2025 Massachusetts Envirothon

Community Engagement Award

Research & Action Checklist

The Mass Envirothon Community Engagement Award recognizes your team's research and action related to the Mass Envirothon Current Issue. To meet the standard for the award, your team must

• Work together to complete the checklist by end of the day, Thursday May 15
• Bring yourselves and examples of your experiences to a zoom interview with a group of Envirothon volunteers

Use this Checklist to document three kinds of experience:

  RESEARCH: Show that you have investigated a range of in-person and secondary resources.

  ACTION: Show that you have taken ideas and connections from your research and put them to work to benefit your community.

  REFLECTION - Share insights and perspectives from your research and action.

Completing this Checklist can help you prepare for your Current Issue presentation on Forest Stewardship: Resilience for a Changing Climate at the 2025 Envirothon competition.

Here is an outline of the tasks on this Checklist:

Research
1. Places - Become familiar with at least three forest areas.
2. People - Interview at least three people involved with trees and forests.
3. Tree/forest education resources - Recommend three online and one in-person resource you found.
4. Summary - State the main points you make in your Current Issue presentation at the Envirothon.
Action!

5. How you are taking action - Describe your project as you would for the local news media.
6. Community connection - Include a letter or email from your community partner.

REFLECTIONS. These items IN BLUE are sprinkled throughout the Checklist. They are your team's opportunity to put into writing the insights and informed opinions you gained from your experiences. Consider all the reflection items and RESPOND BRIEFLY TO FIVE that resonate most with your experience. You may respond to more than five. You may also devise your own reflection questions. In any case, be ready for a conversation!

TECHNICAL DETAILS: To certify your Community Engagement Award, you must:

 * Make a copy of this Checklist google sheet, then rename it adding your team name.

 * Share with your team and complete the Checklist items, including all research, all action, and at least five reflection items.

 * Make a copy of the Community Engagement Award Registration google sheet, and rename it adding your team name, and fill it out.

 * Share the completed Checklist, Registration sheet, and any additional attachments with wsnyder@umass.edu by end of day Thursday, May 15.

 * Bring yourselves, and examples of your community engagement, to an interview via zoom. This will be scheduled for a time convenient for your team sometime in the week of the competition.

Questions? Contact Will Snyder, wsnyder@umass.edu or 413/387-2371.

Name of your School/Organization/Team

Doherty Memorial High School Envirothon Team

Name of the municipality(ies) you are researching

Worcester

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RESEARCH

This is your chance to show that your investigations have been wide-ranging and rigorous. The checklist allows YOU to choose the direction and depth of your research. You may decide to pursue your own tasks that take you deeper, or in different directions. If your team departs from this checklist, be ready to make your case for how your work qualifies for the award.

1. PLACES: Trees grow all around us in Massachusetts, in a variety of places under a wide range of conditions. You could say we live in the forest!   The first step in finding the right relationship with trees and forests is to get to know them.

How should you choose the forest places you will get to know? What widely differing examples of forest can you find in your community? Look for places that demonstrate the diversity of type, ownership, uses, potential uses, public interests, and private interests that may be found in your community. **Consider: Streetscapes. Urban wilds and edges. School grounds. Parks. Working forests. Protected open space. Home landscapes and house lots. Wetlands.**

If you are participating in the Harvard Forest's Schoolyard Long Term Ecological Research, your study plot could be one of these. You might also find places using your municipality's Open Space and Recreation Plan (OSRP), which identifies town open spaces and plans for their acquisition and use.

To respond to the questions below, your team will need to spend time observing and getting to know each of these places (perhaps investigating the soil, water, wildlife, and water elements of each place). You are encouraged to visit with a person who knows the place well. For each place you choose:

•   Locate the place on a map. How large is it? What is the topography? What is its relationship to water and other forest areas?
•   How would you describe this place if you were a forester? an ecologist? a poet? a real estate developer? an outdoor recreation specialist? an environmental advocate? What would you pay attention to, and what words and concepts would you use?
•   What ecosystem services are represented here?
•   What do we know about the history of this place? Who lived here 500 years ago? 150 years ago? What mattered to them about the land?
•   Are these trees and their ecosystem under stress? Are they exhibiting "resilience"? How do you know?
•   What is your community's current relationship to this piece of land? Who "owns" these trees and their ecosystem? Are they protected in some way? How? Who has responsibility for decisions about protection and use? Who cares about them, and how does that show?
•   What role (if any) might this place play in meeting the goals of Massachusetts' Forests as Climate Solutions plans?

We became familiar with (at least) THREE local "forest" areas:

Area #1

Place name (if any)

Newton Hill

Use a mapping app or cell phone to get latitude & longitude.

Latitude:

42.26952 N

Longitude:

71.82091 W

In a brief paragraph, describe the place as a forester would describe it, including location/size, topography, forest age and species composition. Provide information about the ecosystem services it represents.

Newton Hill is a hill! The summit is in the middle of the park. It's a small forested area, surrounded by city streets with homes, businesses and schools. The forest at Newton Hill is a young forest. Around 1900 there were NO trees on Newton Hill. Now, there is a mix of species: red oak, white oak, white oak, white pine, gray birch, hemlock, beech, and black cherry. Ecosystem services provided include recreation (disc golf, walking and hiking, dog-walking, fitness trail, cross-country skiing, cross-country running, sledding. The corner of the park includes tennis courts and a basketball court. Newton Hill also provides habitat for birds, squirrels, chipmunks, coyotes, mice, bunnies, insects, deer. The trees provide shade, cooling, cover, and prevent soil erosion.

Why did you choose this place? Describe how you learned about it and things that YOU think are most important to know about it.

It's in our backyard. It's a convenient spot for us to visit frequently, and this is why we decided to locate our 10m x 10m forest study plot here.

What is the community's responsibility here? In 2-3 sentences, state your opinion on whether, why, and how this place should be protected and/or used, and what stewardship practices should be in place.

Newton Hill is part of Elm Park, a city park, so the city does provide some care. The Friends of Newton Hill are the major stewards of the Hill, maintaining the trails and mowing the summit, and sponsoring trash pick-ups

Area #2

Place name (if any)

Foster's Gorge/Tetasset Ridge

Use a mapping app or cell phone to get latitude & longitude.

Latitude:

42.27155 N

Longitude:

71.85773 W

In a brief paragraph, describe the place as a forester would describe it, including location/size, topography, forest age and species composition. Provide information about the ecosystem services it represents.

The combined GWLT properties in the area (near Airport Hill, off Mill Street) make up about 500 acres. It is a young forest with many tree species present incouding paper birch, silver birch, oak, spruce, hemlock, white oak, black cherry, and black locust. The oldest trees are oak. Ecosystem services provided include habitat and nesting sites for wildlife, recreation opportunies like hiking and bird-watching, improved water quality at Coes Reservoir Beach downhill, soil conservation and erosion prevention, shade/cooling, and food! (Berries, applies, and other native edibles.)

Why did you choose this place? Describe how you learned about it and things that YOU think are most important to know about it.

This is one of many properties that GWLT own/manages. We found it on the GWLT website and were interested partly because of the part called "God's Acre" that was deeded to God in 1840. On our hike, we didn't quite make it that far! People should know that just a few minutes walk from Mill Street leads to trails through a nice wooded area with a gorge.

What is the community's responsibility here? In 2-3 sentences, state your opinion on whether, why, and how this place should be protected and/or used, and what stewardship practices should be in place.

This area is one of the Greater Worcester Land Trust's properties. The trails are open to the public. There is some trash and some mis-use by dirt bikers. GWLT does use staff and volunteers to clean up and maintain their properties.

Area #3

Place name (if any)

Hadwen Arboretum

Use a mapping app or cell phone to get latitude & longitude.

Latitude:

42.26842 N

Longitude:

71.82114 W

In a brief paragraph, describe the place as a forester would describe it, including location/size, topography, forest age and species composition. Provide information about the ecosystem services it represents.

Hadwen Arboretum is a 26 acre wooded area at the corner of May and Lovell Streets.

Why did you choose this place? Describe how you learned about it and things that YOU think are most important to know about it.

We chose this place partly because it is not far from our school. There are over 66 species of trees identified, and there is a community garden at the top of the hill.
The arboretum fell into disrepair in the 2010's while it was solely managed by a club of Clark students; lots of trash, hazardous trees, and overgrown trails, however in 2019, Worcester residents complained and a new Urban Forestry course was put in place that has really helped clean the place up. There is also a new group of student volunteers that are helping to maintain the area.

What is the community's responsibility here? In 2-3 sentences, make a brief case for whether, why, and how this place should be protected and/or used, and what stewardship practices should be in place.

Fortunately, the Clark community is taking responsibility but making the space available to all for walking, learning, and gardening. They are working to address invasive species in the area and even have plans to build a nature center.

Area #4 (This is beyond the requirement. Bravo!)

Place name (if any)

Harvard Forest (in Petersham)

Use a mapping app or cell phone to get latitude & longitude.

Latitude:

42.531762 N

Longitude:

72.189828 W

Harvard Forest is located in Petersham, MA. It includes over 4000 acres. It is fairly flat, with some wetlands, including a black gum swamp. The forest is young, as the hurricane of 1938 knocked down about 75% of the trees. Now there are a variety of tree species, including white pine, white and red oak, hemlock, paper birch, beech, and black gum (tupelo.). Ecosystem services include air quality and oxygen production, soil regeneration, improvements to water quality, carbon sequestions. Also, great habitat for species like moose, deer, bear, and birds. For humans, Harvard Forest provides recreation and education opportunities. The buildings on site are heated by wood from the forest.

We learned about this place from the Envirothon workshop presentation about the opportunity to participate in "Our Changing Forests." There are many scientific studies going on, and anyone (from the public) can propose a research project!

Harvard University owns and takes care of Harvard Forest. It should be protected because there are various of research that occurs in the plot and it is a very beautiful place to hike and protect.

REFLECTION: We were surprised to learn about this OBSTACLE to protection/conservation/stewardship efforts in our community:

REFLECTION: The most DISTRESSING example we saw of a LACK of natural resource (soil, water, forest, wildlife) protection/conservation/stewardship was this:

REFLECTION: The most HOPEFUL example we saw of natural resource (soil, water, forest, wildlife) resilience was this:

The most hopeful example we saw of natural resource resilience at Harvard forest and the work they were doing with New England soil and extreme precipitation giving knowledge to the public on climate change and providing ideas on what the kind of work they do to help the environment with their research programs.

REFLECTION: Of the places we investigated, we think this place (identify the place) has the most potential to contribute to Massachusetts Forests as Climate Solutions, and this is why:

We think that Harvard Forest has the most potential to contribute to Massachusettes Forests as Climate Solutions. Harvard forest already has many experiments set up to measure and test various things having to do with our climate. We think that Harvard Forest is a great place to learn more about solutions to climate change, and even more experiments could be set up on the future in order to move towards climate goals. Like Newton Hill and Tessaset Ridge, Harvard Forest is open to the public. However, it is more out of the way, so it would be better to research there with less of a risk of having the research interferred with.

2. PEOPLE: There are more people than you may expect who have knowledge and informed opinions about trees and forests in your community! For many, working with local trees and forests is officially part of their job.

First-hand connections with people are likely to be your BEST sources of information. Use them to introduce you to the trees and forests of your community. Also use them to check information that you read on the internet. **More people interviewed = a more well-rounded perspective on tree and forest questions!**

Who are these people, and where can you find them? What perspectives, skills and knowledge, and goals do they have? How did they come to do what they are doing - what experiences and education do they bring?

Town government - Who has responsibility for trees, forests, and related ecosystem services? Some possible starting points:
•	 Conservation Commission (or the Conservation Agent who works for them
•	Tree Warden
•	Open Space and Recreation Committee
•	Planning Board
•	Watershed manager
•	Parks Commission

Other organizations and individuals:
•	Land Trusts
•	Volunteer/advocacy groups
•	Professionals (e.g. foresters and arborists)
•	Indigenous people whose ancestors stewarded this land hundreds of years ago
•	Other long time residents who have seen the landscape change

We interviewed (at least) THREE people involved with trees and forests in our community, representing a wide range of roles, backgrounds, and perspectives (These people may be listed elsewhere in this checklist. Interviews may be in person or via video link. Collect the following information about each person):

Name #1

Colin Novick
Organizational affiliation (if any)
Greater Worcester Land Trust
Contact phone or email
Colin@gwlt.org
Their expertise or special interests/concerns related to trees and forests
Executive Director, GWLT
What they do, day-to-day, to further forest conservation
Colin interacts with the community to raise funds, coordinates projects, educates the public, advocates for land conservation. He oversees all of the staff and operations of the GWLT.

Name #2

Amanda Leifer and Shira Davis
Organizational affiliation (if any)
Studio 2112 Landscape Architecture
Contact phone or email
ALeifer@studio2112la.com

SDavis@studio2112la.com

Landscape architects create the design for the exterior of new buildings (like our new school), working with engineers, especially civil engineers. They design the "hardscape" and work to make the interior and exterior spaces work well together. They include trees and other plants types (shrubs, grasses, etc) in designing the exterior spaces of building projects.

What they do, day-to-day, to further forest conservation

When they determine the plantings, it's not an afterthought! For the new Doherty site, they tried to include as many native species as possible, but the presence of ALB and other invasive species in Worcester limits the plantings; they couldn't include birch, maple, elm, or ash. Their design included 300 trees, about 200 of which have been planted so far. There was a commitment to add as many trees as were removed in construction.

Name #3

Adlai Nelson

Organizational affiliation (if any)

Clark University graduate student

Contact phone or email

AdlaiNelson123@gmail.com

Their expertise or special interests/concerns related to trees and forests

Adlai Nelson is a student in the MS Geographic Information Science program at Clark University. She received her undergrad degree in Global Environmental Studies from Clark. She has experience in remote sensing for forest monitoring.

What they do, day-to-day, to further forest conservation

Adlai is part of a volunteer group that is working to maintain and restore Hadwen Arboretum.

Name #4 (This is beyond the requirement. Hooray!)

Katharine Hinkle

Organizational affiliation (if any)

Harvard Forest

Contact phone or email

katharinehinkle@fas.harvard.edu

Their expertise or special interests/concerns related to trees and forests

Katharine is the Manager of Youth Education at Harvard Forest.

What they do, day-to-day, to further forest conservation

Katharine is working with Envirothon Teams this year to encourage their participation in the long-term data collection program called "Our Changing Forests."

REFLECTION: We think this person's (name the person) work is especially important for assuring a healthy, resilient future for trees and forests, and for people, and this is why:

Katharine Hinkle runs education programs at Harvard Forest, so she reaches a lot of young people. She loves her work, and is an enthusiastic leader and mentor for students. Her work this year to help Envirothon Teams participate in the "Our Changing Forests" program will spark a lot of interest in the youth involved and will provide new data sets for the long-term data collection project.

REFLECTION: We think (name the person) is especially effective at mobilizing missing voices around tree and forest issues in our community, and this is why:

REFLECTION: We were inspired by this example of ACTION for tree and forest conservation in our community:

REFLECTION: We encountered this genuine, honest difference of opinion on tree and forest protection/ conservation/stewardship in our community:

3. RECOMMENDATIONS FOR TREE/FOREST EDUCATION

We found that these THREE websites are especially good resources for well-presented, accurate information about the protection/conservation/stewardship of trees and forests, with particular relevance to **forests as climate solutions** in Massachusetts. We have evaluated these using the SIFT method or other resources and recommend them as background for people who want to take action.

These are our **TOP THREE (ONLY THREE)** recommendations. (Provide URLs to guide the reader to the particular page you most recommend as a resource):

Website/page #1 URL:
https://harvardforest.fas.harvard.edu/research/research-topics/large-experiments-and-permanent-plot-studies/
Ten words on how it is valuable/useful:
This source expresses accurate information on the protection of forests.

Website/page #2 URL:
Resilient Forests; https://www.massaudubon.org/our-work/resilient-lands/forests
Ten words on how it is valuable/useful:
Information for landownders about managing their forested property for forest carbon benefits.

Website/page #3 URL:
https://www.mass.gov/info-details/forests-as-climate-solutions
Ten words on how it is valuable/useful:
Provides information on statewide program promoting healthy forest in Massachusetts.

We think this IN-PERSON resource (person? place? organization? program?) offers the best opportunities, formal or informal, for people in our community to learn about trees and forests so that they can participate in decision-making and take responsible action:

Describe the resource:
Broad Meadow Brook Wildlife Sanctuary, Mass Audubon
Provide a web URL if possible:
https://www.massaudubon.org/places-to-explore/wildlife-sanctuaries/broad-meadow-brook
Twenty words on how it is valuable/useful:

Broad Meadow Brook is a 400 acre wildlife sanctuary that Worcester residents can visit for free. It is on the bus route, and WRTA buses are free. BMB offers educational programs for all ages, including WPS students who attend field trips as part of science class.

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4. SUMMARY OF OUR RESEARCH AND RECOMMENDATIONS. Below is a summary of the main point(s) of our Mass Envirothon 2025 Current Issue presentation in 3-4 sentences:

While Worcester has some large green spaces, it is a densely populated city with small potential for increasing the amount of open/conserved land. Our main recommendation is to preserve the existing green spaces. The City of Worcester does have a number of programs in place already, including the Miyawaki Forests, to add small pockets of green. Other organizations like GWLT and MassAudubon are working toward a greener Worcester.

REFLECTION: AUDIENCE. These are the specific municipal authorities and local stakeholders who have the power and/or influence to make the changes we recommend in our presentation:

REFLECTION: AN UNEXPECTED FIND! We were surprised at how important and valuable this (identify: person, place, organization, or other) resource is for our community's participation in tree and forest conservation:

An unexpected find that the team found was the No Loose Braids team that is lead by Andre SrongBearHeart Gaines Jr, listening and watching his initiative in Worcester; protecting the Nipmuc legacy and their connection to the lands of Worcester.

REFLECTION: UNEXPECTED HOPE! Of all the people, places, and online research we did, this is the thing we found that gave us the most hope (Tell us why!):

The thing that gave us the most hope was that everyone we talked had genuine enthusiasm and was serious about taking action towards our futures with climate change. The Envirothon leaders and members of various organizations that we worked with were all working towards a shared goal of having a better future for our enviroment.

REFLECTION: ANOTHER QUESTIONS we would like to answer about our research (and our answer):

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ACTION!

Action projects can be as simple as putting your research findings and recommendations into a letter to the editor or to a decision maker, or making your Current Issue presentation to an audience you would like to influence beyond the Envirothon. Many forms of action are possible: sharing your scientific research, community education (e.g. making and sharing a video, or organizing a public event), participating in an ongoing stewardship project you learned about, meeting with decision-makers to express your views, and more. Teams can plug into an existing community effort or develop a project of their own.

See these Action Resources!

5. THIS IS HOW WE ARE TAKING ACTION BASED ON WHAT WE HAVE LEARNED:

* Best approach: Write and attach a brief news release about your project and/or provide a link to photos and other documents about the work.

Letter of Support

* At least: Write a paragraph below presenting the basic facts of your project: who, what, when, where, how, and why.

This year, the Doherty Envirothon Team elected to begin participating in the program called "Our Changing Forests," coordinated by Harvard Forest. For this project, we set up a 10m x 10m plot on Newton Hill and collected data on the trees in the plot. We measured the DBH and identified each tree by species, and then tagged the trees with a metal disk. We entered our data into a data base that compiles data from 50 different sites across the northeast US. The program will help students and scientists study the role of forests in storing carbon and providing other ecosystem services as well as how forests respond to disturbances like wind storms, tornados, and hurricanes.

REFLECTION: TACTICS. There is always more than one way to reach a goal. This is why we chose the specific tactics we used for accomplishing our goal:

REFLECTION: OUTCOMES. We see these results (planned and unplanned changes, in ourselves and in the community) from our research and action:

In our community we see a lot more youth that come to help clean up the community since they see our team, which is all youth, and they don't feel discouraged that they might not be able to help out or overlooked. The community of community service helpers really enjoy seeing youth helping and see the joy helping clean up the community brings cause they see the change in environment.

REFLECTION: TEAMWORK. These are the ways we worked best as a team, and these are the ways we could improve:

As a team we've made mmense progress, thanks to help from the foresters from DCR to build our plot and get valauble knowledge on how to achieve this. Ways we could improve would be our attendence as only some team members got to experience the activity of building our plot and others did not.

REFLECTION: ANOTHER QUESTION we would like to answer about our action (and our answer):

6. COMMUNITY CONNECTION

- EITHER (best approach): Provide a copy of a letter or email from a community partner outside our school about the action you have chosen to take (Here are some tips for how to ask for a letter)

Letter writer's name:
Katharine Hinkle
Position/Organization:
Manager of Youth Education/Harvard Forest
Letter writer's email address:

katharinehinkle@fas.harvard.edu

 - **OR:** Provide a different form of evidence (Please describe):

REFLECTION: SECOND CHANCES. If we were going to do this community action over again, this is what we would do the same, and this is what we would change:

REFLECTION: WHAT'S NEXT? Based on our experience, this is the next step we recommend for ourselves or other young people in this community: