

2013

Michigan Envirothon Manual



Michigan Envirothon
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The Michigan Envirothon program is offered by the Michigan Association of Conservation Districts (MACD) and the 78 Conservation Districts of Michigan in conjunction with the following Envirothon

partners and sponsors:

North American Envirothon

Consumers Energy & Consumers Energy Foundation

USDA Farm Service Agency

USDA Forest Service

USDA Natural Resources Conservation Service

Michigan Department of Natural Resources

Michigan Department of Environmental Quality

Enbridge Energy

Michigan State University

Lake Superior State University

Special thanks to all of our many volunteers, and the Michigan Envirothon Steering Committee members: Brian Buehler (NRCS), Ernie Delemeist (New Lothrop High School), Chuck Olson (Retired University of Michigan), Kay Lancour (Consumers Energy), Marjorie Longcore (Consumers Energy), John Mitchell (MACD), Tom Occhipinti (DEQ), Lori Phalen (MACD), Angels Sandusky (MACD), Teresa Sherwood (Michigan Department of Agriculture & Rural Development)

Please visit www.michiganenvirothon.org or e-mail mienvirothon@macd.org for more information concerning the Michigan Envirothon.

Welcome to Michigan Envirothon!

Michigan Envirothon is designed to foster critical thinking, wise stewardship and community involvement. The purpose of Envirothon is to provide environmental education to high school students and their adult advisors throughout the state of Michigan. The Michigan Envirothon program presents environmental education in a unique, motivating and exciting way! The program emphasizes hands-on learning in the outdoors; field trips and one-on-one training with resource professionals is highly encouraged. Learning objectives, correlated with Michigan High School Content Expectations, are set forth for each of the subject areas, and resource professionals aid in preparing resource materials for teams to use in their studies.

Michigan Envirothon Goals and Objectives

- To cultivate in high school students a desire to learn about our natural resources.
- To develop a greater appreciation for our reliance upon the natural environment.
- To provide students with an experience in environmental activities to enable them to become environmentally aware adults.
- To develop student's knowledge of the effects individual actions can have on the environment.
- To explore the interactions and interdependencies of our environment.
- To foster aware of local resource organizations/agencies available to assist with environmental matters and career opportunities.

Envirothon In a Nut Shell

Training & Testing

Teams of five students with up to three alternate members study seven subject areas throughout the year, in preparation for competitions held annually. Subject include: Agriculture, Aquatic Ecology, Energy, Forestry, Soils/Geology, Wildlife and a Current Environmental Topic. Regional training and competitions are held in the spring to prepare and qualify teams (top 24) for the two-day State Competition, which occurs in May. At the State Competition, teams receive subject review with Resource Professionals, and are tested in each subject area at four to five outdoor eco-stations.

Community Outreach Project – Education in practice

Teams are required to complete a Community Outreach Project as part of the competition. Teams identify an environmental issue in their community and address that issue through hands-on problem solving and community education. Teams are encouraged to partner with resource agencies, local government, their schools and others to develop a strong and effective project.

A panel of judges scores the projects based on a written summary and oral presentation.

And the winner is.....Everybody!

Test and Project scores are combined to determine an overall winning team. Though there is only one overall state champion, teams are recognized for excellence in each subject area, and for their Community Outreach Project. Top teams are awarded with scholarships, plaques, ribbons, and other prizes. The Michigan Envirothon State Champion goes on to represent Michigan at the North American Envirothon, North America's largest high school environmental education competition. The North American Envirothon is a five-day event held in the summer involving forty-five States and ten Canadian Provinces and offers competitors additional prizes and scholarships.

Regional Competitions

The state is divided into 6 Regions based on the County of residence for purposes of testing and training. Six training and testing events are each spring, typically in March, and are referred to as Regional Competitions. Regional competitions function as both a training and review day as well as a qualifier for the state competition. Regional Competitions may be combined if the number of registered teams from a region does not meet requirements. Teams are required to participate in their assigned Regional Competition, unless otherwise approved prior to the event.* *Exceptions to this rule must be approved in advance by submitting a written request by February 12 stating a valid need or hardship justifying participation in another Regional Competition.*

Teams are expected to do the following prior to arriving at their Regional Envirothon:

- Study resource materials provided by the Michigan Envirothon and from any other sources to cover the Learning Objectives for each subject area.
- Start work on their Community Outreach Project. Each team is required to bring a one-page description of its Community Outreach Project to the Regional competition and turn it in at the time of on-site registration.
- Make contact with their local Conservation District and other organizations for assistance.

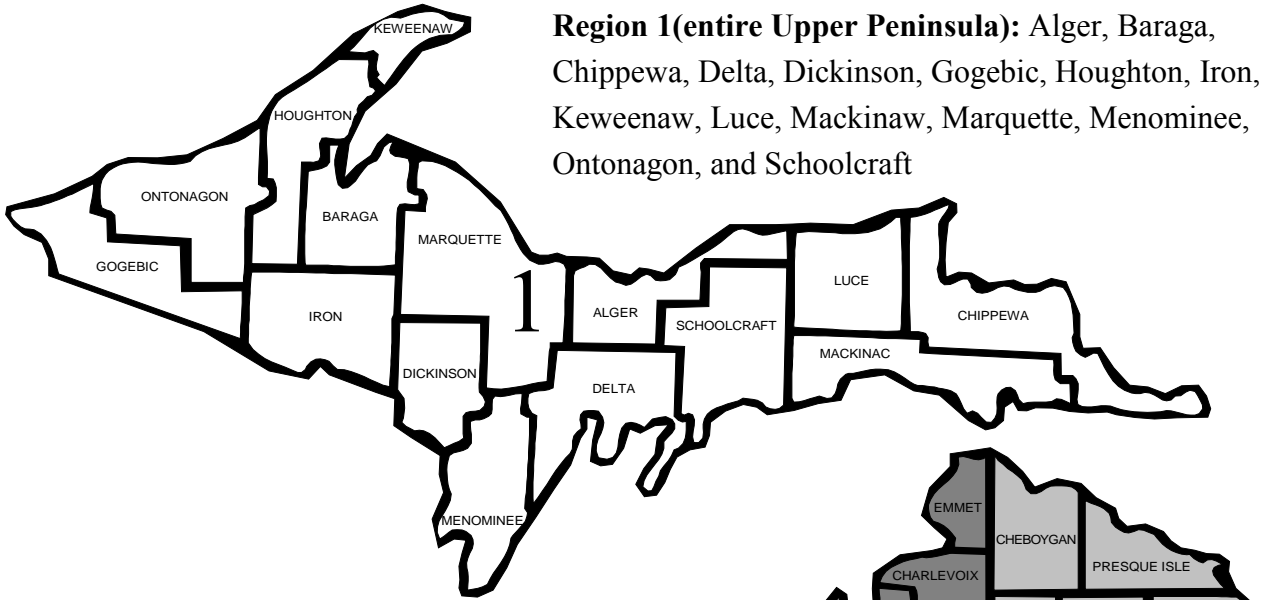
The Regional Envirothon will consist of the following components:

- Review sessions covering the Envirothon subject areas.
- A test at the end of the day to determine which teams will advance to the State Competition in May (or used as practice if all teams will be advanced).
- A one-page summary of a team's Community Service Project turned in at the time of on-site registration. While it is recognized that work on many projects does not begin until after the Regional Competition, a one-page description of the project must be turned-in to qualify for advancement to the State Competition.
- Training sessions will be held outside when weather permits, and hands-on activities will be preferred over lecture style presentations when possible. Teams should be prepared for this format of training before arriving at their Regional event (dress appropriately).

Scoring & State Qualification:

- To qualify for consideration to State Competition a team must: score at least 30 (50%) on the Regional Test and turn in a one-page summary of its Community Service Project
- State Competition is limited to 24 teams. If less than 24 teams register state-wide, all teams scoring at least 30 (50%) on the Regional Test and turn in a one-page summary of its Community Service Project, will be eligible to participate in the State Competition.
- If more than 24 teams register, selection for State Competition is determined as follows:
 - Top 2 Ranked teams from each region and meeting qualification requirements advance to State Competition
 - The remaining Competition Bids will be awarded by ranking all qualified teams in order of their Regional Test Scores, and selecting the teams with the highest test score until the list of twenty-four teams is complete.
- In the event of a tie in determining regional winners AND state qualifiers, rank will be determined as follows: test scores on questions predetermined and ranked as tie breaker questions by the testing and training committee will be compared until the desired number of teams has been identified.

Michigan Envirothon Regions



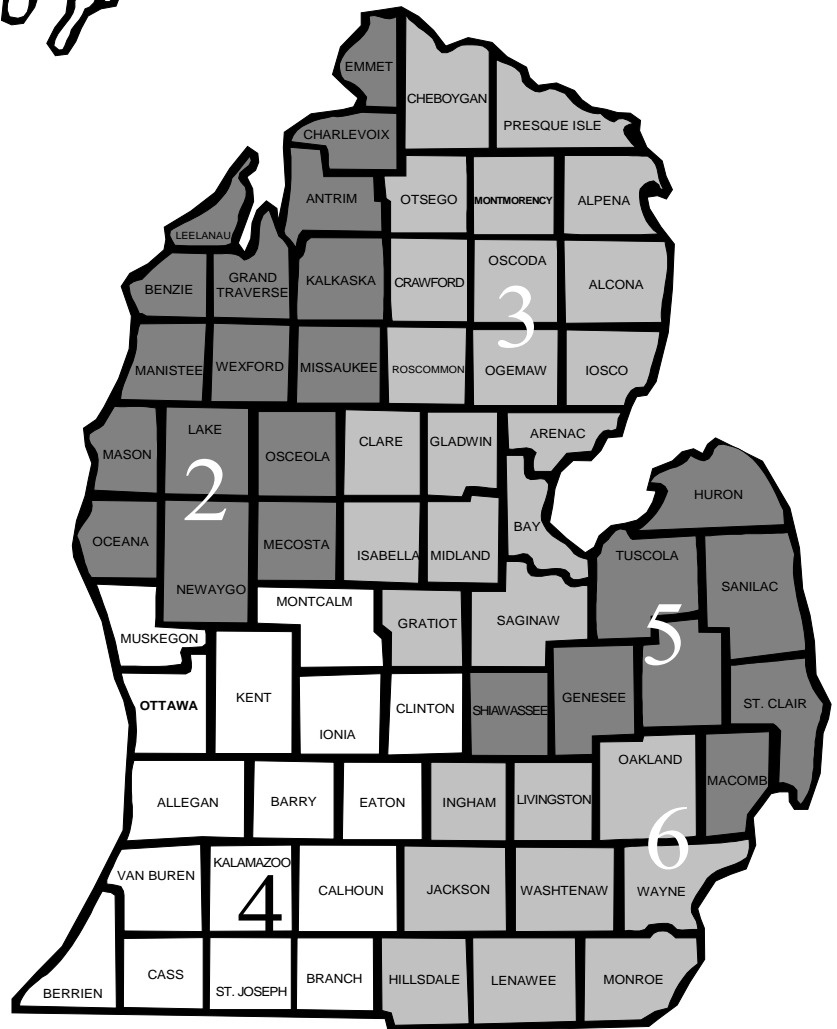
Region 1 (entire Upper Peninsula): Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinaw, Marquette, Menominee, Ontonagon, and Schoolcraft

Region 2: Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, Kalkaska, Lake, Leelanau, Manistee, Mason, Mecosta, Missaukee, Newaygo, Osceola, and Wexford

Region 3: Alcona, Alpena, Arenac, Bay, Cheboygan, Clare, Crawford, Gladwin, Gratiot, Iosco, Isabella, Midland, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, and Saginaw

Region 4: Allegan, Barry, Berrien, Branch, Calhoun, Cass, Clinton, Eaton, Ionia, Kalamazoo, Kent, Montcalm, Muskegon, Ottawa, St. Joseph, and Van Buren

Region 5: Genesee, Huron, Lapeer, Macomb, St. Clair, Sanilac, Shiawassee, and Tuscola



Region 6: Hillsdale, Ingham, Jackson, Lenawee, Livingston, Monroe, Oakland, Washtenaw and Wayne

Michigan Envirothon State Competition

The top 24 Envirothon teams from around the state convene each year to vie for the title of State Champion at the Michigan Envirothon State Competition. These students have the chance to meet and compete against Michigan's top highschool students, to compete for prizes, bragging rights, and a trip to the North American Envirothon Competition, North America's largest high school environmental education competition.

State Competition is typically held in May and begins with community outreach presentations on Wednesday evening, and wraps up with awards ceremony on Friday around 3 p.m. At the State Competition, teams receive subject review with Resource Professionals, and afterwards are tested in each subject area at four to five outdoor eco-stations. In addition to testing, the teams are also judged on their Community Outreach Project.

Testing and Review:

State competition begins with a morning of review by resource professionals. Students will then be shuttled to outdoor locations to complete their tests. There are a total of 4-5 testing locations, and approximately half of the test is administered on Thursday afternoon, with the remainder completed on Friday morning. Sample tests are available in the online resources guide, all subject areas may/will be tested at each testing location. Though you compete as a team, you are free to divide up the test to individual students.

Community Outreach Project: Summary, Oral Presentation, Display

Each team must give an oral presentation on their Community Outreach Project to a panel of judges.

PRIOR to the competition, teams are required to submit a written summary on their Community Outreach Project. *Please see specific guidelines and requirements in the community outreach section of the manual.* Teams are also encouraged to set up any display they may have used for their presentation for judging in our 'People's Choice' competition. Students vote on their top display and project during an ice-cream social on Thursday evening after testing.

And the Winner Is....

Everyone! Test and Community Outreach Project scores are combined to determine a State Champ; however additional teams are recognized for excellence in each subject area, and for their Community Outreach Projects. Top teams are awarded with scholarships, plaques, ribbons, and other prizes. *For specific scoring or grievance information please see Michigan Envirothon Rules & Regulations section of the manual.*

North American Envirothon

Mission Statement

The mission of the Canon Envirothon is to develop knowledgeable, skilled and dedicated citizens who are willing to work towards achieving and maintaining a natural balance between the quality of life and the quality of the environment. This is accomplished by developing in young people an understanding of the principles and practices of resource management and ecology and through practice dealing with complex resource management decisions. The Canon Envirothon program fosters a working partnership with resource professionals and the general public to promote goals of environmental education in grades 9-12 and recognizing students who achieve excellence in environmental and natural resource knowledge and skills. *For More information Visit: www.envirothon.org

Goal 1:

To promote a desire to learn more about the natural environment and develop knowledge and skills to apply the basic principles and practices of resource management and ecology.

Objectives:

- a. Basic knowledge and awareness.
- b. Analysis skills and resource management.

Goal 2:

To promote stewardship of natural resources and develop critical thinking skills, cooperative problem-solving skills, and decision making skills of students to balance the quality of life and the quality of the environment.

Objectives:

- a. Identification of environmental problems.
- b. Issue investigation.
- c. Comprehension of different points of view.
- d. Ability to generate alternative solutions.
- e. Evaluation of personal positions.
- f. Ability to think ahead.
- g. Ability to communicate.

Goal 3:

To provide students with experience in environmentally oriented activities to enable them to become environmentally aware, action oriented citizens.

Objectives:

- a. Knowledge of strategies used in environmental/natural resource management.
- b. Working with resource management agencies and organizations.
- c. Evaluating the effect of personal actions.
- d. Ability to work along and with others to solve environmental problems.

Community Outreach Project

Michigan Envirothon teams must complete a Community Outreach Project (COP) to address an environmental/natural resource issue in their community. Students identify an issue they feel is a priority in their community, and develop a project to address that issue. In this component of the competition, which makes Michigan unique among the other state/provincial Envirothon programs, students develop their own environmental empowerment model for their involvement in environmental issues. COPs are judged, by a panel of selected judges, community leaders and Resource professionals, based on a the written report and oral presentation. The COP accounts for 20-25% of the overall State Competition score.

The Task

Identify an environmental project that your team can design and implement to make a positive environmental impact in your local community. That impact can be made through community education, hands-on problem solving, other creative methods you design, or often a mixture of all of these. Your team should design a project that includes as much community involvement and awareness as possible on a specific environmental issue. Examples may include: drinking/surface water quality, scrap tire disposal, wildlife habitat, farmland preservation, waste management, etc.

Utilize creative methods for financing and completing the work involved with your project. The project does not need to be completed before the Envirothon State Competition, but you should have a timetable for completion of the project. All submissions must include a portion of completed project work to be eligible for judging. Projects may be used for two consecutive years by one team, but any projects lasting longer than two years will not be considered for submission in the competition. A school or group that has multiple teams may use the same project, but each team must submit separate written summaries and give separate oral presentations. In this situation, it is recommended that each team focus on a different aspect of the project.

Step One: Selecting an Issue

1. Make a list of environmental issues that have an impact in your community that your team would like to and is able to address. Pick a few possibilities, if necessary, and explore the issues a little further.
2. Brainstorm for projects that could address the issues. If the possible projects for a particular issue seem unrealistic considering your goals, you may decide to address another issue.
3. Decide on an issue based on the goal of the projects, and on the criteria listed in the judging criteria of this manual. You should have community impact while addressing your issue.

Step Two: Issue Investigation

1. Investigate by using all means possible including: materials provided by Envirothon, your team advisor and/or your local Conservation District, books/magazines/newspapers, Internet resources (make sure they're valid), written data on your county/city, etc.
2. Meet with and interview experts on the topic in your community from agencies/groups such as your local Conservation District, your local government, Michigan Departments of Agriculture, Natural Resources, and Environmental Quality, USDA Natural Resources Conservation Service and many others.
3. Meet with and interview local residents who are directly impacted by the issue. A survey or questionnaire can give you some statistics to use in your investigation.

Step Three: Issue Refinement

1. Decide which of your project ideas is the best method for addressing the issue. Consider these questions: Who is the audience? What do you hope the audience will learn/gain from your project? Can you measure the results and how?

Step Four: Details

1. Decide what resources you need to complete the project, including if you need assistance from other groups and outside financial support.
2. Decide how you are going to measure and document the impact your project has had on the environment, the knowledge of your audience, or both.
3. Outline a plan for writing your project summary, and for the oral presentation(s) you will give. Know what you need to complete the summary and presentation as you move along with your project. This prep-work may make things much easier for your team when you begin to prepare for the State Competition.

Step Five: Project Implementation

1. Secure the necessary partnerships and/or sponsorships for implementing your project. Acquire all the materials needed and begin implementing your project. Gather documentation of your work such as photographs, videotapes, letters of support/agreement, written data, etc. to include with your project display and/or for visual aids.
2. Notify your local media that you have developed a Community Outreach Project as a component of your participation in the Michigan Envirothon. Provide details of the issue, project goals and implementation work. Don't forget to recognize your partners, sponsors, and any other groups and individuals that have provided assistance.

Step Six: Project Evaluation

1. Evaluate your project by considering these questions: Were the project goals met? What did your team members learn by working on the project? Would you continue or expand the project if possible? What did your community learn/gain from the project?

Other items that Judges will look for:

- Innovative projects.
- Creative solutions to community problems.
- Community involvement in the project. For example: surveys of residents, inviting residents to participate in the project, newspaper articles and involvement of environmental/natural resource

agencies and/or groups.

- Solutions (realized or potential) to the problem.
- Written summaries and oral presentations that follow the outline of the judges scoring sheets.
- Proper grammar/spelling, neatness and formatting.
- Timelines that include a target date for the completion of your project.

Past Projects:

The following projects are a few examples teams have completed in the past:

- A comprehensive school energy audit and greening effort to reduce energy usage and costs.
- Projects that promoted and demonstrated the use of rain barrels as a way to conserve water.
- Rain garden installations.
- Installation and promotion of a community butterfly garden.
- Water quality monitoring/advocacy projects.
- Overhaul of community recycling program.
- Sustainable woodlot management improvement & community demonstration project.
- Raptor rehabilitation project.
- Invasive species management and control projects- including honeysuckle, coltsfoot, garlic mustard, phragmites and purple loostrife.
- Lakeshore management project that promoted proper riparian management practices.
- Implementation of stormdrain labeling throughout a community.
- Development of an educational program to educate youth about natural resources.
- Promotion of proper lawn care techniques and a campaign to stop needless lawn care pollution.

Written Summary & Bibliography

Written Summary and List of References/Bibliography are due **by April 29, 2013**. One point per day will be taken off for late submissions; any submissions received on or after May 6, 2013 will receive an additional **5pt per day** reduction from the overall score. Written Summaries not received prior to Oral Presentation will receive **0 out of 60 pts**. Project judges will be reading and scoring this summary prior to your oral presentation. Please note that written summaries submitted for the State Competition will not be returned.

Format and Submission Requirements:

- Your Written Summary **MUST** include the Provided Michigan Envirothon Community Outreach Project Written Summary Cover Page, this does not count towards your 2 pages.
- Electronic Submissions in Word Doc. Or PDF Format
- Typed using double-spaced paragraph and 12 pt. font, maximum 2 pages (or one sheet front & back/ cover page does not count towards page limit). 8 ½” x 11” sheet size only.

Your summary MUST include the following information:

- Michigan Envirothon Community Outreach Project: Written Summary Cover Page*
- Demonstrate a need for the project. What is the environmental issue and how/why is it impacting the environment and your community?

- Explain how you decided to focus your project, and what tasks were included in your project. Were there other options to address the environmental issue, and if so, why did you choose the option you did?
- List and describe any partners you had in the project.
- List any costs associated with implementing your project (time, money, materials, and equipment). How were those costs covered?
- Describe the results of your project. Results can be realized or anticipated (please make sure to clarify the difference).
- Describe how the project was publicized.
- Describe the community's acceptance of your project and feedback that you received from the community. Will your project have a long-term impact on the community or are there plans to continue your project within the community?
- List and describe any other aspects of your project that you feel will give the judges a better understanding of your project prior to your oral presentation.

References/Bibliography (not included in the 2 page total above):

- On a separate page(s), list resources and references used for your project. For example, the references you use may be technical references, fact sheets, interviews with Resource Professionals, and/or may include the references provided by Michigan Envirothon in your team's Resource Packet.

Oral Presentations

During the state competition each team will deliver a 10 minute oral presentation on their Community Outreach Project. Only students of the five-member team are allowed to participate in the oral presentation. Alternative members are not allowed to participate in the presentation but they may watch as long as they do not speak or otherwise interrupt the presentation or question & answer portion.

Oral Presentation Rules and Requirements:

- Advisors are allowed to watch their team's presentation, but they may not speak or otherwise interrupt the presentation or question & answer portion.
- Audio/visual equipment (such as laptops & projectors for PowerPoint presentations) may be used during the oral presentations. Any requests for the use of audio/visual equipment must be made to the Michigan Envirothon office no later than April 29, 2013. If a team is using audio/visual equipment, they must meet with the audio/visual coordinator prior to their presentation time.
- Upon introducing themselves, teams will have ten minutes to give their presentation; introduction of the team and individual team members will not count as part of the ten-minute presentation. A presentation timer/monitor will be in the room keeping time and teams will be asked to stop their presentation at ten minutes if they have not already. Judges will have five minutes to ask the team questions after the presentation, teams will then be excused and the judges will have five minutes to score the presentation before the next team arrives.
- Students will be standing (unless they cannot due to physical disability or injury) while they give their presentation, while a panel of four to five judges will be seated in front of them.

Suggestions for Developing Successful Oral Presentations:

- Reference the judges scoring sheet provided for the oral presentation while developing your presentation. * *see appendix*
- Have all team members participate in the presentation.
- Practice, practice, practice! Teams can practice giving their presentation to classmates, the local

Conservation District Board members, the school board, or anywhere else they can find an audience. Teams typically feel more comfortable while presenting to the Envirothon judges if they have practiced their presentation in front of other groups.

Displays

Community Outreach Project displays are not required, but they are strongly encouraged. Project displays allow other Envirothon teams and the many volunteers present to learn about all of the projects and the great things that are being done by Envirothon teams in communities throughout Michigan. Displays may also be useful to teams while making their oral presentation. If the display is made to set on a table, it should be able to fit onto a 6-foot tabletop. Though no points will be awarded for displays as part of the Envirothon competition, a People's Choice Award will be conducted and a prize will be awarded to all team members on the team with the chosen display.

Michigan Envirothon Learning Objectives

The learning objectives set forth by the Michigan Envirothon are those concepts and skills that the Envirothon teams will be tested in. Resource materials and training with Resource Professionals provided by the Michigan Envirothon are intended to cover the learning objectives. Teams are encouraged to search for additional resources that may also address these objectives. Teams are also encouraged to request training from local Resource Professionals in an effort to address the learning objectives.

Agriculture

1. Look at food and fiber production in Michigan and obtain an understanding of the essential human needs we obtain from our natural resources.
2. Understand the importance of agriculture in Michigan as a major land use.
3. Look at land use trends, the importance of agricultural lands to other natural components of Michigan, and look at the impact of land use policies on land use for agriculture.
4. Understand the basic glossary of agricultural terms and agricultural land use practices.
5. Look at the trend in agriculture - how we got to where we are today - small farms to industrial farming to a sustainable agriculture movement.
6. Sustainable agriculture relies upon four parts. Understand these four parts: a) agricultural product profitability, b) agricultural practices compatible with the environment, c) energy efficiency in agricultural practices, and d) a system which is supportive of rural and urban communities.
7. Understand examples of sustainable agriculture practices and methods: maintenance and improvement of soil / prevention of erosion, rotational grazing, composting, crop rotation, manure spreading, organic farming, cover crop use, integrated pest management, and value-added production.

Aquatic Ecology

1. Identify the processes and phases for each part of the water cycle.
2. Describe the chemical and physical properties of water and explain their importance for freshwater and saltwater ecosystems.
3. Discuss methods of conserving water and reducing point and non-point source pollution.
4. Analyze the interaction of competing uses of water supply: hydropower, navigation, wildlife, recreation, waste assimilation, irrigation, industry and others.
5. Identify common aquatic organisms through the use of the key.
6. Delineate the watershed boundary for a small water body.
7. Be able to explain the different types of aquifers and how each type relates to water quality and quantity.
8. Briefly describe the benefits of wetlands, both their function and value.
9. Describe the changes to the aquatic ecosystem based on alteration to the aquatic habitat.
10. Know methods used to assess and manage aquatic environments and utilize water quality information to assess the general water quality of a given body of water (includes sampling techniques & water quality parameters used to monitor point and non-point source pollution).
11. Be familiar with major methods and laws used to protect water quality (surface and ground water) and utilize this information to make management decisions to improve the quality of water in a given situation.

Energy

1. Energy is an essential human need we obtain from our natural resources. What is energy? What are our needs for energy? Understand the different sources of energy - sun, coal, oil, gas, hydro, geothermal, nuclear - and look at how supply and demand are related to our choices of energy resources.
2. Understand that energy conservation is a consequence of our choices. Become familiar with some ways to practice energy conservation - insulation, efficient products, decisions and choices.
3. Become familiar with different energy measurement terminology and basic terms when talking about energy.
4. Learn about “alternative energy” - solar, biomass, geothermal, wind, etc.
5. Understand the different energy requirements for different types of transportation - cars, trucks, buses, airplanes, trains, boats, etc.
6. Identify and study current issues concerning energy production, uses, etc.

Forestry

1. Identify common trees without a key and identify specific or unusual species of trees or shrubs through the use of a key.
2. Understand forest ecology concepts and factors affecting them, including the relationship between soil and forest types, tree communities, regeneration, competition, disturbance and

succession.

3. Understand the cause/effect relationship of factors affecting tree growth and forest development (climate, insects, soils, microorganisms, etc.).
4. Understand how wildlife habitat relates to forest communities, forest species, forest age structure, snags and den trees, availability of food, and riparian zones.
5. Understand the value of trees in urban and suburban settings and factors affecting their health and survival.
6. Understand how the following issues are affected by forest health and management: biological diversity, forest fragmentation, air quality, rural development, fire and recreation.
7. Understand basic forest management concepts and tools such as: how various silvicultural practices are utilized, the use of tree measuring devices, use of technology, and best management practices.
8. Identify complex factors which influence forest management decisions (economic, social, ecological and urban interface).
9. Apply silviculture concepts and methods to develop general management recommendations for a particular situation and management goals.

Soils/Geology

1. Recognize soil as an important resource.
2. Describe basic soil properties and formation factors.
3. Understand soil drainage classes and know how wetlands are defined.
4. Determine basic soil properties and limitations, such as mottling and permeability, by observing a soil pit or soil profile.
5. Identify types of soil erosion and discuss methods for reducing erosion.
6. Utilize soil information, including soil surveys, in land use planning.
7. Discuss how soil is a factor in, or impacted by, non-point source pollution.

Wildlife

1. Identify common wildlife species and wildlife signs (keys will be used for more extensive identification).
2. Identify basic wildlife survival needs.
3. Describe specific adaptations of wildlife to their environment and role in the ecosystem.
4. Describe predator/prey relationships and examples.
5. Describe the potential impact of the introduction of non-native species.
6. Describe the major factors affecting threatened and endangered species and methods used to improve the populations of these species.
7. Describe ways that habitat can be improved upon for specific species by knowing their requirements.
8. Discuss the concepts of carrying capacity and limiting factors.

9. Discuss various ways the public and wildlife managers can help in the protection, conservation, management, and enhancement of wildlife populations.
10. Describe food chains/webs and cite examples.
11. Describe factors that limit or enhance population growth.
12. Evaluate a given habitat for its suitability for designated species, give a description of their habitat needs.

Current North American Environmental Issue (CEI): 2013

2013 CEI: Sustainable Rangeland Management: Achieving a balance between Traditional Agricultural Uses with Non-Agricultural uses on Montana Rangelands * *Additional information for this topic may be available at www.envirothon.org.*

Background: Rangeland in Montana and across the nation contributes immensely to a sustainable agricultural economy. Montana's number one "industry" is agricultural production, and the number two "industry" is tourism. Rangeland provides forage and habitat for domestic livestock and wildlife. Recently there has been increasing demands on the rangeland for a multi use concept. Multi use includes hunting, precious metals, fuel (gas, coal) exploration and recreational uses such as; access to fishing, bird-watching, hiking, snowmobiling, cross-country skiing, trail bike/ATV riding. Today, management methodologies vary greatly while attempting to balance rangeland uses that result in maximized benefits to all. Montana alone has approximately 93.2 million acres. Rangeland in Montana is located in the short grass prairie and mountain regions. Of that, there are approximately 36.3 million acres of Private Rangeland, 31.2 million acres of Public Rangeland, 3.7 million acres of Dryland Pasture, and 454,000 acres of Irrigated Pasture. Rangeland and Pastureland in Montana would comprise about 70% of the total land area – this would include the prairies, mountain parklands, forested areas with 25% or less canopy openings, alpine plant communities, wetlands, introduced tame pastures - dryland and irrigated.

History: Rangeland has seen major changes from the large bison herds on the prairies during the 1800's, to the homesteading days during the early 1900's, to the multi uses and management of today's rangeland. Native prairie once covered nearly a quarter of the continental United States, providing a home for specially adapted, diverse plant and animal life. Prairie ecosystems thrive on the intermittent disturbance brought by frequent fire and the irregular mosaic of vegetation carved out by the periodic passage of native grazers (bison, elk, mule deer, white-tailed deer, and antelope). These disturbance and subsequent renewal have shaped the life cycle of every native prairie organism.

As our knowledge of Rangeland has increased, it became evident that what helps the rancher is often good for wildlife. In this grazing-dependent ecosystem, many species of both plants and animals rely on the presence of large grazing animals. Properly managed rangeland can provide a sustainable agriculture economy and healthy rangelands for future generations.

Definitions:

- Rangeland – land on which the plant community is comprised of predominately native or indigenous grasses, grasslikes (e.g. sedges), forbs and/or shrubs. Rangeland includes natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes and wet meadows.
- Pastureland – grazing lands comprised of introduced or domesticated native forage species that are used primarily for the production of livestock. They receive periodic renovation and/or cultural treatments such as tillage, fertilization, mowing, weed control and may be irrigated. They are not in rotation with crops.

- Grazing Management – the manipulation of grazing and browsing animals to accomplish a desired result.
- Ecological Site – a distinctive kind of land with specific soil and physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its ability to respond similarly to management actions and natural disturbances.
- Stocking Rate – the amount of land area allocated to each animal unit for the entire grazing period in one year.
- Homestead Act of 1862 - An act passed by Congress in 1862 promising ownership of a 160-acre tract of public land to a citizen or head of a family who had resided on and cultivated the land for five years after the initial claim.

Correlations to Michigan Content Expectations

M.E Learning Objectives By Subject

Agriculture

- Social Studies
 - WHG.CG2 – Resources – Explain the changes over the past 50 years in the use, distribution, and importance of natural resources on human life, settlement, and interactions by describing and evaluating:
 - change in spatial distribution and use of natural resources
 - the difference in ways societies have been using and distributing natural resources
 - social, political, economic, and environmental consequences of the development, distribution, and use of natural resources
 - major changes in networks for the production, distribution, and consumption of natural resources including growth of multinational corporations, and governmental and non-governmental organizations
 - the impact of humans on the global environment

Aquatic Ecology

- Earth Science
 - E2.4B – Explain how the impact of human activities on the environment can be understood through the analysis of interactions between the four Earth systems.
 - E4.p1A – Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption.
 - E4.p1B – Analyze the flow of water between the elements of a watershed, including surface features and ground water.
 - E4.p1C – Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions.
 - E4.p1D – Explain the types, process, and beneficial functions of wetlands.
 - E4.1B – Explain the features and process of groundwater systems and how the sustainability of North American aquifers has changed in recent history qualitatively using the concepts of recharge, residence time, inputs, and outputs.
 - E4.1C – Explain how water quality in both groundwater and surface systems is impacted by land use decisions.
 - E4.2A – Describe the major causes for the ocean’s surface and deep water currents, including the prevailing winds, the Coriolis effect, unequal heating of the earth, changes in water temperature and salinity in high latitudes, and basin shape.
 - E4.2B – Explain how interactions between the oceans and the atmosphere influence global and regional climate.
- Biology
 - L3.p1A – Provide examples of population, community, and ecosystem.
 - L3.p3B – Distinguish between the living (biotic) and nonliving (abiotic) components of an ecosystem.
 - L3.p3C – Explain how biotic and abiotic factors cycle in an ecosystem.
 - B3.4A – Describe ecosystem stability. Understand that if a disaster such as flood or fire occurs, the damaged ecosystem is likely to recover in stages of succession that eventually result in a system similar to the original one.
 - B3.4C - Examine the negative impact of human activities.
 - B3.5B – Explain the influences that affect population growth.

- B3.5e – Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.
- L5.p1A - Define a species and give examples.
- L5.p1B – Define a population and identify local populations.
- L5.p2A – Explain, with examples, that ecology studies the varieties and interactions of living things across space while evolution studies the varieties and interactions of living things across time.
- Physics
 - P4.2B – Name devices that transform specific types of energy into other types.
- Chemistry
 - P4.p2B – Identify a pure substance based on unique chemical and physical properties.
 - P4.2C – Separate mixtures based on the differences in physical properties of the individual components.
- Social Studies
 - C6.1.1 – Identify and research various viewpoints on significant public policy issues.
 - C6.1.4 – Address a public issue by suggesting alternative solutions or courses of action, evaluating the consequences of each, and proposing an action to address the issue or resolve the problem.

Energy

- Earth Science
 - E2.2B – Identify differences in the origin and use of renewable and nonrenewable sources of energy.
 - E2.4A – Describe renewable and nonrenewable sources of energy for human consumption, compare their effects on the environment, and include overall costs and benefits.
- Physics
 - P4.2A – Account for and represent energy transfer and transformation in complex processes.
 - P4.2D – Explain why all the stored energy in gasoline does not transform to mechanical energy of a vehicle.
 - P4.2f – Identify and label the energy inputs, transformations, and outputs using qualitative or quantitative representations in simple technological systems to show energy conservation.

Forestry

- Biology
 - L3.p1A – Provide examples of a population, community, and ecosystem.
 - L3.p3C – Explain how biotic and abiotic factors cycle in an ecosystem.
 - L3.p4A – Recognize that, and describe how, human beings are part of the Earth’s ecosystems. Note that human activities can deliberately or inadvertently alter the equilibrium in ecosystems.
 - B3.2A – Identify how energy is stored in an ecosystem.
 - B3.2B – Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat.
 - B3.2C – Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed.
 - B3.3A – Use a food web to identify and producers, consumers, and decomposers and explain the transfer of energy through trophic levels.
 - B3.4A – Describe ecosystem stability. Understand that if a disaster such as a flood or fire occurs, the damaged ecosystem is likely to recover in stages of succession that eventually result in a system similar to the original one.

- B3.4B – Recognize and describe that a great diversity of species increases the chance that at least some living organisms will survive in the face of cataclysmic changes in the environment.
- B3.4C – Examine the negative impact of human activities.
- B3.5e – Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.

Soils/Geology

- Earth Science
 - E2.1B – Analyze the interactions between the major systems that make up the Earth.
 - E2.3d – Explain how carbon moves through the Earth system and how it may benefit or harm society.
 - E2.4B – Explain how the impact of human activities on the environment can be understood through the analysis of interactions between the four Earth systems.
 - E3.p1B – Explain how physical and chemical weathering leads to erosion and the formation of soils and sediments.
 - E4.p1C – Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions.
 - E4.p1D – Explain the types, process, and beneficial functions of wetlands.
 - E4.1C – Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Wildlife

- Biology
 - L3.p1A – Provide examples of a population, community, and ecosystems.
 - L3.p2A – Describe common relationships among organisms and provide examples of producer/consumer, predator/prey, or parasite/host relationship.
 - L3.p2B – Describe common ecological relationships between and among species and their environments.
 - L3.p3D – Predict how changes in one population might affect other populations based upon their relationships in a food web.
 - B3.2C – Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed.
 - B3.4B – Recognize and describe that a great diversity of species increases the chance that at least some living organisms will survive in the face of cataclysmic changes in the environment.
 - B3.4C – Examine the negative impact of human activities.
 - B3.5B – Explain the influences that affect population growth.
 - B3.5C – Predict the consequences of an invading organism on the survival of other organisms.
 - B3.5d – Describe different reproductive strategies employed by various organisms and explain their advantages and disadvantages.
 - B3.5e – Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.

Community Outreach Project

The Project

- Earth Science, Biology, Physics, Chemistry (E, B, P, C)
 - 1.1A – Generate new questions that can be investigated in the laboratory or field.
 - 1.1C – Conduct scientific investigations using appropriate tools and techniques.
 - 1.1D – Identify patterns in data and relate them to theoretical models.

- 1.1h – Design and conduct a systematic scientific investigation that tests a hypothesis. Draw conclusions from data presented in charts or tables.
- 1.2A – Critique whether or not specific questions can be answered through scientific investigations.
- 1.2B – Identify and critique arguments about personal or societal issues based on scientific evidence.
- 1.2C – Develop an understanding of a scientific concept by accessing information from multiple sources. Evaluate the scientific accuracy and significance of the information.
- 1.2f – Critique solutions to problems, given criteria and scientific constraints.
- 1.2g – Identify scientific tradeoffs in design decisions and choose among alternative solutions.
- 1.2j – Apply science principles or scientific data to anticipate effects of technological design decisions.
- 1.2k – Analyze how science and society interact from a historical, political, economic, or social perspective.
- Social Studies
 - P1.1 – Use close and critical reading strategies to read and analyze texts pertaining to social science; attend to nuance, make connections to prior knowledge, draw inferences, and determine main idea and supporting details.
 - P1.2 – Analyze point of view, context, and bias to interpret primary and secondary source documents.
 - P2.1 – Understand the scientific method of inquiry to investigate social scientific and historical problems.
 - P2.2 – Read and interpret data in tables and graphs.
 - P2.3 – Know how to find and organize information from a variety of sources; analyze, interpret, support interpretations with evidence, critically evaluate, and present the information orally and in writing; report investigation results effectively.
 - P2.4 – Use multiple perspectives and resources to identify and analyze issues appropriate to the social studies discipline being studied.
 - P2.5 – Use deductive and inductive problem-solving skills as appropriate to the problem being studied.
 - P3.1 – Clearly state an issue as a questions of public policy, trace the origins of an issue, analyze various perspectives, and generate and evaluate possible alternative resolutions.
 - P4.2 – Demonstrate knowledge of how, when, and where individuals would plan and conduct activities intended to advance views on matters of public policy, report the results, evaluate effectiveness.
 - P4.3 – Plan and conduct activities intended to advance views on matters on public policy, report the results, and evaluate effectiveness.
 - C6.1.1 – Identify and research various viewpoints on significant public policy issues.
 - C6.1.2 – Locate, analyze, and use various forms of evidence, information, and sources about a significant public policy issue, including primary and secondary sources, legal documents, non-text based information, and other forms of political communication.
 - C6.1.3 – Develop and use criteria in analyzing evidence and position statements.
- English Language Arts
 - CE1.1.2 – Know and use a variety of prewriting strategies to generate, focus, and organize ideas.
 - CE1.2.1 – Write, speak, and use images and graphs to understand and discover complex ideas.
 - CE1.2.2 – Write, speak, and visually represent to develop self-awareness and insight.

- CE1.3.4 – Develop and extend a thesis, argument, or exploration of a topic by analyzing differing perspectives and employing a structure that effectively conveys the ideas in writing.
- CE1.3.7 – Participate collaboratively and productively in groups fulfilling roles and responsibilities, posing relevant questions, giving and following instructions, acknowledging and building on ideas and contributions of others to answer questions or to solve problems, and offering dissent courteously.
- CE1.4.1 – Identify, explore, and refine topics and questions appropriate for research.
- CE1.4.2 – Develop a system for gathering, organizing, paraphrasing, and summarizing information; select, evaluate, synthesize, and use multiple primary and secondary resources.
- CE1.4.3 – Develop and refine a position, claim, thesis, or hypothesis that will be explored and supported by analyzing different perspectives, resolving inconsistencies, and writing about those differences in a structure appropriate for the audience.
- CE1.4.4 – Interpret, synthesize, and evaluate information/findings in various print sources and media to draw conclusions and implications.
- CE2.3.1 – Read, listen to, and view diverse texts for multiple purposes such as learning complex procedures, making work-place decisions, or pursuing in-depth studies.
- CE3.2.4 – Critically interpret primary and secondary research-related documents.
- Mathematics
 - L1.2.1 – Use mathematical symbols to represent quantitative relationships and situations.
 - L1.2.4 – Organize and summarize a data set in a table, plot, chart, or spreadsheet; find patterns in a display of data; understand and critique data displays in the media.
 - L2.3.1 – Convert units of measurement within and between systems; explain how arithmetic operations on measurements affect units, and carry units through calculations correctly.

Written Summary & Oral Presentation

- Earth Science, Biology, Physics, Chemistry (E, B, P, C)
 - 1.1E – Describe a reason for a given conclusion using evidence from an investigation.
 - 1.1g – Use empirical evidence to explain and critique the reasoning used to draw a scientific conclusion or explanation.
- Social Studies
 - P1.4 – Communicate clearly and coherently in writing, speaking, and visually expressing ideas pertaining to social science topics, acknowledging audience and purpose.
 - P1.5 – Present a coherent thesis when making an argument, support with evidence, articulate and answer possible objections, and present a concise, clear closing.
 - Write persuasive/argumentative essays expressing and justifying decisions on public policy issues.
 - C6.1.4 – Address a public issue by suggesting alternative solutions or courses of action, evaluating the consequences of each, and proposing an action to address the issue or resolve the problem.
 - C6.2.7 – Participate in a service-learning project, reflect upon experiences, and evaluate the value of the experience to the American ideal of participation.
- English Language Arts
 - CE1.1.3 – Select and use language that is appropriate for the purpose, audience, and context of the text, speech, or visual representation.
 - CE1.3.2 – Compose written and spoken essays or work-related text that demonstrate logical thinking and the development of ideas for academic, creative, and personal

purposes: essays that convey the author's message by using an engaging introduction, well-constructed paragraphs, transition sentences, and a powerful conclusion.

- CE1.3.5 – From the outset, identify and assess audience expectations and needs; consider the rhetorical effects of style, form, and content based on that assessment; and adapt communication strategies appropriately and effectively.
- CE1.4.7 – Recognize the role of research, including student research, as a contribution to collective knowledge, selecting an appropriate method or genre through which research findings will be shared and evaluated, keeping in mind the needs of the prospective audience.
- CE1.5.1 – Use writing, speaking, and visual expression to develop powerful, creative, and critical messages.
- CE1.5.2 – Prepare spoken and multimedia presentations that effectively address audiences by careful use of voice, pacing, gestures, eye contact, visual aids, audio, video technology.
- CE4.1.3 – Use a range of linguistic applications and styles for accomplishing different rhetorical purposes (e.g., persuading others to change opinions, conducting business transactions, speaking in a public forum, discussing issues informally with peers).
- CE4.1.4 – Control standard English structures in a variety of contexts (e.g., formal speaking, academic prose, business, and public writing) using language carefully and precisely.



Michigan Envirothon

Inspiring Environmental Stewardship in
Michigan's High School Students



Community Outreach Project WRITTEN SUMMARY COVER PAGE

Team Name:

School:

Conservation District:

Environmental Issue Addressing:

Project Type:

Total Project Cost:

Number of Presentations Given:

Number of Students Reached Through Project:

Number of Adults Reached Through Project:

Number of Volunteers Recruited:

Partnering Agencies and Organizations:



Michigan Envirothon

Inspiring Environmental Stewardship in
Michigan's High School Students



Written Summary Cover Page EXAMPLE

Team Name: Green Heroes

School: Eastern High School

Conservation District: Ingham

Project Type: Compost installation and education in Lansing Schools.

Environmental Issue Addressing: Organic waste makes up one third of Lansing Schools garbage. By creating a composting program Green Heroes will reduce the school's solid waste, extend the life of a leaching field and septic tank if a garbage disposal system has been in use (or reduce nitrogen loading to the local sewage treatment facility), educate the school community about benefits of composting and create a useful product (finished compost) for landscaping projects.

Total Project Cost: \$750.00

Number of Presentations Given: 4

Number of Students Reached Through Project: 300

Number of Adults Reached Through Project: 50

Number of Volunteers Recruited: 10

Partnering Agencies and Organizations:

Rotary Charities, Ingham Conservation District, Lansing School Board, and Lansing Kitchen Staff



Michigan Envirothon

Judges' Scoring Sheet: Community Outreach Project

Written Summary & List of References

Scale for Scoring	
0	Not at all
1	Poor or Poorly
2	Fair or Slightly Well
3	Good or Fairly Well
4	Excellent or Very Well
5	Outstanding

Team Number:

Final Score:

Judge Number:

Written Summary and List of References/Bibliography	Circle Score
A. Team addressed/identified a specific environmental problem and related issues	0 1 2 3 4 5
B. Team demonstrated how/why the issue is important to the environment and the community	0 1 2 3 4 5
C. Organization of Subject Matter	
• Written summary was well organized and easy to follow	0 1 2 3 4 5
• Award three points if Written Summary is 2 pages or less (award zero points if Written Summary is longer than 2 pages)	0 3
D. Subject Matter	
• Team presented a viable and reasonable solution, or steps to reaching a viable solution, to the problem(s) that the environmental issue caused	0 1 2 3 4 5
• Team took appropriate actions to implement the project	0 1 2 3 4 5
• Team considered the interested/affected groups when deciding on the project tasks, and partnered with those groups appropriately	0 1 2 3 4 5
• Teams described project costs (time, money, materials, equipment, etc.), if any, and how those costs were covered	0 1 2 3 4 5
• Team presented a list of results realized and/or anticipated results	0 1 2 3 4 5
• Team described how the project was publicized	0 1 2 3 4 5
• Team discussed community acceptance/feedback of the project, long-term impacts, and future activities	0 1 2 3 4 5
E. Award two points if List of References/Bibliography was provided (award zero points if List of References/Bibliography was missing)	0 2
F. Award five points if Written Summary was submitted by the April 30, 2010, deadline (determined by Michigan Envirothon office)	0 1 2 3 4 5
Final Score (60 points maximum)	



Michigan Envirothon Judges' Scoring Sheet: Community Outreach Project Oral Presentations

Scale for Scoring	
0	Not at all
1 or 2	Poor or Poorly
2 or 4	Fair or Slightly Well
3 or 6	Good or Fairly Well
4 or 8	Excellent or Very Well
5 or 10	Outstanding

Team Number:

Oral Presentation Score:

Judge Number:

Part I: Introduction (30 points maximum)	Circle Score
A. Team addressed/identified specific environmental problem and related issues	0 1 2 3 4 5
B. Team demonstrated how/why the issue is important to the environment	0 2 4 6 8 10
C. Team demonstrated how/why the issue is important to the community	0 2 4 6 8 10
D. Team identified interested/affected groups	0 1 2 3 4 5
Part I Subtotal:	

Part II: Subject Matter (70 points maximum)	Circle Score
A. Organization of Subject Matter	
• Overall organization of the presentation	0 1 2 3 4 5
• Flow of information (introduction, body, conclusion)	0 1 2 3 4 5
B. Importance of Problems and Practices	
• Team demonstrated an understanding of the environmental, social, economic, and political issues impacting the community regarding the identified environmental issue	0 2 4 6 8 10
• Team presented a viable and reasonable solution, or steps to reaching a viable solution, to the problem(s) that the environmental issue caused	0 2 4 6 8 10
• Team considered the interested/affected groups when deciding on the project tasks, and partnered with those groups appropriately.	0 1 2 3 4 5
• Team took appropriate actions to implement the project	0 1 2 3 4 5
• Team measured, or will measure, the results of the project	0 1 2 3 4 5
Continued on the next page . . .	

Part II: Subject Matter (continued)						
C. Conclusion						
• Team presented a clear and concise summary in their conclusion	0	1	2	3	4	5
• Team discussed community acceptance/feedback of the project	0	2	4	6	8	10
• Team presented a list of results realized and/or anticipated results	0	2	4	6	8	10
Part II Total:						

Part III: Presentation (40 points maximum)					Circle Score						
A. Overall Presentation: Team members demonstrated effective public speaking skills											
• Team members used eye contact and appropriate gestures		0	1	2	3	4	5				
• Team members incorporated originality and creativity into the presentation		0	1	2	3	4	5				
B. Presentation Time: Team made effective use of their time											
• Add up to five points if the presentation was accomplished in the allotted time scale and the team made effective use of their time. (Time scale is 7-10 minutes.)					0	1	2	3	4	5	
5 pts.: 7-10 minutes	4 pts.: 5-6 minutes	3 pts.: 3-4 minutes	2 pts.: 0-2 minutes	1 pt.: More than 10 minutes							
C. Award Two points for each team member verbally participating in the presentation (all students demonstrated speaking skills)						0	2	4	6	8	10
D. All team members demonstrated thorough knowledge of the environmental issue and the project						0	1	2	3	4	5
E. Questions were answered logically and concisely by all *Judges are encouraged to ask specific questions of individual team members						0	2	4	6	8	10
Part III Total:											

Final Score		
Total Points for Part I	(30 maximum)	
Total Points for Part II	(70 maximum)	
Total Points for Part III	(40 maximum)	
Total Points for Written Summary & List of References (60 maximum)		
Final Score (200 points maximum)		

Michigan Envirothon Rules & Regulations (Last Amended September 2009)

1. Team members must be enrolled in grades 9-12 or age equivalent (13 – 19) during the school year of the competition. Teams will consist of five members. At least three team members must be in attendance at the State Competition.
2. Alternate team members may substitute for regular team members in the Regional or State Envirothon if the alternate is properly registered. Such substitutions must be for the entire competition, and the regular team member may not replace the "alternate" part way through the competition. Alternates who accompany their teams but are not required as replacements for regular team members may attend the competition for the experience this provides. Please note, if an alternate does attend they cannot go with their team during testing or participate in the Community Outreach Project oral presentation.
3. Teams must be accompanied to all Envirothon events by an adult advisor. One advisor must be present for every five students at the Michigan Envirothon State Competition. Teams with mixed genders will need one male and one female advisor. If teams fail to meet this requirement the team may be disqualified. Advisors will be responsible to assure that teams display proper conduct during all Envirothon sponsored events.
4. Teams are required to participate in their own area Regional Envirothon, unless otherwise approved prior to the event. Exceptions to this rule must be approved in advance by submitting a written request by February 18 stating a valid reason for wanting to participate in another Regional Envirothon. Requests will be reviewed by the Michigan Envirothon Board and will be approved or denied prior to the Regional Envirothon event.
5. A maximum of twenty-four teams will be allowed to compete at the State Competition. To qualify for the State Competition, a team must have a minimum score of 30 (50%) on the Regional test. If more than twenty-four teams meet this criterion, the top two teams with a score of 30 or better, located in each Envirothon Region, will qualify. This may provide as many as twelve of the twenty-four teams allowed. All remaining places will be filled by placing all remaining teams having scored 30 or better on the Regional test in a common pool and selecting those teams having the highest scores. In the event of a tie for the 24th place at the State Competition, scores on subject matter questions will be used to determine the winner, starting with scores on the Current Issue. If teams remain tied, scores on the subject matter areas will be considered, in alphabetical order, Agriculture, Aquatic Ecology, Energy, Forestry, Geology and Soils, Wildlife, until the 24th team is identified.
6. After the Registration deadline has passed, the Coordinator will provide the Board of Directors with a list of all applications received. After reviewing the list, the Board may adjust the requirements for qualification for the State Competition, including lowering the minimum score required. All registered teams will be promptly notified of any changes made by the Board.
After all Regional Competitions have been completed, if there are fewer than 24 qualified teams, any team that entered a Regional Competition but failed to receive the minimum score may petition the Board for permission to compete at the State Competition. To facilitate this process, the Coordinator shall notify all teams eligible to petition of the number of vacancies available.
7. Team members are not to use or possess any electronic devices, such as cell phones, DVD players, cameras, audio recorders/players, video recorders, or computers during competition. Simple calculators will be permitted upon approval and/or provided by Michigan Envirothon.
8. All scores are final the day of competition.
9. Costs for transportation to & from the competition, and lodging and meals at the competition will be the responsibility of the participants, unless noted otherwise.
10. Use of snuff, tobacco, drugs (except for those that are prescribed and listed on the Envirothon Health/Release Form) and/or alcohol is PROHIBITED during all Envirothon sponsored events.
11. Release/Health forms must be submitted to the Envirothon office by February 18th. Teams without all of their participants' health forms submitted to the Envirothon office by February 18th will not be allowed to participate in the Envirothon competition. Registration refunds will not be made after February 28th. Partial refunds may be granted to teams who submit written notice of withdrawal by February 28th.

12. The team with the highest cumulative point total will win the event. Tie breaker procedure will be determined prior to each Envirothon competition.
13. The use of identification keys is prohibited unless provided by the Envirothon regional or state competition resource professionals.
14. A Grievance Committee has been established to hear complaints. If team members, advisors, or others wish to make a grievance or complaint (e.g. violation of rules, cheating, event procedures) during competition, this must be done as soon as possible following the incident and before the winners are announced. Complaints may be made to group or station leaders, and they will report back to the Grievance Committee. Group or station leaders may ask the team member or advisor to make their complaint or grievance in writing.
15. Awards for the state and regional competitions will vary from year to year. A list of awards will be available prior to the competition.
16. Envirothon rules and regulations are subject to change. Revisions will be sent in writing to team advisors prior to competition.
17. Any suggestions for program improvements need to be put in writing and submitted to the Envirothon office. These suggestions will be addressed within thirty working days from the date they are received.
18. The written project summary is due April 29th. One point per day will be taken off for late papers. Projects may only be used by a team for two consecutive years. Projects conducted for more than two consecutive years will not be accepted.



Michigan Envirothon

Inspiring Environmental Stewardship in Michigan's High School Students



Envirothon Timeline and Checklist

September –
February

Form a team: Michigan Envirothon teams may be comprised of up to eight students (five team members and three alternate members) *please not for state competition only 5 team members may compete. Teams may be formed by school districts, home school groups, career centers, Girl/Boy Scout groups, FFA, 4-H, church groups and/or environmental clubs. Team advisors are not required to have any special training; they just need to be an adult interested in working with the students and helping them prepare for competition. Assistance is often available through the local Conservation District (see www.macd.org for a directory) and other groups.

September –
March

Choose a Community Outreach Project: Guidelines for the Community Outreach Projects, including Scoring Criteria, and be found in the Michigan Envirothon manual.

November -
February

Register with the Michigan Envirothon office: There is a registration fee per team that covers resource materials and the Regional Envirothon Competition. The earlier a team is registered, the more time they will have to study the learning objectives and work on their community outreach project.

Registration (\$100): Nov. 1 – Feb.15 Late registration (\$130): Feb. 15 – March 1

Don't have your team roster or registration money yet? NO PROBLEM! Complete our **Notice of Intent form** as early as November to let us know you will participate and receive valuable information and tips for your team!

January –
February

Release/Health Forms: Release/Health Forms must be on file with the Michigan Envirothon office before students and advisors can participate in any Envirothon event.

March 26

Region 4 Competition: TBA

March 08

Region 2 Competition: Grand Traverse Conservation District

March 12

Region 5 Competition: Kresge Environmental Education Center, Lapeer

March 15

Region 6 Competition: Indian Springs Metro Park, White Lake

March 19

Region 3 Competition: TBA

March 22

Region 1 Competition: TBA

April 24

Written Summaries for Community Outreach Projects Due: One point per day will be deducted for late reports. ***You MUST submit with the provided cover letter

May 8 - 10

Michigan Envirothon State Competition: The 2013 Michigan Envirothon State Competition will be held on the campus of Michigan State University in East Lansing, Michigan.

August 4 - 9

North American Envirothon 2013: The 2013 North American Envirothon will be held at Montana State University, Bozeman Montana



Envirothon Team Registration/Roster Form
Registration October 1 – February 15 \$100.00
***Late Registration: February 15 -March 1 \$130**
PLEASE FILL OUT ALL LINES

<i>Office Use Only</i> Receive on: _____ Check #: _____ Invoice #: _____ Receipt _____ Region: _____

School: _____ Team Name: _____

Team Advisor: _____ M / F E-mail: _____

Team Co-Advisor: _____ M / F E-mail: _____

Address: _____ City: _____ Zip: _____ County: _____

Work Phone: _____ Home/Cell Phone: _____

Best days/times to call (Please Circle Preferred Phone contact) : _____

Team Members

Team Captain _____ M / F Grade: _____

E-mail: _____

Team Member #2 _____ M / F Grade: _____

E-mail: _____

Team Member #3 _____ M / F Grade: _____

E-mail: _____

Team Member #4 _____ M / F Grade: _____

E-mail: _____

Team Member #5 _____ M / F Grade: _____

E-mail: _____

Alternate Team Member

1. _____ M / F Grade: _____

2. _____ M / F Grade: _____

3. _____ M / F Grade: _____

****No refunds for team withdrawals will be granted after February 15th ****

Late Registration: Feb. 15th - March 1st \$130

***Teams must consist of at least 3 students (5 to be eligible for North American Envirothon) grades 9 – 12**

Registration will be processed upon receipt of payment: Mail Completed form and payment to:

Att: Michigan Envirothon
Michigan Association of Conservation Districts
3001 Coolidge Rd, Suite 250
East Lansing, MI 48823

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Credit Card: Contact Angela Sandusky, angela.sandusky@macd.org or call (517) 930-7449; (517) 324-4421