Department of
ENERGY & ENVIRONMENTAL PROTECTION

Comprehensive Open Space Acquisition Strategy

2016-2020 Green Plan

Five-year Action Strategy
to Achieve Connecticut's Open Space Goal

www.ct.gov/deep/openspace
www.ct.gov/deep/greenplan

Cover: Winners of the 1st Annual Open Space and Watershed Land Acquisition photo contest held in 2017 by the Connecticut Land Conservation Council, in partnership with the Department of Energy and Environmental Protection. Each photo was taken on land protected under a State open space grant. Photos clockwise from top-left:

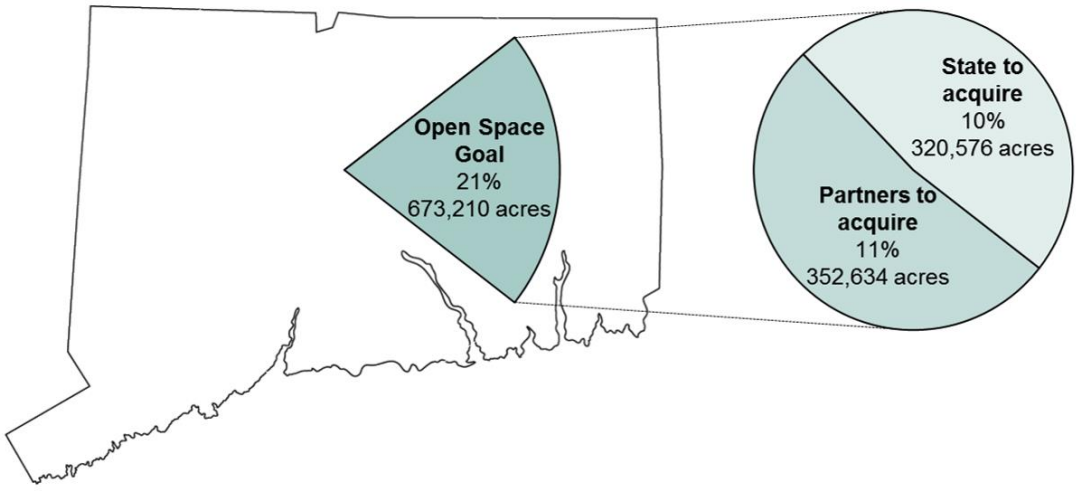
Robert Pagini, *Autumnal Mountain Sunrise*
David Heg, *Lower Falls at Mukluk*
Vikkie Reski, *Hawk Hill Farm*
Dale Bertoldi, *Greens Farm at Lisa Lane*

Executive Summary

The Connecticut Comprehensive Open Space Acquisition Strategy (Green Plan) is a statewide planning document developed by the Department of Energy and Environmental Protection (DEEP) in partnership with municipalities and numerous conservation organizations to guide land acquisitions towards achieving the state's open space goal. This version of the Green Plan presents a coordinated approach for land conservation by the State of Connecticut, through DEEP and its conservation partners (municipalities, land conservation organizations, and water companies – known collectively as DEEP's Partners).

Integral to this plan is a 5-Year Action Strategy meant to unify the efforts of all conservation actors. This action-oriented framework covers the period of time from the end of the previous plan through 2020. Implementation of this 5-Year Action Strategy and the supporting materials of the Green Plan by DEEP and its Partners will greatly advance land conservation in Connecticut.

Section 23-8b of the Connecticut General Statutes set a goal of conserving 21%, or 673,210 acres, of Connecticut's land base as open space by year 2023. Of this, the statute states that the State shall acquire 10% and its Partners shall acquire 11%:



As of December 31, 2015, an estimated 501,330 acres were held as open space in Connecticut, or 74.5% of the total open space goal. DEEP and its Partners must acquire or protect an additional 62,960 acres and 108,920 acres as open space, respectively, to reach their target goals.

While progress has been made over the decades on preserving open space, lands of high conservation and recreation value continue to be lost to development, even with the current economic conditions. Conservation lands increase greatly in value when they are interconnected with other conservation lands. One parcel of land lost to development at a critical junction can diminish the conservation and recreation value of surrounding lands.

The State of Connecticut in partnership with many municipalities, regional councils of government, and private developers are working to focus development in areas of existing infrastructure, including areas with access to water, sewer, reliable energy, and transit. There has been significant investment in this regard in recent years. In order to protect and increase the value of the land DEEP and its Partners have already protected, an increase in land conservation in the most critical locations is needed. This investment will secure the future of Connecticut's natural heritage, its rural landscape, its abundance of recreational resources, its high-quality waters, and its strong communities.

To meet the needs and address the issues facing the State's residents and environmental resources, the Green Plan:

- Discusses the purpose of, need for, and threats to open space conservation;
- Provides an estimate of the area of land protected as open space by the State and its Partners;
- Discusses a system for increasing the accuracy of statewide open space data;
- Describes the highest priorities for acquisition of lands identified to be in greatest need for immediate preservation and the general location of each priority;
- Provides timetables for the acquisition of land by the State and plans for management of such land; and
- Lists resources to be used for open space acquisition and management in Connecticut.

This new Green Plan should enhance open space acquisition efforts and outcomes through the implementation of a set of acquisition target goals and programmatic objectives. Specifically, the State's efforts to acquire certain lands for public use and benefit are dedicated to the following themes:

- Natural Waters and Drinking Water Resources;
- Areas Significant to the Coast;
- Natural Heritage Resources;
- Natural Resource-based Outdoor Recreation

In addition to these priorities, DEEP and its Partners seek to increase acquisitions and provide all people with sufficient proximity to accessible open space through the following program administration themes:

- Strategize Acquisitions for Climate Change Resiliency;
- Build Partnerships and Public Support for Open Space;
- Improve Open Space Data and Tools;
- Develop Strategies for Preserving in Perpetuity State Lands of High Conservation Value;
- Optimize State Acquisition and Grant Program Operations.

Over the next five years, the Green Plan calls for an open space acquisition target of 11,500 acres as open space: 5,550 acres to be acquired by DEEP and 5,950 acres to be acquired by its Partners:

Green Plan Open Space Protection Targets through 2020			
Open Space Priority	**Target Acres**	**DEEP Acquisitions** (Acres)	**Partner Acquisitions** (Acres)
Natural Waters & Drinking Water Resources	5,000	1,500	3,500
		(30% of Total)	*(70% of Total)*
Significant Coastal Areas	1,000	300	700
		(30% of Total)	*(70% of Total)*
Natural Heritage Resources	1,000	750	250
		(75% of Total)	*(25% of Total)*
Outdoor Recreational Trails	2,000	500	1,500
		(50% of Total)	*(50% of Total)*
Other Recreation and Natural Resource Lands Held by DEEP	2,500	2,500	0
		(100% of Total)	
Totals	**11,500**	**5,550**	**5,950**

These targets require greater investment by DEEP and its Partners than has occurred in the recent past. Even with this level of investment, DEEP and its Partners will not meet the State's overall open space goals by 2023. Regardless of the degree of resources that are provided for land conservation, DEEP and its Partners must focus on targeting the highest-value conservation and recreation lands for open space preservation. It is anticipated that with the new, focused, and collaborative efforts of this Green Plan, outcomes will increase.

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5-year Action Strategy to Achieve Connecticut's Open Space Goal

The Green Plan set specific priorities and goals to guide and advance statewide land conservation efforts and initiatives, including protection of the best remaining land for public use and benefit. Lands of public use and benefit include those lands that are used for natural resource protection, conservation, public enjoyment, recreational purposes, or any activity associated with improving or maintaining such purposes.

Detailed in the following sections, the state's strategy to acquire lands for public use and benefit are dedicated to four themes:

Statewide Land Acquisition Priorities

a. Natural Waters and Drinking Water Resources
b. Areas Significant to the Coast
c. Natural Heritage Resources
d. Natural Resource-based Outdoor Recreation

The land acquisition priorities were developed by DEEP through the compilation of information and consultation with other state agencies and outside experts to determine a list of environmental and recreational resources which are under-represented in the existing system of protected open space and in need of immediate protection from land-use or climate change.

In addition to the land acquisition priorities, DEEP and its partners seek to increase acquisitions and provide people of all socio-economic levels with sufficient proximity to accessible open space and the opportunities it provides through the following program administration priorities:

State Program Administration Priorities

1. Strategize Acquisitions for Climate Change Resiliency
2. Build Partnerships and Public Support for Open Space
3. Improve Open Space Data and Tools
4. Develop Strategies for Preserving in Perpetuity State Lands of High Conservation Value
5. Optimize State Acquisition and Grant Program Operations

With an estimated 501,330 acres held as open by DEEP and its land conservation partners as of 2015, the Department and its partners need to add about 62,960 acres and 108,920 acres, respectively, to their land holdings in order to remain on track to reaching the total state open space goal of 673,210 acres by year 2023[1]. Acquisitions for open space must increase, but even with substantial acreage increases DEEP recognizes it will not be able to meet its goal. Therefore, the focus of the Green Plan is on purchasing high quality lands for conservation, as well as increasing open space acreage.

Through year 2020, the State and its land conservation partners should target to acquire a total 11,500 acres as open space: 5,550 acres to be acquired by DEEP and 5,950 acres to be acquired by its partners.

Table 1 on the following page further details target acreages for open space priorities that DEEP and its partners should focus efforts to successfully meet the Green Plan's goals.

The open space target goals were derived by calculating the land needed to increase land holdings by a certain percentage, where current

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The Connecticut River valley.

[1] (CGS) Sec. 23-8b

metrics are available. This percent increase relies on an understanding of the area of lands across the state that are either currently held in protective forms or that remain unprotected and undeveloped. DEEP used the current and best data available to set these acreage targets that comprise the total five-year acquisition goal.

Table 1. Green Plan open space targets set for DEEP and its Partners through 2020.

Open Space Priority	Target Acres	DEEP Acquisitions (Acres)	Partner Acquisitions (Acres)
Natural Waters & Drinking Water Resources	5,000	1,500	3,500
		(30% of Total)	*(70% of Total)*
Significant Coastal Areas	1,000	300	700
		(30% of Total)	*(70% of Total)*
Natural Heritage Resources	1,000	750	250
		(75% of Total)	*(25% of Total)*
Outdoor Recreational Trails	2,000	500	1,500
		(50% of Total)	*(50% of Total)*
Other Recreation and Natural Resource Lands Held by DEEP	2,500	2,500	0
		(100% of Total)	
Totals	**11,500**	**5,550**	**5,950**

These acquisition targets set for DEEP and its land acquisition partners are not ideal and do not keep the state on track to meeting its overall open space goal by 2023. Declining State, municipal, and private resources and acquisitions rates show that they are a stretch, but possibly attainable. The most acquisitions by DEEP were made in 2001, the same year the statutory goal to protect 21 percent of the state was established and financial allocations for land acquisition were at their peak (Figure 1).

The Green Plan's goals are attainable, but will require the procurement of adequate financial and staffing resources to achieve significant results. Using an average per acre cost of about $9,000 for properties purchased between 2007 and 2015 under the State's primary land

acquisition program, and given the acreage needed to meet DEEP's interim target of 5,550 acres acquired, DEEP's total open space funding needs through 2020 would equate to $49,950,000, or about $9,990,000 each year.

If these figures included funding needs for DEEP's partners to reach their portion of the Green Plan's interim target open space goal, total open space funding needs would equate an additional $53,550,000. DEEP's partners would be responsible for securing 60 percent of their total funding needs, with the remainder to be provided through DEEP open space and recreational trails grants. By establishing a strategic call to action with priority objectives, the Green Plan will encourage the creation of new and different funding mechanisms to reach both DEEP's and partners' open space acquisition goals.

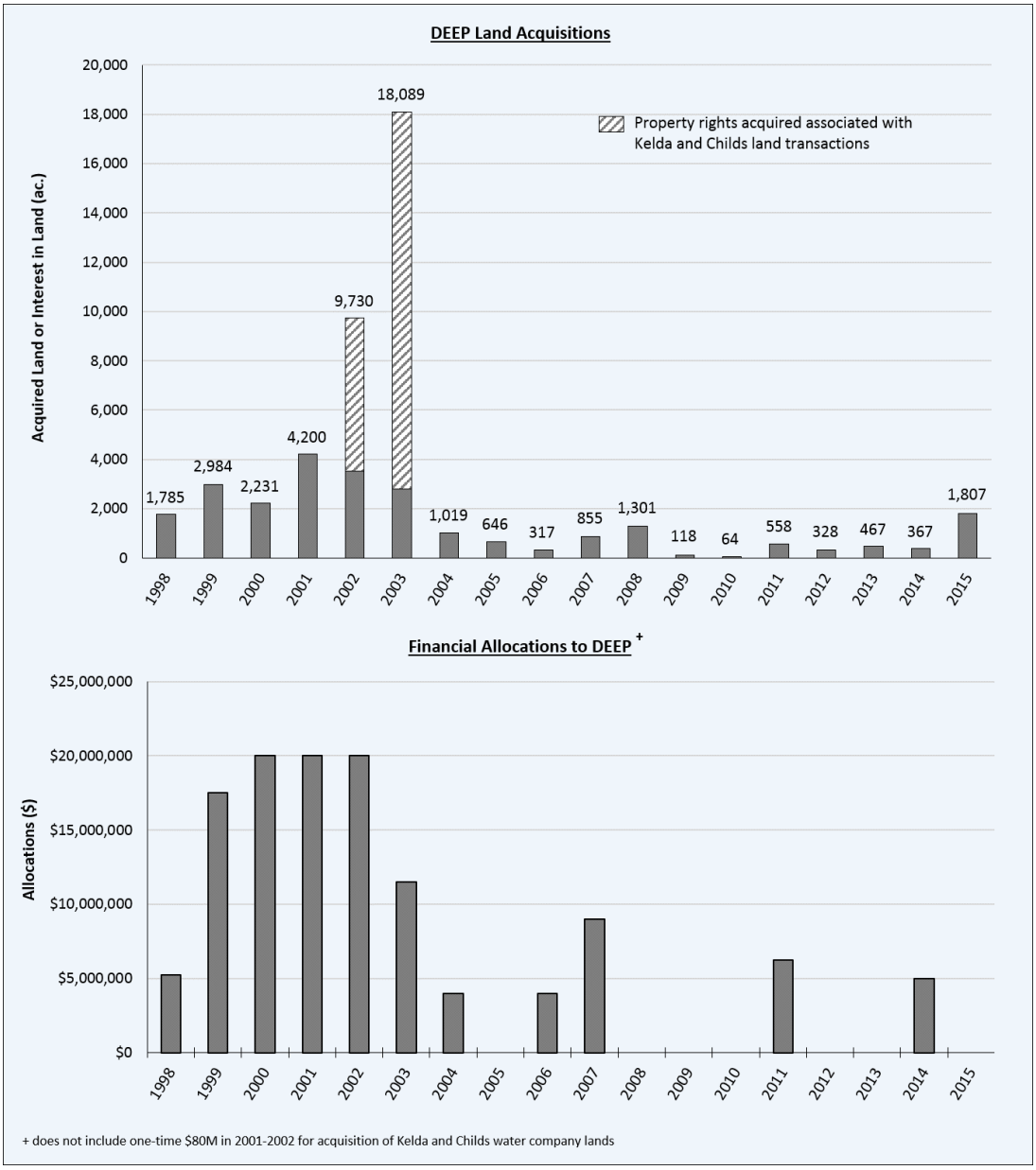


Figure 1. DEEP annual acquisitions for conservation (top) and State financial allocations (bottom) under the Recreation and Natural Heritage Trust Program since 1998. Acreage includes fee simple and conservation easement acquisitions.

Land Acquisition Priorities

Detailed in the next four sections are the State's highest priorities for the acquisition of land for open space by DEEP and its conservation partners through the next five years. The conservation of those specified areas will protect the best remaining lands that serve to provide important environmental services and recreational opportunities to all of the state's residents.

Based on the current and best data available, each section sets target goals to measure progress towards a certain land acquisition priority. Actions taken to achieve goals for one open space objective can contribute to reaching goals for another. In addition, funding needs for both DEEP and its partners to achieve goals are estimated and are based on the average per acre cost of about $9,000 spent on properties acquired under the State's Recreation and Natural Heritage Trust Program between the years 2007 and 2015.

For each land acquisition priority, the actors or primary parties capable of carrying out objectives are provided. Generally, most actions will be carried out in cooperation with DEEP's Land Acquisition and Management Unit (the agency's unit for acquiring lands to be held under DEEP's custody and control), municipalities, and non-profit land conservation organizations (NLCOs).

Tidal marsh at Hammonasset Beach State Park in Clinton.

A. Natural Waters & Drinking Water Resources

Over the next five years, DEEP and its Partners should acquire 5,000 acres that serve to protect the state's natural waters and drinking water resources.

> ***Green Plan Target***
>
> Over the next 5 years, conserve:
>
> - **3,000 acres** of core forest and Connecticut's highest-quality natural water resources
> - **2,000 acres** of underground and surface public water supply watershed lands
>
> *Increases the area of current protected holdings by ½ percent each*

The Green Plan gives priority to the acquisition of lands that serve to protect high-quality natural waters and drinking water resources. Clean water, including in our rivers, lakes, and inland wetlands, are essential to life and provide some of the richest wildlife habitat in the state. Land conservation is an important part of watershed management for protecting habitat and water quality against impacts by fragmentation, climate change, runoff pollution, and other threats.

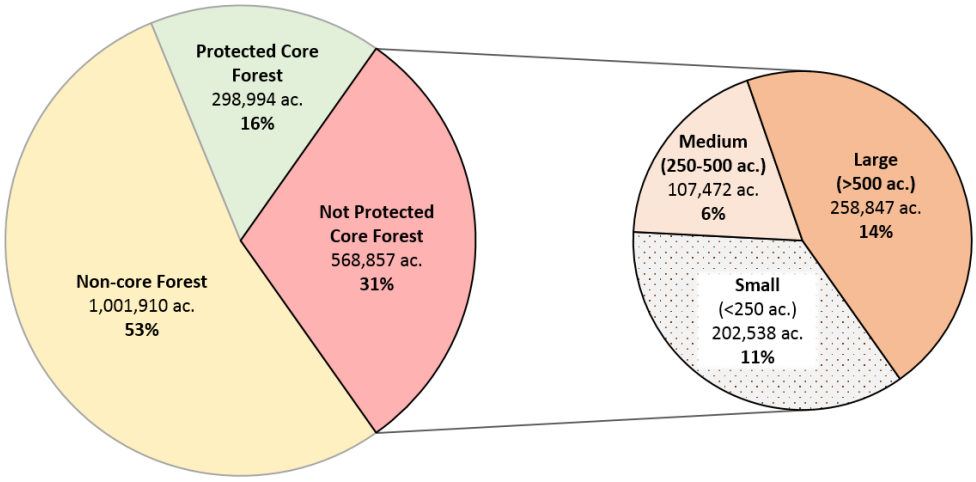
Connecticut has several remaining areas of core forest blocks, characterized as unfragmented forested areas relatively far from non-forested areas[2]. Core forest areas promote water infiltration and often support critical cold water streams. Protecting core forest will conserve natural vegetated cover needed to maintain cold water streams that support habitat for native trout, aquatic invertebrates, and other dependent wildlife, and will serve numerous water quality ecosystem functions, such as reducing erosion and storm water runoff.

[2] CLEAR 2007. Forest Fragmentation Categories Explained, Connecticut's Changing Landscape Study.

Through the current and best data available, it is estimated that there are approximately 569,000 acres of unprotected core forest in the state (Figure 2). Over half of these lands are located within medium and large tracts (250+ acres) of core forest (Figure 3).

Figure 2.

Percent of forest, protected core forest, and unprotected core forest land in Connecticut. Sources: 2006 Forest Fragmentation Study by CLEAR, 2011 DEEP protected open space, and 2014 DPH draft water company lands data.



Other high-quality natural waters exist throughout Connecticut. For example, DEEP has begun a public process of classifying stream flows for use by the state and others to maintain or restore flows in healthy or impaired rivers and streams[3]. Currently, stream flow classifications for the Thames, Pawcatuck and South Central Coastal River Basin have been developed and an interactive map has been made publicly available.

The highest quality streams (known as Class 1) exhibit the depth, volume, velocity, and variation of flow and water levels necessary to maintain habitat conditions supportive of an aquatic, biological community characteristic of that typically present in free-flowing stream systems. Protecting lands that buffer these most natural streams is vital to protecting this high-quality water resource.

[3] More about this process at DEEP's State Stream Flow Standards and Regulations webpage

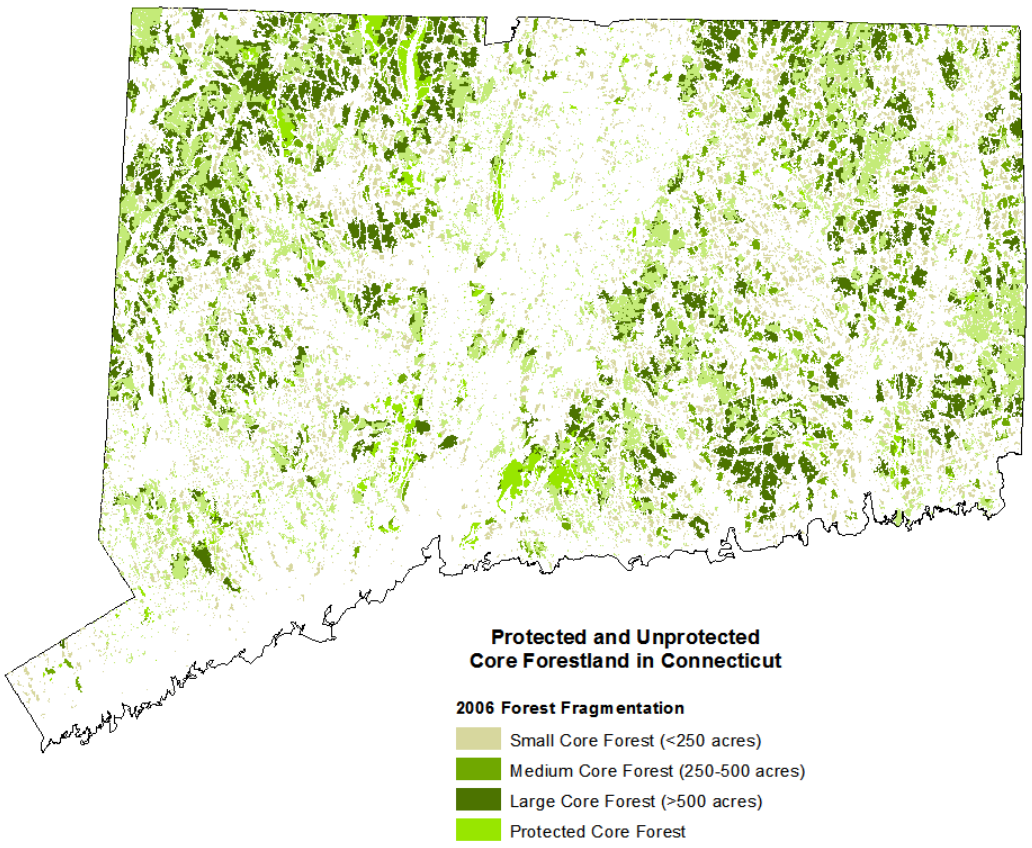


Figure 3. Areas of protected and unprotected core forestland in Connecticut, by forest tract size. Sources: 2006 Forest Fragmentation Study by CLEAR, 2011 DEEP protected open space, and 2014 DPH draft water company lands data layers.

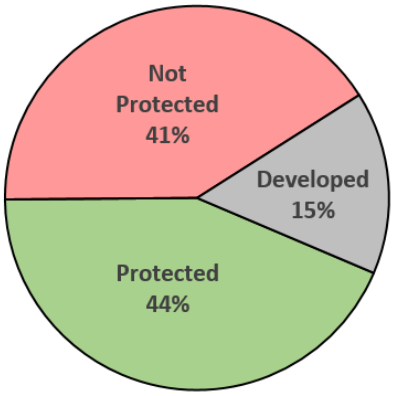
While not all streams will be classified as Class 1, there are many ecosystem benefits to protecting other high-quality natural water resources, such as headwater stream areas, recharge areas for groundwater aquifers, and floodplains. Development in these areas have the greatest impact on statewide water quality and in-water habitat. Acquiring free-flowing water courses, aquifer recharge areas, and floodplains will protect water quality by slowing runoff, trapping sediments, and reducing flood peaks. Protection of these ecologically sensitive areas also maintains habitat supportive of a diversity of fish and wildlife species.

To protect the integrity of the state's natural water quality, over the next five years DEEP and its conservation partners should target to acquire or protect 3,000 acres of lands having the most direct benefit to protecting Connecticut's high-quality natural water resources, including core forests, cold water streams, Class 1 streams, headwater stream areas, recharge areas for groundwater aquifers, and floodplains.

In addition to protecting water resources for ecosystem benefit, Connecticut must protect its drinking water source areas for the benefit of public health and welfare. Eighteen percent of the state's land lies within public drinking water supply source water areas.

Many Connecticut water companies have been acquiring land that protects their drinking water sources since their inception in the late 19th and early 20th centuries. These lands have been historically managed for the protection of safe waters for public health.

The State Department of Public Health oversees the use of land owned by water companies through a statutory permitting requirement under CGS section 25-32(b), more commonly known as the Water Company Land laws. Under this set of laws, water companies are prohibited from selling or



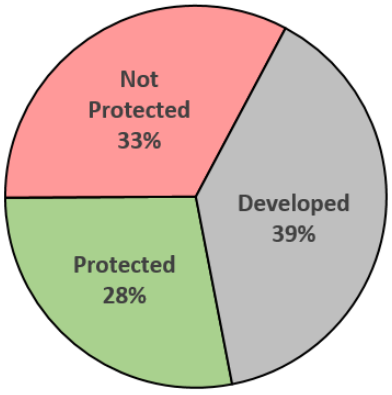


Figure 4. Connecticut's public water supply watershed lands (*top*) and Aquifer Protection Areas (*bottom*) protected by DEEP and its partners.

Sources: 2010-2015 DEEP and 2010 land cover, and 2014 Dept. of Public Health draft water company lands data.

using their Class I and II lands for residential, commercial or industrial purposes or recreational purposes that involve intense development.

Over the next five years, DEEP and its partners should target to protect 2,000 acres of land within public drinking water supply source areas, including land that will protect potential water supplies for the future, roughly distributed as 1,250 acres of land within public water supply watersheds and 750 acres within APAs.

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Five Mile Brook is a major trout stream that runs through Willimantic and Danielson.

Of the total surface public water supply watershed land in Connecticut, 44 percent is owned by DEEP and its land conservation partners (Figure 4). Another 15 percent of such lands are developed for commercial, industrial, or residential purposes, leaving 41 percent of the total surface water supply lands that should be evaluated for open space and water protection.

Over 82,000 acres in Connecticut are within officially designated Aquifer Protection Areas (APAs) and as such are subject to certain state land-use and conversion regulations designed to guard against pollution and contamination of public groundwater sources.

Of the land within APAs, 28 percent are protected as open space by DEEP and its partners. Much of the land within APAs are developed because wells were established to serve nearby residential and commercial areas, which leaves about one-third of lands within APAs not owned by DEEP or its partners left for evaluation for open space and water protection.

Project & Funding Selection

To protect the quality of the state's natural water and water drinking resources, project and funding selection should give priority to undeveloped and unprotected lands that are:

- Core forests, lands that buffer cold water streams, Class 1 streams, headwater stream areas, recharge areas for groundwater aquifers, and floodplains; or
- In close proximity to public water supply wells or high quality aquifers that may yield high water quality, or are Class I, Class II, and/or Class I/II-type watershed lands.

A.1.: Natural Waters & Drinking Water Resources		
Actions	**Actors**	**Target Goal**
1) Protect high-quality natural water resources	• Water companies • DEEP • Municipalities • NLCOs	• 3,000 acres of water ecosystem lands protected. - 2,000 acres of which are medium-to-large core forest protected.
2) Ensure safe and adequate drinking water supplies.		• 1,250 acres of lands within public water supply watersheds protected. • 750 acres of lands within Aquifer Protection Areas protected.

For more information on these topics see Section V.A.I. (Freshwater and Inland Wetland Habitats), Section V.A.III. (Forested Upland Habitats), and Section V.B. (Drinking Water Resources).

A.2.: Five-year Funding Needs to Reach Acquisition Goals						
Total Acres Watershed Lands	DEEP Acquisition (Acres)	Partner Acquisition (Acres)	**Total Acquisition Costs***	DEEP Cost Share	Partner Cost Share	DEEP Grant Share
5,000	1,500 *(30% of Total)*	3,500 *(70% of Total)*	$45,000,000	$13,500,000 *(30% of Total Cost)*	$20,250,000 *(45% of Total Cost)*	$11,250,000 *(25% of Total Cost)*

* based on the average per acre cost of $9,000 for properties acquired under the State Recreation and Natural Heritage Trust Program between 2007 and 2015.

B. Areas Significant to the Coast

Over the next five years, DEEP and its Partners should acquire 1,000 acres that serve to protect coastal resources.

> ***Green Plan Target***
>
> Over the next 5 years, conserve **1,000 acres**, or about 3%, of remaining unprotected lands within the state's coastal boundary.

The Green Plan gives priority to the acquisition of coastal lands to meet the coastal resource conservation and coastal public recreation goals set forth in DEEP's Coastal and Estuarine Land Conservation Program (CELCP) Plan.

Connecticut's CELCP Plan describes the State's coastal land conservation needs and prioritizes the types of coastal land acquisition opportunities that can be nominated for federal CELCP grant financing assistance. According to the CELCP Plan**,** DEEP and its partners own or hold other legal conservation interest to land along 328 miles, or 36 percent, of Connecticut's total shoreline[4]. The remaining 737 miles of unprotected land bordering coastal waters, and about 33,000 acres within the state's coastal boundary[5], should be evaluated for open space protection (Figure 5).

To advance the conservation of ecologically and recreationally significant coastal lands over the next five years, DEEP and its partners should target to acquire or protect 1,000 acres, or about three percent, of remaining unprotected and undeveloped lands located within Connecticut's coastal boundary.

[4] The CELCP Plan states that protected shoreline is land, classified as protected open space, fronting coastal waters, including rivers, within Connecticut's coastal boundary.
[5] Connecticut's coastal boundary is generally defined by a line 1,000 feet inland of a coastal water body or tidal wetland, whichever is further inland ((CGS) Sec. 22a-94b).

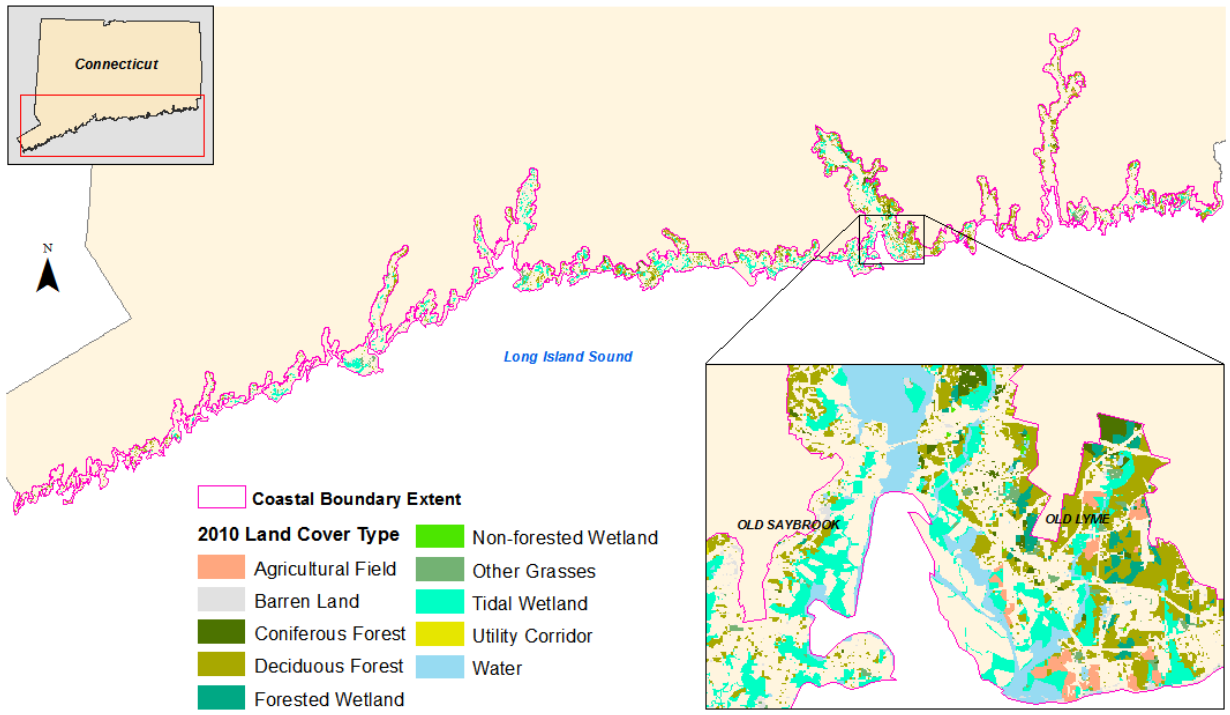

Figure 5. Lands within Connecticut's coastal boundary that are both unprotected and undeveloped. Sources: 2010 land cover by CLEAR and 2011 DEEP protected open space data layers.

Several geo-spatial mapping tools have been developed for coastal resource protection which can aid DEEP and others in protecting lands in this sensitive area. For example, the Long Island Sound Sea Level Affecting Marshes Model (SLAMM) is widely recognized as an effective model to study wetland response to sea-level rise and identify potential tidal marsh migration areas for conservation. The model predicts long term shoreline land cover changes as a function of land elevation, tide range, sea-level rise, and other factors. Using the results of this model applied to Connecticut, communities can identify and potentially protect lands most likely to become coastal marshes in the future[6].

[6] See page 118 for more on SLAMM

DEEP's CELCP Plan Focus Area Viewer can also be used to locate land acquisition areas likely to contain additional priority coastal conservation values[7]. To create the focus area maps, the CELCP Plan used a weighted-sum scoring method to identify discrete coastal areas still in unprotected forms of ownership. Existing and derived ecological geo-spatial data, including data layers related to land cover and land-use, rare species sites and critical habitats, and predicted tidal marshland migration areas, were scored and analyzed for their conservation value.

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Resulting ranking scores created "hotspots," or areas with significant levels of conservation value. This refining process aimed to target limited resources to high-priority land acquisition opportunities likely to successfully compete in the competitive national, federal CELCP funding process.

Project & Funding Selection

To meet the coastal resource conservation and coastal recreation goals set forth in the CELCP Plan, project and funding selection should give priority to coastal areas with lands:

- In close proximity to or contiguous to areas of existing protected open space;
- Having large blocks of unfragmented coastal forest and tidal marsh migration areas, or lands adjacent to tidal marsh, to accommodate for species shifts or inland migration due to climate change;

[7] See page 147 for more on the CELCP Plan Focus Area Viewer

- Having coastal habitats emphasized for acquisition in the Connecticut Wildlife Action Plan; or

- With potential to provide new or expand existing coastal public recreational trails, fishing, and swimming access, especially in high density residential areas.

B.1.: Areas Significant to the Coast		
Actions	**Actors**	**Target Goal**
1) Conserve coastal area lands that meet the coastal resource conservation and coastal recreation goals set forth in the 2015 CELCP Plan.	• DEEP • Municipalities • NLCOs	• 1,000 acres of lands within the state's coastal boundary protected.

For more information on these topics see Section V.A.II. (Coastal Habitats) and Section V.B.I. (Outdoor Recreation Needs).

B.2.: Five-year Funding Needs to Reach Acquisition Goals						
Total Acres Coastal Lands	DEEP Acquisition (Acres)	Partner Acquisition (Acres)	**Total Acquisition Costs***	DEEP Cost Share	Partner Cost Share	DEEP Grant Share
1,000	300	700	$9,000,000	$2,700,000	$4,050,000	$2,250,000
	(30% of Total)	*(70% of Total)*		*(30% of Total Cost)*	*(45% of Total Cost)*	*(25% of Total Cost)*

* based on the average per acre cost of $$9,000 for properties acquired under the State Recreation and Natural Heritage Trust Program between 2007 and 2015.

C. Natural Heritage Resources

Over the next five years, DEEP and its Partners should acquire 1,000 acres of key and critical habitats that serve to protect the state's natural heritage resources.

Connecticut's natural heritage is characterized by unique ecological and geological features such as rivers, mountains, scenic ridgelines, coastal and estuarine natural areas, and diverse or rare floral and faunal communities.

Green Plan Target

Over the next 5 years, conserve:

- **500 acres** of key plant, fish, and wildlife habitat;
- **500 acres** of Critical Habitats
  Increases current protected holdings by about 1%

The Green Plan gives priority to the acquisition of lands that support important elements of the state's natural heritage, including State endangered and threatened species, non-game species of Greatest Conservation Need, and Connecticut key and Critical Habitats.

Protecting land having important habitat and other natural features ensures the long-term survival of both rare and currently common species. Moreover, investing in the protection of our natural heritage also ensures the public's ability to enjoy and benefit from these resources, such as through wildlife viewing and scientific study of environmental systems.

In 1992, the first Connecticut Endangered Species list was formally accepted. This list included species which were at risk of extirpation from Connecticut and categorized them as Endangered, Threated, or Special Concern based on the number of populations in the state and the degree of threats to these populations[8].

In the 2015 revision of the Connecticut Wildlife Action Plan (WAP), species of wildlife and plants were also identified as species of Greatest Conservation Need. Three qualitative tiers

[8] The current list is available at the DEEP Endangered Species webpage

(most important, very important, and important) were used to highlight the relative ranking of GCN species in terms of regional or state conservation responsibility for these taxa and the immediacy of threats to their populations. The WAP also emphasizes the protection of some key habitats for GCN species including grasslands and cold-water streams, among others.


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Sand barrens are a unique habitat that host populations of many rare species.

In addition to the species lists described above, Connecticut has also identified and mapped the distribution of twenty-seven rare and specialized habitats which have been termed 'Connecticut Critical Habitats[9].' For the purposes of the Green Plan, similar Critical Habitat types have been grouped together, reducing the number of habitats from twenty-seven to seventeen.

Based on the current and best data available, it is estimated that roughly half of Critical Habitats mapped (18,000 acres) remain unprotected. Over the next five years, DEEP and its partners should target to protect 1,000 acres of land for natural heritage conservation, half of which should consist of unprotected and undeveloped critical habitats and increase current protected holdings of such land by one percent.

Project & Funding Selection

Because of the value of their ecosystem benefits, greater risk level to loss to land development, or sensitivity to changes in the environment (e.g., climate change, changes to water

[9] Connecticut Critical Habitat Maps and guidance documents are available at Connecticut Environmental Conditions Online

quality, etc.), land acquisition project and funding selection should give priority to the protection of sand barrens, acidic Atlantic White Cedar swamps, bogs and fens, acidic Red/Black Spruce basin swamps, circumneutral Northern White Cedar swamps, and rocky summit outcrop habitats (Figure 6).

When the acquisition opportunities arise, cold talus forestland, floodplain forest, dry forest, beachshore, intertidal marsh, and coastal grasslands are also very important for consideration as protected open space. However, the priority ranking of these habitats does not reduce the importance or value of other particular habitat types. Rather, it is DEEP's attempt to identify habitat types for which it believes the agency and its partners could have the greatest impact over the next five years and which habitats are in the most imminent need of protection.

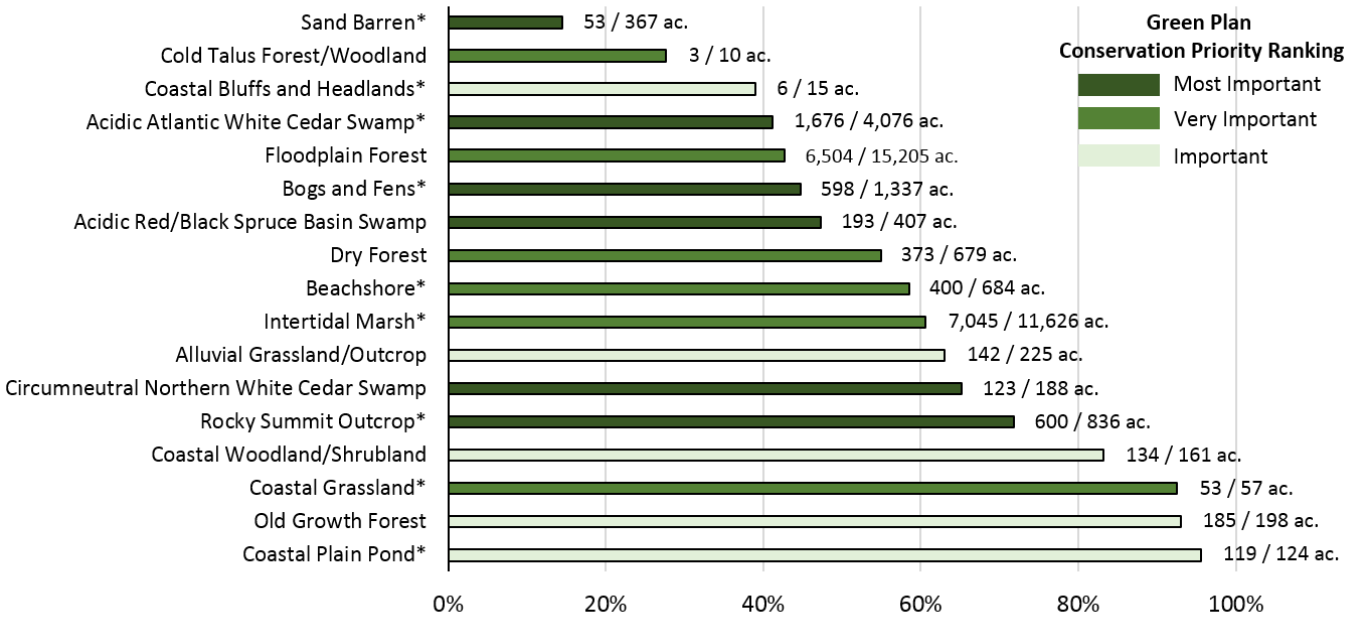

Figure 6. Estimated area of critical habitat types currently protected as open space by DEEP and its partners, and priority acquisition for conservation ranking for each habitat type. Each habitat is followed by the proportion of total habitat area that is protected. * Indicates one of the 13 of the most imperiled habitats in the state.
Source: Analysis of DEEP 2009 Critical Habitats and 2011 protected open space data layers.

To counter habitat degradation, fragmentation, and loss due to development, and to maintain or increase viable wildlife populations of greatest conservation need, project selection should also give priority to lands that serve to:

- Protect Federal or State Endangered, Threatened, or Special Concern species;
- Protect key habitats emphasized for acquisition in the Connecticut Wildlife Action Plan, including grassland, cold water stream, head water, or inland wetland habitats, or buffers to climate change;
- Protect habitat corridors for species disproportionately affected by barriers and habitat fragmentation; or
- Expand the size of existing areas managed for natural heritage resources.

C.1.: Natural Heritage Resources		
Actions	**Actors**	**Target Goal**
1) Conserve critical and key habitats emphasized in the State WAP that meet objectives to protect greatest conservation need species.	• DEEP • Municipalities • NLCOs	• 1,000 acres of fish and wildlife habitats protected. - 500 of which are critical habitats protected.

For more information on these topics see Section V.A. (Fish and Wildlife Habitat).

C.2.: Five-year Funding Needs to Reach Acquisition Goals						
Total Acres Fish and Wildlife Habitat	DEEP Acquisition (Acres)	Partner Acquisition (Acres)	**Total Acquisition Costs***	DEEP Cost Share	Partner Cost Share	DEEP Grant Share
1,000	750 *(75% of Total)*	250 *(25% of Total)*	$9,000,000	$6,750,000 *(75% of Total Cost)*	$1,125,000 *(12.5% of Total Cost)*	$1,125,000 *(12.5% of Total Cost)*

* based on the average per acre cost of $$9,000 for properties acquired under the State Recreation and Natural Heritage Trust Program between 2007 and 2015.

D. Natural Resource-based Outdoor Recreation

Over the next five years, DEEP and its Partners should acquire 4,500 acres and 10 miles of water access that serve to provide statewide multiple outdoor recreational opportunities.

One of the highest goals of the State's Green Plan strategy is to bring people of all ages, abilities, and socio-economic makeups onto open space and into nature.

It is important to ensure the public has adequate, equal opportunities to participate in fishing, hunting, wildlife-viewing, and other passive, natural-resource based outdoor activities on open space funded with state conservation dollars.

Green Plan Target

Over the next 5 years:

- Award **20 State Urban Green and Community Garden grants** to create or enhance urban open spaces;
- Open **7 new water bodies** and **10 miles** of river and stream for public fishing and other uses;
- Protect **2,000 acres** that *fill gaps in the state's major recreational trails*;
- Open an additional **2,300 acres** to public hunting to *expand the current area available by 1%;*
- Add **2,500 acres** to the State's system of Parks, Forests, and Wildlife Management Areas.

Every year, DEEP invites children and families to many of its Parks, Forests, and Wildlife Management Areas through No Child Left Inside® environmental education programs. DEEP's Urban Green and Community Gardens grant program also helps to bring open space features to city populations in need of local outdoor places to learn, play, and grow fresh foods.

In order to expand opportunities for residents to enjoy natural-resource outdoor recreation over the next five years, interim goals for the State include:

- 20 State Urban Green and Community Gardens grants awarded to create new or enhance existing outdoor open spaces in urban communities;
- 2,500 acres added to State Park, Forest, and Wildlife Management Areas;
- 7 new water bodies open for public boating, fishing, and/or swimming;
- 10 miles of new river and stream access opened to public fishing;
- 2,000 acres protected that close gaps in the state's major recreational trails;

- 2,300 acres opened to public hunting through new acquisitions to expand the current area available by about one percent.

© M. Long

A handicapped-accessible trail leads to a boardwalk and overlook at Pachaug State Forest in Voluntown.

To welcome into its recreational opportunities people of all abilities, DEEP complies with relevant state and federal disability rights laws. In accordance with all state and federal law, partner projects providing urban garden and recreational opportunities must also provide maximum access to people with disabilities.

Project & Funding Selection

To strategically meet community demands for passive outdoor recreation activities, and effectively steward lands for such purposes, project and funding selection should give priority to lands:

- In close proximity to densely populated areas;
- Capable of providing multiple recreational activities of significant demand or unmet need as identified in the Connecticut Statewide Comprehensive Outdoor Recreation and/or Coastal and Estuarine Land Conservation Program Plans;
- Expanding or protecting sections of the state's major recreational trail networks including such trails as: the East Coast Greenway, Farmington River, and Farmington Canal Heritage Trails, Hop River, Air Line, Moosup, Quinnebaug River, or Larkin Trails, or the Blue-Blazed Hiking Trails;
- Closing in-holdings or expanding State Park, Forest, or Wildlife Management Areas; or
- Providing public access to the state's Wild & Scenic Rivers or Connecticut River National Blueway.
- Coordinate state and town brownfield remediation projects to include wildlife habitat creation and/or public recreational trail use along Connecticut's major rivers.

D.1.: Natural Resource-based Outdoor Recreation		
Actions	**Actors**	**Target Goal**
1) Enhance urban community access to local open space.	• DEEP • Municipalities • NLCOs	• 20 State Urban Green and Community Garden grants awarded.
2) Meet currently underserved demand for recreational activities identified in the State's SCORP and CELCP Plans.		• 7 new water bodies opened to the public. • 2,500 acres added to State Parks, Forests, and Wildlife Management Areas.
3) Expand sections of the state's major recreational trail networks.		• 2,000 acres protected to close gaps in the state's major recreational trails.
4) Expand public fishing opportunities.		• 10 new miles of river and stream opened to public fishing.
5) Expand public hunting opportunities.	• DEEP	• 2,267 new acres opened to public hunting.

For more information on these topics see Section IV (Land Conservation Partners and Programs), Section V.C.I. (Outdoor Recreation Needs), and Section V.D. (Open Space in Urban Communities).

D.2.: Five-year Funding Needs to Reach Acquisition Goals						
Natural Resource and Recreation Lands	DEEP Acquisition (Acres)	Partner Acquisition (Acres)	**Total Acquisition Costs***	DEEP Cost Share	Partner Cost Share	DEEP Grant Share
To be Held by DEEP	2,500 *(100% of Total)*	0	$22,500,000	$22,500,000 *(100% of Total Cost)*	$0	$0
Trails**	500 *(25% of Total)*	1,500 *(75% of Total)*	$18,000,000	$4,500,000 *(25% of Total Cost)*	$6,750,000 *(37.5% of Total Cost)*	$6,750,000 *(37.5% of Total Cost)*

* based on the average per acre cost of $9,000 for properties acquired under the State Recreation and Natural Heritage Trust Program between 2007 and 2015.

** based on 300 feet, the typical width of trails

Program Administration Priorities

Set in order to make progress towards the Green Plan's land acquisition goals, the State's highest program administration priorities are detailed in the next five sections. Taking the steps in the following sections will effectively increase land acquisitions for conservation and provide all people of ages, abilities, and backgrounds with access to open space recreation.

As with the State's land acquisition priorities, actions taken to achieve one administrative objective can contribute to achieving those for others. DEEP is the lead participant for all of these administrative objectives, though the Department relies on its partners for support, including other State agencies, municipalities, environmental planning associations and commissions, and non-profit land conservation organizations (NLCOs).

John A. Minetto State Park in Torrington.

1. Strategize Acquisitions for Climate Change Resiliency

Over the next five years, DEEP will plan for and prioritize the protection of lands for open space that adapt natural resources for impacts from climate change.

By actively viewing land acquisitions through a climate change lens, the Green Plan enables DEEP and its partners to take on an adaptive approach to protect the state's natural and recreational resources from impacts such as sea-level rise, extreme weather events, and shifts in habitats and species communities.

Green Plan Actions

To work towards adapting to climate change over the next 5 years, DEEP will:

- Include the **evaluation for lands identified as at most risk from climate change** in the State's land acquisition and open space grant programs selection process; and
- Identify and build **key data sets** needed to support statewide conservation planning for impacts due to climate change.

To maintain long-term ecosystem resiliency, DEEP will update its land acquisition and open space grant programs project selection processes to include the evaluation for lands most at-risk of impacts from climate change.

Updated State project selection criteria will include priorities for lands such as those identified in the State's Climate Change Preparedness Plan as having habitats at most risk from climate change, including the location of forested swamps, lands adjacent to freshwater and tidal wetlands, riparian lands adjacent to cold water streams, and beaches and dunes.

To help plan future acquisitions to include the conservation of lands most valuable for conservation purposes including climate change adaptation, DEEP will use key data sets in geographic information systems to identify and select key project alternatives.

For example, the Long Island Sound Study's Sea Level Affecting Marsh Model is a tool that can be used to project potential responses of Connecticut's tidal marshes to sea-level rise.

The results of this and other assessments of Connecticut coastal area response to sea-level rise or other impacts by climate change will help DEEP identify areas adjacent to existing tidal marshes for land conservation that could help sustain some of the ecological services currently provided by existing tidal marsh systems.

1: Strategize Acquisitions for Climate Change Resiliency
Actions
1) Include evaluation of lands identified as at most risk from climate change in the State's land acquisition and open space grant programs selection process.
2) Collaborate with partners to identify and develop key data sets necessary to support climate resilience land conservation planning.

For more information on these topics see Section II.E. (Impacts by Climate Change) and Section VI (Identifying High Priority Lands for Conservation).

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Acquiring and protecting lands next to existing tidal marshes will help mitigate coastal flooding due to sea-level rise, as well as maintain the provision of many other important ecosystem services provided by this habitat type.

2. Build Partnerships and Public Support for Open Space

Over the next five years, DEEP will work with its land conservation partners to leverage resources and provide the public with comprehensive information on statewide open space.

Partnerships for Open Space

All stakeholders working together towards common conservation goals is critical to achieving the most open space objectives over the next five years.

Meaningful partnerships among state and federal agencies, municipalities, regional councils of government, environmental planning associations, land trusts, and private companies and landowners will effectively leverage dollars, expertise, and other resources for open space protection.

Conservation-minded private landowners are some of the most important partners through which DEEP is informed of, and works alongside to protect, lands for potential open space conservation. DEEP welcomes discussion with property owners about the current or future sale or donation of property. To encourage and assist people in protecting their properties from development, DEEP should evaluate the establishment of new private landowner open space conservation option programs.

Green Plan Actions

To achieve more open space objectives over the next 5 years, DEEP will:

- Evaluate new private **landowner open space conservation option programs**;
- Enhance coordination with the **State Department of Agriculture** on farm and forestland preservation;
- Work with DEEP's **Bureau of Energy and Technology Policy** to integrate Green Plan recommendations into the state's energy strategy;
- Appoint members to fill vacancies on the **State's open space Review Board**;
- Enter into **10 agreements** under the **Cooperators provision** of the State's land acquisition program; and
- Encourage partners to participate in **Regional Conservation Partnership collaborations**.


Louis Mikey Botti in 1944, whose 62-acre family farm was protected by the Manchester Land Conservation Trust with partial funding from a DEEP open space grant.
Photos courtesy of the Manchester Land Conservation Trust

A right of first refusal program could allow the State to invest in open space conservation by paying a landowner for the first opportunity to purchase a property. When a landowner and DEEP have a mutual interest in protecting a property for its high conservation value, but the owner may not be ready to transfer it, the owner could be paid a proportion of the fair market value of their property in return for giving DEEP the first opportunity to purchase the property when they are ready to sell.

Innovative conservation programs like this are critical to help prepare the state for the conservation of hundreds of acres of land that is predicted to change hands very soon as many of the state's private landowners are aging, contemplating succession, and want to see their land protected from development. Recent farm and forest landowner demography studies strongly suggest that without conservation-minded heirs to take over, Connecticut's landscape is vulnerable to fragmentation and development.

While the State's Department of Agriculture holds the primary role in the preservation of farmland across the state, DEEP should enhance coordination efforts with the agency to aid in the protection of these lands. For example, each agency has information on farmlands protected across the state and sharing geo-spatial data on these lands would greatly and strategically improve open space conservation planning going forward.

Moreover, DEEP should work with its Bureau of Energy and Technology to explore ways to minimize the conversion of valuable farm and forestland to uses incompatible with open space purposes. By integrating recommendations from the Green Plan into the next version of the Connecticut Comprehensive Energy Strategy, DEEP can balance the needs of a growing renewable and locally-based energy economy with the protection of lands important for the provision of ecosystem benefits.

Another important partnership DEEP shares is that with the State Natural Heritage, Open Space and Watershed Land Acquisition Review Board (Review Board)[10]. Several times a year, the Review Board plays a supportive role in DEEP's open space programs by overseeing open space grant selection criteria and policies; ensuring compliance with disability civil rights laws; reviewing the Green Plan; promoting public participation; and making recommendations to the Commissioner and General Assembly. Over the next five years, DEEP will continue working with the Review Board to fill member vacancies and operate its programs.

© B. Ulkus

The Town of Columbia is a Cooperator manager of Mono Pond.

DEEP also seeks to continue building partnerships through the Cooperators provision[11] of the Recreation and Natural Heritage Trust Program. Over the next five years, DEEP should enter into at least 10 stewardship agreements with willing and eligible partners to reduce open space acquisition and stewardship costs.

Designed to stretch state funding for new acquisitions and reduce stewardship costs, this provision offers a mutual benefit between the State and one or more of its land conservation

[10] (CGS) Sec. 7-131e(b)
[11] (CGS) Sec. 23-79

partners. When the State and a partner (i.e., a municipality or land trust) have a common desire to protect a certain property but either may not have the resources available to do so, the Cooperators provision allows the State to enter into stewardship agreements between partners, thus sharing the costs of acquisition and land management. For example, under a stewardship agreement, the Town of Columbia and DEEP jointly manage Mono Pond for natural resource conservation and public passive recreation.

To overall increase the pace and scale of land conservation, the Department encourages its many partners to participate in Regional Conservation Partnerships collaborations. Regional Conservation Partnerships (RCPs) are informal networks of private and public organizations and agencies that work together to develop and implement shared, long-term conservation visions across town and sometimes state and international boundaries.

Active RCP programs are attractive candidates for funding from public and private sources because they benefit from additional leverage in matching funds and local influence.

***Regional Conservation Partnerships* (RCPs)**

RCPs are informal networks of private and public organizations and agencies that work together to develop and implement shared, long-term land conservation visions across town and sometimes state and international boundaries. Today, there are more than 40 RCPs in New England.

Wildlands and Woodlands, overseen by the non-profit conservation organization Highstead, provides a wealth of information on RCPs and hosts an interactive map for viewing.

Explore more at www.wildlandsandwoodlands.org/rcpnetwork

For example, the USDA Natural Resource Conservation Service's Healthy Forest Reserve Program is awarding $3.5 million in grants in 2016 through the Long Island Sound Watershed RCP Program. To address water quality issues associated with excess nutrient and

urban storm water runoff, this RCP will use the funds to coordinate the development and implementation of a comprehensive farm and forestland protection and management program.

Other examples of Connecticut RCPs include the Litchfield Hills Greenprint Collaborative and the Lower Connecticut River and Coastal Region Land Trust Exchange. Each consist of local land trusts and town and community leaders who share expertise, data, and tools with goals to protect land and natural resources in their areas.

2: Build Partnerships and Public Support for Open Space
Actions
Building Partnerships
1) Evaluate new private landowner open space conservation option programs to be administered by DEEP.
2) Enhance coordination with the State Department of Agriculture on farm and forestland preservation.
3) Work with DEEP's Bureau of Energy and Technology Policy to integrate Green Plan recommendations into the state's energy strategy.
4) Appoint members to fill vacancies on the State Natural Heritage, Open Space and Watershed Land Acquisition Review Board.
5) Enter into 10 stewardship agreements under the Cooperators provision of the State's Recreation and Natural Heritage Trust Program to share acquisition costs with land conservation partners.
6) Promote the Cooperators provision of the State's land acquisition program on DEEP's open space webpage to inform partners on its purpose, benefits, and more.
7) Encourage land conservation organizations to participate in Regional Conservation Partnership programs to leverage, attract, and target resources.

For more information on these topics see Section IV (Land Conservation Partners and Programs).

Public Support for Open Space

A strong outreach and education strategy is key to making the connection between the parks and lands the public enjoys and the importance of acquiring and protecting open space.

The more people that are involved in using and stewarding our open spaces, the more protection these lands will have and the more public support there will be for future initiatives.

Through the next five years, the Green Plan aims to provide the public with more information on open space protection, improve access to protected lands, and help to raise the next generation of open space stewards in Connecticut, with a special focus on urban areas.

Green Plan Actions

To provide the public with information about open space over the next 5 years, DEEP will:

- Explore ways to attract and train **youth and students** on open space and land acquisition programs;
- Partner with a **diverse array of community groups** in public open space initiatives;
- Inform the public on DEEP **open space lands and programs** online and in other materials for distribution; and
- Collaborate with partners to inform municipalities, land trusts, and water companies on the **Green Plan and the Land Registry**.

For over 20 years, DEEP's Office of Environmental Justice has partnered with youth, agricultural, disability, and other community groups to raise awareness about urban environmental issues and public health concerns that disproportionately affect lower income and urban communities. For example, supported by the Friends of Keney Park, DEEP's Environmental Justice program attracts and trains urban youth from Hartford, Bloomfield, and Windsor on topics such as wildlife habitat, trails stewardship, recycling, and gardening using the nearly 700-acre Keney Park as an outdoor classroom.

DEEP's Environmental Justice program also partners with the Parks and Fisheries Divisions to provide youth with environmental education programming under the Connecticut Aquatic Resources Education (CARE) and No Child Left Inside® (NCLI) initiatives. Under NCLI, each summer children from urban communities visit State Parks or Forests to learn about trails, habitat, plants and animals, and more. The CARE program helps introduce children and families to learn about water, fish, and angling through visits to state and local waterways.

© M. Beauchene

Each spring, DEEP's Fisheries Division and Environmental Justice program gather youth from the surrounding community and stock trout at various locations in the state.

To continue attracting the next generation of stewards for open space, DEEP and its partners should explore additional ways to encourage young and diverse people to visit protected lands and become trained in or involved with acquisition programs.

An array of community groups, such as universities and town recreation, open space and conservation commissions, can become partners in encouraging program exploration and involvement.

To better inform all members of the public, DEEP will work with its community partners to distribute information on state open space lands and programs. To make it easier for the public to find and recreate on open space purchased using State conservation funding, DEEP will highlight publicly-accessible protected lands on its webpage.

Maps that show the location of statewide public open spaces, such as the Protected Open Space Mapping datalayer on Connecticut Environmental Conditions Online, are currently available to the public for viewing and downloading. Since becoming available on DEEP's open space webpage in early 2015, the Public Use and Benefit Land Registry (Land Registry) pilot project can also serve to locate public open space. To maximize accessibility, DEEP-published digitial tools and materials are evaluated for use by computer users with disabilities wherever possible.

To complement its webpage resources, DEEP will develop outreach materials about state open space programs for distribution to residents at town hall and other related public facilities. To welcome people of all abilities, DEEP will include information on open space elements, such as viewing platforms, for people with disabilities. All hard copy materials will be made available in alternative format upon request.

Municipal and private conservation organizations play critical roles in land protection, and they often enter in cooperative agreements with DEEP in acquiring and stewarding open space. Together with water companies, these partners have helped protect at least 30,000 acres of open space to date through DEEP's Open Space and Watershed Land Acquisition grant program. To build on this progress, DEEP will send grant round opening announcements to the state's Council of Governments for dissemination to towns and local land conservation organizations.

© Town of South Windsor

The Town of South Windsor received a DEEP open space grant to protect its Wapping Park for scenic, passive recreation.

Public outreach and communication is essential to gaining strong, long-term support for land protection. DEEP relies on its partners for assistance with public engagement on the importance and utility of the Green Plan, improving the accuracy of open space data using the Land Registry, and working statewide with young and diverse communities. Certain partners, such as Audubon Connecticut and the Connecticut Land Conservation Council, have already pledged their support. DEEP looks forward to participating in a collaborative effort among its agency and other statewide associations and non-profit organizations to best achieve open space protection goals for the state.

2: Build Partnerships and Public Support for Open Space
Actions
Building Public Support
1) Explore ways to attract and train the youth and students, especially from urban areas, on open space protection and acquisition programs.
2) Partner with traditional and non-traditional community groups in public open space initiatives, including disability, youth, urban, university, municipal, and others.
3) Inform the general public and others on DEEP publicly-accessible open space lands and acquisition programs on its webpage and in materials for distribution.
4) Collaborate with partners to inform municipalities, land trusts, and water companies on the Green Plan and the Land Registry to increase open space information accuracy.

For more information on these topics see Section IV (Land Conservation Partners and Programs) and Section V.D. (Open Space in Urban Communities).

3. Improve Open Space Data and Tools

Over the next five years, DEEP will launch and enhance a statewide land registry pilot, improve state open space data, and use data to make better land protection decisions.

Maintaining accurate data on statewide protected open space is necessary to assess progress on Connecticut's goals, strategically plan future acquisitions, and provide the public with information on the lands they are entitled to enjoy.

To help meet this challenge, DEEP established the Public Use and Benefit Land Registry (Land Registry)[12], a pilot mapping system that will inventory and eventually show all existing protected open space in Connecticut.

Developed in relation with other statewide geographic data, the Land Registry gathers data to assist in planning for what areas DEEP would like to conserve in the future.

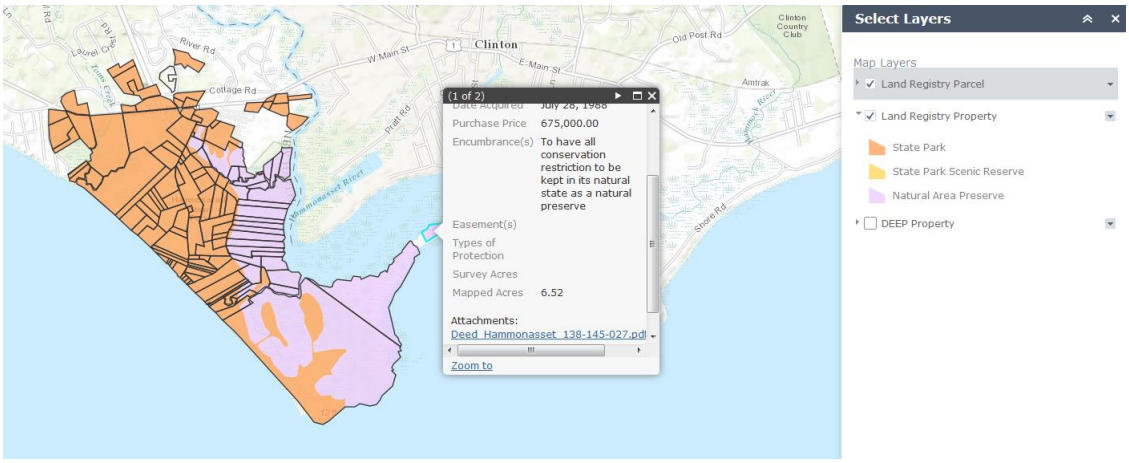
Green Plan Actions

To improve open space data and tools over the next 5 years, DEEP will:

- Launch and populate the **state's Land Registry** pilot *(CGS Sec. 23-8e)*;
- Produce a **map layer of all projects funded to date** under DEEP's open space grant program;
- Require applicants to the State's open space grant program to submit **digital versions of surveys**;
- Evaluate a means for land conservation partners to **voluntarily submit data** to DEEP *(CGS Sec. 23-8b(2))*;
- Collaborate with partners to inform **municipalities, land trusts, and water companies** on the Land Registry;
- Identify and build **key datasets** to support statewide planning; and
- Evaluate the use of a **statewide priority acquisition mapping tool**.

Another purpose of the Land Registry is to ensure that the public is informed of what lands have been protected and why those lands have been acquired. The mapping system allows users to browse state lands, determine property ownership, and research, view, and download copies of parcel information, including deeds, surveys, and land management plans.

[12] (CGS) Sec. 23-8e



A parcel which was acquired by the State and later designated as part of Hammonassett Beach Natural Area Preserve is highlighted on the pilot Public Use and Benefit Land Registry.

Starting with three State Parks, over the next five years DEEP will launch and develop the Land Registry for the State, its partners, and the public to use in assessing open space. The registry will be populated with information on other DEEP lands and, in the future, on open space lands held by other state agencies, all projects partially funded by State open space grants, municipalities, and land conservation organizations.

Following uniform standards and practices, documents related to DEEP's ownership of property within the state are recorded in the agency's unit of Land Acquisition and Management and are then scanned into the Land Registry's computer database. To help make this process more efficient and to improve this dataset for users, DEEP should consider requiring recipients of funding from the State's open space grant program to submit digital versions of property surveys.

Populating the Land Registry with open space data will be a great task and requires the cooperation of many parties. To increase the accuracy of the estimated area of statewide open space, DEEP will evaluate establishing a system that encourages the voluntary submittal of

information regarding new acquisitions by its partners[13]. An example of such a system could include a standardized form that can be filled out by Towns and returned to DEEP for input into the Land Registry.

Educating DEEP's land conservation partners about the importance, utility, and function of the Land Registry and developing a voluntary data submittal system will be critical to improving the accuracy of information on state open space. This will be best achieved through a collaborative effort among DEEP, the State's Natural Heritage, Open Space and Watershed Land Acquisition Review Board, the Connecticut Land Conservation Council, and other organizations.

The Land Registry will serve as one of many tools the State, its partners, and the public can use in assessing lands for the acquisition of new open space. The acquisition of lands for open space conservation purposes is strategically improved by assessing lands in relation to multiple geographic datasets.

Over the next five years, DEEP should collaborate with its land conservation and other partners to identify and build additional key spatial datasets that enable the state to evaluate and prioritize the acquisition of lands having critical environmental and recreational resources. Such datasets could include tidal marsh migration areas, improved natural resource occurrences, and inactive drinking water reservoirs.

Other regional conservation partnerships, such as the Lower Connecticut River and Coastal Region Land Trust Exchange, have taken conservation planning one step further by using geographic information systems (GIS) to combine and analyze spatial datasets in order to target lands of highest value for natural resource protection. Over the next five years, DEEP

[13] (CGS) Sec. 23-8b(2)

should evaluate the establishment of a publicly-accessible, statewide land acquisition priority mapping decision support tool.

This tool could use a GIS overlay scoring system to identify areas statewide that represent concentrations of higher conservation value that warrant investigation as potential land acquisition targets. By analyzing combined existing open space, ecological, and other datasets, DEEP and the public could maps that identify discrete land acquisition focus areas still in non-conservation forms of ownership.

3: Improve Open Space Data and Tools
Actions
1) Launch the Public Use and Benefit Land Registry pilot (Land Registry) with three State Parks for use by DEEP, its partners, and the public in assessing existing protecting lands *(CGS Sec. 23-8e).*
2) Continue to develop the Land Registry by populating with information on other DEEP-owned lands, other State lands, parcels funded partially by DEEP open space grants, and lands owned by conservation partners.
3) Evaluate a means to improve the accuracy of the Land Registry data and for land conservation partners to voluntarily submit data to DEEP *(CGS Sec. 23-8b(2)).*
4) Collaborate with partners to inform municipalities, land trusts, and water companies on the Land Registry to increase open space information accuracy.
5) Require recipients of funding from the Open Space and Watershed Land Acquisition Grant Program to submit digital versions of property surveys for records filing and entry into the Land Registry.
6) Collaborate with partners to identify key datasets used to evaluate lands for conservation, including datasets related to impacts from climate change.
7) Evaluate the establishment of a publicly-accessible, statewide land acquisition priority mapping tool for use by DEEP and others to make better land conservation decisions.

For more information on these topics see Section II.F. (Data Needs for Open Space Planning) and Section IV.A.II. (Unique Land Conservation Partnership Examples).

4. Develop Strategies for Preserving in Perpetuity State-owned Lands of High Conservation Value

Over the next five years, DEEP will work with other state agencies to identify lands of high conservation value for potential preservation or protection as open space.

The State of Connecticut, through its multiple state agencies, owns areas of undeveloped lands that have high conservation value and may be beneficial additions to the State's portfolio of open space. DEEP is required to establish a process by which each State agency may identify and potentially protect in perpetuity state-owned lands that are valuable for conservation purposes or public use and benefit[14].

Lands of public use and benefit include those lands that would be valuable for conservation, public enjoyment, recreational purposes, or any activity associated with improving or maintaining such purposes. Lands of high conservation value are defined by DEEP as those that meet at least one of the land acquisition priorities identified in this planning document.

To begin establishing this process, over the next five years DEEP will use state lands inventories to assess lands under custody and control of all state agencies. DEEP will assess undeveloped or primarily natural lands to determine if these lands could be considered lands of high conservation value or if they could serve a public use or benefit.

Next, DEEP would work with agencies that have custody of such lands of high conservation value to understand their present and future operational needs for these lands. If agencies identify no or low business needs for such lands, DEEP would work with that agency and the State Office of Policy and Management to propose a means to add these lands to the State's open space portfolio.

[14] (CGS) Sec. 23-8d and e

In establishing State-owned lands of high conservation value as open space, DEEP's priority is to permanently protect these state lands as protected open space. If this is not feasible, given the needs of the agency currently managing such lands, DEEP will work to preserve these lands of high conservation value as preserved open space.

In addition to working with other State agencies to move new lands to open space uses, DEEP will evaluate the protection of its open space. DEEP's system of Parks, Forests, and Wildlife Areas contains certain lands that can be considered protected open space. Other lands, while meeting the definition of preserved open space, may not have protection that secure the lands as open space in perpetuity.

To address this risk to the public's system of State-owned open space, DEEP will work to develop several options that can be deployed to permanently protect DEEP open space. Such options will be discussed with the State's Natural Heritage, Open Space and Watershed Land Acquisition Review Board and the Council for Environmental Quality.

4: Develop Strategies for Preserving in Perpetuity State-owned Lands of High Conservation Value
Actions
1a) Assess state property that is not protected in relation to existing protected lands and natural landscape features using GIS mapping tools.
1b) In consultation with other State agencies, implement a process to determine if lands held by each agency may be valuable for conservation or public recreational purposes.
1c) Work with OPM and State agency owners of lands of high conservation value to add such lands to the State's system of preserved or protected open space.
2) Propose a means in which DEEP may prioritize and protect in perpetuity state-owned lands that are both not needed for agency business purposes and best enhance conservation and public use and benefit purposes.

5. Optimize State Open Space Acquisition and Grant Program Operations

Over the next five years, DEEP will address State open space program processes to improve acquisition planning, performance, and partnerships.

Making DEEP land acquisition program operations more efficient while maintaining agency environmental standards is key to effectively protecting quality lands for public open space, assisting the State's partners in achieving Connecticut's open space goals, and addressing new environmental challenges as they arise.

Over the next five years, DEEP will undertake a number of actions to address State open space processes and improve acquisition planning, performance, and partnerships.

Green Plan Actions

To optimize programs over the next 5 years, DEEP will:

- Review and update DEEP's open space program procedures to **ensure consistency with the revised Green Plan;**
- Expand DEEP open space annual reports to include a **progress assessment on Green Plan objectives**;
- Engage the State's open space Review Board and all land conservation partners in **updating the Green Plan** in 5 years *((CGS) Sec. 23-8b);*

To ensure consistency with the objectives in this Plan, DEEP will review and update its standardized open space acquisition policies and procedures set under both the Recreation and Natural Heritage Trust and the Open Space and Watershed Land Acquisition Grant Programs.

Each year, DEEP submits a report on the Green Plan and the progress made towards the state's open space goals to the Environmental Committee of the General Assembly. Over the

next five years, DEEP will also enhance its open space reports to assess progress towards recommendations in the Green Plan. Current and past monthly and annual state open space reports are available online. If major new initiatives or changes to existing programs occur, DEEP may also provide an annual update to the Green Plan.

Considering the current and future needs and concerns of Connecticut's environmental and recreational resources, the Green Plan is the State's detailed open space strategy. In drafting the next plan update[15], DEEP will again seek guidance and review from the State's Natural Heritage, Open Space and Land Acquisition Review Board (Review Board) and all other land conservation stakeholders to provide a revised action strategy aimed at the protection of Connecticut's best remaining and most at-risk lands.

Green Plan Actions (cont.)

- Update Green Plan annually, if major changes are needed.
- Promote the **Cooperators provision** of the State's land acquisition program;
- Apply for **federal assistance** and explore **regional conservation partnerships;**
- Provide **consistent and predictable funding grant rounds** to land conservation partners each year;
- Work closely with the State's open space Review Board to **streamline open space grant program practices**; and
- Develop a **preliminary project review sheet** for open space grant applicants.

Operating successful State open space programs and achieving Connecticut's total open space goal depends on implementing a detailed strategy on how to best fulfill this goal, as well as securing an adequate level of resources that allows lands to be purchased in an effective and efficient manner to reach the goal. To accelerate acquisition efforts by leveraging state conservation funding over the next five years, DEEP will promote cooperative acquisitions

[15] (CGS) Sec. 23-8b

between its land conservation partners, seek and apply for federal land acquisition assistance, and explore opportunities to participate in regional conservation partnerships across southern New England.

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With funding from a state open space grant, the Town of East Haddam acquired the Zeleznicky Property to help preserve and connect over 1,000 acres of open space.

Acquiring open space on a statewide scale for public purposes is also time-consuming, which can threaten protection of key lands facing high development pressures or other factors resulting in lost opportunities. To provide its conservation partners with more consistent and predictable funding assistance, DEEP has committed to opening an annual grant round on or about September 15 each year. To further enable strategic decisions, DEEP will continue to announce grant rounds each year, at the same time of year.

To minimize overall grant processing time and to ensure available state funding is allocated as expeditiously as possible, DEEP will work closely with the Review Board to evaluate open space grant funding criteria, policies, and procedures. With the Board's assistance, DEEP can identify and revise unnecessary, redundant, or inefficient steps in the grant application and award process.

At the announcement of new open space grant rounds, DEEP receives a moderate amount of questions from its eligible partners about whether a project of interest would score high in the competitive grant selection process. To simplify information requests to DEEP and facilitate better decision making by its partners, DEEP will develop a basic, preliminary project review sheet for DEEP's partners. To be made available on the Department's webpage, the sheet could provide applicants with basic information on the program's objectives and selection criteria.

Within existing resources, improvement in DEEP land acquisition and open space grant program operations can occur. However, funding, personnel, training, and equipment are required to administer these programs and purchase lands in an effective and efficient manner. DEEP will make every effort within budget and staff limitations to improve its programs with a focus on achieving the Green Plan's open space objectives.

5: Optimize State Land Acquisition and Grant Program Operations
Actions
1) Review and update the State's standardized land acquisition and open space grant program procedures to ensure planning consistency with the revised Green Plan.
2) Every five years develop a comprehensive strategy plan that engages all statewide land conservation partners in open space protection ((*CGS) 23-8b*).
3) Enhance DEEP open space annual reports to include progress assessments towards objectives made in the revised Green Plan.
4) Promote the Cooperators provision of the State's land acquisition program on DEEP's open space webpage to inform partners on its purpose, benefits, and more.
5) Apply for federal land acquisition funding assistance and explore participation in regional conservation partnerships to leverage state conservation dollars.
6) To enable more strategic decision making, provide DEEP's land conservation partners with State open space grant rounds each year, at the same time of year, regardless of the timing of State bonding.
7) Work closely with the State's Natural Heritage, Open Space and Watershed Land Acquisition Review Board to streamline DEEP grant funding criteria, policies, and procedures.
8) Develop a basic, preliminary project review sheet for DEEP's partners to use in reviewing whether a project of interest would score high in competitive grant awarding.

For more information on these topics see Section IV (Land Conservation Partners and Programs).