

MASSACHUSETTS ENVIROTHON

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Questions and Resources for Team Preparation 2004 Mass Envirothon Current Issue

Natural Resource Management in the Urban Environment

In what ways is your community "urban"? How is it connected to other communities, including urban centers? What urban environmental stresses does it contribute to, and how can these problems be addressed?

Human activities have major and diverse effects on ecosystems near and far. There are examples of intense resource use and high ecosystem impact in every community, not only within the traditional urban boundaries. We are a high impact society in general, it's just a little more obvious in our cities. And whether or not your community is considered a city, it no doubt contributes in some way to the economic activity of urban centers not very far away. In this year's current issue, we will be looking at these "urban" effects and the forms they take for each of our communities, and at ways that we might reduce our impact on the natural systems we depend upon.

The 2004 Current Issue problem asks teams to assess the extent and nature of "urban" activities in their communities - those functions associated with **concentrations of people and economic activity**, often resulting in **intense resource use** and **high ecosystem impact**. Teams will choose one area for in-depth investigation that represents a significant environmental impact or opportunity for environmental improvement, then recommend concrete steps their community can take to address the issue.

This document is intended as a very general starting guide for approaching this year's current issue topic and preparing for presentations at the Envirothon in May. It is not intended to be the definitive resource for all aspects of this very broad issue, or to place a limit on your creativity! Teams will also find many resource connections and ideas at the Canon Envirothon's web site, <http://www.envirothon.org/competition/Canon2004/currentissue.htm>. In addition, watch for new resources and useful connections via email and on the Mass Envirothon web site at <http://maenvirothon.org/website-html/>

Questions? Contact Will Snyder, wsnyder@umassk12.net.

What does it mean to be urban?

At the simplest level, the term *urban* is associated with people living in dense settlement patterns. The line between urban and non-urban is not easily drawn, however. In many ways, we are all urbanites now.



New patterns of settlement

Exurbia - From Ohio State University (<http://www-agecon.ag.ohio-state.edu/programs/exurbs/def.htm>) comes a description that will sound familiar to many Massachusetts communities:

Exurbia or the “exurbs” are a type of spatial pattern of settlement that differ from their suburban counterparts. Exurbs are located at greater distances from urban centers than suburban developments and are comprised of a different mix of land uses and population. Active farms are interspersed with different ages and types of very low density residential development, including roadside houses, new housing subdivisions, exclusive estates, and mobile homes. In addition, exurbia contains small, rural towns as well as newer edge-of-town retail, commercial, and industrial development. Exurbs are areas that are in transition from their traditional rural setting to something more urban. They are often transformed into suburbs or edge cities within a 20-30 year period.

Edge cities - A new way of looking at our landscape, from one of the great geographer/journalists of our time, Joel Garreau (<http://www.wired.com/wired/archive/3.12/edgier.cities.html>):

Almost nobody saw it coming. The people we pay to be urban planners never imagined a future in which ordinary people pick up and move their city functions as close as possible to their suburban homes. They never envisioned that we would be constructing enormous office buildings in areas like Silicon Valley, and filling them with the bulk of our information-age jobs.

Nonetheless, these places I call edge cities - places like Tysons Corner, Virginia; Schaumburg, Illinois; and Irvine, California - have become vastly larger than many of the 45 remaining major downtowns in the United States. In fact, edge cities have become the standard for the world's urban environments.

The hallmarks of edge cities are not the sidewalks of New York, for usually there are few sidewalks. Look, rather, for jogging trails. Nor are these new cities tied together by locomotives and subways. Instead, they are united by jet ways, freeways, and satellite dishes 10 meters across. You won't find a horse-mounted hero as the characteristic monument of an edge city. Instead you will find high, atrium-shielding trees perpetually in leaf at the cores of corporate headquarters, fitness centers, and shopping plazas. In this new kind of city, you will find few of the penthouses of the old urban rich or the tenements of the old urban poor. Instead, the landmark dwelling is the celebrated single-family detached home - the three-bedroom, two-bath unit with grass all around - that made America the best-housed civilization the world has ever known.

Since edge cities are so new - only 30 years ago, most of them were cow pasture - it's hard to project their future. But humans have been building cities for 58,000 years now, and patterns have developed. All cities, for example, appear chaotic in their early stages. In 1848, Charles Dickens saw his first industrial-age city. Used to tiny agrarian towns, he wrote of London, "There were a hundred thousand shapes and substances of incompleteness, wildly mingled out of their places, upside down, burrowing in the earth, aspiring in the earth, moldering in the water, and unintelligible as in any dream."

That's not a bad description of the strip malls in most edge cities today. But just as London turned out to be a model of urban life after six or seven generations of tearing it down, rebuilding, re-envisioning, and planting ivy, there's hope for our new edge cities.

National Geographic has developed a lesson plan for high school that focuses on the phenomenon of edge cities. See <http://www.nationalgeographic.com/xpeditions/lessons/12/g912/fringe.html>

New Urbanism. From the web site of the Center for New Urbanism at <http://www.cnu.org/about/index.cfm>:

New Urbanism is an urban design movement that burst onto the scene in the late 1980s and early 1990s. New Urbanists aim to reform all aspects of real estate development. Their work affects regional and local plans. They are involved in new development, urban retrofits, and suburban infill. In all cases, New Urbanist neighborhoods are walkable, and contain a diverse range of housing and jobs. New Urbanists support regional planning for open space, appropriate architecture and planning, and the balanced development of jobs and housing. They believe these strategies are the best way to reduce how long people spend in traffic, to increase the supply of affordable housing, and to rein in urban sprawl. Many other issues, such as historic restoration, safe streets, and green building are also covered in the Charter of the New Urbanism, the movement's seminal document.

Culturally, there's more to cities than settlement patterns. The word *city* has the same Latin root as *civility* and *civilization*. Historically, the growth of cities in the ancient world allowed specialization of roles in society, and the flourishing of the arts. *Urbane*, which has the same Latin root as urban, is synonymous with *gracious* and *suave*. In early 20th century America, and still in many parts of the world, rural life was isolated and often impoverished.

Traditionally, a rural lifestyle is associated with self reliance, self sufficiency, and living close to the land. One measure of how urban we are lies in how far removed we are from understanding that our livelihoods, and our communities' health in general, are ultimately completely dependent on the functioning of natural systems.

Urban life is also associated with a highly human-constructed, mediated environment, involving little interaction with the natural world. We talk about the "built" (as opposed to the "natural") environment, referring to the degree to which we alter and try to control our surroundings. Of course, the built environment is not limited to cities. We live indoors to a greater extent than at any time in human history, whether we live in densely or sparsely populated communities.

Can city life be environmentally sound?

Sheer numbers of people have a dramatic impact on local natural systems, as anyone who has attended a poorly planned all-day rock festival can attest. We think of "carrying capacity" as an estimate of the population of a given species (at a given level of resource consumption and waste generation) that an ecosystem can support without being degraded in the long run. The density of their population makes cities look like they are far beyond their human carrying capacity. But a combination of technology and abundant sources of cheap energy have allowed us to extend our "local" ecosystem, in terms of resources and waste disposal, to hinterlands far away. In the 1930's, for example, Boston extended its water supply system west to the Swift River valley, and in the 1990's extended its waste water system out into Massachusetts Bay. In some senses, Boston as an urban phenomenon extends into western Massachusetts and beyond.

We associate city life with a high consumption/high pollution lifestyle, but is this a fair assumption? Cities have grown as people take advantage of the economic efficiencies of being close together. An individual city dweller who uses public transportation and lives in an apartment building with central heating, even with no environmental intent, is likely to have less personal environmental impact than his environmentally conscious exurban cousin.

A more accurate assessment of our individual environmental impact, wherever we live, can be found in the concept of the "ecological footprint" - an estimate of how much productive land and water needed to support your lifestyle. Online explanations and calculators can be found at <http://www.earthday.net/footprint/index.asp> and <http://www.lead.org/leadnet/footprint/intro.htm>.

What Do We Mean by Urban Natural Resource Management?

Through the past century, growing scientific understanding of natural systems and an accompanying conservation ethic have informed our attitudes and practices toward natural resources in undeveloped areas. We have moved from an exploit-and-run mentality, to a resource management philosophy, to an ecological understanding of ourselves and our activities as part of the larger economy of nature.

Our attitudes toward the urban environment have undergone similar development. Three metaphors in current use for understanding urban ecology are particularly powerful:

Green Infrastructure

From <http://www.greeninfrastructure.net/> , a web site hosted by The Conservation Fund in partnership with USDA Forest Service.)

Green Infrastructure is the Nation's natural life support system - a strategically planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with conservation value that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people.

The Green Infrastructure network encompasses a wide range of landscape elements, including: natural areas - such as wetlands, woodlands, waterways, and wildlife habitat; public and private conservation lands - such as nature preserves, wildlife corridors, greenways, and parks; and public and private working lands of conservation value - such as forests, farms, and ranches. It also incorporates outdoor recreation and trail networks.

According to Webster's New World Dictionary, Infrastructure is defined as - "the substructure or underlying foundation, especially the basic installations and facilities on which the continuance and growth of a community or state depends". When we think of infrastructure we think of built infrastructure such as roads, electric power lines and water systems as well as social infrastructure such as schools, hospitals and libraries. However, the concept of Green Infrastructure elevates air, land, and water to an equal footing with built infrastructure and transforms open space from "nice to have" to "must have." At the same time, green infrastructure helps frame the most efficient location for development and growth - and related gray infrastructure - ensuring that developers, citizens, and communities capture the cost advantages of location and create and protect household and community amenities.

Green infrastructure systems help protect and restore naturally functioning ecosystems and provide a framework for future development. In doing so, they provide a diversity of ecological, social, and economic functions and benefits: enriched habitat and biodiversity; maintenance of natural landscape processes; cleaner air and water; increased recreational and transportation opportunities; improved health; and better connection to nature and sense of place.

Well planned green space has also been shown to increase property values and decrease the costs of public infrastructure and public services, including the costs for stormwater management and water treatment systems.

Investing in green infrastructure can often be more cost effective than conventional public works projects. For example, in the 1990s New York City avoided the need to spend \$6-\$8 billion on new water filtration and treatment plants by instead purchasing and protecting watershed land in the Catskill Mountains for about \$1.5 billion. Likewise Arnold, Missouri, has dramatically reduced the cost to taxpayers of disaster relief and flood damage repair by purchasing threatened properties and creating a greenway in the flood plain.

What gives the term Green Infrastructure its staying power is its ability to invoke images of planned networks of green spaces that benefit wildlife and people, link urban settings to rural ones and, like other infrastructure, forms an integral part of government budgets and programs.

Just as all forms of built infrastructure are promoted for the wide range of public and private benefits they provide, we need to promote Green Infrastructure systems actively for the wide range of essential ecological and social functions, values and benefits that accrue to people and nature.

From: <http://www.ouopenspaces.org/Issues/greeninfrastructure.html>, the web site of the Community Open Space Partnership:

Green Infrastructure: A New Idea for a Changing World (and for Changing the World)

Words communicate ideas; without a word to describe it, an idea does not truly exist. "Infrastructure" is a good example. In the nineteenth century, there were drainage ditches and trains and telegraph wires, but the idea that these formed the "underlying structure" of society – the infrastructure – did not exist. Yet in the last several decades, we have become accustomed to applying the term "infrastructure" to almost anything: from sanitary sewers and natural gas lines (utility infrastructure) to runways and rails (transportation infrastructure) even to schools and police stations (services infrastructure), and on and on. What do all these have in common? Not a thing, except that they are all recognized as essential parts of a necessary system: "infrastructure."

Now it is time to reconsider what "infrastructure" includes, and more to the point, what it currently excludes. If the word is to truly signify those things that make our communities healthy, livable, and sustainable, the definition must evolve to include something new: our critical open spaces. The Community Open Space Partnership defines green infrastructure as "the network of open spaces in and around cities designed to enhance local economic vitality, sustain natural systems, connect people to the natural world, and increase individual and community well being."

Ecosystem Services

FROM the web site of the Ecological Society of America and their web publication (with the Union of Concerned Scientists) *Communicating Ecosystem Services: Tools for Scientists to Engage the Public* (<http://www.esa.org/ecoservices/>).

What Are Ecosystem Services?

Ecosystem Services are the processes by which the environment produces resources that we often take for granted such as clean water, timber, and habitat for fisheries, and pollination of native and agricultural plants. Whether we find ourselves in the city or a rural area, the ecosystems in which humans live provide goods and services that are very familiar to us.

Ecosystems provide "services" that:

- moderate weather extremes and their impacts
- disperse seeds
- mitigate drought and floods
- protect people from the sun's harmful ultraviolet rays
- cycle and move nutrients
- protect stream and river channels and coastal shores from erosion
- detoxify and decompose wastes
- control agricultural pests
- maintain biodiversity
- generate and preserve soils and renew their fertility
- contribute to climate stability
- purify the air and water
- regulate disease carrying organisms
- pollinate crops and natural vegetation

From the web site of the World Resources Institute, "Valuing Ecosystem Services" (<http://www.wri.org/wr-98-99/ecoserv.htm>)

What are Mother Nature's life-support services worth? In one sense, their value is infinite. The Earth's economies would soon collapse without fertile soil, fresh water, breathable air, and an amenable climate. But "infinite" too often translates to "zero" in the equations that guide land use and policy decisions. Practitioners in the young field of ecological economics believe more concrete numbers are required to help nations avoid

unsustainable economic choices that degrade both their natural resources and the vital services that healthy natural ecosystems generate.

In one of the first efforts to calculate a global number, a team of researchers from the United States, Argentina, and the Netherlands has put an average price tag of US\$33 trillion a year on these fundamental ecosystem services, which are largely taken for granted because they are free. That is nearly twice the value of the global gross national product (GNP) of US\$18 trillion.

From the web site of the Heinz the H. John Heinz III Center for Science, Economics and the Environment, from a report on *The State of the Nation's Ecosystems* (http://www.heinzctr.org/ecosystems/national/nat_svcs.shtml):

. . . many of the services provided by natural ecosystems are less tangible and more difficult to quantify, including such vital processes as purification of air and water, detoxification and recycling of wastes, regulation of climate through storage of carbon dioxide, regeneration of soil fertility, and maintenance of the earth's startling variety of plants and animals, which we use to sustain ourselves, but which we also enjoy for their own sake. Natural ecosystem processes reduce the severity of floods, promote pollination of crops and natural vegetation, ensure dispersal of seeds, control agricultural pests, and protect coasts and hillsides from erosion.

These services are often unrecognized, or at best taken for granted—until conversion or loss of the ecosystem results in loss of the services. For example, wetlands and floodplains can play a vital role in minimizing flood peaks, but this was often not recognized until downstream flooding increased following upstream conversion and filling. Or a steep hillside, formerly stabilized by trees and shrubs, slides downward, taking with it the houses that replaced the trees. Indeed, one of the greatest environmental, social, and economic disasters in the nation's history—the Dust Bowl—occurred when the intangible services provided by the natural grassland ecosystem were lost as a result of widespread agricultural conversion.

Land can also change from agricultural use into a more natural condition (this occurs less often for urban lands). For example, demographic and economic changes in New England have replaced farmland production with forest ecosystem services, and the Conservation Reserve Program (which removes environmentally sensitive farmlands from production) implicitly acknowledges that the ecosystem services provided by these lands can outweigh the value of their agricultural production.

Two starting places for understanding urban ecology as currently practiced:

* When the National Science Foundation established the Long Term Ecological Research program (<http://www.lternet.edu/>) in the 1980s, one of the 24 sites chosen was the City of Baltimore. The goal of the Baltimore Ecosystem Study (<http://www.beslter.org/>) is "to understand metropolitan Baltimore as an ecological system," bringing together researchers from the biological, physical, and social sciences to look at "how both the ecological and engineered systems of Baltimore work". The principal communities studied are: "Eastern deciduous forest/ Suburban Agriculture fringe, urban parks, residential and commercial patches, riparian and stream habitats." Research topics include: "Patch dynamics of built, social, biological, and hydrological components of the metropolitan area; feedbacks between social, economic, and ecological components of an urban ecosystem; effect of infrastructure and development on fluxes of nutrients, energy, and water in upland, stream, and coastal regions of metropolitan Baltimore."

* The University of Massachusetts Ecological Cities project ". . . seeks to promote sharing of knowledge and experience among disciplines, sectors, and urban regions regarding new approaches to urban greenspace creation and management." The project's "shared vision" diagram provides an image of the wide variety of issues and arenas of study and action in the field of urban ecology, and helpful links to organizations that are involved (<http://www.umass.edu/ecologicalcities/links/category-shared.html>)

Possible Directions for Envirothon Team Research

This year's Current Issue offers endless possibilities for team investigations. Narrowing the research focus in some way will be essential. Below is a (far from complete!) list of possible topics and issues based on more traditional categories of natural resources.

Several of the web sites below came from a simple web search using the term <urban sustainable development>. The sites recommended below do not make a comprehensive list, but they seem to be solid, trustworthy sources. Seek and ye shall find!

For a good overview of the breadth of sustainable development issues in cities, and some outstanding examples of cities aiming for sustainability, try this web site from the Energy Efficiency and Renewable Energy Network of the U.S. Department of Energy. (Your federal tax dollars at work!): <http://www.sustainable.doe.gov/slides/urban/1.html>

Topics marked with an asterisk (*) below represent Mass Envirothon Current Issues from previous years. Contact Will Snyder (wsnyder@umassk12.net) for the *Questions & Resources* handout.

Forests. From the web site of the Massachusetts Urban and Community Forestry Program (<http://www.state.ma.us/dem/programs/forestry/urban/index.htm>):

What is Urban and Community Forestry? Urban and community forests are the trees, plants and associated ecosystems anywhere where people are - country roads in rural towns, new developments in the suburbs, or concrete neighborhoods in cities and old mill towns. Our landscape is a continuum from rural forest to city center. We live, work, play and learn all along this continuum.

The Massachusetts Urban and Community Forestry Program assists communities and nonprofit groups in protecting, growing, and managing community trees and forest ecosystems, with the ultimate aim of improving the environment and enhancing livability of all of Massachusetts' communities. We provide grants, technical assistance, training, and recognition awards to communities of all sizes throughout Massachusetts. The program also provides guidance on urban forestry policy issues at the state level.

In particular, see *Growing Our Future: A Plan for Urban and Community Forestry in Massachusetts* (2002), a five-year plan for improving urban and community forestry in Massachusetts.

Soil. Issues include compaction, erosion, and contamination and brownfields redevelopment. One place to start to investigate urban soil issues is the web site of the Natural Resource Conservation Service at <http://soils.usda.gov/use/urban/>.

Water. Issues include drinking water supply*, stormwater management*, wastewater treatment*, protection and management of wetlands* and waterways. Type your water issue in at <http://www.mass.gov/> or see the U.S. Environmental Protection Agency website at <http://www.epa.gov/ebtpages/water.html>

Wildlife. Issues vary: We like some urban critters, others we don't. Topics include habitat protection and enhancement, managing human/wildlife interactions, and pest management*. Web searches turn up mainly sites concerned with humane treatment of wildlife. Try starting with our own Massachusetts Department of Fish and Game, expected to be linked via <http://www.mass.gov/>.

Waste. Questions for investigation may include: What do we produce? How much do we produce? How is it treated? Where does it go? What are special considerations for hazardous waste? How do solid waste issues intersect with water issues? Typing the term <recycling> into the search box at <http://www.mass.gov/> leads you to the home page for the Massachusetts Department of Environmental Protection Recycling Program, with information for consumers, teachers, municipalities, and businesses at <http://www.state.ma.us/dep/recycle/recycle.htm>

Energy. Power for heating, lighting, transportation, and the myriad technologies on which we depend is perhaps the biggest environmental issue of all, but has escaped media notice in recent years. One place to start is the Urban Energy

Systems links at the Global Development Research Center's virtual library on Urban Environmental Management at <http://www.gdrc.org/uem/energy/energy.html>.

See also the web site for the National Center for Appropriate Technology at <http://www.ncat.org/> - "Championing sustainable technologies and community-based approaches that protect natural resources and assist people, especially the economically disadvantaged, in becoming more self-reliant." See especially their pages on sustainable communities and sustainable energy.

Another list of links is on the U.S. Department of Energy web site at <http://www.eere.energy.gov/>

Air Pollution. A big issue! The U.S. E.P.A. web site at <http://www.epa.gov/ebtpages/air.html> is a good place to start.

Noise. From the Noise Pollution Clearinghouse at <http://www.nonoise.org/aboutno.htm>:

Noise is unwanted sound; it is derived from the Latin word "nausea," meaning seasickness. Noise is among the most pervasive pollutants today. Noise from road traffic, jet planes, jet skis, garbage trucks, construction equipment, manufacturing processes, lawn mowers, leaf blowers, and boom boxes, to name a few, are among the unwanted sounds that are routinely broadcast into the air. The problem with noise is not only that it is unwanted, but also that it negatively affects human health and well-being. Problems related to noise include hearing loss, stress, high blood pressure, sleep loss, distraction and lost productivity, and a general reduction in the quality of life and opportunities for tranquillity.

Try the following for fun: *Noiseways New York* is a virtual tour of various scenic and not-so scenic locations in the New York City area that includes pictures and sound recordings from each location. *Can you Hear the Green?* is a virtual tour that lets you compare the aural environment at various places in and near Portland, Oregon. Both are accessible from <http://www.noiseways.org/>

Strategies for Community Investigation

The following suggested activities and questions are designed to help Envirothon teams in their investigations. They are meant only as a guide; every investigation will be different.

1. Look at your community's urban connections.

Throughout your investigations, you should **keep these questions in mind**: In what ways is your community "urban"? How is it connected to other communities, including urban centers? What urban environmental stresses does it contribute to, and how can these problems be addressed?

Calculate your ecological footprint. Calculators can be found at <http://www.earthday.net/footprint/index.asp> and <http://www.lead.org/leadnet/footprint/intro.htm>.

Investigate some of the websites related to specific issues above. Begin scanning local media for relevant news reports. Pool your team's knowledge: What issues are most pressing urban issues in your community's awareness? What urban issues are critical but have not yet reached people's awareness?

Line up interviews with local officials or advocates. How do they see the issue(s) from the particular perspective of your community? What are they working on right now? Has new infrastructure been put in place over the past twenty years? What and where? Has environmental impact been a part of discussions surrounding these decisions?

Talk with a long term resident. Has the population grown, spread out, changed over the past 20 years? How has the community's "green" and "gray" infrastructure changed over the past twenty years? (See if you can

explain this idea!) How have these changes affected their lives? (For example, do more people commute farther now?)

Survey the natural resource issues in your community - via field observations, media reports, and interviews - and assess which represent the greatest environmental impact. You should be able to respond thoughtfully to such questions as:

Where does your solid waste go? Where is your water supply, how does the water reach you, and how is it treated before and after its use? What are your community's traffic patterns and transportation issues? How far do people commute on a regular basis? Where is your power generated? From what source? How does it reach you? What land uses are represented in your town? Where is development densest? Where is the open space and how is it used? What are your community's growth and development concerns? Does your town have a masterplan?

In what ways does your community depend on green infrastructure to handle some of these issues?

Survey the ways you have an urban impact through your connections to other communities. What are the effects of your actions outside your town boundaries?

See what you can learn from maps. Low tech: Look at the *Historical Atlas of Massachusetts* (1991), Richard Wilke and Jack Tager, editors. It should be in your school or town library. High tech: Visit MassGIS, our state mapping agency, at <http://www.state.ma.us/mgis/>. In particular, get hold of the "data viewer" which is now available on a cd and online. What can you learn about population density? land uses? What land uses would you characterize as "urban"?

Compare your community with another community. (One way to do this is to contact another Envirothon team!) Which is more urban? Why? Who can document the most distant environmental effects? Post your findings on the Envirothon web page.

To meet the standard for the Mass Envirothon *Community Research Award*, you should be able to demonstrate that you have used the following in research relevant to your urban issue:

- 2 site visits (at least one in your community, perhaps one in another community)**
- 2 local newspaper stories**
- 2 national magazine stories and or resource books**
- 1 interview with a local official**
- 1 interview with an agency/ngo staff person**
- 1 interview with a long time local resident**
- 1 interview with another Envirothon team about their community**
- 2 helpful web sites**
- 1 map that helped you understand the issues better**

If your team decides to take what you have learned through your research on this issue and apply it in service to your community this year, you will be eligible for the Massachusetts Envirothon *Community Service Award*. Service may take the form of public education, advocacy, research, or stewardship projects. Contact Mass Envirothon for more information.

2. Based on your research, define your issue and your plan.

You can choose a problem that is very visible within your town boundaries, or you can choose to look at a problem that your town contributes to, but shows its effects beyond the town boundaries.

How does the issue manifest itself, on the ground? What are the environmental effects? Where do they occur?

Who is already working on the problem? What are they doing?

What are the options for addressing this problem? What are the pros and cons of each? Consider cost, time, resources available, public concern, potential for success, etc. Focus on actions that your community can take as a whole, rather than just what individuals can do.

Decide on a specific, do-able step that your community can take right now. In making your plan, look for key leverage points: what step(s), however small, could be taken this year, that might be key in beginning to move the community in the direction of addressing the problem?

3. In your presentation at the Envirothon, you should

Introduce your community: In what ways are you urban? What are your urban connections beyond your town boundaries? What environmental stresses are you contributing to?

Introduce the key issue you have identified. Why did you choose it?

State the action you are recommending and the outcomes you believe will result.

Note who should be involved in the plan, and what their roles should be. Who should take the lead?

Note the major costs you can see that will be involved, and who might be expected to pay.

Note how your proposal will affect ecosystems and people, in your own community and in others.

How will the Envirothon Current Issue be Judged?

1. Competition Scoring

The Current Issue represents 100 points, or one quarter of the team's total Envirothon score.

As in past years, teams will have 15 minutes to present their recommendations to a panel of judges on the day of the Envirothon. This will be followed by a 10 minute period for formal questions from the panel. Judging criteria will include:

- An answer to the questions: How urban are we? and What are our urban connections? with evidence of general knowledge of a range of urban environmental issues, and in-depth knowledge of a specific issue.
- Evidence of first hand community investigation, including both field exploration and contacts and interviews with people working on the issue
- Evidence of discriminating research of library, media, and web sources.
- Persuasiveness of your case that you have found a significant environmental concern or opportunity for environmental improvement that your community should address
- Quality of proposal for the next step your community should take, including concrete next steps
- Quality of presentation including organization, speaking skills, teamwork, effective use of maps and other visual aids, time management, and response to questions
- Overall quality, including evidence of curiosity, critical thinking, effort, depth, honesty, and creativity

A copy of the scoring sheet to be used by the judges will be mailed to participating teams at least four weeks before the Envirothon.

2. Noncompetitive Awards for Community Research and Community Service

The Massachusetts Envirothon Community Research Award recognizes teams who have done thorough and wide ranging community research in preparation for their Current Issue presentation at the Envirothon.

The Massachusetts Envirothon Community Service Award further recognizes teams who are taking this new knowledge and applying it in service to their communities.

Specific requirements and standards for these awards are available from Mass Envirothon.

Both awards are optional and noncompetitive, and are completely separate from the competitive scoring described below. Team advisors and school principals certify that their team has met the requirement. On the day of the Envirothon, teams receiving the award will meet with Envirothon reviewers, display their work informally for other teams, and be recognized in the awards program.