

Trails and Resource Protection

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Overview

- Trails and Trail Planning
- Protecting Resources
- The Alphabet Soup of Resource Protection
- Putting it all together
- Useful Links
- Q&A

More than just pathways in the woods

- Connect people to natural landscapes
- Improve fitness and mental health
- Promote land stewardship
- Improve local economy and tourism
- Promote education and exploration of the natural world

"leave nothing but footprints and take nothing but pictures..."

Impacts...

- Soils: compaction, erosion, altered microbial activity, etc
- Vegetation: loss of ground cover, trees and shrubs and fragile species, introduction of exotics, etc.
- Wildlife: physiological and behavioral responses, decreased reproductive success, decreased survival and abundance, etc.
- Access to vandalism and looting of cultural resources



Achieving a Balance: Trail System Planning

- **Successful trail systems**
 - Highlight scenic features
 - Protect sensitive resources
 - Create valuable connections
 - Discourage unwanted behaviors
 - Provide the desired range of high-quality recreational experiences to users
- **Planning:**
 - Get to Know the Trails
 - Identify Scenic, Recreational and Cultural Destinations, Features and Experiences
 - Identify Constraints, Issues and Problem Areas
 - Make a Plan

Trail System Assessment

- Get to Know Your Trails

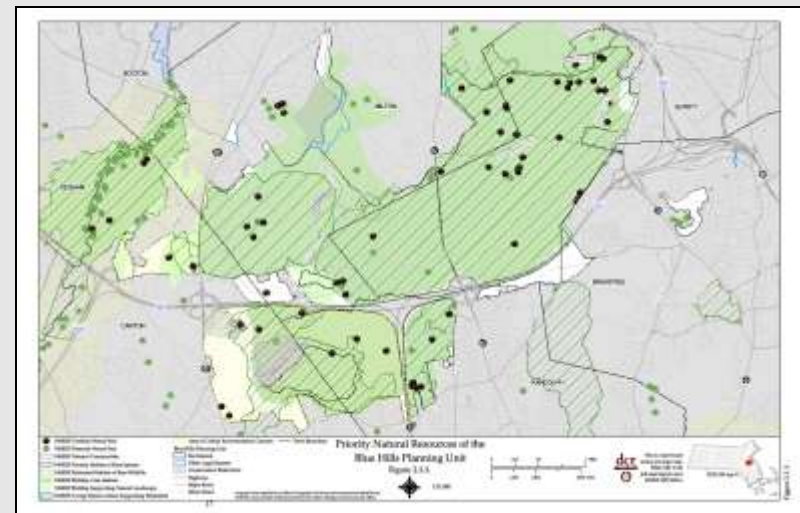
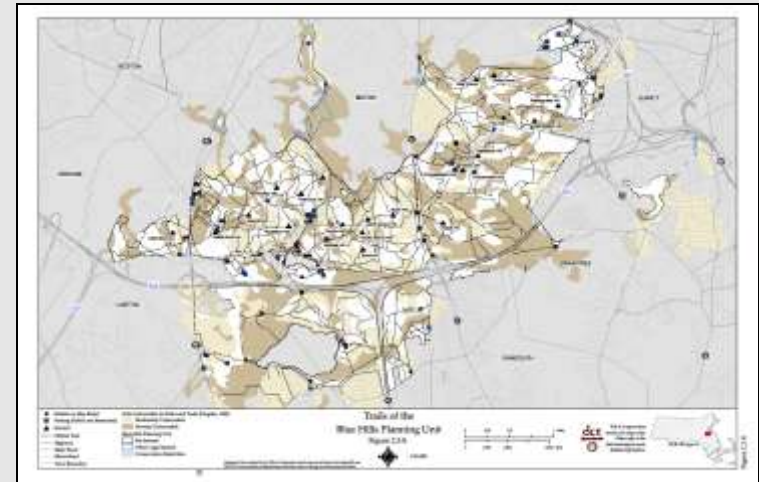
- Walk Your Trails

- Document existing conditions, structures, types and number of users, signage, invasive spp.

- Gather Maps*

- Existing trails, roads, developed areas, park boundaries
 - Rare species habitat
 - VPs and PVPs
 - Historic / cultural and other natural resources
 - Special management areas / zones
 - Wetlands and Streams
 - Steep slopes

- Take Pictures



free mapping, MassGIS Oliver

Identify Features, Uses and Experiences

- What are the Scenic / Cultural Features?
- What are Current uses, demands and conflicts?
- What Experiences do You Want to Provide?
- What Connections do You Want to Make?
- What options are there for parking and trail access?



Constraints, Issues and Problem Areas

- All Lands

- Priority Habitat
- Wetland Resources
- Cultural Resources
- Town/City Zoning and other bylaws
- Deed / Easement Restrictions
(e.g. conservation restrictions, flood control easements)
- Watershed / Water Supply Protection
- ACEC
- 100 year flood levels
- Private property/Boundaries
- Encroachments
- Dumping sites
- Illegal activities/party sites

- State Lands

- DCR Forest Management Zones
- Wildlands
- Forest Reserves

Making a Trail Plan: Considering Natural and Cultural Resources



Reducing Impacts to Resources

- **Principles:**

- Avoid Sensitive Ecological Areas
- Developed in Areas Already Influenced by Human Activity
- Provide Buffers to Protect Sensitive Ecological and Hydrologic Systems
- Use Natural Infiltration and Best Practices for Stormwater Management
- Limit tread erosion through design and construction

- **Management**

- Provide Ongoing Stewardship of the Trails
- Ensure Trails Remain Sustainable
- Formally Decommission and Restore Unsustainable and Illegal Trail Corridors

Consider Natural Resources

- **When?** maintaining, improving or creating new trails
- **Most pertinent regulatory agencies:**
 - Mass Wildlife/NHESP
 - MassDEP
 - Cities/Towns (Historic Landmarks)
 - MDAR
 - MEPA
 - MWRA
 - Army Corps of Engineers
 - US Forest Service
 - US Fish and Wildlife
 - USDA

Natural resources: air, fauna, flora , land, water, minerals, timber, topsoil, fauna, flora, forests and wildlife with economic, esthetic or other value

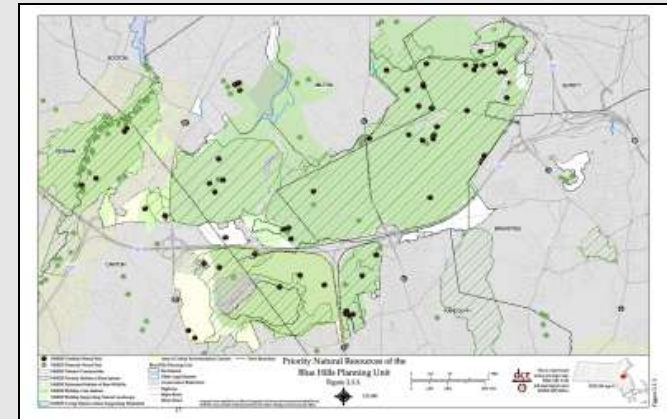
MESA/NHESP

- NHESP is responsible for the conservation and protection of Massachusetts' biodiversity under the MESA and the WPA
- 176 species of vertebrate and invertebrate animals and 259 species of native plants and their habitats are officially listed as Endangered, Threatened or of Special Concern under the Massachusetts Endangered Species Act
- MESA prohibits the "Take" of any species; any activity that directly kills or injures a MESA-listed species, as well as *activities that disrupt rare species behavior and their habitat (e.g. trail maintenance, vista clearing, mowing)*
- Vernal pool certification clearing house



Regulatory Requirements (321 CMR 10)

- Applies to areas with “Priority Habitat Designations”
 - New Occurrence
 - MEPA Assessment Request
 - Mass GIS Overlay or NHESP Atlas
 - Permitting Requirement



- Data Release Forms
- Species Data Forms
- Species Guidelines
- Reporting requirements

Natural Heritage Data Release Form

Please fill out this form if you are reporting information for conservation purposes or habitat management and you are a non-profit conservation group, governmental agency or are working with a governmental agency. Our response to this request will be a list of rare species found at your site.

Species Information

Name: _____ Affiliation: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Distance From: _____ East: _____ Road Address: _____

If a person individual working with a Town, Public or Government Agency, enter organization information below:

Organization Name: _____ Contact Person: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Distance From: _____ East: _____

Site Information

Name of Location (if different from above): _____

Location: _____ UNCS Quad Map: _____

Description of habitat management or conservation project (if necessary, attach additional sheet): _____

Please return a copy of a 1:25,000 topographic map to the scale 1:25,000 or 1:50,000 (not larger reduced) with the site location clearly marked and centered on the map page.

Please mail this completed form and topographic map to:

Natural Heritage Data Release
Natural Heritage and Endangered Species Program
161 Division of Fisheries and Wildlife
1 Raleigh Hill Road
Westborough, MA 01581

Or file to Natural Heritage Data Release
(501) 389-7871

Questions regarding this form should be directed according to the contact for the property in Central Berkshire, Evans, Franklin, Hampshire, Hampden, Middlesex & Worcester Counties call: 508-389-6181
Barnstable, Dukes, Dukes, Nantucket, Norfolk, Plymouth & Suffolk Counties call: 508-585-6164

June 2002

Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife
161 Division of Fisheries and Wildlife
1 Raleigh Hill Road
Westborough, MA 01581
www.nhesp.org

Blue-spotted Salamander
Ambystoma lateralis

State Status: Species of Special Concern
Federal Status: None

Description: The blue-spotted salamander is a slender salamander with short limbs, long digits, and a narrow, rounded vent. It has blue to black dorsum with brilliant sky blue spots or speckles on the lower sides of the body under the extension of the spines quite dense and numerous of orange blue dorsal spots and blotches. The ventral surface is a pale grey with black pigmentation surrounding the vent. The tail is long and broadly compressed averaging 40% of the total body length. Adult range from 4.0 to 5.3 inches (10 to 14 cm) in total length.

Dispersing the one of this species is easier than during the breeding season, when males are identifiable by a reddish cast skin caused by enlarged dorsal glands. Additionally, the larvae are also difficult to differentiate from other *Ambystoma* species; larvae are olive green to black and have a long dorsal fin that extends from behind the head along the back and tail.

Hybrid species: The blue-spotted salamander is a member of the *Ambystoma* - blue-spotted complex (*Ambystoma* cf. *polynebulosum* - *A. lateralis* complex). *Ambystoma* (*A. polynebulosum*) and blue-spotted salamanders were separated by sex age populations, but after the war ended, the two species came into contact with each other and began interbreeding producing hybrid populations. The hybridization of these two species has led to the development of two complexly hybrid populations that are all polyhybrid - that is, they have multiple sets of chromosomes rather than the normal set of two (diploid). Although *Ambystoma* (*A. polynebulosum*) and blue-spotted salamanders are fairly easy to differentiate from each other, the identification of the hybrid species is very difficult to distinguish on the basis of appearance alone. Typically, identification can only be completed through chromosome counts or use of mtDNA cells in conjunction with DNA control sequences. Thus,

though these two hybrid populations have been formally named as the *Silvery salamander* (*Ambystoma polynebulosum*) and the *Trembling salamander* (*Ambystoma lateralis*), the hybrid salamanders are simply referred to as the *Ambystoma* / *Ambystoma* complex salamander.

When the *Ambystoma* - blue-spotted complex hybrid is present in an area, they may outnumber the blue-spotted or *Ambystoma* (*A. lateralis*) salamanders by a 2:1 margin. A population with many more females than males is a good indicator of the presence of hybridization of these species. The main population of the *Ambystoma* (*A. lateralis*) complex, species is obtained from male hybrids in Massachusetts and New York, but no genetic interbreeding occurs. However, additional hybrid forms such as spotted males and striped and spotted females have been found, indicating that some hybridization genetic material from two parents.

The members of the complex form a continuum to appearance from the ground-surface coloration, pale blue backs, and wide dorsal of the *Ambystoma* (*A. lateralis*) to the black-black coloration, prominent blue spots, and narrow dorsal of the blue-spotted salamander.

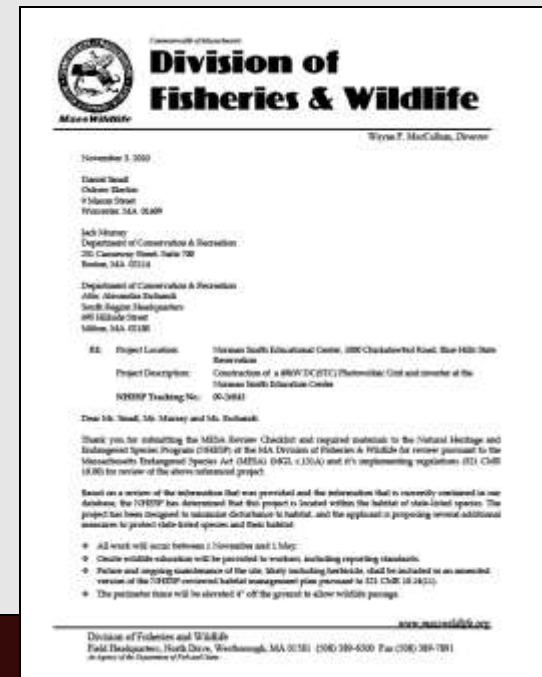
Range: The range of the *Ambystoma* (*A. lateralis*) and blue-spotted salamanders overlap in New England. Populations of pure blue-spotted salamanders therefore occur north of the hybridization zone with *Ambystoma* (*A. lateralis*). The area of populations of pure blue-spotted salamanders and hybrids extends from the Canadian Maritime

MESA Permits

- Filing form
- Filing fee based on disturbed acreage (\$300)
- Within 30 days of receiving a filing the NHESP will provide a response letter indicating whether or not the submission is complete
- If complete, the NHESP will provide a determination letter within 60 days of the date of posting of the first letter (order of condition)



The image shows a 'MESA PROJECT REVIEW CHECKLIST' form. At the top, it says 'MESA PROJECT REVIEW CHECKLIST' and 'MESA Project Review Checklist'. Below that, it says 'Checklist Information'. The form is divided into several sections, each with a heading and a list of items to be checked. The sections are: 1. Project Location, 2. Applicant, 3. Project Description, and 4. Project Management. Each section has a list of items with checkboxes next to them. The form is filled out with handwritten information.



The image shows a letter from the 'Division of Fisheries & Wildlife' in Massachusetts. The letter is dated November 3, 2000. It is addressed to 'David Small, Outdoor Director, 9 Moore Street, Worcester, MA 01609'. The letter is from 'Jack Murray, Department of Conservation & Recreation, 300 Cameron Street, Suite 700, Worcester, MA 01614'. The letter is about a project located at '1000 South Educational Center, 1000 South Educational Center, Worcester, MA 01609'. The project description is 'Construction of a 1000 South Educational Center and a 1000 South Educational Center'. The NHESP Tracking No. is '00-0841'. The letter discusses the project's location, the project description, and the NHESP Tracking No. It also mentions that the project is located within the habitat of state-listed species and that the project has been designed to minimize disturbance to habitat and the applicant is proposing several additional measures to protect state-listed species and their habitat. The letter concludes with a list of conditions that must be met for the project to proceed.

MESA Exemptions and Emergencies

321 CMR 10.14-10.15 (Summary; Reg provided)

- Agriculture/Aquaculture
- Non commercial forest management activities
- Construction, repair, removal and replacement of buildings within same footprint, storm water basins, hydrant pipe systems, paved roads, etc.
- Management of vegetation and/or state listed wildlife habitat provided that there is an approved Habitat Management plan

Habitat Management Plan Exemption

Trail planning and beyond...

- If within priority habitat, submitting a park maintenance plan may be beneficial. May include:
 - Invasive species removal
 - Trail maintenance, reroutes, new trails and closures
 - Field/Grassland, vista, orchard management
 - Habitat improvements (tree planting, beach nourishment, etc)
- If within pri hab, request species info
 - combine maintenance activities with those that would benefit species
 - Include species monitoring, vernal pool certification, etc.
- Have no expiration date! If the activity is described in the plan and is approved by NHESP, you do not have to re-file
 - Can be amended to include new information, new practices, etc.
 - Amendment can be completed via a letter
 - Must obtain approval prior to commencing work

Further Considerations

- Habitat management plans are useful even for properties that do not contain priority habitat;
 - Helps plan for trail improvement, invasive removal, vernal pool certification, wildlife monitoring, etc.
 - Improved Public Perception
 - Fosters creation of partnerships
 - Provides a venue for stakeholder participation, including volunteer opportunities
 - OPDMD/ADA



Wetlands Protection Act

DEP/ Cons Coms (310 CMR 10)

- Consider that activities occurring within 100-feet of a coastal or inland wetland or within 200-feet of a perennial stream or river are governed by the Wetlands Protection Act
- If your trail activities will occur within 100-feet of a wetland or 200-feet of stream or river you **must file a "Request for Determination of Applicability" (RDA) or a "Notice of Intent" (NOI)**
- Your local Conservation Commission can explain the state regulations and local bylaws; they can also provide guidance on completing your filing.



Consider Cultural Resources

- Minimize impact to sites, structures, buildings, landscapes, districts, and objects that are significant in history, prehistory, architecture, archaeology, engineering, and/or culture;
- State or National Register of Historic Places
 - 50+years
 - <50yrs if culturally significant
- Most Pertinent Regulatory Agencies:

Cities/town Bylaws

DCR

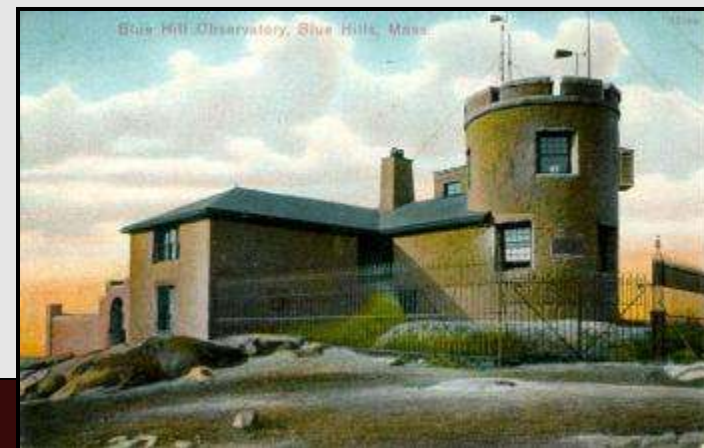
MHC (Chapter 9)

FHC (s.106)

USDOT

NPS

MEPA



Cultural and Historic Resources- MHC

Regulatory Requirements

- Any projects that require funding, licenses, or permits from federal and/or state agencies*
 - Project Notification Form (PNF)



900 CMR, OFFICE OF THE SECRETARY OF THE COMMONWEALTH
APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
100 ARCHBISHOP'S HOUSE
DORSET, MASS. 01923
813-721-8470, FAX: 813-727-3118
PROJECT NOTIFICATION FORM

Project Name: _____
Location: Address: _____
City / Town: _____
Project Purpose: _____
Title: _____
Address: _____
City/Town/Zip/County: _____
Agency's Division of Authority for the project (if it involves, person, supervisor, agent or other authorized field staff) from state architecture agencies: _____
Agency/Date: _____ Date of Review on Form (if any): _____

Project Description (as written): _____

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition. _____

Does the project include rehabilitation of any existing building(s)? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation. _____

Does the project include new construction? If so, describe which plans and drawings, if any, are used. _____

03/09 (Revised 7/11) - revised 900 CMR - 275

*** Includes soil disturbance- tree plantings, trail maintenance, sign installation**

MHC Process

- By law, the MHC has 30 days from the receipt of a Project Notification Form (PNF) to comment on the agency's actions.
- MHC can make a determination of no effect, no adverse effect, adverse effect, or they can request further information.
- Potential requirements:
 - Monitoring of excavation
 - Archaeological reconnaissance survey
 - Intensive archaeological survey



Further Considerations

- When planning trail and/or other maintenance projects, consider :
 - Protecting the cultural history of the land including its stonewalls, landscape, wells, cellar holes, buildings, foundations, etc
 - Minimize soil disturbance (cut at base, build and backfill, etc)
 - Don't forget Rail Trails and unique Railroad features!



Massachusetts Regulatory Review

- Will any work occur within 200 feet of a stream or river or within 100 feet of a wetland?

If yes, contact your local conservation commission for help preparing an RDA or NOI.

- Does the project area intersect with any Priority Habitat Area?

If yes, file a MESA Project Review Checklist with the NHESP.

- Will the project disturb any soil and will it occur on state property or be funded with state and/or federal funds?

If yes, file a Project Notification Form with the MHC.

Putting it all together

- Copies of NHESP and MHC Forms
- Sample MESA Permit and Approval
- Vernal Pool Certification Guidelines
- Sample Approved Habitat Management plan
- Sample DRAFT Trail plan

Useful links

- **Regulatory Agencies:**
 - NHESP: <http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm>
 - DEP: <http://www.mass.gov/dep/>
 - MHC: <http://www.sec.state.ma.us/mhc/>
 - DCR: <http://www.mass.gov/dcr/>
 - Trail Guidelines:
http://www.mass.gov/dcr/stewardship/greenway/docs/DCR_guidelines.pdf
 - Trails/ADA:
<http://www.americantrails.org/resources/accessible/index.html>
[ml ADA:](#)

Questions? Comments?

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