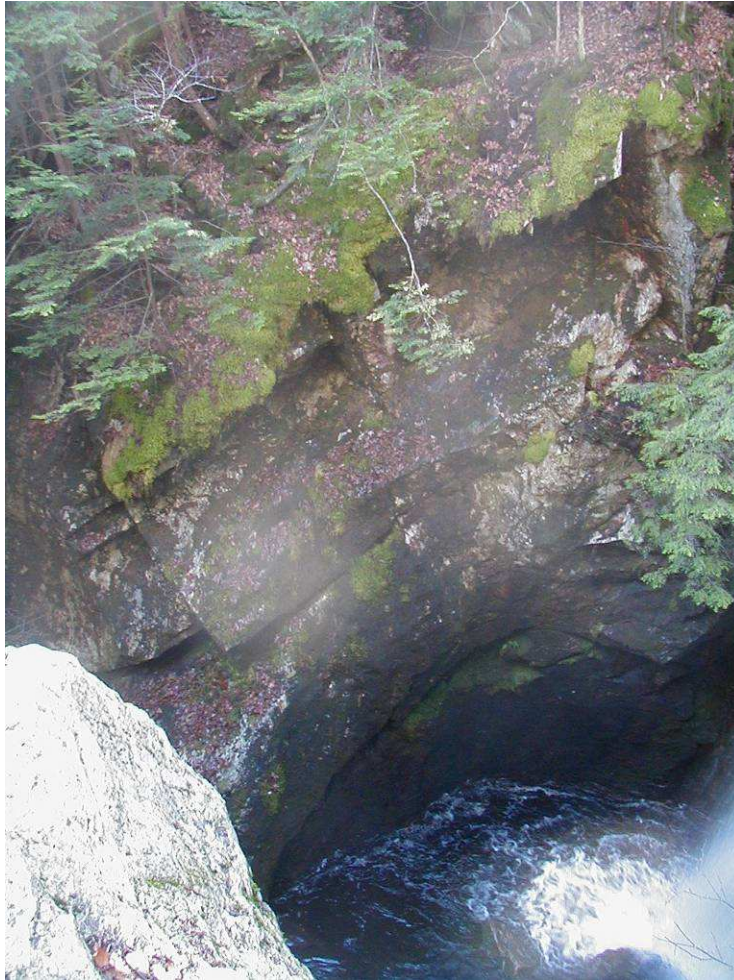


Royalston Falls Management Plan

2010



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Royalston Falls: Basic Management Plan

Location: Royalston Falls, Royalston, MA

Acreage: 217 acres (property guide)

Completed by: Julie Richburg, assisted by Russ Hopping, Walker Korby, Dick O'Brien, Chris Rodstrom

Date: Approved by the FOC on September 22, 2010

Supporting Reports and Materials:

- Trustees Property Guide
- NHESP Biomap and Living Waters data
- NHESP Priority Habitats of Rare Species GIS data.
- Farnsworth & Hickler 2008 "Natural Resources of Royalston Falls Reservation"
- Tritsch 2004 "Borderlands: Land Use History and Cultural Resources at Royalston Falls Reservation, Jacobs Hill Reservation, and Doane's Falls Reservation"

I. Introduction

a. Brief description of property:

Royalston Falls Reservation encompasses a topographically heterogeneous region of the North Quabbin area that supports a variety of natural habitats. The reservation has had low levels of previous human disturbance and includes (along with neighboring properties) large blocks of matrix forest including coniferous dominated hemlock ravines and mixed-hardwood forests. Falls Brook, which originates in New Hampshire, is the defining feature of the property, as it plunges through a dramatic gorge that bisects the property. The southeastern portion of the reservation contains a wetland complex (including a spruce swamp), where Falls Brook and other tributaries of the East Branch of the Tully River meander over flatter terrain.

The Reservation lies in the Millers River watershed, which encompasses 200,000 acres in Massachusetts and another 50,000 in New Hampshire. The Reservation contains a portion of the Tully Trail, a 22-mile loop trail that encircles the largely undeveloped Tully Valley in Central Massachusetts. The trail crosses both protected open space including Trustees reservations, state forest, and federal lands as well as private property. In addition to the Tully Trail, a section of the Metacomet-Monadnock (M&M) Trail (which extends from the border with Connecticut near Springfield to Mount Monadnock in southwest New Hampshire) shares a portion of the Tully Trail until it heads north past the shelter to cross into New Hampshire.

- #### b. Acquisition history: Gift of Mr. and Mrs. George L. Foote in 1951 and 1954. Additional land purchased in 2002 (CR purchased by state).
- #### c. Donor's wishes or other clear guiding principles:

The 12.2 acres acquired in 2002 are subject to a conservation restriction held by Massachusetts Department of Environmental Management (now Department of Conservation and Recreation). Generally, the restrictions on the property 1) require public access, 2) limit trails to no more than 10 feet wide, 3) allow for construction of an unpaved parking area, and 4) set specific controls over forestry activities. See Conservation Restriction for specific restrictions.

George Foote Jr., the son of the donors, is an active steward of his family's lands which abut the entire northern edge of the Reservation and which are in Chapter 61. He has encouraged us to consider joint timber harvest operations with him. Although discussed in the past, a forest-management plan for the reservation has not been completed to determine if a harvest is merited.

II. Summary of Preliminary Management Goals

Royalston Falls is a C-type management property. C-type 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. Additional resources, including funding, staff and volunteer time, will be necessary to implement some of the recommendations in this plan.

III. Legal and Management Considerations

- Conservation Restriction on a 12.2 portion of the property
- Massachusetts Wetlands Protection Act – there are extensive wetlands on the property which will be regulated under WPA.
- Seasonal hunting is permitted at this property subject to all state and town laws.

IV. Property Description:

A. Historic and Cultural Resources

Significant Historic Features:

- Cellar holes and stone walls. The number and locations of these features and their significance has not been fully assessed, although much of the history of the property and surrounding area is well-detailed in Tritsch's *Borderlands* report.

Threats to Historic Features:

- The cellar holes and stone walls are not maintained, encroaching vegetation could impact them.

Opportunities:

- Map historic features including stone walls.

B. Natural Resources

Significant Natural Features:

- In addition to Falls Brook, 14 community types occur at Royalston Falls including Alluvial Hardwood Flats, a newly described community for Massachusetts and potential Priority Community Type. Other Priority Community Types include Woodland Vernal Pool (S3) and Spruce-Fir Boreal Swamp (S3).
- Of the 47 bird species identified during a breeding bird survey, 13 are considered Priority Species¹ and reflect the importance of the extensive forest and wetlands habitat found at and around the Reservation.
- Royalston Falls is part of an extensive network of protected lands in Royalston and the North Quabbin Greenway that provides important habitat for plants and wildlife, including wide-ranging species, those dependent upon interior forest habitat, and species dependent upon clean waters (e.g., moose, bear, otter, odonates).
- The majority of the Reservation is designated as Core Habitat with the remainder being designated as Supporting Natural Landscape by MNHESP. Spring salamander (now delisted) has been documented from the Reservation and wood turtles (SC) are likely.
- The Reservation is relatively free of exotic invasive species.

Threats to Natural Features:

- Three species of exotic invasive plants are present at the Reservation: Japanese barberry (*Berberis thunbergii*), common buckthorn (*Rhamnus cathartica*), and glossy buckthorn (*Rhamnus frangula* [aka *Frangula alnus* Mill]). The severity of these infestations is low compared to some of the monodominant stands that are forming in other protected areas in the region.
- Hemlock woolly adelgid (HWA) has not been documented at the Reservation, but should be expected. Because hemlock is abundant at Royalston Falls, HWA has the potential to dramatically alter the Reservation.
- Global climate change has the potential to significantly alter the ecosystems and natural resources of Massachusetts including changes to the flora and fauna, especially invasive species. The position of Royalston Falls on the northern Worcester Plateau allows it to support northern community types (such as spruce fir boreal swamp) and species. A warming climate will likely lead to the retreat of northern-distributed species such as the lake darter

¹ *Partners in Flight Landbird Conservation Plan: Physiographic Area 27: Northern New England* (October 2000).
EZ Management Plan

(*Aeschna eremite*), a dragonfly species at its southern limit of its range in Central Massachusetts.

- Development of adjacent parcels could threaten the habitat value of the Reservation. Roughly two-thirds of the property's boundary abuts unprotected land (much of which is owned by a single landowner). Development would likely introduce invasive plants, increase the level of pollutants and nutrients entering streams and wetlands and lead to an increase in negative use (e.g., off-road vehicles and encroachment).
- The shelter area receives concentrated use resulting in heavily trampled and compacted soils. Moreover, the lack of a pit toilet facility means that overnight visitors are using the surrounding hills as latrines. The compacted and eroded soils cannot buffer human waste and other pollutants from Falls Brook, which lies steeply downhill from the shelter. Some alternative (e.g., pit toilet) will likely be needed.
- Much of the boundary is not well posted, thereby unintentional trespass could occur threatening the property's natural resources.

Opportunities:

- Implementing a program of early detection and rapid response to new exotic invasive species will reduce the potential of these species becoming established, especially if hemlocks decline due to the hemlock woolly adelgid. In addition, due to the current low densities of invasive plants at the Reservation control efforts should prove effective.
- Royalston Falls is vulnerable to housing development on lands surrounding the Reservation. In particular, development of the in-holdings on Falls Road could lead to improvements of Falls Road resulting in more traffic and disturbance. This also has the potential to facilitate the introduction and spread of invasive species. Protection of these lands would ensure the future stewardship of the Reservation and the preservation of its resources.

C. Scenic Resources

Significant Scenic Features:

- The Falls, a 45 foot drop into a magnificent little gorge
- Large glacial potholes north of the falls, one of which created a natural bridge
- Falls Brook is scenic as its tannic waters meander through the sheltered forest.

Threats to Scenic Features:

- Vegetation overgrowing and blocking views

Opportunities:

- Direct M&M Trail hikers to the falls (M&M Trail crosses the property but does not pass the falls).

D. Structural Resources

Structure	Size	Current Use	Current Condition
Parking area. Rte 32 entrance. With gate.	6 cars	Parking	Upgraded in 2008. Good. Space is adequate. Gate recently installed to limit access down entrance road.
Parking area, Falls Road entrance	4 cars	Parking	Access to this entrance is limited to 4-wheel drive vehicles with good clearance. Not used often.
Small bulletin board, Rte 32 entrance			Bulletin board has general information, but not trail maps
Small bulletin board, Falls Rd entrance			Bulletin board has general information, but not trail maps
Property signs, Rte 32 and Falls Road			Falls Road sign needs to be replaced.
Hiking trails			Trails to shelter are wet and need repair/reconstruction.
Trail shelter (timber framed) with porch, loft, and 2 large double bunk beds	12 people	Open to the public. Used by hikers & scout groups	Built in 2003. Fire pit in front
Picnic table at Rte 32 entrance		For public use	Good
Metal posts with steel cables around the falls		Protective rail	Good condition. Needs painting.
Bridge over brook south of the falls			Log bridge is weathered and needs replacement
Bridge near shelter			Log bridge with planks in good condition

Threats to Structural Resources:

- Vandalism at the trail shelter. Occasional graffiti and trash.
- Shelter is threatened by several surrounding dying trees. These trees, mostly hemlock, have been injured by soil compaction from the building and use of the shelter.
- The south bridge is weathered and needs replacing.
- The railings around the falls could use another coat of paint.
- The trails will continue to be muddy and wet until major drainage or rerouting occurs. Currently we are working on one section but there are half a dozen more that will need attention. In particular, the trails down to the shelter are in very poor condition, rutted and very muddy.

Opportunities:

- Shelter does not have any type of toilet facility. A pit-toilet or other facility would improve the containment of human waste and prevent pollution of Falls Brook.
- Develop a shelter steward to visit shelter regularly
- Assess which trees are imminently threatening shelter and remove.
- Replace south bridge.
- Improve location of or drainage along trails.

E. Opportunity for Engagement and Visitor Services

Visitor Engagement:

- Picnic table at the Rte 32 entrance
- Trails well blazed
- No programs offered
- Estimate of 1600 visitors per year based on counter records between August and December of 2008
- Shelter used frequently, especially on good weekends in the summer – through hikers
- Shelter used by partygoers once or twice a month in the summer – alcohol containers and other trash left
- Scout groups use the shelter or camp on the property

Opportunities:

- Signage to bring M&M hikers to view the falls.
- Educational opportunities at the shelter. Visitors rest or stay here overnight. There is a good opportunity to have information up at the shelter and other means of educating visitors there.
- Connection with campers at Tully Campground.

Current Volunteer Engagement:

- No current volunteers

Opportunities:

- Shelter steward volunteer position
- Trail steward volunteer position

Visitor Service:	Does it Exist?	Specific Description: age, condition, actively updated?
1. Approach signs that lead visitors to the property	N	
2. Entrance and trailhead signs.	Y	
3. Kiosk or Bulletin Board meets standards.	Y	Two small bulletin boards, one at each entrance
4. Up-to-date Map on bulletin board and website.	N	Map on website is of the Tully Trail, not specific to the reservation; needs bulletin board map. Royalston Falls trail brochure recently completed
5. Trails are clearly marked	Y	Trails are blazed. Additional trail markings (mileage, etc.) will be added as part of recreational trails grant (2009)
6. Adequate parking area.	Y	Rte 32 parking area was upgraded in 2009 as part of recreational trails grant.

V. Current Resources Available for Management

a. Staff and Volunteers:

The lack of staff limits stewardship in the Quabbin Management Unit. There is one full-time field staff for the Management Unit based in Athol, 14 miles away. About 5% of their staff time is allocated to Royalston Falls. No volunteers are currently involved. A campground ranger from Tully Campground patrols the shelter area periodically during the summer and checks the parking area and bulletin boards.

b. Equipment:

The Quabbin Management Unit has: one pickup truck, and shares the use of one dump truck, one tractor with bucket-loader, and chipper attachment.

c. Operating budget:

Royalston Falls does not have a dedicated operating budget, and funds needed are taken from the Management Unit budget. A modest endowment generates approximately \$480 in investment income annually.

d. Other (partners, etc.):

The 2009 Recreational Trails Grant from the DCR helped improve several wet and boggy sections of the trail, add the metal entrance gate, upgrade the parking lot, pay for new trail maps, and install additional signs.

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 Costs	Total Phase 2 Costs	Total Phase 3 Costs	Total Plan Costs all Phases	Budget Source	Operating	Supplemental	Capital	Targeted Funding Source	Notes	Status	
1	NR	Control invasive species, especially those identified as early detection species	Property is relatively free of invasive species. Early control will be most effective and efficient to protect the natural resources of the reservation.	ongoing	N	S	EC	20	15	15	50	✓	\$150	\$50	\$50	\$250	O	\$250					Costs associated with equipment and supplies to control invasives including possible chemical control.	NS
2	GM	Construct pit toilet or other suitable facility at the shelter	Overnight guests currently have no toilet facilities	I	C	S		16			16	✓	\$500	\$0	\$0	\$500	O	\$500					Soils are compacted near the shelter and are not suitable for informal latrine use. Permitting will likely be required.	NS
3	HR	Map historic features including stone walls and cellar holes.	Locate cultural features and determine their significance	3	D	S	HR			16	16	✓	\$0	\$0	\$0	\$0	O						This project is well-suited for a volunteer or a student.	NS
4	GM	Assess and remove trees threatening the shelter	Prevent damage to the shelter	I	N	S		16			16	✓	\$0	\$0	\$0	\$0	O							NS
5	SR	Replace/repair south bridge	Bridge is weathered and in need of repair	I	C	S		8			8	✓	\$0	\$0	\$0	\$0	O						This log bridge can be replaced in one day at no cost with the help of a couple of volunteers.	NS
6	GM	Meet with the abutter to the north of the property to secure official access to a trail reroute.	Improve trail conditions by rerouting to an area with better drainage	I	N	S	LC	8			8		\$0	\$0	\$0	\$0	O						The main entrance trail is very muddy and needs to be rerouted. Initial contact with the abutter has indicated a willingness to reroute onto his land.	IP
7	GM	Repair or re-route trail in muddy and/or eroded sections	Portions of the trail are wet and eroded.	2	C	S	EC	20	80	20	120	✓	\$0	\$0	\$0	\$0	O						Prioritize trail repairs and seek funding.	IP
8	VM	Work with town officials on installing approach signs	Considered a baseline standard	3	D	S				8	8		\$0	\$0	\$0	\$0	O							NS
9	GM	Establish a trail and/or shelter stewardship program	More oversight of the property is needed. This would enable the Trustees to engage a volunteer to take on some of the stewardship responsibilities at this property.	2	N	S	VC		20		20		\$0	\$0	\$0	\$0	O						Because this is a remote location, it may take more time to find a volunteer steward.	NS
10	GM	Mark boundaries	Baseline standard	2	N	S			8		8	✓	\$0	\$500	\$0	\$500	O	\$500					The cost is for the signs, and is an estimate.	IP
TOTAL								88	123	59	270		\$650	\$550	\$50	\$1,250		\$1,250	\$	\$				

Key:

Type: E/I – Education and Interpretation, GM – General Management, HR - Historical and Cultural Resource Management, NR – Natural Resource Management, SR – Structural 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: DSR – Director of Structural Resources, E & O - Education & Outreach, EC – Ecologist, HR - Historic Resource Staff, RD – Regional Director, 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 Opp?	Total hours needed to reach APL	Add'l funds needed to reach APL	Notes
1	Inspect trees around shelter for dead or dying branches/stems	SR	Adequate	Annually	no	S, Su, F	S	yes	2	\$0	Clear dead or dying trees before they damage the shelter. Clearing will not be necessary every year, but inspection should occur annually
2	Maintain scenic vistas	SC	Adequate	Annually	no	S, Su, F	S	yes	4	\$0	Assess vegetation growth at vistas and prune when necessary
3	Review status of the 5 top-tier critical lands annually and contact landowners periodically to develop positive relationship	LC	Adequate	Annually	no		S	no	8	\$0	Protection of these lands would secure the protection and future stewardship of the Reservation and its resources.
4	Property visit	GM	Adequate	Once per month	no	W, S, Su, F	S	yes	12	\$0	Inspect signs, stock kiosk, pick-up trash, check trail conditions
5	Trail maintenance	GM	Adequate	Annually	no	S, Su, F	S	yes	12	\$0	Improve or maintain trails as necessary
6	Clean shelter during summer	GM	Adequate	once every other week	no	Su	S	yes	16	\$0	Pick up trash, clean any graffiti
7	Monitor for invasive species	GM	Adequate	Annually	no	S, Su	S	yes	4	\$0	Monitor for invasive species, especially around entrance, disturbed sites, and property boundaries
8	Plow parking lot	GM	Adequate	as needed	no	W	S	yes	5	\$0	
9	Monitor boundaries	GM	Adequate	Annually	no	W, S, Su, F	S	yes	0	\$0	Required
TOTAL									63	\$0	

Key:

Action Type:

- E/I – Education and Interpretation
- GM – General Property Management
- NR – Natural Resources Management
- SC – Scenic Resources Management
- SR – Structural Resources Management

Who?:

- EC – Ecologist
- PM – Property Manager
- S - Superintendent

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.

VIII. Conclusions

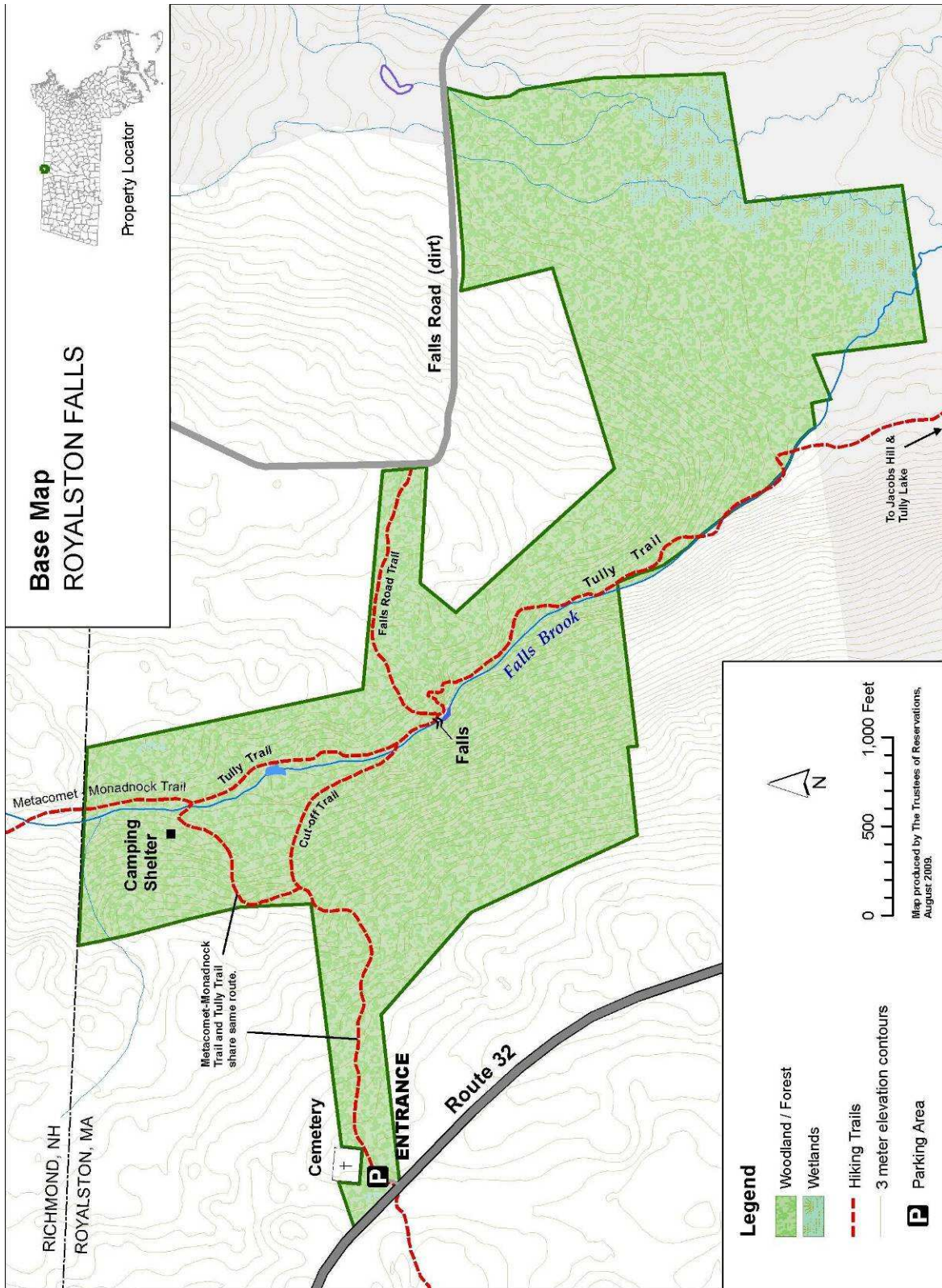
Maintenance of the trail and the shelter are the primary needs of Royalston Falls. Several trail sections are perennially muddy and need to be re-routed or have drainage installed. The south bridge crossing Falls Brook needs repair/replacement.

The property is relatively free of invasive species, but should be monitored for new or spreading populations. Control of existing or new invasive species will improve the ecological integrity of the reservation. The management unit is adequately managing this property with minimal staff time and on a small budget, but more could be done with the help of volunteers or with the addition of a small amount of staff time. A volunteer property steward (or a team of stewards) could greatly improve the feel of the reservation by maintaining trails, removing trash, and maintaining the shelter. In addition, educational materials available at the shelter could encourage overnight visitors to learn more about the property and other issues. The shelter provides a unique opportunity for a visitor to stay at one of our properties for longer than the typical couple of hours.

IX. Monitoring and Review

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.

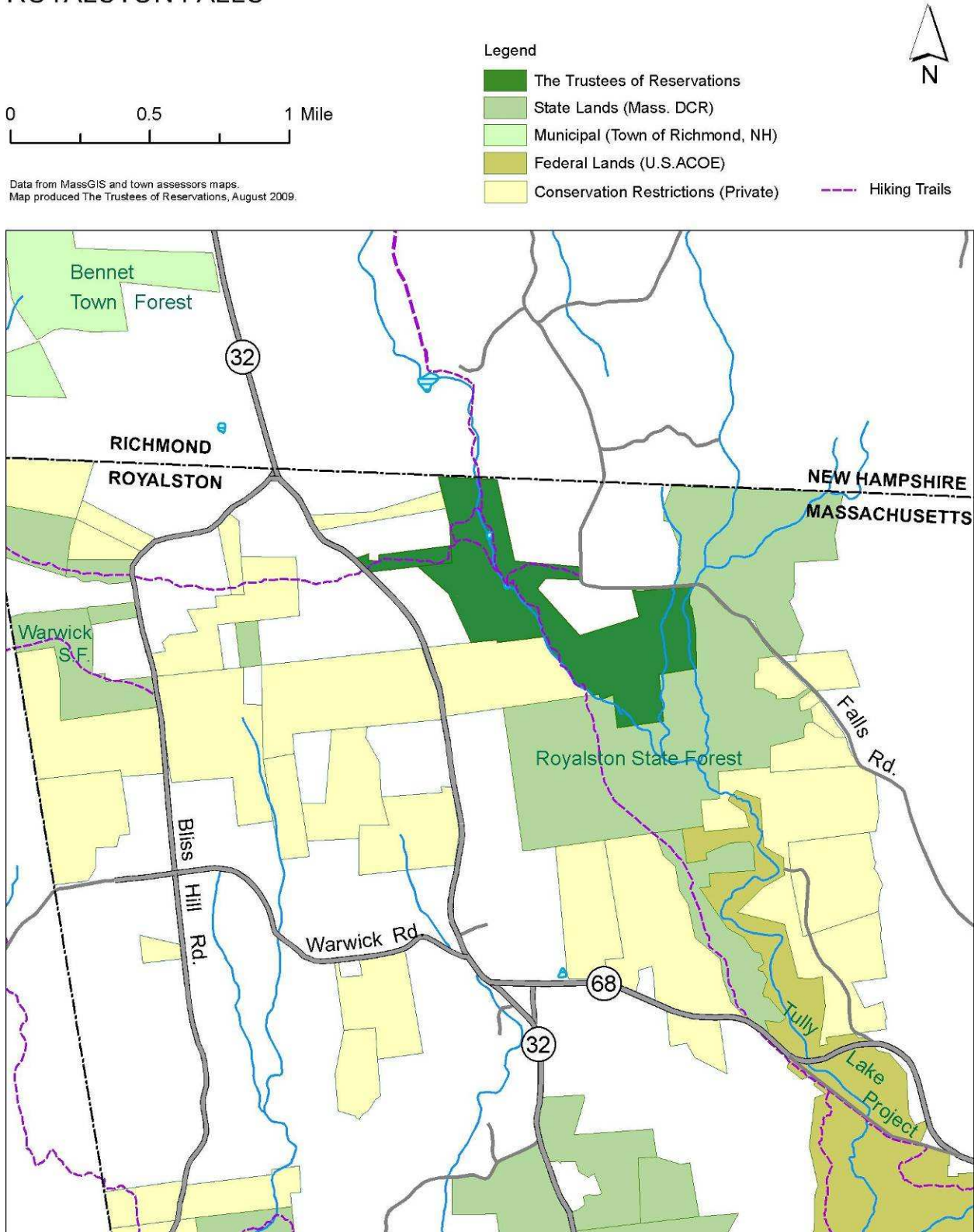
APPENDIX A: Royalston Falls Base Map



APPENDIX B: Royalston Falls Protected Open Space

Open Space Context Map

ROYALSTON FALLS



APPENDIX C: Royalston Falls Natural Heritage & Endangered Species Program Map

