

# Pegan Hill Management Plan

## 2009



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## Pegan Hill: Basic Management Plan

Location: Pegan Hill, Natick & Dover, MA

Acreage: 32 acres (property guide)

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Date: FOC approved, September 24, 2009

Supporting Reports and Materials: Property Guide; Trustees' website;

### I. Introduction

- a. Brief description of property: Pegan Hill reservation encompasses the 410 foot summit of Pegan Hill, which is the highest point in Natick. This classic glacial drumlin is almost entirely covered by forest that includes pine, oak, maple, and birch. A one-mile trail runs along the reservation's north-south axis and traverses the summit of the hill. A stonewall guides visitors into the property at the northern trailhead and parallels the eastern boundary line.

Pegan Hill was named for the Pegan Indian clan; their Native American significance is currently unknown. The reservation is located in the Charles River Valley, an area that has a rich native and early settlement history. The Trustees own many reservations in the valley, a total of 18 are within 10-miles of Pegan Hill. In comparison to a few of the neighboring reservations including Noanet Woodlands, Powisset Farm, Rocky Woods, Chase Woodlands, and Peters Reservation, Pegan Hill receives only modest visitation and management. Although Pegan Hill is not located along the Charles River it is still an important piece of open space in the highly developed valley. The property is the centerpiece of surrounding protected land including the Mumford Wildlife Forest (New England Forestry Foundation) to the west, the Morss CR to the east, and Lookout Farm to the northwest, only a portion of which is protected. The Charles River Link Trail, a sixteen mile trail from Newton to the Bay Circuit Trail in Medfield, traverses a portion of the Pegan Hill trail before veering west into the Mumford Wildlife Forest. On occasion, it seems that local Trustees' members seek out the typically quiet Pegan Hill as a place to visit to avoid the crowds.

Pegan Hill is a C-type management property. C-type management properties are characterized by low visitation, modest resource significance and management complexity. Typically, these properties are an important local resource, but will not likely engage a broad range of visitors and volunteers. Charles River Valley Management Unit resources, including funding, staff and volunteer time, are adequate at this time but will need to be increased as the reservation is expanded in the future, see Section F for land conservation opportunities.

- b. Acquisition history: Original acreage a gift of Mr. and Mrs. Judson S Batelle in 1956 in memory of Mr. Batelle's father. Additional land given by Mrs. Dorothea D Hovery in 1957 in memory of her husband, and by Mr. and Mrs. Barron F Lambert, Jr in 1968. Endowment given by local residents. Mr. Christopher Morss donated one acre along the Natick Dover town line in 2008.
  - c. Donor's wishes or other clear guiding principles: There are no specific wishes or guiding principles.
- II. Summary of Preliminary Management Goals
- a. Property and ecological management, including invasive control, should be conducted in concert with surrounding protected land.
  - b. Improve visitor experience by providing an interpretive panel.
  - c. Learn more about the property's history and cultural resources.
- III. Legal and Management Considerations
- a. Conservation efforts may lead to the acquisition of additional parcels surrounding Pegan Hill. This would increase the resources needed to manage and maintain Pegan Hill.
- IV. Property Description:
- A. Historic and Cultural Resources

History: Over 350 years ago, Pegan Hill marked the southern edge of the 4,000-acre "Praying Indian" town of Natick, established in 1651 at the urging of the Reverend John Eliot. From 1646 until his death forty-four years later, Eliot led a mission whose goal included the creation of "praying towns" for Native Americans who, inspired by the gospel that Eliot had taught, desired to leave their nomadic lives to form villages in which they could learn more about Christianity. After early success, Eliot became encouraged by the possibility of gradual religious, social, and political integration of all Native Americans into colonial society. In the end, he founded six more "praying towns" in Massachusetts and Connecticut.

The lowland areas surrounding Pegan Hill served as fields for apple trees and vegetable crops, and fences were laid out for raising goats, pigs, and oxen. The stone walls that encircle the base of Pegan Hill are remnants of this era. Pegan Hill was likely cleared of most of its vegetation for cropland and pasture. Treeless hills were also magical places because they provided views of where the land met the sky.

After King Philip's War (1675-76), many surviving Native Americans moved to Natick to live under Eliot's care. When he died in 1690, their life rapidly declined. Unable to find trades and despised by wider society, the Native Americans retreated to the fringes of colonial life, worked marginal jobs, and sold off their land to farmers to pay debts that were impoverishing them.

Significant Historic Features: There are no known historic features.

Threats to Historic Features: There are currently no threats.

Opportunities:

- Improve visitor experience by providing interpretive panel about property and surrounding lands.
- Conduct a ground level archeological survey. Involves a walk-through while recording the location of historical and cultural artifacts. Superintendent has already located and photographed a human altered stone artifact and open water wells on the southern part of the property.

B. Natural Resources

Significant Natural Features:

- Protected Network of Open Space – Located less than a mile from the Charles River, Pegan Hill is part of an extensive network of protected land within the Charles River Valley. Eighteen properties owned by The Trustees lie within 10 miles of Pegan Hill. The Trustees also hold a Conservation Restriction on 34 abutting acres on the east side of the property. Along with land owned by the New England Forestry Foundation and the Massachusetts Audubon Society (Broadmoor Wildlife Sanctuary) to the west, Pegan Hill helps protect the ecological integrity of the Charles River Valley
- Rare Species Habitat – Sections of the properties are identified as BioMap Supporting Natural Lands. BioMap Core Habitat for Blue-Spotted Salamander (Special Concern) occurs just over a mile from the property on the west side of the Charles River. No suitable breeding habitat for this species has been identified on the property. Areas immediately to the west of the property are also identified as Living Waters Critical Supporting Watershed.
- Glacial Drumlin – Pegan Hill is a classic example of a glacial drumlin composed of unconsolidated sand, gravel, and stones left behind as the last glaciers retreated some 11,000 years ago. This large deposit of glacial material now forms the highest point in Natick.

Threats to Natural Features:

- Invasive Exotic Plants – Non-native invasive plants are adversely impacting some native community types at Pegan Hill by reducing plant species diversity and recruitment. Five invasive, exotic plant species have been identified on the property. Glossy buckthorn and Asiatic bittersweet are the most prevalent invasives, especially within canopy gaps, and along trails and forest edges. Other species include winged euonymus, common barberry, and garlic mustard.
- Deer Browse - Deer browse is likely exacting a toll on plant diversity at Pegan Hill. Deer browsing also effects tree regeneration and can alter forest composition over the long term through preferential browsing of certain species. The overall loss of plant diversity over time also impacts faunal diversity due to the reliance of many wildlife and insect species on

specific plants.

- Climate Change – Climate change poses a new type and scale of threat to our natural areas. Research on how we can best adapt to the changes and mitigate the impacts of climate changes is underway. The impacts of global climate change will be felt throughout all of The Trustees' properties, but at varying degrees. Global warming has the potential to significantly alter the ecosystems and natural resources of Massachusetts in future decades through accelerating rates of sea level rise, increases in storm frequency and intensity and changing floras and faunas due to milder climate. The Trustees can strengthen a natural landscape's resilience to climate-related changes by reducing existing environmental stressors. Specific management techniques to achieve this include invasive species control, reducing negative recreational impacts, or deer population control to prevent over-browsing.

Opportunities:

- Invasive Plant Control – Invasive plant control actions at Pegan Hill should focus on early detection and rapid response. Priority should be placed on eradicating small patches of garlic mustard along the trails and monitoring for additional species incursions.
- Permit bow hunting and coordinate with surrounding landowners where possible to reduce the deer population and the associated negative impacts of over browsing.

C. Scenic Resources

Significant Scenic Features:

- View from parking lot looks out across Lookout Farm to the northwest

Threats to Scenic Features:

- Normal vegetation and trees on Pegan Hill and adjacent properties obstruct views from the summit of Pegan Hill. Efforts were made to clear a view in the past, but were unsuccessful. It is not necessary to clear this view in the future.

Opportunities:

- When the property is expanded, potential scenic viewpoints should be assessed. This task will not be scheduled in implementation table as the timeline is uncertain.

D. Structural Resources

- There are open stone wells that are filled with water along the trail that enters from the southern end of Pegan Lane. A fence was erected for visitor safety.

Threats to Structural Resources: There are currently no threats.

Opportunities:

- Investigate history of wells as part of archeological ground level survey.
- Investigate the current use of the wells by talking to abutters. If the wells are no longer used, they should be filled and covered for public safety. This action may require approval by Dover and Natick Conservation Commission, since the wells are close to wetlands and a tractor may be used.
- Monitor fences surrounding wells and repair as needed to ensure visitor safety.

E. Opportunity for Engagement

Visitor Engagement:

- Management Unit holds Hike of the Month Club that meets at various properties.
- Trail map was recently updated.

Opportunities:

- Post updated trail map on TTOR website and bulletin board, when the board is erected.
- Meet with the local Historical Society to assess their interest in a historical or an archeological project. An example output may include an informational brochure with trail map to publicize Pegan Hill and how it ties into the local history.

<b>Visitor Service:</b>	<b>Does it Exist?</b>	<b>Specific Description: age, condition, actively updated?</b>
1. Approach signs that lead visitors to the property	N	Needed to meet baseline standards.
2. Entrance and trailhead signs.	Y	
3. Kiosk or Bulletin Board meets standards.	N	None exist at this time. FY11 goal under baseline standards.
4. Up-to-date Map on bulletin board and website.	N	Map on website in FY10; on bulletin board in FY11.
5. Trails are clearly marked	Y	
6. Adequate parking area.	Y	

Current Volunteer Engagement: The Management Unit holds monthly trail projects at rotating properties with a growing list of individual volunteers and community groups. There are also three to six volunteers who serve as trail stewards in the management unit. Trail stewards monitor and report trail conditions throughout the management unit. Sporadic volunteer engagement occurs at Pegan Hill which has included invasive removal. The Charles River

Link Trail incorporates a portion of the trail at Pegan Hill and subsequent trail marking was conducted. Norfolk Hunt Club passes through Pegan Hill occasionally. They are an old English hunting club and hold hunts on horseback that traverse many Charles River Valley properties including Pegan Hill. The club schedules their proposed hunt dates with CRV Management Unit Superintendent to make sure that their hounds and horses don't surprise or interfere with property visitors. A number of the Norfolk Hunt Club members are also TTOR members or TTOR holds CRs on their property, so the relationship between groups is beneficial.

#### Opportunities:

- Invasive plant control program could be supported by volunteers or other partners, such as the New England Forestry Foundation, and could include the Mumford Wildlife Forest.

#### Opportunities for Land Conservation:

- Mr. Morss plans to leave his land, approximately 33 acres, which is currently under conservation restriction, in his will to The Trustees as an addition to Pegan Hill through the process of a devise. With the acquisition of this land, The Trustees may establish a trail link to Main St. in Dover, expand invasive plant control, and address a minor brush dump and encroachment by neighbors on the undeveloped Morss property. This expansion and associated work will require additional resources to complete. Pegan Hill will double in size with this acquisition and additional funds and resources will be needed to properly manage the expanded reservation. These tasks should be assessed in more detail in the future.
- The owners of Lookout Farm have recently shut down certain farming operations and the farm's future is uncertain. A portion of the farm is an Agricultural Preservation Restriction (APR), but the remainder, including the fields closest to Pegan Hill, is unprotected. Protecting the unrestricted land at Lookout Farm is a high conservation priority. The Trustees need to maintain annual contact with Lookout Farm's owner to make sure they are apprised of conservation options.
- Dover Assessors' Parcel 4-32-A, 21.9 undeveloped acres off of Main Street owned by the Thorndike family, was protected by a Mass. Audubon Society CR in 2007. Although the owners' plans are unknown, they may devise their land to a non-profit, such as MAS or TTOR for public use. This property would make a good addition to Pegan Hill if offered.
- Immediately west of the Reservation, between the TTOR and NEFF properties, are three largely undeveloped parcels: Natick Assessors' Parcel 79-4-A (3.31 acres); Parcel 79-4-C (9.79 acres); and Parcel 79-4-D (16.3 acres). In early 2009 Trustees staff communicated conservation options to the owners. Trustees' staff communicate with local supporters (Dover Land Conservation Trust, Charles River Valley volunteers, etc.) to keep current with any news of the owners'

- intentions, and check in with the owners every few years.
- The Magullion Property is a 5-acre CR that may become a TTOR reservation in the future. The property will not be part of Pegan Hill, but will be managed by the Charles River Management Unit and therefore increase their responsibilities.

## V. Current Resources Available for Management

- a. Staff and Volunteers: The Trustees of Reservations presently divides its statewide property management activities into six regions. Pegan Hill is part of the Charles River Valley Management Unit (CRVMU), one of five management units in the Greater Boston Region. The unit staff is comprised of three full-time, year-round employees: a Superintendent, Assistant Superintendent, and a Maintenance Technician. Each are involved in the maintenance and management of Pegan Hill, in addition to 14 other properties within the management unit totaling more than 2,600 acres. Several seasonal maintenance assistants supplement the daily maintenance tasks performed unit-wide in the spring, summer and fall. Additional staff positions exist in the management unit (e.g., Rangers, Farm Manager, and Administrative Assistant) but these individuals do not participate in the stewardship of Pegan Hill. A Regional Director, based in Sharon, oversees Field Operations in the management unit. Additional support is also provided by the Greater Boston Regional Ecologist and by the administrative support staff at Moose Hill Farm in Sharon.

At this time, the available staffing and volunteer resources within the CRVMU are adequate to fully meet the routine C-type property baseline management needs of Pegan Hill. Recommendations in this plan need to be prioritized and scheduled appropriately in order to implement using the management unit's current resources. Additional resources, including funding, staff and volunteer time will need to be increased as the reservation is expanded in the future.

- b. Equipment: The management unit has several major pieces of equipment which may be used in the stewardship of Pegan Hill: a Ford F-250 pick-up truck to transport staff, haul equipment or trailer small equipment; a Ford F-350 dump truck to haul and empty large loads and tow the regional chipper; and a Kubota M6800 with a front-end bucket used for moving and loading materials. The following implements are also available: disc mower for cutting brush fields; brush mower for mowing trails/carriage paths; post hole auger; York rake for grading dirt roads and parking lots; and an excavator.

Operating budget: No operating budget exists at this time. However, an endowment exists, interest from which is used to support general management at Pegan Hill and across the management unit.

- c. Other (partners, etc.): Wellesley Trails Committee has developed the Charles River Link Trail ([charlesriverlink.org](http://charlesriverlink.org)). TTOR and the Norfolk Hunt Club have a good working relationship as the Club's events typically use TTOR land with prior permission.

VI. Recommended One-time Actions

Rec#	Type	Resource Protection Action	Description/ Rationale	Phase	Rank	1° staff	2° staff	Phase 1 Staff Hours	Phase 2 Staff Hours	Phase 3 Staff Hours	Total Plan Staff Needs	Vol. Op?	Total Phase 1 Cost	Total Phase 2 Cost	Total Phase 3 Cost	Total Plan Costs all Phases	Budget Source	Operating	Supplemental	Capital	Target Funding Source	Notes	Status
1	VM	Post trail map on website.		I	N	S	E&O	1			1		\$0	\$0	\$0	\$0	O					Superintendent will contact E&O to post final trail map.	NS
2	VM	Construct and install new kiosk, with large trail map.		I	N	S	E&O	40			40	yes	\$450	\$0	\$0	\$450	O	\$450					NS
3	NR	Complete administrative tasks associated with initiating bow hunting privileges.	Coordinate with surrounding landowners where possible to reduce the deer population and the associated negative impacts of over browsing.	I	C	S	EC	16			16		\$0	\$0	\$0	\$0	O					FOC approval of regs, town permission may be needed, post the property, find and screen hunters (TTOR members).	NS
4	E/I	Meet with local Historical Society to assess interest in working with TTOR on a historic or archeological project.	To engage local groups and volunteers. Suggestions: Quest, tri-fold brochure, archeological survey	3	D	S	E&O			8	8	yes	\$0	\$0	\$0	\$0	O						NS

**Key:**

Type: E/I – Education and Interpretation, GM – General Management, HR - Historical and Cultural Resource Management, NR – Natural Resource Management, VM - Visitor Management

Phase: 1 – 2009 through 2011, 2 – 2012 through 2014, 3 – 2015 through 2017

Rank: C - Critical, N – Needed, D - Desired

Staff: E & O - Education & Outreach, EC – Ecologist, HR - Historic Resource Staff, S – Superintendent

Budget Source: C – Capital, N – Not Applicable, O – Operating, S - Supplemental

Status: IP – In Progress, NS – Not Started

VI. Recommended One-time Actions (continued)

Rec#	Type	Resource Protection Action	Description/ Rationale	Phase	Rank	1° staff	2° staff	Phase 1 Staff Hours	Phase 2 Staff Hours	Phase 3 Staff Hours	Total Plan Staff Needs	Vol. Op?	Total Phase 1 Cost	Total Phase 2 Cost	Total Phase 3 Cost	Total Plan Costs all Phases	Budget Source	Operating	Supplemental	Capital	Target Funding Source	Notes	Status
5	HR	Conduct a ground level archeological survey.		2	N	HR	S		24		24		\$0	\$0	\$0	\$0	O					Record location of finds with field map or GPS. Investigate human altered stone and open wells.	NS
6	VM	Create interpretive panel about property and surrounding lands.	Would improve visitor experience and understanding of history.	2	D	S	HR		20		20	yes	\$0	\$350	\$0	\$350	O	\$350				Education and Outreach will be needed to design and print panel. Cost covers printing.	NS
7	GM	Install approach sign(s).	Needed to meet baseline standards.	3	D	S				8	8		\$0	\$0	\$200	\$200	O	\$200					NS
	SR	Determine the current use of stone wells and fill wells if not currently in use.	Only applies if wells are no longer in use.	3	D	S				25	25		\$0	\$0	\$500	\$500	O	\$500				Time covers research and labor. TTOR may need approval by Dover and Natick. Cost covers fill and potential bobcat rental.	NS
		<b>TOTAL</b>						57	44	41	142		\$450	\$350	\$700	\$1,500		\$1,500	\$0	\$0			

**Key:**  
 Type: E/I – Education and Interpretation, GM – General Management, HR - Historical and Cultural Resource Management, NR – Natural Resource Management, VM - Visitor Management  
 Phase: 1 – 2009 through 2011, 2 – 2012 through 2014, 3 – 2015 through 2017  
 Rank: C - Critical, N – Needed, D - Desired  
 Staff: E & O - Education & Outreach, EC – Ecologist, HR - Historic Resource Staff, S – Superintendent  
 Budget Source: C – Capital, N – Not Applicable, O – Operating, S - Supplemental  
 Status: IP – In Progress, NS – Not Started

VII. Routine Management Program

Line #	Task	Action Type	Acceptable Performance Level (APL)	Acceptable Frequency	Less Than Annual	Season	Who?	Volunteer Op?	Total Hours Needed to Reach APL	Add'l Funds Needed to Reach APL	Notes
1	Find and screen bow hunters; monitor hunting program.	NR	Adequate	Annual	no	F, W	S	no	8	\$0	Hunter must be TTOR member. Purpose: reduce deer population and negative impacts of overbrowsing.
2	Maintain annual contact with Lookout Farm owner to ensure they are apprised of conservation options.	LC	Adequate	Annually	no	Any time	LC	no	1	\$0	
3	Maintain annual contact with surrounding land owners to ensure they are apprised of conservation options.	LC	Adequate	Annually	no	Year-round	LC	no	1	\$0	
4	Maintain and paint sign posts and future kiosk.	GM	Adequate	5-7 years	yes	Sp,S,F	S	yes	2	\$0	
5	Monitor property boundary and post signs as needed.	GM	Adequate	Every 5 years	no	Year-round	S	yes	4	\$0	
6	Monitor and maintain trails.	GM	Adequate	Annual	no	Sp,S,F	S	yes	4	\$0	

**Key:**  
**Action Type:**  
 GM – General Property Management  
 LC – Land Conservation  
 NR – Natural Resources Management  
**Performance Level:**  
 Adequate - The task is currently completed at a level that does not hinder resource protection or the visitor experience.  
 Strong - The task is completed in a manner/at a frequency that represents the ideal.  
**Who?:**  
 EC – Ecologist  
 LC – Land Conservation Staff  
 S - Superintendent

VII. Routine Management Program

Line #	Task	Action Type	Acceptable Performance Level (APL)	Acceptable Frequency	Less Than Annual	Season	Who?	Volunteer Op?	Total Hours Needed to Reach APL	Add'l Funds Needed to Reach APL	Notes
7	Restock brochures and monitor for trash in parking	GM	Strong	every 2 weeks	no	Year-round	S	yes	4	\$0	
8	Monitor fences surrounding wells and repair, as needed.	GM	Adequate	Annual	no	Sp, S, F	S	yes	4	\$250	Cost is estimate of fence repair.
9	Control invasive plants.	NR	Strong	Bi-Annual	no	Sp, S, F	S	yes	16	\$0	Focus on early detection and rapid response. Coordination Ecologist is needed. Add't funds may be needed for herbicide and misc equipment. Coordinate with NEFF and the Mumford Wildlife Forest.
<b>TOTAL</b>									44	\$250	

**Key:**  
**Action Type:**  
 GM – General Property Management  
 LC – Land Conservation  
 NR – Natural Resources Management  
**Performance Level:**  
 Adequate - The task is currently completed at a level that does not hinder resource protection or the visitor experience.  
 Strong - The task is completed in a manner/at a frequency that represents the ideal.  
**Who?:**  
 EC – Ecologist  
 LC – Land Conservation Staff  
 S - Superintendent

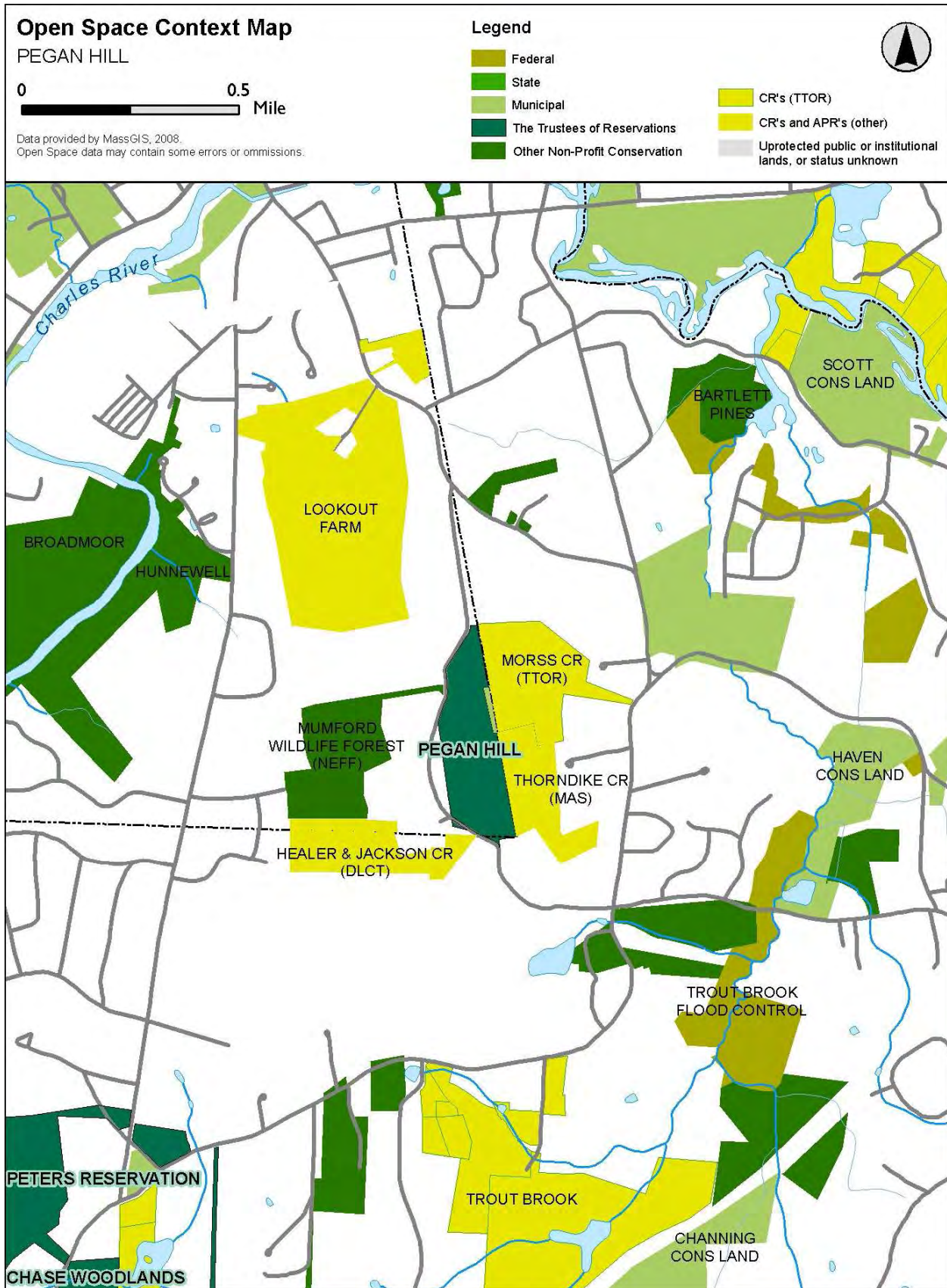
## VIII. Conclusions

- a. Although Pegan Hill is a small property with limited visitation and engagement opportunities, its rich cultural history and the potential for land protection in the immediate vicinity make the property an important piece of The Trustees' Charles River Valley conservation efforts. Coincidentally, Pegan Hill's limited visitation may actually be an attraction to some local members. The management of the property will change when additional land is added to Pegan Hill, specifically the land being left by Mr. Morss; staff time and resources may need to increase as a result. Trustees staff need to remain engaged with neighboring land owners to ensure that they are aware of land conservation options, as additional protected land could benefit Pegan Hill.

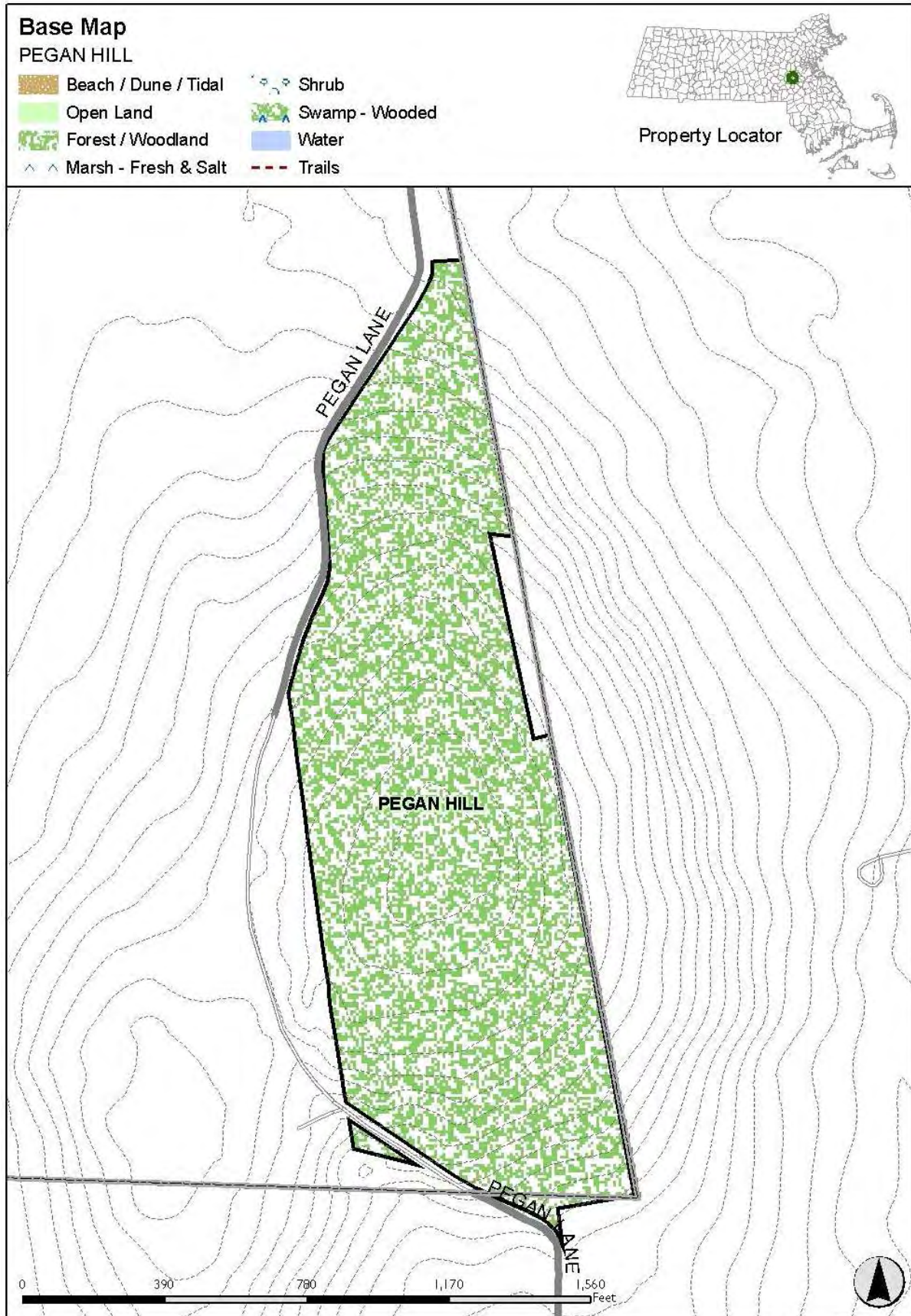
## IX. Monitoring and Review

- a. Property plan should be reviewed annually by staff to ensure progress is being made to complete the recommendations. Future plan revisions may require additional research and field work.

# APPENDIX A: Pegan Hill Open Space Context Map



# APPENDIX B: Pegan Hill Base Map



# APPENDIX C: Pegan Hill Natural Heritage & Endangered Species Program Map



# APPENDIX D: Land Conservation Opportunities

