

**POWERS TRACTS
A HABITAT MANAGEMENT PLAN FOR THE
WEST FARMS LAND TRUST, WATERFORD, CT**



I. INTRODUCTION

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B. Purpose

This management plan describes the habitats and management of the Powers Tracts in Waterford, Connecticut. These tracts include coastal grassland habitat of 2.8 acres acquired in 1994 and 0.3 acres of beach/dune habitat acquired in 1994. This plan details the natural and cultural resources of the Powers Tracts and documents existing management activities to maintain the area's natural habitats, significant species and cultural resources. The management activities to preserve these resources are recommended in the context of limited public use of these tracts – particularly during bird nesting season.

C. General property description

1. Location and Access: The three tracts of land included as part of the Powers Tracts are adjacent to Goshen Cove in Waterford, Connecticut. The grassland tract (including a small amount of wetlands) of 2.8 acres lies between Great Neck Road and Goshen Cove. This area is accessed from Great Neck Road with parking by

permission at the adjacent landowner's driveway (Hupfel). A path through the grassland is mowed to allow for foot travel through the grassland. The beach/dune tracts (0.3 acres), between Long Island Sound and Goshen Cove are accessed from Westcott Rd. Visiting the beach area is discouraged during piping plover nesting season (late March – early July).

2. Physical Description: The upland tract of 2.4 acres is part of a larger 6 acre grassland (other tracts are in private ownership). This grassland is on a hill overlooking Goshen Cove on the northwest side of the Cove. This tract includes a small area of wetlands bordering Goshen Cove. The beach/dune tracts of 0.3 acres run north – south between Long Island Sound and Goshen Cove, and are to the west of the Goshen Cove inlet.

3. Ownership: These three tracts of land were in private ownership (Powers/Chappell) before donation of the land to the West Farms Land Trust in 1994. The Town of Waterford holds a conservation easement on the properties since 1994.

4. Deed Restrictions: The conservation easement with the Town of Waterford (in file) outlines restrictions such that the Property will remain as open space and in its natural state in perpetuity for exclusive use as a meadow, estuarine, and shoreline wildlife refuge, as a conservation area, and to preserve its aquatic views and vistas. The Town of Waterford holds a Conservation Easement on the Powers Tracts to protect in perpetuity significant natural features and to minimize the environmental impact of activities associated with land development in the Town of Waterford.

5. Other use/management restrictions:

Per the Conservation Easement (see Powers file)

Prohibited:

The construction or placing of buildings, road, signs, billboards or other advertising, or other structures on or above ground;

The dumping or placing of soil or other substance or material as landfill, or dumping of trash, ashes, waste, rubbish, garbage, junk, or unsightly or offensive materials;

The excavation, dredging or removal of loam, peat, gravel, soil, rock or other substances in such a manner as to affect the surface or the quantity or quality of ground or surface waters;

The removal or destruction of trees, shrubs, or other vegetation other than as provided for in the Conservation Easement Agreement (described below), the destruction of wildlife or its habitat, the application of pesticides or herbicides, or any other activity or use which is or has the potential to be detrimental to drainage, flood control, water quality, erosion control, soil conservation, wildlife or the land and water areas in their natural condition.

The Town of Waterford, through the Conservation Commission, shall determine whether any proposed activities have any of the above prohibited effects.

Exceptions:

With proper permissions: the construction, reconstruction, maintenance and repair of above-ground and below-ground public and private utilities.

With proper permissions: permit the removal of dead or diseased trees or dead or diseased brush.

With proper permissions: permit the pruning and thinning of live trees and brush
The Conservation Easement Agreement allows for the mowing of the area established as meadow at least annually, but not more than three times a year, to preserve its function as a meadow ecosystem and wildlife habitat and to cut trees and brush at the discretion of the land trust.

6. Current management: The grassland tract is under active management with burning and mowing through a Natural Resources Conservation Service (NRCS) Wildlife Habitat Incentive Program (WHIP) contract. Mown paths are maintained for foot travel through the grassland. Connecticut Department of Energy and Environmental Protection (DEEP) personnel, with the help of volunteers, maintain the beach/dune area with fencing for piping plovers nesting between late March and early July.

Power Tract – 2.4 acres
Entire area is 6 acres
Hupfel - 1.7 acres
Other landowners – 2 acres
Total under WHIP – 4.1 acres

Entire grassland– 6 acres (4 landowners: West Farms Land Trust (2.4), Hupfels (1.7 acres), Hendels and Gilberts (1.9 acres)

Management:

all 6 acres are mown (from at least 2000)

Warm season grasses planted in spring 2005 through WHIP program (10 year contract): scratch the earth, plant seed with earth penetrating roller – on WFLT acres only

Species: big and little bluestem, switchgrass, Indian grass

Controlled burn in 2007, 2009 (WFLT and Hupfel – 4.1 acres). Area was mown in 2011.

WHIP plan can be converted to a mowing plan if burning proves too difficult. Grassland would need to be thatched if not burned due to the sunlight requirements of the warm season grasses, if too much thatch starts to accumulate (possible contact for thatching is USFWS).

II. GENERAL GOALS OF THE PRESERVE

The Powers tracts provide natural habitat for a variety of plants and animals. This property was donated to The West Farms Land Trust such that the property will remain as open space and in its natural state in perpetuity for exclusive use as a meadow, estuarine, and shoreline wildlife refuge, as a conservation area, and to preserve its aquatic views and vistas. The Town of Waterford hold a Conservation Easement on the Powers Tracts to protect in perpetuity significant natural features and to minimize the environmental impact of activities associated with land development in the Town of Waterford.

In considering the future of this property, the West Farms Land Trust has stated the following goals for the property:

1. To maintain grassland habitat, beach/dune habitat and biological diversity as part of the larger Goshen Cove ecosystem, including the Niering Preserve (a meadow/grassland also adjacent to Goshen Cove on the east side) and Harkness Memorial State Park;
2. To manage the grassland habitat such that the area remains as such with a diversity of grasses and herbaceous perennials, including the proactive management of invasive species; towards this goal the WFLT will continue to work with the 3 neighbors of this tract to promote management of the area as a grassland;
As incremental changes due to climate change such as sea level rise cause changes in the area over time, the WFLT will likely not take actions to restore the tracts or prevent marsh migration into the uplands fringing the marsh
3. To maintain the biological diversity of the beach/dune tracts including management assistance to CT DEEP with piping plover nesting;
In the event of a major natural storm event (including but not limited to breaching of the dune system, or severe dune/beach erosion) the WFLT will assess changes to the site and decide on a course of action, if any. In most instances, the area will be left "as is."
4. To maintain the scenic vistas associated with these tracts for public enjoyment. Public access is minimal and will remain so.

A. Open Space

These tracts, while small in acreage, are part of the larger Goshen Cove ecosystem. The Long Island Sound Study recognizes the Great Neck and Goshen Point as a Stewardship Area with coastal grassland habitat and coastal barrier/dune communities. The Town of Waterford holds a Conservation Easement on the Powers Tracts to protect in perpetuity significant natural features and to minimize the environmental impact of activities associated with land development in the Town of Waterford.

B. Public Use

While the tracts are open to the public, there is little to no parking areas provided. People may choose to walk onto the tracts, or land small watercraft on the beach. Scientific research, monitoring or inventory work may be conducted on the site only with the written permission of the WFLT Board after review of what such work might entail.

III. CHARACTERISTICS OF THE PRESERVE

A. Natural Habitats

The Grassland /Meadow - This habitat is defined as an area in which herbs, graminoids, forbs, and ferns are dominant, generally forming at least 25% cover. Trees, shrubs, and dwarf-shrubs generally provide less than 25% cover. Dominant grasses include switch grass (*Panicum virgatum*) and a bentgrass (*Agrostis* sp.). Numerous forbs (broadleaved herbaceous perennials) include common milkweed (*Asclepias syriaca*), rough stemmed goldenrod (*Solidago rugosa*), and Joe pye weeds (*Eupatorium* spp.). A plant list for the grassland tract is included in Appendix A. This list only provides the dominant species found on several sites visits and is not a complete inventory of the site.

The area adjacent to Goshen Cove is a narrow, but botanically interesting wetland. Plants are listed in Appendix A. There are several invasive plant species in this area, including honeysuckles (*Lonicera* spp.) and Asiatic bittersweet (*Celastrus orbiculatus*) along the wetland border. One in particular, lesser celandine (*Ranunculus ficaria*) is not on the land trust property, but should be watched in case it spreads. It currently occurs on the Hupfel's wetland.

The dune/back dune area can also be considered a grassland with American beach grass (*Ammophila breviligulata*), the dominant plant on the dunes and in the back dune. Other plants of the dune/back dune are identified in Appendix B.

B. PLANTS AND WILDLIFE

The primary ecological value of this grassland is as a general stopover for migrant land birds, winter use by open country birds and migrant use (such as sparrows). Also the grassland may possibly be used as a migratory stopover and winter use by raptors. The area also provides numerous flowers for pollinators.

The beach/dune tracts are part of a significant beach area for piping plover nesting. Piping plovers are small (approx 7 inches long) shorebirds and are federally listed as threatened along the Atlantic Coast. Here the birds nest on coastal beaches, sand flats and some dune areas. More information on these birds can be found at:

<http://www.fws.gov/plover/facts.html>

C. CULTURAL RESOURCES

Stone walls border the property along Great Neck Road and should be maintained as needed. Vines such as Asiatic bittersweet and poison ivy should not be allowed to grow over the walls.

IV. EXISTING ACTIVITIES IN THE PRESERVE

A. Current Recreational Uses (passive/active)

Grassland Tract: While open to the public, there is not public parking for visitors to the grassland tract. Visitors may walk on the mown trails to enjoy the grassland and the scenic vistas. Dogs are not allowed on the property so as to minimize disturbance for nesting birds.

Boundaries are posted (Fall 2011) with temporary stakes from a surveyor hired by the Gilberts. The WFLT has cedar posts at the three corners of the Hupfels line. The neighbors recently asked that the WFLT *not* put tall posts through the middle of the field, and instead try to mark the boundaries in a way that does not change the character of the grassland. The new plan is to place two or three posts near the bushes to be less visible, yet still allow line of sight from one post to the other across the field.

Beach/Dune tracts: While open to the public (except when areas are fenced off for piping plover nesting), there is no public parking for this area. People may walk onto the

beach. Sections of the beach may be may be blocked from public access if birds select WFLT property on which to nest. Dogs are allowed on the beach except as restricted during the bird nesting season.

Collecting driftwood and having small fires on the beach is permitted. Boundaries are not posted on the beach/dune tracts. Temporary markers may be added during bird nesting season.

B. Research and Educational Uses

Research may be allowed on the tracts depending on the project, its impact, if any, and the length of data collection. Any research that involves multiple visits, flagging, or other applications that could disrupt wildlife or aesthetic appeal of the area, will likely not be allowed.

No educational uses for the tracts are occurring and the Land Trust is not currently interested in pursuing such activities on these tracts.

Banding of birds on the beach tract is allowed for any studies conducted by CT DEEP or their partners on the piping plovers and other shore birds.

See Appendix C for language on allowing Species Collections.

V. MANAGEMENT ISSUES and CURRENT MANAGEMENT ACTIVITIES

A. Grassland Tract

1. Existing site condition – grassland management has been well planned and includes neighbors. Tilling, burning, seeding and mowing techniques were used to establish the grassland. A healthy mix of grasses, sedges and herbaceous perennials exists. There are some invasive shrubs and herbaceous plants. Also, the goldenrods (mainly *Solidago rugosa*) can form large clones and could, over time, outcompete the grasses. The goldenrods should be watched over time (perhaps by aerial flight ala Stocker) and if a significant increase is observed, management options such as herbicide, should be explored.
2. Current management activities – the grassland is mown or burned every year with the path through the area mown on a regular basis throughout the growing season. Ticks are abundant throughout the grassland, and regular path mowing helps to provide a “safer” walking area. Coordination with neighboring tracts within the grassland is attempted such that the entire grassland is managed as a single unit. Currently WFLT has permission to mow the Gilberts grassland tract and then sends a bill for mowing. Survey stakes are used as a guide.
The area is not mown between the months of April 15 to August 15 to protect any ground nesting birds that may use the site.
3. Planned or desired future condition – The Land Trust wishes to maintain this area as a grassland with any necessary management. (Also as stated in the Conservation Easement). If not mown or burned, the area will eventually fill

in with shrubs (many of which would likely be invasive) and eventually become coastal forest.

The WFLT may try mowing portions of the field each year on a rotating basis.

4. Potential Climate change impacts – warming air temperatures and a gradual shift to a longer growing season may change the species composition of the grassland over time. Invasion by new, more southerly, invasive species is a potential concern. The wetland area bordering Goshen Cove may provide an opportunity for salt marsh migration over time with sea level rise. No attempt will be made by the Land Trust to stop or institute land management practices to halt this progression.

B. Beach/Dune Tract

1. Existing site condition – the tracts of beach/dune and back dune owned by the land trust are part of a larger beach system. The area is a healthy, functioning beach/dune/backdune system.

2. Current management activities, if any – CT DEEP manages for the piping plovers with fencing during the nesting season.

There is a channel opening between Long Island Sound (LIS) and Goshen Cove. The channel location often shifts position along the shore because of storm activity and seasonal changes. At times, sand fills the channel, blocking tidal flow. The State of Connecticut often clears the opening with equipment if the channel fails to open on its own. In the early part of the summer of 2010, a nearby piping plover nest restricted the State from opening the channel for an exceptionally long period. The resulting high water with the cove appears to have killed all the saltwater cordgrass (*Spartina alterniflora*) below the flood water level. As of 2011, saltwater cordgrass is slowly recovering in a few areas, but the majority of flats in the cove are devoid of vegetation. It is likely that the cordgrass will colonize over time. The cordgrass is advancing into the uplands on the Powers tract, establishing itself above the level of the flood waters that killed lower elevation plants.

3. Planned or desired future condition – The West Farms Land Trust desires to maintain this area as part of a healthy beach/dune system. With sea level rise, the beach and dune may become inundated over time, shifting to sand flats if inundation becomes continuous. Also there is potential for the beach and dune to shift landward depending on currents and sand source and movement.

C. Recreational/Educational Activities

1. Property Boundaries

- a. **Existing Conditions:** The boundaries are clearly marked on the field portion of the Powers tract. A few more permanent yet aesthetic markers such as cedar posts will be added to ensure the boundaries remain visible into the future.

b. Planned or Desired Outcome: the desired outcome is marking of the grassland property boundaries with cedar posts or other unobtrusive posts and with scheduled annual monitoring to ensure the property remains clearly marked. Clearly marked boundaries are critical to facilitate annual monitoring of the property and to ensure unintentional encroachment by neighboring landowners (such as through alternative or more intensive mowing regimes) that may impact the conservation value of the property.

2. Existing Trails – Several mowed foot paths cross the field. These are maintained by two of the land owners as a way to access a road leading to the beach. They are intended for use by the homeowners who maintain the paths. There is no access point to these trails from the main road for the public and providing such access would not be practicable.

3. Planned or desired trails, parking areas, etc. – no new trails are planned or desired on the grassland and no trail exists or is planned for the beach/dune tracts.

4. Planned educational activities - no educational activities are planned for this area. If any such activity is desired, it would be best to coordinate with the Niering Preserve grassland area and have an educational trail or trail guide for this nearby area.

VI. MANAGEMENT RECOMMENDATIONS and PLANNED ACTIVITIES

A. Natural Habitats/Plants/Wildlife

Grassland:

Mowing or burning regime: the current mowing/burning regime should be continued with coordination of neighboring tracts of land such that management is the same for the entire grassland, as much as is possible. Mowing should not take place between April 15 and August 15 to minimize impacts to wildlife. Coordination of mowing with neighboring Harkness State Park might benefit birds and overwintering animals: if one mows one year, the other would leave their field unmown and alternate in subsequent years.

Also, if the fields are not burned for several years, consider dethatching them so as to permit light to penetrate close to the ground. Also dethatching prevents the build-up of an organic layer (often colonized by invasive plant species). USFWS staff from the Stewart B. McKinney National Wildlife Refuge in Westbrook, CT may be able to provide such services.

Invasive plant management: Several invasive shrubs were found and could be individually treated with herbicide, or as native shrubs are controlled through mowing, the current mowing regime could be used to control the invasive shrubs as opposed to eradicating them. Asiatic bittersweet will increase if no control measures are taken. Hand cutting and spraying the cut stems may be the most effective control method. Burning is not currently recommended for the grassland due to the presence of poison ivy (at the current time).

Goldenrods (not invasive), which can form large clones and outcompete grasses, should be monitored and possibly controlled (herbicide) if numbers start to increase.

Wetland fringe: there are several invasive shrubs (honeysuckle and Asiatic bittersweet) that can be cut and stem sprayed. The lesser celandine is not currently on land trust property but could easily spread. Information on control recommends herbicide use for large infestations: <http://www.nps.gov/plants/alien/fact/rafi1.htm>

Beach/Dune habitat: current management for the piping plovers will continue with CT DEEP.

While several invasive plants are found here such as Asiatic bittersweet and beach rose, monitoring on an annual basis is recommended as opposed to active management at this time. One potentially invasive plant to watch for on the beach and dune area is the Asiatic sand sedge (*Carex kobomugi*). More information on this species can be found at <http://www.nps.gov/plants/alien/fact/cako1.htm>

B. Recreational/Educational uses

- 1. Existing trails** –maintenance of the mown path through the grassland is conducted by the landscapers for the Hupfel’s and the Hendel’s and will continue into the foreseeable future. If this mowing regime should stop, the WFLT will need to determine if and how this mowing regime will continue.
- 2. New Trails** - No new trails are currently planned for the site.
- 3. Research and Education** – No research or education is currently planned for the site

VII. IMPLEMENTATION SCHEDULE

A. Current ongoing activities

B. Recommended activities

ACTION	WHO	WHEN (initiation and completion dates)	RESOURCES	EVALUTION/MONITORING
Grassland Mowing and trail mowing		After mid-August	NRCS Cost share	
Mowing coordination with neighbors				

Invasive plant control in the grassland				
Invasive plant control near wetland				
Place cedar posts near the bushes along the Gilbert's line				

VIII. Management Questions

None at the current time.

APPENDICES

Appendix A. Powers Grassland Tract – Preliminary plant list

Grasses:

Switch grass (*Panicum virgatum*) – dominant grass
Bentgrass (*Agrostis* sp) – dominant grass
Indian grass (*Sorghastrum nutans*)
Orchard grass (*Dactylis glomerata*)
Brome grass (*Bromus inermis*)
Quack grass (*Elymus repens*)*
Big bluestem (*Andropogon gerardii*)
Reed canary grass (*Phalaris arundinaceae*)
Eulalia (*Miscanthus sinensis*)
Velvet grass (*Holcus lanatus*)
Timothy (*Phleum pratense*)
Prairie cordgrass (*Spartina pectinata*)

Herbaceous perennials:

Queen Anne's lace (*Daucus carota*)
Rough stemmed goldenrod (*Solidago rugosa*) - large clones which could overtake areas and outcompete grasses
Gray goldenrod (*Solidago* cf *nemoralis*)
Yarrow (*Achillea millefolium*)
Common milkweed (*Asclepias syriaca*)
Canada thistle (*Cirsium arvense*)
Joe pye weed (*Eupatorium* cf *dubium*)
Rue anemone (*Anemonella thalictroides*)
Lupine (*Lupinus* cf *polyphyllus*) – appears to have been planted and has spread
Bugleweed (*Lycopus* sp)

Common horsetail (*Equisetum arvense*)

Closer to water:

Seaside goldenrod (*Solidago sempervirens*)
Slender blue flag (*Iris prismatica*)

Vines

Asiatic bittersweet (*Celastrus orbiculatus*)* - not a great deal
Honeysuckle (*Lonicera* sp.)
Summer grape (*Vitis* cf *aestivalis*)
Virginia creeper (*Panthenocissus quinquefolia*)
Bindweed (*Convolvulus* cf *arvensis*)
Poison ivy (*Toxicodendron radicans*)
Dewberry (*Rubus* cf *flagellaris*)

Shrubs

Highbush blueberry (*Vaccinium corymbosum*)
Honeysuckle (*Lonicera* sp)
Winged Sumac (*Rhus copallina*)
Northern bayberry (*Morella pensylvanica*)
Chokecherry (*Prunus* cf *virginiana*)
Pasture rose (*Rosa carolina*)
Southern arrowwood (*Viburnum dentatum*)
Currant (*Ribes* sp.)

Wetland area adjacent to Goshen Cove

Sedge (*Carex stipata*)
Sedge (*Carex annectens*)
Sedge (*Carex hormathodes*)
Sedge (*Carex* cf *stricta*)
Black sedge (*Juncus gerardii*)
Common rush (*Juncus effuses*)
Sweet vernal grass (*Anthoxanthum odoratum*)
Sweetflag (*Acorus calamus*)
Spike rush (*Eleocharis* cf *tenuis*)
Fox sedge (*Carex vulpinoidea*)
Woodrush (*Luzula* sp)
Saltmeadow cordgrass (*Spartina patens*)
Prairie cordgrass (*Spartina pectinata*)

Ferns

Sensitive fern (*Onoclea sensibilis*)
Royal fern (*Osmunda regalis*)
Marsh Fern (*Thelypteris palustris*)

Herbaceous plants

Slender blue flag (*Iris prismatica*)
Tuberous sweetpea (*Lathyrus* cf *tuberosus*)
Seaside goldenrod (*Solidago sempervirens*)
Goldenrod (*Solidago* cf *gigantea*)
Swamp candles (*Lysimachia terrestris*)
Pye weed (*Eupatorium* sp.)
Aster sp
Bedstraw (*Galium* sp.)
Lesser celandine (*Ranunculus ficara*)*
Water hemlock (*Cicuta maculata*)

Rose (*Rosa* cf *virginiana*)
Marsh elder (*Iva frutescens*)
Purple chokeberry (*Photinia floribunda*)
Southern arrowwood (*Viburnum dentatum*)

Autumn Olive (*Elaeagnus umbellata*) *
Groundsel Tree (*Baccharis halimifolia*)
Honeysuckles (*Lonicera* spp.)*
Black Cherry (*Prunus serotina*)
Winged sumac (*Rhus copallina*)
Highbush blueberry (*Vaccinium corymbosum*)
Northern bayberry (*Morella pensylvanica*)
Poison Ivy (*Toxicodendron radicans*)

Goshen Cove Marsh

Much of the Saltwater cordgrass (*Spartina alterniflora*) is dead – water level changes due to inlet blockage
Saltwater cordgrass (*Spartina alterniflora*) (tall)
Saltmeadow cordgrass (*Spartina patens*)
In small inlet: Bulrush (*Scirpus pungens*)

Brackish meadow

Saltmeadow cordgrass (*Spartina patens*)
Saltwater cordgrass (*Spartina alterniflora*)
Black rush (*Juncus gerardii*)
Bulrush (*Scirpus pungens*)
Seaside goldenrod (*Solidago sempervirens*)
Panic grass (*Panicum* sp)
Sedge (*Carex* sp)
Goldenrod (*Euthamia* either *tenuifolia* (1 leaf vein) or *graminifolia* (3 linear leaf veins)
Marsh vetchling (*Lathyrus* cf *palustris*)

Appendix B. Powers Beach/Dune/Backdune Preliminary Plant List

American beachgrass (*Ammophila breviligulata*)
Seaside goldenrod (*Solidago sempervirens*)
Switchgrass (*Panicum virgatum*)
Red cedar (*Juniperus virginiana*)
Northern bayberry (*Morella pensylvanica*)
Carolina rose (*Rosa carolina*)
Poison ivy (*Toxicodendron radicans*)
Beach pea (*Lathyrus japonicas*)
Common reed (*Phragmites australis*) fringing the cove

Appendix C.

Species Collections

Collection of plants, animals, minerals, water, and soil in the Preserve is not allowed unless specific permission is sought through an education, collection, or research permit. Permission may be granted based on the applicant's demonstration of how collection will contribute to and aid an education or research effort. In no case shall the collection of plants and

animals, other than invasive species, exceed the quantity necessary to maintain a healthy and viable population of that species.

Appendix D.
TECHNICAL RESOURCES

Invasive plant species (includes Connecticut Invasive Plant List and fact sheets)

<http://www.hort.uconn.edu/CIPWG/>

Connecticut Botanical Society

<http://www.ct-botanical-society.org/>

Connecticut Audubon Society

<http://www.ctaudubon.org/>

Managing Grasslands, Shrubland and Young Forest for Wildlife

A guide for the Northeast 2006

http://www.wildlife.state.nh.us/Wildlife/Northeast_Hab_Mgt_Guide.htm

Photographs



