

K-12 Teachers Environmental Education Needs Assessment

What Teachers Are Currently Doing The results presented in TABLE 1 indicate that an overwhelming majority of teachers are teaching about the environment and environmental issues. There are, however, some who are not. Almost half of the teachers reported having guest speakers, taking field trips, and involving students in action projects. Thirty-one percent of the teachers teach in an outdoor setting, and 22% have student environmental clubs.

TABLE I: Percentage of Teachers Presently Doing Various EE Activities

91%	Teach about environmental issues
89%	Teach about the environment
47%	Have guest speakers/programs
44%	Take environmental field trips
42%	Involve students in action projects
31%	Teach in an outdoor setting
22%	Have student environmental clubs

Type of Training Desired As shown in Table II, the greatest percentage of teachers indicated they would like to see training offered as in-services during the school year. While 49% of the teachers reported wanting summer workshops, only 24% indicated they would like training offered through university courses for credit. Taking weekend workshops was the least popular choice, with only 20% selecting this type of offering.

TABLE II: Training Teachers Would Like to See Offered

60%	Teacher in-service during school year
49%	Summer workshops
24%	University courses for credit
20%	Weekend workshops

Level of Need for EE Services & Opportunities Teachers were asked to rate the level of need they had for EE services as high, moderate or low. The results, presented in Table III, revealed that a range of 41% - 91% of teachers rated the 11 services listed as a high level need. The greatest percentage of teachers reported funding as a high level need.

TABLE III: Level of Need for EE Services & Opportunities

	High Need	Moderate	Low Need
Funding for Activities & Resources	91%	7%	2%
Field Trip Opportunities	83%	12%	5%
Curriculum Resources	74%	21%	5%
Lesson and Curriculum Ideas	70%	25%	5%
Mailing of EE Information	64%	33%	3%
Speakers	63%	33%	5%
Professional Development and EE Training	62%	31%	7%
Development of Teacher Networks	59%	31%	10%
Meetings to Share with Others	51%	28%	21%
Outdoor School Site	50%	29%	21%
Student EE Clubs	41%	34%	24%

Teachers were also asked to priority rank their highest three service needs. As shown in Table IV, the greatest percentage of teachers ranked funding as their number one service need, followed by lesson and curriculum ideas as the second highest need, and field trip opportunities as the third highest need. The point system shown in Table IV was calculated by assigning a numerical value to the first, second, and third highest need as follows: Highest Need = 3 points, 2nd Highest Need = 2 points, and 3rd Highest Need = 1 point. These points were assigned to each respondent's ranking for each of the 11 needs listed on the table.

TABLE IV: Ranking Order of Highest 3 EE Service Needs

	Overall Points	First	Second	Third
Funding for Activities and Resources	53%	24%	20%	17%
Lesson and Curriculum Ideas	38%	12%	24%	7%
Field Trip Opportunities	33%	10%	22%	7%
Curriculum Resources	25%	10%	7%	17%
Professional Development and EE Training	22%	12%	2%	12%
Speakers	22%	10%	10%	5%
Outdoor School Site	19%	10%	2%	12%
Mailings of EE Information	6%	2%	0%	7%
Meetings to Share With Others	5%	2%	0%	5%
Student EE Clubs	3%	0%	2%	2%
Development of Teacher Networks	2%	0%	2%	0%

Level of Need for EE Training Table V shows the percentages of teachers who rated the level of need they had for EE training. While the greatest percentage of teachers reported training in regard to the availability and use of curriculum to be a high level need, it is evident that teachers would benefit from training in each of the areas listed below. Although training about what EE is was rated as a high level need by the percentage of teachers, a combined 44% of teachers did rate it as a high or moderate level need.

TABLE V: Level of Need for EE Training

	High Need	Moderate	Low Need
Availability and Use of Curriculum	64%	18%	18%
Technology	59%	24%	17%
Development and Use of Outdoor Sites	58%	20%	20%
Program of Studies Alignment	58%	13%	30%
Teaching Strategies	53%	26%	21%
Funding Sources and Grant Writing	50%	33%	18%
Use of Local Non-formal EE Sites	50%	29%	21%
Integration of EE	50%	28%	23%
Teaching about Environmental Issues	46%	31%	23%
Content Knowledge	28%	36%	36%
What is EE?	13%	31%	56%

Teachers also ranked and rated their three priority training needs. As shown in Table VI, the greatest percentage of teachers ranked the development and use of outdoor learning sites as their number one training need, followed by the KY Program of Studies alignment as the second highest need, and availability and use of curriculum as the third highest need.

TABLE VI: Rank Order of Highest 3 EE Training Needs

	Overall Points	First	Second	Third
Development and Use of Outdoor Sites	31%	18%	11%	5%
Program of Studies Alignment	30%	18%	11%	3%
Availability and Use of Curriculum	26%	5%	16%	21%
Funding Sources and Grant Writing	24%	13%	5%	8%
Content Knowledge	17%	11%	3%	8%
Technology	16%	8%	5%	8%
Use of Local EE Sites	15%	3%	13%	5%
Integration of EE	13%	0%	16%	3%
Teaching about Environmental Issues	9%	3%	3%	11%
What is EE?	3%	3%	0%	0%
Teaching Strategies	2%	0%	0%	5%

Focus Group Methods and Results A 90-minute focus group discussion was conducted to gain more in-depth information about the environmental education needs of teachers that had been assessed by the survey. The seven teachers who participated consisted of two elementary teachers, two middle school teachers, and three high school teachers. Each of these teachers had participated in the survey and had received a written summary of the survey results that had been mailed to all respondents.

The focus group meeting consisted of three parts: (1) Introductions of participants and facilitators followed by a brief overview of the focus group process, (2) Focus group discussions on several questions, and (3) Reconvening of the entire group to share results and prioritize needs. There were three focus groups which were designated as elementary, middle school, and high school. Following is a list of the small group discussion questions and a summary of the results:

1. In what specific ways would funding be helpful to the environmental education efforts of teachers?

Teachers remarked that no school funding has been earmarked for environmental education because it is not a Core Content area on which K-12 students are tested as a part of the state standards assessment program. Instead, interested teachers have had to seek funding from various small grants and have received supplies from businesses such as nurseries and agricultural supply retailers. The teachers reported that a clearinghouse for information on potential funding sources would be a very helpful service.

2. (A) In what specific ways would field trips be helpful to the EE efforts of teachers?

Low-cost, nearby field trips are especially desirable; summary information them through a website or a newsletter would be a useful service, according to the teachers. The teachers strongly advocated sponsoring field trips to different sites on campus led by NKU science education students.

(B) What are the obstacles to taking field trips?

The obstacles reported by teachers centered on transportation issues, time constraints, scheduling within schools, and coordination with other classes.

3. How would you envision an outdoor site being used at your school for EE?

The teachers believed environmental education sites should provide hands-on learning opportunities to be integrated across all disciplines. They acknowledged that some teachers would probably never use the site, but think most would, if they understood how. It was noted that some volunteer help might be needed to maintain outdoor classrooms.

4. (A) What are the best ways to recruit teachers to participate in EE opportunities?

The teachers indicated that teachers in general respond to personal invitations from other teachers or from an institution or organization they respect such as NKU or a county Conservation District. Incentives such as stipends and credit are desirable. They also reported that free curriculum materials and lesson ideas they can readily use in their classrooms also make new learning opportunities more attractive to teachers.

(B) Describe the nature of professional development that is most useful to teachers. Hands-on, interdisciplinary workshops were considered to be most useful by teachers. Professional development that encourages networking with other teachers was also reported to be very desirable.

5. What are some ways you envision a Regional EE Center housed at NKU being most useful to teachers?

Teachers ranked a Regional Center very high on their list of environmental education needs. They indicated that, ideally, such a Center would house nature guides, curricular materials, videos, and other materials that could be loaned to teachers. The loaning of field supplies (e.g., hip waders and nets) for special studies was also a service considered useful by teachers. The Center would ideally have a frequently updated website with information on field trips, an environmental calendar, and ways for teachers to share ideas. The teachers all felt it would be ideal to have outdoor learning sites on NKU's campus that could serve as field trip sites for K-12 teachers, and for teacher professional development opportunities. Using these sites as a lab-school concept, where children and university students learn together was an idea greeted with much enthusiasm.