

MASSACHUSETTS ENVIROTHON



Thursday, May 16, 2013

Borderland State Park, North Easton Mass.

Welcome!

Whatever the weather, we accept the Envirothon challenge!

Every year, the Envirothon is a chance to test our knowledge and skills in the real world, outdoors.

We hold the Envirothon in a Massachusetts State Park to give you a chance to explore a landscape that we the people of Massachusetts have set aside to be protected and enjoyed by all. What state park or forest is in your neighborhood?

On the day of the Envirothon you will find that you are a part of a larger community – of young people and adults, from across our Commonwealth – who are ready to step up to improve the environment in their community. It's a good place to make new friends and connections. We've got lots of work to do.

Thank you all for making this a great year for Mass. Envirothon. Now: enjoy the day. Push yourself to do your best. And take time to enjoy the people and park around you.

Have a great day!

Will Snyder

Chair

Mass. Envirothon Steering Committee



The mansion at Borderland State Park

This Year's Registered Teams

Teams marked with an asterisk participated in this year's program but are not competing today.

- 4H Envirothon Club
- Acton-Boxborough Regional High School
- Bedford High School *
- Boston College High School
- Bristol County Agricultural High School *
- David Prouty High School
- Doherty Memorial High School
- Greater New Bedford Regional Vo-Tech High School
- Greenfield High School
- Hopkinton High School
- Leicester High School
- Lexington High School
- Millbury Jr. Sr. High School
- Monson Environmental Action Team
- New Mission Academy
- Newton North High School
- Nipmuc
- Oliver Ames High School
- Pioneer Valley Regional School
- Quabbin Regional High School
- R.C. Mahar Regional High School
- Reading Memorial High School
- Rockport Environmental Action Team
- Somerset Berkley Regional High School
- South Hadley High School
- Southeastern Regional School District
- Springfield Central High School
- Sutton High School
- Taconic High School *
- Tantasqua High School
- TechBoston Academy
- Weston/Land's Sake
- Worcester South Community High
- Worcester Technical High School



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Schedule

7:30 - 8:30	Registration for volunteers and judges Registration for teams. Teams will be assigned to their stations and presentation time. Team pictures
8:00	Orientation for volunteers and judges
8:30 - 8:45	WELCOME and announcements
9:00 - 10:05	First period
10:15 - 11:20	Second period
11:30 -12:35	Third period
12:35 - 2:00	LUNCH
12:45 - 1:45	Roundtable discussions Stations and exhibits open Visit the U.S. Fish & Wildlife Service's Watershed on Wheels Visit the Student Conservation Association information table
1:45	Group photo Evaluation surveys
2:00	Announcement of Community Awards, Current Issue winners and partial station results




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Massachusetts Envirothon Steering Committee

Will Snyder	<i>Chair, Massachusetts Envirothon Committee</i> University of Massachusetts Center for Agriculture/Extension
Susan Sacco	<i>Vice Chair, Massachusetts Envirothon Committee</i> Massachusetts Division of Fisheries and Wildlife (MassWildlife)
Doris Wood	<i>Treasurer/Secretary, Massachusetts Envirothon Committee</i>
Tom Anderson	Massachusetts Executive Office of Energy and Environmental Affairs
Joe Perry	Massachusetts Department of Conservation and Recreation
Clif Read	Massachusetts Department of Conservation and Recreation
George Zoto	Massachusetts Department of Environmental Protection
Matthew Goode	Suffolk County Conservation District

Non-voting Steering Committee Members

Al Averill	USDA Natural Resources Conservation Service
Meg Colclough	Executive Office of Energy and Environmental Affairs
Bill Dunham	Belmont Enterprises
Kelley Freda	Massachusetts Department of Conservation and Recreation
Dan Giza	Alden Research Laboratory, Inc.
Pam Landry	Massachusetts Division of Fisheries and Wildlife (MassWildlife)
Julie Martin	Massachusetts Department of Conservation and Recreation
Liz McGuire	Middlesex Conservation District
Dominique Pahlavan	Executive Office of Energy and Environmental Affairs
Diane Baedeker Petit	USDA Natural Resources Conservation Service

Brita Dempsey *Massachusetts Envirothon Coordinator*

Station Coordinators/Curriculum Specialists

Al Averill	USDA Natural Resources Conservation Service
Kelley Freda	Massachusetts Department of Conservation and Recreation
Pam Landry	Massachusetts Division of Fisheries and Wildlife (MassWildlife)
Dominique Pahlavan	Executive Office of Energy and Environmental Affairs
Joe Perry	Massachusetts Department of Conservation and Recreation
Clif Read	Massachusetts Department of Conservation and Recreation
Will Snyder	University of Massachusetts Center for Agriculture/Extension
George Zoto	Massachusetts Department of Environmental Protection

What happens at an Ecostation?

At the Massachusetts Envirothon, teams rotate through four ecostations, in addition to giving their Current Issue presentation. Each ecostation has a different emphasis: forestry, soil, water and wildlife.

When students arrive at each ecostation, the examiners instruct them to get into their distinct teams. Teams listen to examiners for a brief time to become familiar with that station, its questions and any other special instructions.

It's then up to the team to determine their strategy in taking the exam. They can break up and use individual strengths (for example, one or two people focus on species ID, while the others do the written section), or go through the exam as a team.

The ecostations generally incorporate questions that are:

- **Written** - multiple choice, true or false, or fill-in-the-blank.
- **Practical** - This may include species identification, questions that relate to the soils or habitat surrounding the station, and hands-on activities.



Meet Our Host Site

Borderland State Park



Leach Pond

Borderland State Park is one of the most historically significant tracts of publicly owned land in the Commonwealth. Created in the early 1900s by artist and suffragist Blanche Ames and her botanist husband Oakes, Borderland offers many of the same pleasures that the Ames family enjoyed: walking and horseback riding on woodland trails, fishing and canoeing in the ponds, or, in winter, ice-skating and sledding.

In 1906, Oakes and Blanche Ames purchased land on the border of Sharon and Easton. The country estate they named “Borderland” remained in the family for 65 years. In 1971, two years after the death of Blanche Ames, the Commonwealth of Massachusetts acquired the estate and opened it as a state park.

The family’s home, a three-storey stone mansion built in 1910, still stands. Its 20 rooms are furnished much as they were when the Ameses lived here; many of Blanche Ames’ paintings grace the walls.

Borderland encompasses 1773 acres of woodlands, fields, ponds and unique geological formations. The park lies between gradually rising hills to the north and much flatter land to the south. The result is a mix of habitats, supporting a rich variety of wildlife.

There are three major ponds at Borderland and several smaller bodies of water. Lower Leach is 100 acres in size, created in 1825 to create water power for an iron works further downstream on the Poquanticut Brook.

Pud’s Pond was created by the Ames family in 1906 and named after Blanche’s father. When walking next to the spillway you can see the white roads inlaid in the dam when it was repaired in 1926. Upper Leach Pond was created in 1939 for wildlife habitat and recreation.

The glaciated cliffs and outcroppings make the geology of Borderland unusually interesting. Throughout the park are examples of glacial “erratics,” granite boulders that were torn loose from the bedrock and deposited some distance away. Glacial riverbeds are strewn with a multitude of boulders and stones. These areas are evidence of the ferocious energy produced by the run-off from melting glaciers.

Much of the “natural” beauty of Borderland is, in fact, the result of human activity. The ponds, fields, stone walls, and pathways reflect a long history of agricultural and industrial use. Without continued management, the fields would return to forests and the ponds would become marshes and swamps.

Borderland’s earliest human inhabitants were Native Americans. The park’s land marked the territorial boundary between the Massachusetts and Wampanoag tribes, giving added significance to the name Borderland. Both tribes hunted and fished here before the first white settlers arrived in the 1690s.

Throughout the nineteenth century, farming was the main activity at Borderland. Stone walls, now enveloped by woods, once divided cleared fields. ♦

Roundtables

When the testing is over, everyone is invited to unwind, meet new friends from across the state, and share community and environmental connections at the Roundtable discussions.

Roundtables are freewheeling, small-group discussions about a place, a question, or an idea of your choice.

Every team is invited to bring their presentation materials and start a conversation about what they have found in their communities. Community Award teams are especially encouraged to offer a roundtable.

Here’s how it works:

- For each team that wants to offer a roundtable, two or three “home team” members share their team’s topic with three or four visitors.
- The place buzzes with ideas, opinions, and concerns as each home team presents their topic and visitors offer their own questions and views.
- Every 5-10 minutes, visitors leave one table, move on to another, and the process begins again. Team members take turns sitting at the home table and visiting other tables.

EVERYONE is welcome to visit the roundtables!



The park has large glacially transported boulders weighing over a million pounds.

Trees, Forests, and Sustainability

We live in the forest. The Massachusetts landscape has been dominated by forests since soon after the last ice age. Even today, land left open soon reverts to forest. Can you find a view in your community that does not include a tree?

Forests are the predominant ecological community in our part of the continent. If you just leave land alone almost anywhere Massachusetts, the result will be forest.

Massachusetts forests vary in species composition, age, and extent. Some are tree-lined streets and landscaped parks in cities and towns. Some are urban wilds. Others are large unbroken stretches of woodland where human habitation is sparse.

We depend on trees and forests for our well-being. The benefits we receive include not only timber and pulp and fuel wood, but also processes like water purification, pollution sequestration, and climate regulation, and also less tangible cultural, spiritual, and recreational benefits.

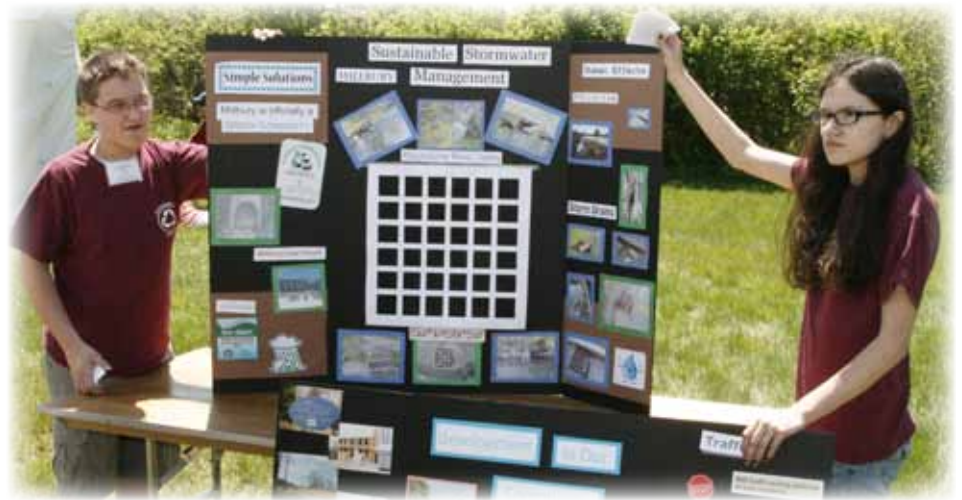
The term “ecosystem services” has emerged in recent years as a helpful way to understand and describe benefits derived from forests. Ecosystem services include traditional natural resources but also include natural functions that have value to us – like soil formation, flood control, carbon sequestration, waste treatment.

Community Awards

Teams work hard to prepare for their Massachusetts Envirothon Current Issue presentations and they deserve recognition for this work!

The Community Awards are presented to teams who do thorough and wide-ranging Current Issue research and teams that take action in a service project based on what they learn.

The Community Awards provide important visibility for teams, schools and communities. These awards are optional and noncompetitive.



Forests are communities

They are complex ecological systems, and we have only partial understanding of all the processes at work within them. We have come to understand that even cities are ecological spaces, packed with trees, vegetation, and wildlife, connected to the ecosystems of suburban and rural areas.

Forests’ ecological diversity is compounded by the many edges they share with paved and built areas, agricultural fields, bodies of water, and tended lawns. The concept of ecosystem services links human well-being to the functioning of these ecosystems. In a very real sense, we are members of the forest community.

Forests change

Forests are living things. They grow and evolve. They renew themselves over time. When they are healthy, they are resilient – able to resist damage and recover quickly.

Scientists have come to understand that change – in response to human disturbance (such as clearing or selective cutting or high-impact recreation) or natural disturbances (such as hurricane or wildfire or insect infestation) – is the normal state for Massachusetts forests.

Simply leaving forest land alone also results in change: succession happens, trees grow, species composition changes (and sometimes invasive species come to dominate), and wildlife habitat changes.

People have been making changes in Massachusetts forests since the last ice age. Many of us are familiar with the cycles of clearing and reforestation since European settlement, but Native Americans also altered the forest for centuries before this, often with fire, to improve conditions for hunting and foraging. Climate change presents a new and severe threat to forests because the scale and speed of change may overwhelm forests’ capacity to adjust.

Conservation is critical for sustainability

What does “sustainability” mean for forest ecosystems in Massachusetts? As human activity strains natural resource limits, and particularly as climate change transforms our world, we need new knowledge and skills and commitment to treat this home well.

How it works

Teams make their presentations to a panel of about eight judges. The judge’s job is to listen, ask good questions, assess the team’s work, and give feedback on their research, their proposal, and their presentation.

Teams have 15 minutes for their presentation, followed by 10 minutes when the judges can ask questions. Five of the judges will give the team a number score, while the others focus on providing written comments. An average score will be generated for the competition. ♦

Current Issue Presentation Judges

Judges as of May 14, 2013



Paul Barten, Ph.D., UMass Dept. of Environmental Conservation

Kathleen Baskin, P.E., Executive Office of Energy & Environmental Affairs

Whitney Beals, New England Forestry Foundation

Linda Benevides, Executive Office of Energy & Environmental Affairs

Jani Benoit, Ph.D., Wheaton College - Chemistry

Kim Bent, Catch The Science Bug

George Buckley, DCE - Harvard University

Lisa Capone, Mass. Dept. of Energy Resources

Jennifer Carlino, Town of Norton

Wendell Cerne, Mass. Science Education Leadership Assoc.

Warren Chamberlain, State Commission for Conservation of Soil, Water, & Related Resources

Priscilla Chapman, Mass. Audubon Society

Peter Church, Mass. Dept. of Conservation & Recreation

Dan Clark, Mass. DCR - Division of Water Supply Protection

Michael Clark, Satuit Consulting, Inc.

Neil Clark, The Writing Company

Christine Clarke, State Conservationist, USDA Natural Resources Conservation Service

Susan Cox, USDA Forest Service

Nina Danforth,

Paula Davison, Mass. Dept. of Conservation & Recreation

MaryAnn DiPinto, Mass. Dept. of Environmental Protection, Wetland Program

Christy Edwards, Mass. Dept. of Fish & Game

Linde Eyster, Mass. Assoc. of Science Teachers

Nancy M. Eyster-Smith, Ph.D., Bentley University

Christy Foote-Smith, Mass. Audubon - Drumlin Farm Wildlife Sanctuary

Priscilla Geigis, Director, Mass. Dept. of Conservation & Recreation - State Parks & Recreation

Michele Girard, Mass. Assoc. of Conservation Commissions

Ann Gisinger, Environmental Business Council of New England

Harrison Goldspiel, Brandeis University

Ken Gooch, Mass. Dept. of Conservation & Recreation - Forest Health

Dolores Alleyne Goode, Ph.D., Lesley University

Steven D. Goodwin, Dean, UMass College of Natural Sciences

Michele Grzenda, Mass. Assoc. of Conservation Commissions

Christine Hatch, Ph.D., UMass Dept. of Geosciences

John Hayes, Ph.D., Salem State University - Geography

William Hill, Mass. Dept. of Conservation & Recreation - Bureau of Forestry

Ellie Horwitz, MassWildlife - retired

Erin Jacque, BSC Group

Vanessa K. Johnson, Essex County Greenbelt Assoc.

Gerard Kennedy, Mass. Dept. of Agricultural Resources

Kenneth Kimmel, Commissioner, Mass. Dept. of Environmental Protection

Elizabeth Kotowski, Mass. Dept. of Environmental Protection

Jeff LaFleur, Mass. Assoc. of Conservation Districts

Andrea Langhauser, Mass. DEP Waterways Regulation

Mark S. Lindhult, FASLA, UMass Dept. of Landscape Architecture & Regional Planning

Paul Lyons, Mass. Dept. of Conservation & Recreation - Water Supply Protection

Clint McFarland, USDA Animal and Plant Health Inspection Service

Ray McKinnon, Mass. Dept. of Conservation & Recreation - Blue Hills Reservation

Carl Melberg, U.S. Fish & Wildlife Service

Colin M. J. Novick, Greater Worcester Land Trust

Robert O'Connor, Executive Office of Energy & Environmental Affairs

Colleen O'Donnell, Zoo New England

Gerry Palano, Mass. Dept. of Agricultural Resources

Melissa Patterson, Student Conservation Assoc. - Massachusetts

Jane Pfister, Executive Office of Energy & Environmental Affairs

Anne Phelps, Newton Planning Dept.

Bill Pula, Mass. Dept. of Conservation & Recreation

Vandana M. Rao, Ph.D., Executive Office of Energy & Environmental Affairs

Heidi Ricci, Mass. Audubon Society

Kevin Scherer, City of Worcester

Robert W. Schrader, UMass Center for Agriculture

Glenn Stanisewski, USDA Natural Resources Conservation Service

Richard Starkey, Westbrook Farm, Greenfield

Marcia Starkey, Tower Hill Consultants

Paul Starratt, Town of Westford

Rick Sullivan, Secretary, Energy & Environmental Affairs

Christopher Szkutak,

Carol Szocik, Mass. Dept. of Agricultural Resources

Dawn Travalini, National Grid

Mary Trudeau, Wetland Scientist

Russ Waldron, Applied Ecological Sciences (AES)

Johanna Zabriskie, Mass. Dept. of Fish & Game

Tara Zadeh, Mass. Dept. of Agricultural Resources

Sally Zielinski, Ph.D., Mass. Assoc. of Conservation Commissions

Joel Zimmerman, Mass. Dept. of Conservation & Recreation - Water Supply Protection



Volunteers



Lou Adams, ALB Cooperative Eradication Program
John Aldridge, Student Conservation Association
Dan Beard, ALB Cooperative Eradication Program
Joan Boegel, Reading
Andrew Buckley, Mass. Dept. of Conservation and Recreation
Barbara Buls, Mass. Dept. of Conservation and Recreation
Deb Cary, Mass Audubon
John Clement, Middleboro
Paul Clifford, Mass. Dept. of Conservation and Recreation
Mike Downey, Mass. Dept. of Conservation and Recreation
Patricia Doyle, Needham
Bill Dunham, Belmont Enterprises
Shawn Finn, USDA Natural Resources Conservation Service
Alynda Foreman, The Louis Berger Group, Inc.
Norma Forgione, Mass. Dept. of Conservation and Recreation
Justin Gonsor, Mass. Dept. of Conservation and Recreation
David Greene, Mass. Dept. of Conservation and Recreation
Terry Hamilton, Millbury Jr./Sr. High School
Stephen Herbert, UMass Center for Agriculture
Sean Hersey, Tempe, AZ
Lynn Hildenbrand, Mass. Dept. of Conservation and Recreation
Russ Holden, Project Green Schools
Doug Hutcheson, Mass. Dept. of Conservation and Recreation



Amie Humphrey Facendola, Alden Research Laboratory, Inc.
Susan Ingalls, Mass. Wildlife
Jack Jackson, Haverhill
Melanie Joe, Mass. Dept. of Conservation and Recreation
Jim Lafley, Mass. Dept. of Conservation and Recreation
Jim Lagacy, Mass. Wildlife
Carolyn LaMarre, Taunton River Watershed Alliance
Andrea Langhauser, Mass. Dept. of Environmental Protection
Nancy Lebedzinski, ALB Cooperative Eradication Program
Rick LeBlanc, Mass. Dept. of Agricultural Resources
Sean Libby, Mass. Dept. of Conservation and Recreation
Sean Mahoney, Mass. Dept. of Conservation and Recreation
Austin Mason, Consulting Forester
Pete Mirick, Mass. Wildlife
Dan Moon, Environmental Business Council of New England
Susan Moore, Mass. Audubon Society
Brooke Mueller, Student Conservation Association
Laura Muller, Wheaton College
Paula Packard, Mass. Dept. of Conservation and Recreation
Michelle Padula, Mass. Dept. of Agricultural Resources
Ryan Pennesi, Student Conservation Association
Chuck Perna, Ashby
Les Perry, Mass. Dept. of Conservation and Recreation
Kyle Plummer, Student Conservation Association
Judy Reilly, Bristol-Myers Squibb
Susan Reyes, Science and Sustainability Education for Everyone
Glenn Rosenholm, U.S. Forest Service
Mike Sawyers, Mass. Wildlife
Allyson Schaeffer, Student Conservation Association
Jennifer Schafer, Mass. Dept. of Conservation and Recreation
Ellenor Simmons, Mass. Dept. of Conservation and Recreation
Dwight Sipler, owner, Small Farm
Joe Smith, Mass. State Comm. for the Conservation of Soil, Water, & Related Resources
Jennifer Soper, Mass. Dept. of Conservation and Recreation

Gini Traub, Mass. Dept. of Conservation and Recreation
Lisa Trotto, Worcester County Conservation District
Catherine Ulitsky, USDA Natural Resources Conservation Service
Rich Valcourt, Phillipston
Rich Valcourt, Jr., Consulting Forester
Amanda Walker, U.S. Fish & Wildlife Service, Watershed on Wheels
Kristina Wiley, USDA Natural Resources Conservation Service
Dave Williams, Middlesex County Conservation District
Amy Wilmot, Mass. Dept. of Conservation and Recreation
Dean Withrow, Friends of Disc Golf at Borderland
Jan Wright, Friends of Assabet River NWR and Friends of Oxbow NWR
Sara Wyatt, Student Conservation Association



Student Volunteers

Millbury Junior/Senior High School

Meg Andresano	Robert Johnson
Kim Aurelio	Evelyn Joyce
Marissa Belaska	Shannon Latour
Tiana Benton	Kati LeClaire
Tim Bernard	Mark LeClaire
Taylor Caforio	Hannah Lynch
Nicole Chionchio	Ben Miles
Gina Chionchio	Allison Murray
Heather Daly	Ryan Pelchat
Renee Francolini	Alex Peterson
Merrie Gardner	Victoria Prominski
Rebecca Haynes	Kristina Pulaski
Khanh Huynh	Courtney Schultz
Liz Irr	Nicky Wright

While you're here...
 Be sure to visit the U.S. Fish & Wildlife Service's Watershed on Wheels, a.k.a. the WOW Express!



Site Map | Borderland State Park

Thank you to our sponsors!

Borderland State Park

Host of the 2013 Massachusetts Envirothon

Ellenor Simmons, Park Supervisor

and thanks to all the Massachusetts Department of Conservation and Recreation staff who made this event possible.

The Massachusetts Envirothon is a program of the Massachusetts State Commission for Conservation of Soil, Water & Related Resources.

Our work would not be possible without contributions of time, resources and funding from a variety of donors, including:

Alden Research Laboratory, Inc.
Berkshire Conservation District
Big Y Foods, Inc.
Cape Cod Conservation District
Environmental Business Council of New England
Hannaford Supermarkets
Massachusetts Association of Conservation Districts
Massachusetts Department of Conservation and Recreation
Massachusetts Department of Environmental Protection
Massachusetts Division of Fisheries and Wildlife (MassWildlife)
Massachusetts Executive Office of Energy and Environmental Affairs
Middlesex Conservation District
Mrs. Penny Holmes
Museum of Science, Boston
New England Aquarium
U.S. Forest Service/Massachusetts Department of Conservation and Recreation
University of Massachusetts Amherst, College of Natural Sciences
University of Massachusetts Center for Agriculture/Extension
USDA Natural Resources Conservation Service
Wegmans
Wheaton College
Worcester County Conservation District
Worcester Technical High School

Individual teams received sponsorship from many community sources including:

Baystate-Springfield Educational Partnership, Monson PTSA, & the Norcross Wildlife Sanctuary

A special thank you to the committee, judges, volunteers, coaches, agencies, organizations, schools, parents and all whose hard work and support make the Massachusetts Envirothon possible!