

## **Mass Envirothon 2007 EVALUATION HIGHLIGHTS - DRAFT**

**Compiled by Will Snyder, UMass Extension**

The 2007 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.

Details of the evaluation are at the end of this document. Copies of the survey are available from Will Snyder at [wsnyder@umext.umass.edu](mailto:wsnyder@umext.umass.edu).

### **Key Findings**

**Energy Literacy.** 81% of team members reported that their Envirothon experience had increased their knowledge of renewable energy technology to a *moderate* or *great extent*. (63% said it had increased their knowledge in this area to a *great extent*). 71% of coaches reported that their involvement in the Envirothon this year had increased their knowledge of energy conservation & renewable energy technologies to a *great extent*.

**Knowledge of Ecosystems and Natural Resource Management.** Overall, 64% of team members and 82% of coaches reported that their preparation for the Envirothon this year had increased their knowledge of Envirothon topic areas (forests, water, wildlife, soils) to a *moderate* or *great extent*. Experienced participants - both coaches and students - reported continuing to learn in these topic areas at nearly the same rate as newer participants.

**Teamwork.** 76% of team members believed their Envirothon preparation had increased their ability to work with others as a team to a *moderate* or *great extent*. 69% of coaches believed that their team's teamwork skills had increased to a *great extent*.

**Community Service.** 75% of team members reported that their Envirothon experience had increased their interest in community service to a *moderate* or *great extent*. 89% of coaches believed that their team's Envirothon experience had increased their positive engagement with the community to a *moderate* or *great extent*.

**College and Career Plans.** 55% of team members reported that their Envirothon experience had increased their interest in college studies and careers related to the environment to a *moderate* or *great extent*.

**Professional Development.** 80% of coaches reported that Envirothon involvement had increased their interest in professional development in environmental science/policy to a *moderate* or *great extent*.

## **Areas of Greatest Impact - Teams**

The areas where all team members believed they had gained the most from the Envirothon experience were (weighted scores in parentheses):

- knowledge of energy conservation strategies (2.50)
- knowledge of renewable energy technology (2.47)
- interest in reducing your own energy/environmental impact (your “ecological footprint”) (2.37)
- interest in solving energy issues (2.28)
- interest in spending time outdoors (2.23)
- ability to talk with adults about environmental issues (2.20)
- ability to investigate community environmental issues (2.13)
- ability to work with others as a team (2.13)

When they assessed their teams’ learning, coaches’ believed that their teams had experienced the greatest increases in (weighted scores in parentheses):

- positive sense of environmental stewardship (2.88)
- community research skills (2.69)
- teamwork (2.69)
- understanding of environmental science (2.67)

## **Areas of Greatest Impact - Coaches**

The areas where all coaches believed they themselves had gained most from their Envirothon involvement were (weighted scores in parentheses):

- knowledge of energy conservation & renewable energy technologies (2.62)
- interest in reducing your own environmental impact (your “ecological footprint”) (2.58)
- skill in helping your group function as a team (2.44)
- interest in community action and service learning projects (2.35)
- skill in supporting your team’s investigations of community environmental issues (2.34)

In almost all areas, coaches who have been involved with the Envirothon for more than two years believed that they had gained more in the past year than coaches who were in their first two years of coaching. The greatest differences, where veteran coaches felt they had gained more knowledge, skills, and interests, and new coaches felt they had gained less, were (weighted scores in parentheses):

- knowledge of how decisions about the environment are made in your students’ community (2.47 to 2.06)
- skill in supporting your team’s investigations of community environmental issues (2.52 to 2.12)

- interest in reducing your own environmental impact (your “ecological footprint”) (2.75 to 2.37)
- interest in community action and service learning projects (2.50 to 2.17)

### **Skills and Knowledge in Ecology and Natural Resource Management**

Weighted scores in the four ecology/management topic areas showed that participants believed they had gained to a similar extent in all areas:

- knowledge of forest ecology and management in Massachusetts (1.78)
- knowledge of aquatic ecology and water resources in Massachusetts (1.86)
- knowledge of wildlife ecology and management in Massachusetts (1.85)
- knowledge of Massachusetts soils and soil science (1.76)

Those participants in their first year of competition believed they had learned the most in the wildlife area (weighted score 1.95, with 75% indicating an increase to a *moderate* or *great extent*). At the low end, first year participants believed they had learned least in the soils area (weighted score 1.71 with 12.5% saying they had experienced *no increase at all* in this knowledge).

However, the situation reversed for returning participants. Team members in their second, third, or fourth year indicated that their knowledge had increased least in the wildlife area (weighted score 1.60), and the most in the soils area (weighted score 1.90, with 32.5% indicating an increase to a *great extent*).

### **Community Awards participation**

Community Awards teams were slightly older and more experienced than non-community award teams. For example, 32% of Community Awards team respondents had been to the Envirothon before this year, while 24% of non-Community Awards team respondents had this experience.

Presentation scores for all teams earning the Community Research Award averaged 10.9 points higher than all other teams out of a possible 100 points (85.6 to 74.7)

On 17 out of 19 survey items, Community Awards team members reported greater increases in knowledge, skills, and interests than non-Community Award teams, even in areas not related to research and action related to the Current Issue. The differences were greatest on the following items (weighted scores in parentheses):

- knowledge of aquatic ecology and water resources in Massachusetts (2.32 reported by CA teams to 1.66 reported by non-CA teams)
- knowledge of Massachusetts soils and soil science (2.14 to 1.61)
- knowledge of energy conservation strategies (2.84 to 2.46)
- ability to contact and talk to officials in town government or state agencies (2.10 to 1.69)
- ability to work with others as a team (2.40 to 2.01)

In almost all areas, coaches whose teams had earned a community award believed that they had gained more in the past year than coaches who had not. The greatest differences, where veteran coaches felt they were experiencing more gains in knowledge, skills, and interests, and new coaches felt they were experiencing less, were (weighted scores in parentheses):

- your interest in community action and service learning projects (2.78 to 2.08)
- skill in supporting your team's investigations of community environmental issues (2.57 to 2.19)
- knowledge of how decisions about the environment are made in your students' community (2.50 to 2.18)
- interest in professional development in environmental science/policy (2.50 to 2.13)
- skill in coaching your team to make an effective presentation (2.42 to 1.86)

---

At the Envirothon event on May 10, 2007, 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.

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

Team members rated 19 items about themselves. Coaches rated 8 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*.

We received 169 returns from the 299 team members (a 56% return rate) and 37 returns from the 66 coaches (a 56% return rate) who participated on May 10.

Evaluations were received from 34 of 46 teams competing on May 10, with an average of 4.8 returns per team. This means when we received evaluations from a team, we were likely to receive them from the whole team, including alternates.

2007 respondents were 36% seniors, 44% juniors, 25% sophomores, and 11% freshmen.

74% of participants were there for the first time, with another 20% 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.

Scores were analyzed in two ways for this report. First, responses were converted to percentages to show the proportions of participants assessing their experiences similarly. Second, a weighted number score calculated for each item was used to indicate the relative value of different elements of the Envirothon experience for participants. To calculate the weighted number score, responses were assigned point values (*not at all* = 0, to a *small extent* = 1, to a *moderate extent* = 2, to a *great extent* = 3, *not sure* = 0) and an average response was determined for each item. Averages were calculated using the number of responses to an item as the divisor for that item.