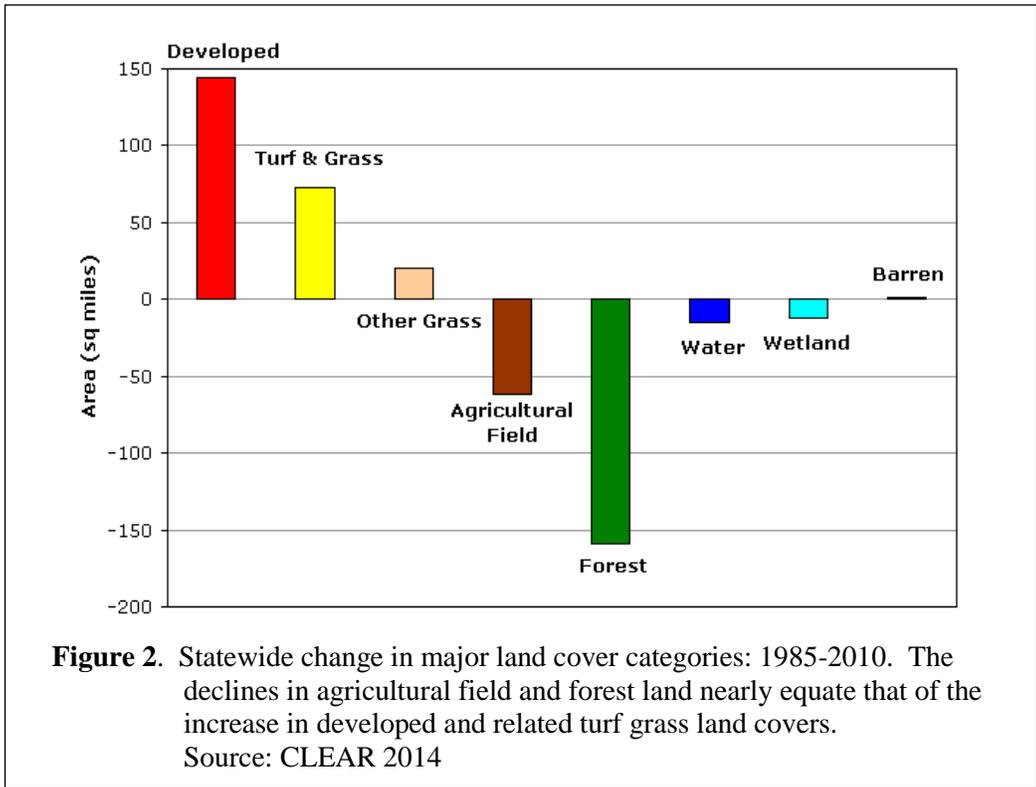
Perhaps the greatest challenges to the conservation of land as open space are economic and land development pressures. Because economic incentives to develop land can outweigh those from conservation purposes, private landowners can be pushed to convert their lands to uses incompatible with open space.

Sprawl development has already impacted statewide environmental and natural resources. A rapid growth of development since the 1970's facilitated a shift of people living in urban centers to suburban areas (Figure 1).

As a consequence of such growth, from 1985 to 2010, Connecticut lost 180 square miles (115,200 acres) of forested land and 62 square miles (39,680 acres) of agricultural fields to development²¹ and related land covers (Figure 2).



²¹ “Developed” is defined by the [UConn Center for Land Use Education and Research](#) as built areas typically associated with commercial, industrial, and residential uses containing impervious surface such as roads, parking areas, and structures and also includes maintained turf/grass.



A recovering economy could spark another burst in land development that places pressure on undeveloped lands. This places an urgency on all aspects of land protection from securing funding, surveying and appraising potential parcels, and to negotiating and closing of transactions to ensure that long-term protection goals are met before desirable properties are converted to other uses. DEEP and its partners recognize this threat and work continuously to prevent the further loss of open space resources.

B. Land Transfer & Parcelization

In the next fifteen to twenty years, significant tracts of lands across Connecticut are going to change hands and potentially uses as older landowners do or do not include conservation in their properties' futures. For example, of the state's 1.8 million acres of forestland, 70 percent is

privately-owned, and of this land 54 percent is owned by individual families in parcels of 10 acres or more.

A study on the attitudes, objectives, and behaviors of private forestland owners conducted by the Yale School of Forestry and Environmental Studies and DEEP's Forestry Division found that there is a significant risk of sale of forestland, with as many as one-third of these landowners willing to sell if offered a reasonable price (Tyrell 2015). Vast amounts of the state's forest are vulnerable to fragmentation, development, and parcelization, or the process of subdividing large parcels of land into smaller parcels.

Not only does parcelization break up the landscape and cost the region valuable natural and public recreational resources, and but it can also make it more difficult for DEEP and its partners to protect land from further fragmentation or development. Depending on factors such as location and market values, when a large tract of land is subdivided, the per-acre cost and the number of willing sellers or entities needed to cooperate in protecting the land increases.

C. Funding Availability

Securing adequate funding to achieve Connecticut's open space goal has been difficult for several years. State bond funds, municipal, federal, and private funding for land conservation purposes are limited. As a result, DEEP has seen a drop in the open space acreage acquired by DEEP and in the number of grants submitted to DEEP's open space grant program.

Per acre costs for land protection (fee simple and easement acquisition) vary significantly based on a number of variables including a landowner's financial flexibility and location, the character and size of a parcel, and current property values at the time of acquisition. Some property acquisitions can be accomplished with minimal per acre cost, while other are much

more expensive. For example, coastal property values are varied and can be more expensive on average than inland non-coastal acquisitions.

Annual average per acre costs to the State over recent years under the [Recreation and Natural Heritage Trust Program](#) (RNHTP), DEEP’s program for purchasing lands that add to the State’s system of Parks, Forests, and Wildlife Management Areas, have been as low as about \$3,481 in 2012 to as high as about \$13,800 in 2008 and 2011 (Table 1). These numbers vary based on property values and on the degree to which properties are acquired by donation, partial donation, or with assistance of other funding entities. Regardless, these averages can be used as a reasonable predictor of cost to the State for acquisition.

Using an average per acre cost of about \$9,000 for properties acquired under the RNHTP between 2007 and 2015, and given the 62,960 acres need to meet the DEEP’s statutory open space goal, total acquisition funding needs for this program would equate over \$566 million between now and 2023.

Table 1. Average cost per acre for lands acquired under the Recreation and Natural Heritage Trust Program and average grant dollars paid by the State per acre protected under the Open Space and Watershed Land Acquisition Grant Program: 2007-2015.

Year	Recreation and Natural Heritage Trust Program	Open Space Grant Program (Financially Completed)
2007	\$5,549	\$4,048
2008	\$13,821	\$5,806
2009	\$11,209	\$3,991
2010	\$10,636	\$5,233
2011	\$13,782	\$4,714
2012	\$3,481	\$2,763
2013	\$4,437	\$2,353
2014	\$5,102	\$2,470
2015	\$8,447	\$4,281

Annual average per acre grant paid by the State under DEEP's [Open Space and Watershed Land Acquisition Grant Program](#) (OSWA) hovered between about \$2,350 in 2013 and \$5,810 in 2008. Using an average per acre grant cost of \$4,107 for DEEP's partners' properties protected under OSWA between years 2007 and 2015, and given the 108,920 acres DEEP's partners need to make their statutory open space goal, total program funding needs for this program up to year 2023 equates to over \$447 million.

Clearly, securing this magnitude of continual open space acquisition funding is idealistic. To make frugal use of currently available resources, DEEP works to ensure that its open space programs are working effectively and efficiently. To maximize resources, DEEP has increasingly pursued the purchase of conservation easements, accepted land donations, sought grants from private groups, and facilitated stronger partnerships with cost-sharing cooperators.

Innovative Land Conservation Funding Mechanisms **Adopting a Local Option to Fund Open Space**

Having a local open space conservation plan in place is an important first step towards strategically protecting lands for clean air, land, and water. Having a local reliable and self-supporting funding stream dedicated to land conservation is an important second, especially in times of tight budgets and uncertain funding opportunities.

[Audubon Connecticut](#), in partnership with several individuals and the [Connecticut Land Conservation Council](#), has organized a statewide effort to support legislation that would create a “local option” to acquire and protect open space. If adopted, this local option, known as “Project Green Space,” would enable towns and cities to choose to collect up to 1% of the assessed value of homes on buyers to support local open space and farmland acquisition projects, as well as park, forest, and trail management projects. Similar local option initiatives to redouble open space funding have been successfully implemented in towns in Massachusetts and New York.

According to Audubon Connecticut, the legislation would have three components:

1. The percentage of the assessment on the value of the home.

The assessment on home purchases would allow for flexibility for local communities and would be up to 1% of the value of a home, imposed only on the buyer.

2. An exclusion level to ensure equity among home buyers.

An exclusion level of the value of a home would be in place to ensure that homeowners are not penalized who cannot afford a locally adopted assessment value. For example, if the exclusion level is \$150,000 and a home is valued at \$320,000, the assessment would be imposed on \$170,000 of the value of the home. If a home is valued at \$150,000 no assessment would be imposed.

3. The range of projects funded.

The legislation would apply to the acquisition of parcels for open space, parks, and farmland preservation. As proposed, the legislation would not include projects like brownfield remediation, building and maintaining sports fields, and local water and sewer projects. Projects could be further defined in each community when the local ordinance is passed by a community.

Because the funds are often not readily available, conservation efforts can be missed opportunities to acquire and preserve land for future generations. Project Green Space could provide municipalities a secured funding source for the acquisition and stewardship of open space and parks. To learn more about Project Green Space and how it could work for your community, contact Genese Leach of Audubon Connecticut at gleach@audubon.org or (301) 704-5235.

D. Stewardship of Protected Lands

The stewardship of open space requires major capital expenditures and management actions to address specific land conditions and ensure the adequate protection of open space lands. When evaluating the acquisition of a parcel of land, DEEP considers the purchase price of the parcel and the long-term associated costs, or carrying costs, of the acquisition, as well, such as dam removal or trails, habitat, or forest management, which can be expensive.

Conservation easements can carry their own costs associated with long-term monitoring requirements. As part of the award agreement and to maintain standing for future grant applications, several federal programs including the [Forest Legacy](#) and [Highland Conservation Act](#) programs require applicants to annually monitor lands for easement enforcement. Because DEEP has limited staff and resources to monitor these lands, the agency seeks partnerships such as those with local land trusts who will assist in fulfilling these requirements.

Illegal encroachments are a significant and costly stewardship challenge to protected open space. Encroachments, or conducting an activity on another party's land that damages or alters the land, vegetation, or other features, includes but are not limited to: removing boundary markers; erecting buildings or other structures; building roads, driveways, or trails; dismantling stone walls; cutting vegetation; installing lawns or utilities; use of unauthorized or unpermitted motorized or all-terrain vehicles; or using, storing, or depositing vehicles, material, or debris.

DEEP works to resolve identified encroachment in a timely and effective manner, as it is imperative to preserve and protect lands held for the public as open space. Response actions can vary depending on the degree, duration, and other factors surrounding the encroachment. Resolution of potential encroachments usually involve title research, survey work, and may require legal action

E. Impacts by Climate Change

Climate change is perhaps the most significant challenge facing Connecticut's natural landscape today. Already, the state's lands and waters, and their associated flora and fauna, are experiencing changes as a result of rising sea levels, warming temperatures, and other consequences.

The Adaptation Subcommittee to the Governor's Steering Committee on Climate Change [published a report in 2010](#) on the impacts of climate change on four areas critical to Connecticut's well-being, including natural resources. This report identifies cold water streams and tidal marshes as some of the most at-risk habitat types to climate change (Adaptation Subcommittee 2010).

The suitability of cold water streams for native fish species such as wild brook trout will decline as water temperatures increase as a result of climate change (Beauchene et al. 2014). In many locations of the state, the critical water temperature threshold for such streams may already be exceeded. In these stream courses, wild brook trout, slimy sculpin, and other dependent fish and wildlife species are susceptible to population declines.

As sea levels rise, tidal wetlands will become submerged, resulting in their loss and simultaneous impairment of beneficial ecosystem benefits such as flood water absorption and fish and wildlife habitat. Together with intensifying storms, sea-level rise will also lead to increased inland flooding. Inland flooding can lead to soil erosion, surface runoff, and stream and river water quality impairment.

The Adaptation Subcommittee followed their 2010 report on climate impacts with the release of the State's [Climate Change Preparedness Plan of 2011](#). This plan reiterates the habitat

types identified in 2010 as at most risk from climate change and provides adaptation strategies to reduce their risk of environmental degradation and increase their resiliency, including land acquisition and protection.

For example, protecting existing core forest next to cold water streams (characterized as unfragmented forested areas relatively far from non-forested areas²²) and lands adjacent to tidal wetlands can connect large habitat linkages, ensure natural vegetated cover needed to maintain cold water streams temperatures, and allow for the migration of tidal wetlands as a result of sea-level rise.

Preparing inland and coastal natural resources for impacts by climate change is a serious and on-going effort that DEEP and its partners work continuously in support of. The Green Plan complements current state planning documents by placing an emphasis on discussing related threats and introducing throughout the document new recommendations to acquire key lands that will serve to protect at-risk habitats and strategize future acquisitions with climate change in mind.

F. Data Needs for Open Space Planning

To best achieve the State's open space goals, DEEP first needs a complete and accurate inventory of how much land in Connecticut has been acquired as open space, where it exists, and of what land use purposes each are comprised. With such an inventory, DEEP and its partners would be equipped to make better and more proactive decisions about the acquisition and stewardship of key lands for conservation and public recreation purposes.

²² CLEAR 2007. [Forest Fragmentation Categories Explained](#), Connecticut's Changing Landscape Study.

Currently, DEEP has only an estimate of land held as open space by its own agency and has no inventory for other state agencies. Landscape-scale conservation planning by DEEP would be improved with information on which farm's development rights are currently held under the Connecticut Department of Agriculture's Farmland Preservation Program. With regard to open space held by DEEP's partners, what estimates the Department has conflict with those derived from other sources, such as the [Land Trust Alliance](#) and the [National Conservation Easement Database](#).

The State open space grant program provides some information about how much and where land is held by municipalities, non-profit land conservation organizations, and water companies. Started in 2013, DEEP is partnering with the University of Connecticut and the [Trust for Public Land](#) to produce a publicly accessible GIS map layer of all acquisition projects awarded open space grants to date. The map layer, which will show where over 30,000 acres of open space is located, is currently being checked for data quality and control.

Other than what is known through administering the open space grants, DEEP has little and outdated information on the total acreage its partners have protected through other means. To attempt to meet this challenge, the [Protected Open Space Mapping Project](#) (POSM) was initiated in 2003 to identify, catalog, and digitally map all dedicated open space in Connecticut by researching records at town halls.

While every attempt is made to gather accurate information, DEEP's estimates are just that. The data collected for POSM was quickly outdated and did not include conservation easements, and the funding has recently ended to complete the project. Furthermore, DEEP is left unaware of future lands that become acquired or protected for conservation by its partners or other private entities.

To help support statewide land acquisition planning, DEEP has developed a pilot [Public Use and Benefit Land Registry](#) (Land Registry). As it becomes populated with information, this pilot system will offer a comprehensive, publicly-accessible geodatabase that provides users with advanced attribute information such as property deed restrictions, acquisition funding sources, and purposes of open space.

The Land Registry, which will incorporate POSM data, state open space grant program data, and information on other lands not owned by DEEP, will be useful in planning future open space protection, trail and outdoor recreation development, and more. Cooperation between DEEP and its land conservation partners will be vital to populating this geodatabase and keeping information up-to-date.