

Massachusetts Envirothon 2009 EVALUATION HIGHLIGHTS

The 2009 survey of Massachusetts Envirothon participants asked coaches and team members to think back over the past year and rate the extent to which participation in the Mass Envirothon had resulted in an increase in their knowledge, skills, and interests. Coaches were asked to rate their students' increase as well as their own. Current Issue presentation judges were also asked for general assessment of teams they judged.

Better survey collection strategies meant that data cited in this report represent 72% of youth and 71% of coaches participating on the field days at the end of the Envirothon year. Responses to particular questions show consistency from year to year, suggesting that the data do reflect the perceptions and attitudes of all participants.

This is a simple summary intended to provide some insight into the program's success, particularly the student learning that is occurring. This evaluation was conducted for Mass Envirothon by UMass Extension. More detail, including copies of survey forms, is available by contacting Will Snyder, UMass Extension, at wsnyder@umext.umass.edu.

Youth Gains in Knowledge and Skill

Knowledge of Natural Resource Management. Overall, approximately 63% of team members reported at least a moderate increase in their knowledge of water, forest, wildlife, and soil resources. Nearly 97% of responding coaches reported that their teams had increased their knowledge and skill in these areas to at least a moderate extent.

Knowledge of Energy Issues. 86% of team members reported that their Envirothon experience had increased their knowledge of this year's current issue, renewable energy, to a moderate or great extent (53% reported an increase to a great extent). 81% of coaches saw a great increase in their teams' knowledge of renewable energy issues.

Teamwork. 90% of team members believed that their Envirothon preparation had increased their ability to work with others as a team to a moderate or great extent. Coaches concurred, with 94% reporting that they had seen an increase to a moderate or great extent in their students' teamwork. 65% of judges believed that teamwork and initiative were areas of consistent strength among teams.

Community Research. 80% of team members felt that their general ability to investigate community energy/environmental issues had increased to a moderate or great extent, and 13 out of 40 teams completed the requirements to receive the Community Research Award. Teams were somewhat less confident about increases in specific research skills: ability to contact and talk to officials in town government or state agencies (71%), knowledge of how environmental

decisions are made in your community (73%), and ability to use GIS and maps as a source of environmental information (56%). 30% of judges thought this was an area of consistent strength, while 70% noted both strengths and weaknesses. 24% of judges noted consistent weakness in the area of *understanding of the decision-making process involved in environmental issues in Massachusetts*, with one judge commenting that “I have been in government for 20 years and I am not sure I understand it -- but they seem to understand there is a process, most important.”

Presentation Skills. 82% of team members believed that their ability to make an effective presentation had increased to a moderate or great extent. 91% of coaches agreed. However, only 12% of judges saw presentation skills as an area of consistent strength; a majority saw significant variation among teams.

Development of Youth Attitudes and Values

Community Service. As in previous years, about 80% of team members reported a moderate or great increase in their interest in community service. 61% reported that their specific interest in finding renewable energy solutions for their communities had increased to a great extent. However, only 9 out of 40 teams completed the certification checklist to qualify for the Community Action Award.

College and Career Plans. Similar to 2008, approximately 68% of responding team members said that their Envirothon experience had increased their interest in further education and careers related to the environment to a moderate or great extent.

Ecological Footprint. 92% of participating youth (up from 84% in 2008) reported that their interest in reducing their energy/environmental impact (ecological footprint) had increased to a moderate or great extent. Perhaps not surprisingly for a year when the current issue focused on energy issues, this item brought the most emphatic positive response, with 66% feeling their interest increase to a great extent. Judges rated *positive sense of environmental stewardship* as the area of greatest strength for teams.

Spending Time Outdoors. Consistent with previous years, 82% of team members reported that their Envirothon involvement had increased their interest in spending time outdoors.

Overall Confidence in Environmental Citizenship. By large majorities, the young people participating in the 2009 Mass Envirothon said that over the past year their familiarity with the land and ecosystems of their own communities (81%), and their ability to talk with adults about environmental issues (84%), had increased to a moderate or great extent.

Educator Professional Development

The 32 coaches responding to the survey had coached for an average of more than 5 years, with about 20% in their first year and 20% having coached for 10 years or more. The vast majority of coaches are high school science teachers, although there are teachers of different subjects and

also community-based educators involved in Envirothon coaching. The consistent theme in their responses is their own continuing development in knowledge, skills, and attitudes. 87% reported increases in their own knowledge across all Envirothon curriculum areas -- forests, wildlife, water, and soils, as well as renewable energy. 81% believed that their skills for supporting their teams' community investigations had increased to a moderate or great extent. Coaches were also emphatic about their own increasing interest in professional development relating to environmental science and policy and their interest in reducing their own ecological footprints (with 78% reporting at least a moderate increase in both cases).

Who Participated?

A total of 247 young people took part in the two field days in May. The total attending either the workshop at UMass in November, or the competition in May, was 354. According to coaches estimates of the number of students they involved in the program, as many as 667 young people were reached by the program this year.

As in previous years, most were participating for the first time. At the competition in May, approximately 67% were participating for the first time. 65% were juniors and seniors in high school. Approximately two thirds of participating youth were girls, one third were boys.

Young people from 48 high schools representing at least the following 60 communities were involved in Envirothon events during the year: Acton, Adams, Ashland, Barnstable, Barre, Bedford, Boston, Boylston, Brockton, Brimfield, Cambridge, Cheshire, Dunstable, East Bridgewater, Greenfield, Groton, Hanover, Hardwick, Heath, Hopkinton, Hubbardston, Ipswich, Lancaster, Lawrence, Leicester, Leominster, Lexington, Lowell, Lynn, Malden, Marion, Marshfield, Marstons Mills, Mattapoisette, Mendon, Millbury, Monson, Norton, New Bedford, Newton, North Brookfield, Northfield, Petersham, Orange, Pittsfield, Plainfield, Randolph, Rockport, Rochester, Scituate, Shelburne Falls, Somerset, South Hadley, Springfield, Stoughton, Sturbridge, Sutton, Upton, Weymouth, and Worcester.

147 youth provided racial/ethnic identification data on a separate "diversity check" form, and the results appear to indicate some improvement in the Envirothon program's diversity:

	Mass Envirothon 2008	Mass Envirothon 2009	All Massachusetts
African American	1.4%	3.4%	8.1%
Asian	8.7%	11.5%	4.9%
Hispanic	2.9%	2.0%	13.9%
White	84.6%	75.5%	70.8%
Native American	-	1.3%	0.3%
Native Hawaiian, Pacific Islander	-	0.6%	0.1%
Multi-Race, Non-Hispanic	0.7%	3.4%	1.9%
Other	3.6%	2.0%	-

Summary

Survey returns from students, coaches, and judges strongly indicate that the Massachusetts Envirothon program continued to provide a rich, positive youth development experience in natural resource and environmental affairs, and also in teamwork, presentation skills, and community research. Coaches indicated that they had a strong learning experience, as well.

Program participation represents significant geographic diversity, including rural, suburban, and urban teams from across Massachusetts. The program also appears to be making some headway in achieving racial/ethnic diversity.

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At the Envirothon field days on May 13 and 14, 2009, Massachusetts Envirothon asked coaches and team members to complete surveys rating the extent to which participation in the Mass Envirothon had resulted in an increase in their knowledge, skills, and interests. Judges were asked to assess teams in seven related areas, such as *understanding of the science, understanding of decision-making processes, community research skills, teamwork & initiative, positive sense of environmental stewardship.*

Surveys were filled out after the competition but before scores were announced.

Team members rated 18 items about themselves. Coaches rated 10 items about their teams and 11 items about themselves. All participants rated each item on a scale: *not at all, to a small extent, to a moderate extent, to a great extent, not sure.* Judges were asked to respond in these categories: *no basis to judge, an area of consistent weakness, some strength and some weakness, an area of consistent strength.* This is the third year that essentially the same survey has been used.

We received 178 returns from the 247 team members (a 72% return rate) and 32 returns from the 45 coaches (a 71% return rate) who participated on May 13 and 14. This was the highest percentage of returns for Mass Envirothon evaluations in at least ten years.

Evaluations were received from 33 of 40 teams competing on May 13 and 14, with an average of 5.3 returns per team. This means when we received evaluations from a team, we were likely to receive them from the whole team, including alternates.

2009 respondents were 35% seniors, 30% juniors, 27% sophomores, and 8% freshmen.

67% of participants were there for the first time, with another 22% in their second year.

Two measures suggest that the evaluation findings may be generalizable to all 2007 teams: The average total score for all teams was 233.5 and the average overall score for teams returning evaluations was 234.9. Evaluations were received from 11 out of 15 (73%) of the Community Award teams and 23 out of 31 (74%) of the non-Community Award teams.

Raw data were analyzed by converting numbers to percentages to show the proportions of participants assessing their experiences similarly.

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