

Massachusetts Envirothon Story 2009 Acton-Boxborough Regional High School

Acton, MA

Coach: Brian Dempsey

For Envirothon this year, our team got together and put a lot of effort into making our Earth a better place. We focused our work mainly on two initiatives: first, using a biofuel converter to generate power, and second, building a green roof on our high school. We got the idea for the first one when the science department gave us a \$3,000 grant because of our excellence in past years. We decided to spend it on a biofuel converter because our AP Environmental Science class had a unit on biofuels, and we could easily collaborate with its students for their knowledge. But, the question remained where we could get the biofuel to convert. Fortunately, a team member had parents who owned a restaurant who could supply us with their excess "fry oil." Before hearing about our project, they would mostly just throwaway their oil. We contacted other restaurants in town and they were all glad to give us their oil.

Our second idea came when a team member said her uncle, an environmental engineer, suggested the advantages of a green roof. Although we were hooked, the funds to build it weren't as enthusiastic. It costs thousands of dollars to build a green roof on our school! We immediately began hosting fundraisers. First, we had a Highlighter Dance, which many students came to just to support the Envirothon's efforts. Then, we organized an original Game Night, where students came to play video games (to the adults: don't worry, there was a ping_pong table there too.) It was such a success that people asked us to host more of them (the ping_pong table will still be there.) The two events earned us about \$800, a substantial start.

Although our project is far from finished, we still have a lot of plans for what we'll do next year. But, if all else fails, we can always just paint our roof green.

Massachusetts Envirothon Story 2009

Barnstable High School

Hyannis Massachusetts

Coach: David Gorrill

Members

Michael White

Caleb Kapp

Mark Poire

Sam Gage

Introduction

After months of research and attempts to figure out an economical and effective way the town of Barnstable could go green within it's community we have finally come to a conclusion. Though we searched many avenues which could be taken the task at hand was much harder than we anticipated. From co generators to solar power we searched and researched all the projects and current data available to us we finally found a solution for our green task, wind power (through turbines) as a solution for our communities need to go green. Also it was made apparent to us that our school was our "community" along with our towns other buildings such as our DPW and sewage treatment facility. For these areas would be much more applicable for a wind turbine. Research through Jay Cashman Contractors (the contractor of the turbine of MMA) showed us the savings and costs of the turbine at the Academy and when the numbers are put together the school in the long run is going to actually save a lot of money. General Electric showed and conversed with us via email the benefits of having a small or a large scale turbine. But what it all boils down to is how much the school will save. Anaerobic digestions too costly for a school based project although it would produce much needed energy. Solar power seemed to be almost a dream to our school because to even start to save money we'd have to cover our school and almost all of our sports fields with panels that would cost us into the millions. The only other avenue that seemed reasonable was a co generator which we actually already have a small scale one in effect in our building now. The only problem is co generators still burn natural gas which is using a limited resource and not a completely green solution to the future energy crisis. When our school and town go green we want to be completely green. Wind turbines are completely green and produce affordable energy for a large scale school such as Barnstable. We believe in wind power as our green solution for Barnstable.

Massachusetts Envirothon Story 2009 Bedford High School

Coach: Michael Griffin

This year we had a unique experience for preparing for the Envirothon. Basically, we had a crunch time experience. A majority of our team is in an Environmental class and we were all preparing for the AP Exam. This was our primary goal before coming to the event the very next day. We spent most of the year learning the basics of the environment both globally and locally. The crunch time came in preparing for the presentation. We spent two weeks on the phone, meeting with people, and touring Bedford to find ways in which green energy is being utilized. There are many and we will be sending a report to the BHS facilities department with a summary of ways in which the school can go green.

As part of our experience, we did a detailed study of our school and the changes that took place as a result of a remodeling of the school. All systems in the school have been upgraded and new technology was put in place to reduce the amount of energy wasted. New windows and roofing material helped insulate the building. However, in our study we found that there is more energy used in the building today than previously. Some of the major causes, required lighting levels and increased light load in classrooms. The other item was an inefficient program that did not regulate the heat correctly. These have been addressed and the school is adopting green methods to help decrease the energy load. Some of these include:

- Informing teachers of using natural light and turning off lights.
- Turning off computer monitors when not in use.
- Reducing the temperature at night to 55 F
- Monitoring and reporting heating problems on a consistent basis (lack of communication was the primary cause for the inefficient heating)

The group also helps run our recycling program. Over the years, we have grown to recycle just about everything containers, paper and cardboard are separated into bins for recycling. Due to the growth in recycling, we needed an extra large container for paper. We were overwhelming our old containers. On average, we collect 20 large wheeled toppers of recycling per week. We are promoting reduction to the teachers to help reduce the waste. We publish our recycling amounts twice a year.

In an effort to reduce waste, we are printing this on half a page. (please reuse the back for a note and then recycle the paper.)

Massachusetts Envirothon Story 2009

David Prouty High School

Spencer, MA

Coach: Mary McLaughlin and Mary Baker Wood

The Experience

Figuring out how to reduce the energy consumption of an entire town by twenty percent in the year 2020 is a tough task for anyone, not to mention a group of high school students with limited resources. We met, we brainstormed, we brainstormed some more, and still we didn't have a plan. Finally, we came up with an idea. Simplicity is always an option, and when it came to simplicity we hit the proverbial jackpot. Everyone loves to save money, especially these days with the state that our economy is in, and the only thing better than saving money is saving money as well as saving the environment. We decided that instead of doing something big and costly, that everyone could chip in and do their part in our town, by doing little things that they might otherwise not do. Things such as unplugging the television, or the computer when it isn't in use. Surprisingly enough, doing these little things can greatly reduce the amount of energy you use and waste in your own home. Not only do you reduce your own electricity bill in doing this, you reduce the demand for electricity in your town, which reduces the amount of electricity needed to be produced. After we had our plan formulated, we needed to get some numbers and statistics from the state, as well as from our own town. We contacted local businesses, such as FLEXcon and Big Y to get some information on the monthly electricity usage, as well as from the school district. After calling all of these businesses, we were asked to send e-mails to the companies, which, after weeks and weeks of waiting, they finally responded to. This information gave us an idea of how much energy our town uses when added to the amount used by residential buildings. After calculating all of that, we needed more than just one idea to reduce the energy consumption in Spencer, so we brainstormed some more. This time we came up with a good idea for local businesses, that being solar panels. If you don't know, FLEXcon is a very big factory, they make the sticky paper and lamination paper you use at school. Their factory consumes the most energy in town, and is also a very large area in town. What would be a better place than at a factory to put solar panels? The solar panel array that we proposed would cost the company relatively little, compared to their income, and would generate enough energy to cut their typical electricity usage in half. Other businesses such as the Big Y and Price Chopper supermarkets, as well as Taggies Inc. would benefit from the same technology. Having the larger consumers using solar panels would cut the town's energy usage in half and provide clean energy in our town as well. After reviewing our ideas, we refined them into specific plans, and we have decided to record a public service announcement for our local Cable Access programming as a reminder to the town that they can help save the environment in more ways than one, and make a bigger impact than they think. Even though our idea is not a big one, nor is it a complicated one, it will work. All of our energy saving strategies are simple and proven to work, and everyone can help make a difference in our little town of Spencer.

Massachusetts Envirothon Story 2009

Essex Agricultural and Technical High School

Danvers, MA

Coach: Charles Saulnier and Ann Witzig

Our Envirothon Experience

We're an elite team of Environmental super heroes, in a justice league called... SEA! We fight for truth, justice, and the environment. Battling Dr. Smog and the elusive CO₂ in the air one day at a time. HILLY A! Take that pollutants! Ok, so we may be exaggerating a little bit, but really we're a group of students from the Essex Agricultural and Technical High school in Danvers, Massachusetts called the Students for Environmental Action (SEA). We meet twice maybe even three times a week to put our brain power to use. Our team mainly consists of Environmental Science and Natural Resource students who are trying to make the town of Danvers a better place.

Envirothon began for us in the classroom as we gained a basic understanding of this competition. This year we're all new to this experience and it was challenging to get our bearings straight. We watched one video for inspiration called "An Inconvenient Truth" by Al Gore. It was dull, but it jump started our brains into thinking GREEN and getting us focused on the current issue "Renewable Energy: Getting it Right Ecologically and Economically." At first we dug deep into the current issue finding new things about the town of Danvers and new renewable energies.

We began to get pumped as we heard about our first Envirothon field trip to UMASS Amherst. This feeling of ecstasy only increased as we learned about the joys of organic waste (which is our main theme for a renewable energy) and went on following field trip to the Ecotarium. We have bonded, tested each others limits, and ultimately have become a strong team.

As I have said before, we're a rookie team and we didn't know what to expect. This was certainly a difficult task we faced. We studied, we researched, we procrastinated, but in the end we pulled it all together with the help of our encouraging coaches. We're confident that even if we don't place this year, we'll gain the experience to be the best team we can be. So we've had fun and we'll be back once again to defeat the evils in the environment.

Massachusetts Envirothon Story 2009
By: Greater New Bedford Voc-Tech High School

New Bedford, Massachusetts

Coaches: Lawrence Carlesii and Christopher Pires

We at Greater New Bedford Voc-Tech in the environmental science and technology career major compete annually in the Massachusetts state Envirothon. Our school actually has students from three different communities; New Bedford, Fairhaven, and Dartmouth. The entire career major are actually the ones involved in preparations; everyone works on all the projects and research, its just the team and coaches that put into presentation and notebook formats. Our main project for this year was to hand out simple home energy audits for people to do in the community, and in return for completed forms we would hand out free fluorescent light bulbs. Each person in our career major did one for their own houses and some people did extra for neighbors and family members.

Through all of our research, we have found that alternative energies that would be good for our community are wind power, solar power, and tidal power. Our local government has also passed laws that help in energy efficiency like switching all incandescent bulbs with fluorescent bulbs, and weatherizing all residential buildings. The research we did opened our eyes to the efforts our community is doing, and showed us that what we do isn't going unnoticed but rather is being used to further progress into the future. It has been a lot of hard work and at times we have been at each others necks, but in the end the research was finished and the presentation was completed. The Envirothon is a tough competition that pushes you to the brink of your endurance, but is a great and worthwhile experience.

Massachusetts Envirothon Story 2009 Groton Dunstable High School

Groton, Massachusetts

Coach: Melanie McCracken

This was Groton-Dunstable High school's first year participating in the Massachusetts Envirothon. Our team met every Thursday after school to conduct surveys, identify trees and study invertebrates. Everyone chose a focused interest in an area and created and presented power points to the team as extra practice and review. In November we visited UMASS Amherst and attended several workshops centering around wildlife, soils, wind, water, tree identification and measurement. That was our first official start to competing in the Envirothon and it immediately captured our interest in competing. Our team visited the Ecotourism in Worcester in March. We attended more workshops and got a better understanding of current issues facing the environment in other communities. The power points presented in the Ecotarium got us thinking about what we could achieve in our own town of Groton. We visited Groton Electric to talk to Kevin Kelly, the head of the company, who told us there was a debate occurring about a wind turbine being placed in Groton. Researching the information given from Kevin Kelly had allowed us to elaborate on ways to create reusable energy. Our team also managed to create a survey that was administered to 700 adults in the community. Of the surveys it was found that an easy answer to the growing energy dilemma in Groton was to replace incandescent bulbs with CFL's. This is an easy solution that can save a lot of energy. Mr. Black who teaches at the Groton School was generous enough to give us a tour and teach us about the vernal pools in Groton. We walked to the town hall and spoke with Barbara Ganem who works for the conservation commission. In conclusion, by speaking to all of these towns people it was helped our team progress in competing for the Massachusetts Envirothon.

Massachusetts Envirothon Story 2009 Leicester High School

Leicester, Massachusetts
Coach: Joanne Bernier

We decided to write about our adventures in attempting to research for our current issue. To begin, we decided to focus on our schools. They are a vital part of our community, take up about 28 acres on one site and 23 acres on another site and clearly impact the town economically. In doing this research we were very lucky to be able to work with three WPI- Worcester Polytechnical Institute students working on their senior project. Together, we were able to take measurements, obtain data, review utility bills and come to an understanding concerning what types of renewable energy systems might be both environmentally and economically feasible for our school system. It was fun to meet with them and interact with them. We shared ideas and offered suggestions. Overall, this collaboration made our research and presentation more interesting and beneficial. Ultimately we decided upon solar panels to be located on the top of the high school roof and a cost sharing program with a third party which would enable a payback period of 3 years. The town has decided to move forward with this and the panels should be installed sometime before fiscal 2010.

Submitted,

The Leicester High School Envirothon Team- Dylan Baker, Nicki Dupont, Tom Killoran, Aris Demarco, Rebecca Lulu, Kaleigh Bernier, and Meghan Bernier

Massachusetts Envirothon Story 2009 Lexington High School

Coach: Steve Wilkins

This year, the Lexington Envirothon Team has been very active in exploring the possibilities of this year research topic_alternative energy, getting it right ecologically and economically. We started the year brainstorming a list of alternative energy and sustainability solutions for our town. We then discussed as a team on how to get more people to adapt to a more sustainable lifestyle, economically and environmentally.

The first step in this approach was to gather data on Lexington to learn about our town's energy use and also diagnose the best remedy for our town. In the process, we have gone to our town hall to collect data on houses with solar panel permits, and we have released a survey to 44 households, inquiring about their household energy usage. We have also taken this chance to have households calculate their own carbon footprint and become aware of the costs of their current lifestyles, economically and environmentally.

At the end of the collecting process, we compiled data on heating, electricity, vehicle use, natural gas, alternative energy use, and the carbon footprint of Lexington households. We then used the data to see whether alternative energy sources such as wood_burning and photovoltaics were feasible for our town. In addition to our feasibility study, we also contacted Tarica Harris, a green architect from the architecture firm TRO, and sought her advice on the best ways to curb our town's energy usage.

Finally, we took the results from our feasibility studies, our discussion with Tarica Harris, and the energy use data we collected earlier, to create a brochure that communicated our findings with the rest of the town. In the brochure, we wrote about the current sustainability of Lexington households and the benefits of alternative energy and other energy saving technologies. The brochures have been released in our town hall offices and in our local library, available to the public. In addition, we also held a meeting with our school principal, Natalie Cohen, and also talked to her about our findings and discussed ways that we could curb our school's energy usages. Our team is still continuing to reach out to the town about the benefits of alternative energy and sustainability. In fact, we have recently contacted our town's branch of the Global Warming Action Committee (GWAC). We hope to communicate our findings with them and as a result, put a more aggressive push on our goals to lead Lexington into a more sustainable future.

Massachusetts Envirothon Story 2009

Millbury Memorial Jr. /Sr. High School Environmental Council

Coach: Terry Hamilton

Background: This year our Envirothon team was made up of juniors: Kim Croteau, Sara Macaruso
sophomores: Sam Meserve, Lisa McLaren, and Taylor Bennett. We are from Millbury, Massachusetts and go
to Millbury Memorial Jr. /Sr. High School. We are part of our school's environmental Council.

Challenge 1: Every little bit helps. When you choose to use "green" energy you're making the responsible
decision. Even if the world only changes one person at a time, it is still changing.

Challenge 2: The only way we could describe our Envirothon year is as having quirks. We started our year
off by going to visit a dairy farm and getting to see solar panels and baby cows. We then went to Holy Name
High School and got to see a huge wind turbine. The rest of our year was spent running around our town
taking pictures of anything that we thought was renewable energy. It was crazy, but so much fun.

Our Story: This year was full challenging work. We visited Pearson's Dairy, Holy Name High School,
Stowe Farm, Davidson Bird Conservation, the Ecotarium and the Millbury Town Hall. We had meeting with
Mr. John Pearson, Mr. Cody Pearson, and Mrs. Laurie Connors. We took several surveys and spend endless
time developing pictures, driving around and getting lost.

We thought about doing the Community Award, but under the time crunch we decided no. We researched
and made posters. We learned loads about what renewable energy actually was and how to work it into your
everyday life. We had a blast and learned a lot. It was a great time, but very stressful!

Massachusetts Envirothon Story 2009 Monson Environmental Action Team

Coaches: Leslie Duthie and Jennifer Ohop

Our Story:

Who is our team? Our team is Harrison Morin, Tyler Allen, Torie Egan, Monica Morin and Stephanie Morin. Our other Monson Environmental Action Team members include: KC Fussell, Hayley Porter, Nick Lebel, Scott Campbell, Scott Gerrish, Sister Mary Windturbine and our coaches, Jennifer Ohop and Leslie Duthie.

We are from Monson and attend Monson High School. Our coaches work at Norcross Wildlife Sanctuary and we all do this as an after-school team.

If global warming continues we will have manatees in Monson so we recommend that our community start small by using simple efficiency measures in the home. Then we begin to build green technologies by installing biomass plants, wind turbines and photovoltaics on homes, schools and businesses to make our town more energy efficient. We will invest in ourselves and our community to reduce our carbon footprint.

Other Thoughts:

The best thing that we did this year was to take field trips. We visited the Quabbin visitor center and had a tour of the biomass plant that is used to heat the visitor center at the Quabbin. Scott Campbell gave us a great tour and we used this information in our current issue presentation. We also stopped to see the wind turbine at Holy Name during our trip to the Envirothon conference at the Ecotarium. It gave the group a good idea of what a turbine was like, how loud it was. One of our team members also contacted someone at Holy Name to find out how they went about purchasing and constructing the turbine. Again this was useful in our presentation. Finally we met with a forester who talked about sustainable forestry. This is something that many people in our "community" do as extra income and to preserve family lands. Sustainable forestry could provide us with plenty of wood should the community decide to invest in a biomass plant. I think our team would agree that these were some of our most memorable events in preparing for envirothon. I think these little field trips were as vital as the programs offered to us through the envirothon program.

Massachusetts Envirothon Story 2009

Nipmuc Regional High School

Upton and Mendon, MA

Coach: Michael Maloney

Team: Colby Crossman, Mark Reil, Alex Flynn, Josh Meyers, Jess Anderson, Amber Taylor
Environmental Science

Our Envirothon Story

Our envirothon project consisted of us planning on carrying out a construction project that involved our school adding on solar panels on the roof so that our school can become more green and by doing so save money. Our project is involved with our school, which is in Upton but our school is a joint school between Upton and Mendon, the name of the school is Nipmuc and we are the warriors.

If I had only three sentences to describe our project they would be as follows. Solar Nipmuc is a project created by students in the school who wished to make a difference in our school by creating a new energy source for our school that is clean and renewable. Our project is an actual plan that we hope to institute over the summer or when funds are sufficient if the school committee passes our project when we have our presentation. Our plan will reduce the school's emissions greatly thus helping our environment and saving our school a lot of money in the process and therefore hopefully saving the taxpayer's money.

Our envirothon year would be a description of us going through many different conferences and presentations. We went to Umass Amherst to the conference, where we all went to different stations and learned about what we would need to know so that we could succeed in the envirothon. In West Boylston we went to the presentation and work shops, where we further learned about all of the different aspects of the envirothon and how to do well at them. Our class attended another presentation that was given at Northeastern University there we learned about the many different particulars about renewable energy and in particular solar energy. These different presentations and conferences allowed us to become more aware about being green and helped us prepare for the Envirothon.

Massachusetts Envirothon Story 2009 Old Rochester Regional High School

Mattapoisett, MA
Coach: Lynn Connors

Envirothon story

Once upon a time, in Mattapoisett, at Old Rochester Regional High School there was a group of kids who were devoted to making their school more environmentally friendly. Their group OREO took on all matters with everything green.

Their first difference happened early in the year. They were sitting around enjoying an extremely yummy snack and they were deciding what to do. They talked about how at lunch; there were excessive amounts of bottles being thrown away. They said how they should get a recycling program at lunch. But people in the past used the box as a trash. So the idea flew out that someone should go around and collect the bottles, cans, and milk cartons.

A couple of weeks later one of their members' fathers came in and told them about reusable energy. He told them about solar panels and how they keep water warm for two days. He told them that, cars that have absolutely no dependency on fossil fuels. He also talked to them about insulation made from jeans. One of the members said " I'm tempted to go home and stick my jeans in my walls."

After that, they had a speaker from the Mattapoisett Department of Environmental Protection. They came in and told them what can and cannot be recycled. From there the team of kids took cardboard boxes and painted them, then stuck them into classes. This helped kids start recycling in their classrooms during anytime of the school day. Kids from the whole school then would give up studies and go around to collect the recycling items. When their leader, the great Ms. Connor was sick, the kingdom of earth protectors were under constant battle with the Janitor dragons.

But they survived, and even helped the little young stars learn about recycling. There was a family night at the Old Hammond Town School and OREO took two_liter bottles and cut off the topsl bottoms and make little fishes out of them, While all this was going on, they continually put together a festival; called Earth fest. Where they are to raise money for the group and donate money to local wind turbine research department.

The group was excited and looked forward to their journey to envirothon. They prepped since the first meeting of the year. Putting everything that they worked on throughout the year into their presentation.

OREO is a club is devoted to making the school more environmentally friendly. Driven by excellent snacks. They deal with their problems at hand and make a difference in their schools paper waste. People who are not a member of OREO try to help the club and follow our footsteps by contributing to our great recycling program.

Massachusetts Envirothon Story 2009 Pioneer Valley Regional High School

The PVRS Planeteers'

Northfield, MA

Coach: Karen O'Neil

The Pioneer Valley Regional School Planeteers are made up of seven 10-12th grade students. Six of our team members live in Northfield, with the one odd member who lives in Vernon, Vermont. We are all new to Envirothon, but we all share an interest in the environment.

If we had to summarize our current issue recommendations to our community we would say:

- We could lower our energy consumption by more than 20% over the next ten years, simply by making our homes and town buildings more energy efficient.
- There are programs that help home and business owners increase energy efficiency and help make the change affordable.
- The renewable energy sources that we think are most feasible for Northfield are solar/photovoltaic and geothermal. We are also very interested in wind technology, but are concerned that there may not be enough wind in Northfield to make wind turbines an economically sound option (we were told that a windmill would never, ever make back the money spent on the original investment. Ever.)

If we were to describe our Envirothon year, we would say that some of us alternated between moments of confidence and moments of panic. We work well as a team, but we wish we had some experienced team members. We also wish that we had more time, or at least started working earlier. Interviews were our biggest challenge; we had difficulty setting up times to meet when most of our members could attend. But, we learned some valuable interview skills and conducted interviews in person, via the telephone, and via email. One of the best parts of this experience was that we were doing it with our friends.

Massachusetts Envirothon Story 2009 Quabbin Regional High School

Barre, MA

Coach: Becky Bottomley

Team Members: Audrey Degnan, Stephanie Korzec, Genevieve Joly, Caroline Doane, Andrea Miller, Carly Lohr, Sue Kim

Renewable Energy: Getting it Right, Ecologically and Economically Summary by Carly Lohr

Our team decided to focus on the town of Barre to view the options for renewable energy and determine the best fits economically and ecologically for the community. Through many interviews and tours we concluded that there is not one specific source of energy that is the most beneficial to the community, but rather a combination of strategies, all of which are effective.

Quabbin Regional High School is located in central Massachusetts in the relatively small town of Barre. In addition to Barre, the school district also consists of the surrounding rural towns including Oakham, Hardwick, Hubbardston, and New Braintree.

Our team learned quite a lot about wildlife, soils, water, and forests by attending all of the Envirothon workshops and committing to after school team meetings. Along with these standard procedures, we also made a large effort to learn about our community regarding the current issue research project.

One of our first visits was to Ware River in South Barre to meet with the owner of Ware River Power, Luke Wright. The objective of his company is to create power by using pre-existing dams from the old mills, as well as making use of used turbine equipment. Another effective energy saving option that we viewed is ground source heating at the home of Maryann DiPinto in Hubbardston, she received 30% tax credit worth \$12,000 to install this system that extracts heat from the water and is used to heat the house. Also, we toured the solar powered home of Tom Gaskill in Hardwick. Tom's home is powered by 24 PV panels and a solar hot water heater. In addition, we took a tour of the recently built, passive solar and extremely energy efficient home of Paul Dumanowski of Barre. The home was constructed with energy efficient windows and a well insulated basement, saving hundreds of dollars a month in heating and electric expenses. After our tour of a 250 year old colonial home owned by the Hastings, of Barre, we learned that energy improvements can still be made to old homes. The Hastings have made an effort to reduce their carbon footprint by purchasing energy efficient appliances and insulating their home. Our team has also visited the Doyle Conservation Center. This green building was built with recycled and sustainable materials and uses solar panels and geothermal energy. We also visited the garage of Fran and Jay Ward in Hubbardston, where gallons of cooking oils were collected from local restaurants to make biodiesel. The team also took a tour of our own school, which has installed LED exit signs and now uses energy efficient lights in the cafeteria and gym. These efforts have saved the school 40,000 kW per month. Recently, we had a meeting at Barre Municipal Building with town Administrator David Battistoni, selectperson Kathleen Inman, building inspector George Ricker and energy committee members Howard and Jinx Hastings to discuss energy issues in Barre. Concluding our long year of research was an enjoyable day at the Carter-Stevens Farm to welcome green energy. At this day introduced the newly installed 15 kW wind turbine. At this event we met with Erin and Molly Stevens, Senator Stephen Brewer and the Commissioner of Agriculture Scott Soares.

With the information we gathered from these tours, we also grew the desire to inform and educate our community on ways that they could help make a difference as well. Featured in our local paper, The Barre Gazette, are tips that we found to be both easy and effective for people to help make a positive impact on the environment. When people make an effort, money can be saved and further environmental damage can be spared. This year our team has not only learned a lot, but we have also changed our perspective on the way we live our life both economically and ecologically.

Massachusetts Envirothon Story 2009

R.C. Mahar Regional School

Orange, MA

Advisors: Kurt Enko and Mike Magee

Our school district is located in the north_central part of Massachusetts adjacent to the Quabbin Reservoir. It is a rural area and we are very fortunate to have access to numerous natural resources.

There were several people that were involved in our preparation for this Envirothon. As we approached the current issue, our focus was our actual school building. Our mission was to develop strategies that would eventually lead to a more efficient building that would, in turn lead to cost savings. Although we were focusing on efficiency, the cost saving aspect was also a very attractive portion of our plan considering the current economic situation.

Our first order of business was to look at the present energy usage of the school. The superintendent and his staff went out of their way to provide us with all of the energy costs for the past two years. The custodial staff was also instrumental in helping us with our project. They gave us a tour of our boiler room and were very helpful in directing us to a number of additional resources.

Along with school personnel, there were several members of the area communities that assisted us with our mission. This information was especially beneficial with the "wind" portion of the project.

Challenge #1:

To reduce energy consumption, we need to maintain efficient burners, lower thermostats, turn off unused lights and re_train people in regards to energy usage. We also need to actively research and implement alternative energy sources including wind, solar hot water and photovoltaic arrays.

Challenge #2

This was a very busy year for us. We divided the program of study into two areas. Some of our meetings were devoted to preparing for the station tests while the other meetings involved research and development of our project. It was an interesting year and we cannot believe the event is already upon us.

Massachusetts Envirothon Story 2009 Rockport High School

The Rookies
Rockport High School Green Team

Coach: Rebecca MacKay-Smith

Rockport, Massachusetts isn't like most towns. It's a little seaside village on Boston's North that's most famous for a red shack called the Motif Number One (which artists come from all over the world to paint, something we'll never understand). We have plenty of tourists in the summertime and lots of wild turkeys year round but not a single stoplight. It's very rare for a grade at Rockport High I to be larger than 100 kids.

Locked away on our little island, we had never heard of the Envirothon before last spring. One member of our school's Green Team brought in a print_out on the Envirothon. "Wow, this looks fun activity for the group." We said. "So, we're building biofuel engines, right?" It took us a long time to understand what the Envirothon was all about and exactly how much work was involved. We through periods of sheer terror thinking that we had to memorize all the fungal species of North America, or something equally horrific. Our biggest inspiration came from our Current Issue Project. Once we began getting more deeply involved in the research, the entire event seemed more and more exciting.

We reached out into the community from every angle. We interviewed business owners, town officials, superintendents of two separate school systems, science teachers, engineers, and countless others. For every person who fled from our questions like we were the Spanish Inquisition, two people provided us with incredible data and insights. As we dug deeper, we realized that our research was unearthing projects and individuals who could help us convert Rockport's fossil fuel sources to renewable ones. Our Envirothon project seemed so much more meaningful when we discovered the concrete impact we could make on our community.

For instance, we solved the Mystery of the Vanishing Wind Turbine. A couple of years ago, our town set up a "site survey" on the high school's lawn to check the wind energy potential. We were all looking forward to a wind turbine being installed on campus, but the town gradually stopped speaking about the project and it seemed no new action was being taken. Once we began interviewing community members this year, we learned that the data from Rockport's site survey was promising enough to install a turbine; the project had only stopped moving forward because of staff changes in Town Hall and lack of public awareness. We have decided as the Green Team to recharge the wind energy project's momentum. As our first step, we've arranged to show our Current Issue Presentation to our Superintendent, who is eager to reduce energy costs. We will be staying in close contact with project leaders in Town Hall and the members of the local scientific community. We want to launch a public awareness campaign by writing to the paper, educating our peers and speaking at Town Meeting this fall. We never would have discovered this opportunity if we were not being Envirothon detectives. Having the power to help bring clean energy to our town makes every long, overly_caffeinated night spent laboring over our presentation worthwhile.

Massachusetts Envirothon Story 2009 Somerset High School Envirothon Team

Somerset, MA
Coach: Matt Talbot

“When one tugs at a single thing in nature, he finds it attached to the rest of the world.”
~John Muir

This year's Envirothon represented an exciting situation for Somerset in which we returned almost all members from the previous year. Coached by Mr. Matthew Talbot, seniors Kevin O'Brien, Lindsay Machamer, Emily Domingue and Rachel Coogan, along with junior alternate John Charest, were joined by newcomers Chelsea Sandner as a starter as well as Stephen Murphy. Hoping to build on last year's success in which we came in fourth place at the finals, we set out on an ambitious plan to bring our knowledge about renewable energy to the community. Our plan was based on the following:

Renewable energy involves a three-pronged approach involving energy conservation, energy reduction, and new energy sources. We believe we can successfully accomplish our goals and make a difference through grass roots, do-it-yourself projects and by concentrating on a community-centered education campaign. Only when everyone is on board and involved can we take those small steps necessary to achieve our larger goals.

To accomplish our goals, we set out first by splitting up the topics into manageable tasks supervised by a group member. By doing this, we allowed each other to focus ourselves on one issue. Our next task involved the integral task of gathering information. Building on last year, we developed new community connections with the MMA, officers at the town hall, and conservation services. Still, we tried to work as a team, holding weekly meetings to keep on track and keep each other informed. Through all this, we were still able to maintain focus on the nature part of the experience by going over the guides and electing to each cover two topics so as to have two experts for everything. We furthered our proficiency with field guides and identification while working with experts in the field, just generally adding to our previous knowledge and abilities.

Our developed plan involved a multifaceted methodology that involved both education for ourselves and for our community. Interviews with various community members in positions to speak about the town, its energy usage, or its energy policy revealed a lot about what Somerset is trying to do including testing for wind turbines and solar panels. Visits to the Ecotarium helped us focus our ideas on the current topics and allowed us to explore some of our areas of interest. Using this knowledge, we put together an action plan involving flyers for Vote Earth Day, as well as an informational slide show published on local access television. A survey and further information was placed in our newly designed website while we also sponsored the Lights Out Day at the high school. Most importantly, we were able to plan a free home energy seminar at the high school put on by Massachusetts Department of Energy, thus bringing real solutions to the community.

Overall, this year's experience taught a lot and only increased what we had hoped to accomplish. We learned new ways to reach people using easy and fun ways in today's information age. We found the public eager to make the changes for energy efficiency and conservation if only showed the necessary steps. As seniors most of us can only wish we could return for another year, regretting only that we could not work on a bigger scale and make a bigger difference. We wish the best of luck to the next generation and hope that they can further these goals as Somerset continues its path towards renewable energy and environmental friendliness.

Massachusetts Envirothon Story 2009

Springfield Central High School

City: Springfield
Coach: Naomi Volain

2009 Current Issue: Renewable Energy

The Springfield Central High School Envirothon team is made up of students from Mrs. Volain's AP Environmental Science and Ecology classes.

Our Renewable Energy Issue involves the expansion of our city's green initiatives. Our plan as a city is to implement a solar approach to gain renewable energy. Springfield currently has pilot programs in which we aim to reduce and recycle products used in our city. Our goal as a team was to find out which programs were in the makings to help our city become less dependent on fossil fuels.

Through out our search we discovered several up coming ideas for renewable energy sources from a mixture of categories; such as solar, hydropower, biomass, biodiesel, and hybrid vehicle conversion. Here in Springfield we have 53 schools, 4 colleges, private industries, municipal buildings, over 100 fast-food restaurants, post offices, libraries, churches and synagogues, Baystate Medical Center, Mass Mutual Center, and our very own James Naismith Memorial Basketball Hall of Fame.

Western Massachusetts Energy Company, WMECO, is planning a collaborative effort to help the city reach its goal of obtaining clean and more convenient energy. The company plans to help but one of the largest solar electric systems in Massachusetts on a rooftop at Technology Park in Springfield. The system of 108 separate panels generates more than 36,000 kilowatt-hours of electricity each year and helps manage the growing energy needs of Technology Park located on the campus of Springfield Technical Community College. Our biomass approach is a connection between the new pilot company Qteros who plans to use the bio-waste from our local Municipal Wastewater treatment program to create an alternative transportation fuel. Not only does that create a good alternative for the stored waste, but it opens the doors for organizations like our local fast-food chains. Within a 20 mile radius of our school there are about 4 Burger King's, 3 Friendly's, and 5 Taco Bell's. The oil produced by these companies cooking can also be used as well at this new pilot company Qteros, who plans to set up shop in the Indian Orchard area of our city.

The most effective plan that is set to be put in effect in the next few years hits home directly for our team here at Central High. WMECO plans to install solar panels on top of our very own school. Hoping to reach an estimated maximum output of 52 megawatts, our superintendent Dr. Alan Ingram along with representatives from WMECO, wish to use our very own school as an example of a way to create our own energy here in Springfield.

In conclusion our team worked hard, down to the wire; making phone calls, e-mails, and field trips to locations to get the truth about what our city is prepared to do in the economic crisis. With the support of our citizens, local government officials, and some Federal funding, we are helping Springfield Go Green!

Massachusetts Envirothon Story 2009 Tahanto Regional High School

Boylston, MA

Coach: Sue Moore

Team Members: Laura Johnson, Alaa Eldam, Julie Sargent, Tasneem Zawahreh, Yasemin Nail Alternate:
Elizabeth Morena

The Tahanto Envirothon Team 2009 worked with the Regional School Building Committee, which is considering renovating or rebuilding Tahanto Regional High School. As part of meeting the criteria of the Massachusetts SBA or School Building Authority, the architects must provide a Mass CHPS (or Massachusetts Collaborative for High Performance Schools) SCORECARD to achieve green school funding for items such as sustainable site layout, water use reduction, and the use of renewable energy. The higher the number of points in the Mass CHPS matrix achieved by the school design, the higher the reimbursement percentage from the state to the school will be.

The Team researched ideas for the conservation of energy and water and for the use of renewable energy for the newer building. To learn more about green schools, the Team took a field trip to the Blackstone Valley Technical High School in Upton, Massachusetts, for a tour of green school. Blackstone uses several sources for renewable energy. It has solar panels on the roof for electricity and a solar hot water pre_heating system. The hallways, classrooms, Library, and Gym make use of ambient light with daylight reflective tubes. Classrooms and computer labs have Flat_Screen Monitors which use less electricity. Classrooms also have "smart boards" in their classrooms. An rooms have motion sensors and day light sensors that prevent the unnecessary use of electrical lighting. Fluorescent lights use the T_5 and T_8 bulbs which are more efficient than the T_12 bulbs. Blackstone has an Energy Recovery Ventilation System which produces reconditioned air but is not air conditioning.

Blackstone has a multipurpose room combining an auditorium, a gym, and a competition center. This idea was encouraged by Timothy Cahill of the SBA. Dividers allow the room to have different combinations of room size. 30_40% of the materials were recycled during construction. The tile floors and eco_foam ceilings are 60% recycled. Blackstone also has dual fuel high efficient bilers that are 90% efficient and can operate on oil or gas. Conservation of water was achieved by low flush toilets, waterless urinals, and shut_off valves on the faucets. In addition to having a green school, students have a Renewable Energy Team that follows a curriculum from MASS AIRE, the Mass Alliance of Secondary Schools Accentuating Instruction in Renewable Energy.

The Tahanto Envirothon Team also visited the Doyle Conservation Center in Leominster, Mass. The Center exhibits geothermal heating and cooling, PV pr photovoltaic panels, composting toilets, and renewable materials such as sustainably harvested bamboo, cork floors, recycled carpets as well as landscaping that uses native and xerophytic plants,

Team members composed a survey for the students and teachers at Tahanto to attain their input for a greener school. Our Team made a presentation to the School Building Committee with the results of their field trips and surveys. The Team wanted to incorporate the natural and cultural history of Wachusett Reservoir and Sawyer's Mill into the school. We suggested using geothermal energy with a closed loop system as the school is near the Reservoir, and a helical wind turbine. The Team suggested having a green house, a green roof with a garden, a rain garden. The Team wants to maintain the intimate atmosphere that personifies Tahanto.