

7/1/93

**March 13, 1993 - Six - Month Status Report
LCMR WORK PROGRAM 1991**

I. Environmental Education Program - Education 19a

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A. M.L. 91 Ch. 254 Art.1, Sec. 14 Subd: 5 (a) Appropriation:\$790,000.00
Balance: \$ 31,363.45

Environmental Education Program: \$400,000 is from the Minnesota Environment and Natural Resources Trust Fund to the Commissioner of Education to develop and implement model K-12 environmental education curriculum integration. This program will incorporate ongoing models of other deliverers of environmental education. \$30,000 is from the Minnesota Environment and Natural Resources Trust Fund to the Commissioner of Education for a grant to the Minnesota Community Education Association to incorporate environmental education into the Community Education system. \$60,000 is from the Minnesota environment and natural resources trust fund to the Commissioner of Natural Resources to complete a long-term plan for the development and coordination of environmental learning centers. \$85,000 is from the Minnesota Environmental and Natural Resources Trust Fund to the Commissioner of State Planning for a grant to the Audubon Center of the Northwoods for an assessment of environmental learning center programs and services. \$215,000 is from the Minnesota Environment and Natural Resources Trust Fund to the Commissioner of State Planning to develop a statewide environmental education plan. The statewide plan will integrate the plans, strategies, and policies of the Department of Education, post-secondary institutions, the Department of Natural Resources, and other deliverers of environmental education.

B. N/A

C. N/A

II. Narrative

There is no up-to-date comprehensive plan for environmental education in Minnesota. M.S. 1990, 126A calls for a new plan. The plan must chart a course for cooperative unification of the professional environmental education community, state agencies, and the state's formal and informal education systems. Effective environmental education is integral to understanding the need to preserve and protect the quality of Minnesota's environment. This understanding is facilitated through the integration of environmental education into the K-12 program, the Community Education system, public and private interactive environmental education centers and public agency education efforts. The Minnesota Department of Education will incorporate the model environmental learner outcomes and ongoing models of other deliverers of environmental education into the K-12 program. The Minnesota Community Education Association will integrate the model environmental learner outcomes into the community education system. The Minnesota Department of Education will provide the overall statewide integration and coordination of the environmental education plan. The steering committee composed of the program manager and major cooperators will meet on a regular basis throughout the funding period in order to insure coordination between program objective.

III. Objectives

A. Department of Education: Establish a comprehensive environmental education program for K-12 formal education.

A1. **Narrative:** The Minnesota Department of Education (MDE) will create a model for integrating environmental education curriculum in grades K-12 in Minnesota school districts. The department will also develop a teacher inservice program to support the implementation of the new integrated curriculum model in every Minnesota school district.

A2. **Procedures:** Analysis of the LCMR funded DNR study of Minnesota's environmental education needs. Determination of the K-12 environmental education curriculum and inservice needs of Minnesota teachers. Identification and documentation of ongoing exemplary integrated curriculum models of other deliverers of environmental education. These data will be synthesized into a comprehensive program vision and action plan. With the cooperation of the state's environmental education community, an integrated outcome-based interdisciplinary instructional model will be developed. The model will be introduced and demonstrated in selected statewide school district research and development sites. A teacher inservice system will be developed to support the implementation of the integrated model and will be coordinated state wide.

A3. Budget

LCMR Funds

- a. Amount Budgeted: \$ 400,000
- b. Balance: \$ 23,000

A4. Timeline for Products/Tasks: July 91 Jan 92 June 92 June 93 June 93

Analyze DNR Study	—	—			
K-12 Needs Assessment and Data Collection	—	—	—		
Develop Comprehensive Program Vision and Plan	—	—	—		
Cooperative Development of Integrated Model	—	—	—	—	—
Develop Teacher Inservice System		—			
Selection of School District R&D Sites		—	—	—	
Inservice of School District R&D Staff					
Demonstration of Integration Model at R&D Sites			—	—	—
Establish Statewide Teacher Inservice System				—	—

A5. Status:

In 1991 the Minnesota Department of Education requested school districts to submit proposals for funds for developing kindergarten-through-twelfth-grade integrated, interdisciplinary, outcome-based environmental education model programs. In addition the districts were to design methods to disseminate the results of their work to all other districts in the state to enable those districts to formulate their own programs.

Results

These seven districts and one consortium of eight districts have

- 1. produced over 100 teaching units that incorporate, in some way, outcome-based, integrated, environmental education. Most of these units are or will be available for use by teachers statewide on Macintosh disk or in paper.
- 2. developed two options for integrating environmental education into the curriculum;

- 3. identified strategies for team-teaching that seem to work best, especially for use as an introduction to integration;
- 4. identified effective curriculum development processes for districts;
- 5. developed dissemination methods both within and between districts;
- 6. developed unique options in choices of themes, structuring class hours, community partners, and action projects; and
- 7. become a team that is willing to help disseminate these results to other districts.

Conclusions of the independent evaluator

The Department of Education contracted with an independent private evaluator to assess the results of the project. She was quite impressed with the work the school districts had done. A copy of her report is included with this summation.

Conclusions of the participating districts:

The teachers who developed the model curriculum integration process found that by using environmental education as an organizer for their other subject material, the process

- 1. identified connections and expansions, linking learning together into a relevant whole.
- 2. required students to use higher level thinking skills.
- 3. empowered the students to deal with issues in their own lives.
- 4. promoted global awareness and identified local actions that can be applied to global issues.
- 5. promoted action on issues.

Relationship to the Proposed Graduation Rule

During 1992 and 1993 Minnesota's proposed new graduation rule was developed by the Board of Education. The rule consists of a set of outcomes each Minnesota graduate will be expected to meet. These outcomes include one of the seven goals from the 1990 Environmental Education Act "Minnesota graduates will understand stewardship for the environment."

During the course of this project all six comprehensive outcomes and all thirteen of the content outcomes were addressed. This demonstrates that environmental education is an effective organizer of education programs.

The results that the teachers noted and the relationship of what they did to the graduation outcomes came about in large part because of the well-established tradition in Minnesota that

- there are four contexts to environmental education, natural, social, valuing and action. Environmental education cannot be reduced to science education.
- environmental education must address the seven goals identified in the 1990 Environmental Education Act.

There is no nationally developed and disseminated set of environmental education standards that was available to be adopted. A framework of environmental education concepts that is developmentally appropriate for kindergarten to twelfth grade is being developed by the Department of Education. This framework is to be used as a guide by teachers planning their curriculum. At the request of the Department of Education, one of the districts involved in developing the model environmental education curriculum integration process is creating the framework for use across the state, because they had already developed a similar framework for their work on this project. This framework incorporates the other goals from the 1990 Environmental Education Act. Minnesota's framework should be available sometime in 1994.

The inclusion of environmental education in the Minnesota graduation outcomes, the development of the framework and of the integration process places environmental education at the forefront of the systemic change currently coming about in Minnesota's schools.

The integration process, the district implementation process, the statewide implementation process and examples of the model teaching units are all published in Addendum: A GreenPrint for Minnesota Schools, A guide for Integrating Environmental Education. This guide is available through the Department of Education either in paper or on Macintosh disk. It will be the foundation for the statewide dissemination process.

This guide can be used by any organization or agency that wishes to prepare materials for schools to use.

Recommendations

Because all three individual components (OBE, EE, and integration) were relatively new to the school districts, and because attempting to do all three

simultaneously is a taxing exercise, the results from the districts should be assessed as a strong first effort. The project helped to demonstrate

1. to what degree districts are proceeding in successfully incorporating outcome-based education
2. the level of understanding of environmental education
3. the level of understanding of integration
4. the nature of the difficulties in carrying out these tasks.

Suggested Improvements and Continuing Efforts Needed

The implementation of this project made visible the barriers that need to be overcome in order to facilitate integrated, outcome-based environmental education. These include:

1. The structure of the junior high and high school program.

The discrete, roughly hour-long class periods and the separation of disciplines make the integration of any subject matter exceedingly difficult. Teachers who want to work with others, or who want to take their classes outside the school building have a much more difficult challenge than elementary teachers because doing so disrupts the schedules of other high school instructors.

Though one of the project schools, Chaska High School, did build a new structure that accommodated integration and out-of-classroom experiences, the future of their effort within the school is not certain beyond the range of the grant period. Other schools in the project found that these realities led to lack of participation by their high schools, or the postponement of high school involvement until the second year of the grant. Where high school teachers did participate, they chose to teach as individuals rather than part of a team, a strategy that puts the burden for all the content, including all the environmental content, on one teacher.

Recommendation: That efforts continue within the Department of Education to promote integration in high schools by

- a. preparing current high school teachers to teach with others
- b. aiding administrators to find viable structural options to the 50 to 55 minute class period.

2. Continued preparation of teachers needed.

A. Teachers are still learning about outcome-based education.

These districts were chosen in part because they gave evidence of a level of sophistication in using outcome-based education. The teaching units written by staff in participating districts indicated that though they are progressing well, there is still the tendency to confuse outcomes with objectives, and the understanding of the assessment process needs further development. This is hardly surprising because the transition to outcome-based education is still fairly new, and these two components are among the most difficult to learn and use.

Recommendation: The Department of Education should continue to work with school districts to ensure that outcome-based education is being assimilated and used effectively.

B. Teachers need a better understanding of environmental education.

Teachers in the participating districts expressed a need to know more about the content of environmental education. Few have had the opportunity to incorporate environmental education into their teacher education programs except as intermittent workshops following certification. The MCRS survey conducted in 1991 indicated that teachers receive 50% of their information about environmental issues through the media. This uncertainty with the content can lead to a hesitancy to explore environmental issues or work with environmental education at all. Only 33% of teachers surveyed in 1991 felt they definitely knew enough about environmental education to incorporate it into their own teaching. (MCSR, 1991). Such uncertainty can lead to a narrowing of environmental education to science and nature study.

Recommendation:

- a. In-service environmental education courses and workshops should be made available to current teachers.
- b. Current teachers should receive lane-change credit for taking these workshops and courses, no matter what their grade level or discipline.
- c. Students in university education programs should receive training in environmental education.*

*For an expansion of these teacher preparation recommendations, see "A Greenprint for Minnesota: State Plan for Environmental Education", Department of Education, Environmental Education Advisory Board, State of Minnesota, June, 1993.

C. Teachers need a better understanding of and more practice with integration methods.

Integration is not easy. It requires people to seek out connections and make

them clear, when most of our schooling has been an exercise in learning to compartmentalize. Of all the integration models available, two were chosen most frequently. This is partly because of the relative ease with which some models were incorporated into current structure, but also may be because integration is new and several models were only partially understood. The fact that teachers chose only two models most frequently does not rule out the possibility that other models may be useful once teachers have a better understanding of them.

Recommendation: Teachers need more training in and practice with integration methods and more opportunity to use them.

4. Timing of the grant

The project was intended to allow two years for curriculum and process development. However, because it took six months to carefully choose the participating districts, only one and one-half years of effort elapsed before the report was due. The districts received their grant funds and attended their preparatory workshops in winter of 1991. The final report for the project was due in June of 1993. The result is that writing for all grade levels and piloting of all teaching units is incomplete.

Recommendation: The process guide and model units will be distributed on Macintosh disks and assembled in a three-ring binder in order to allow easy additions and changes. As units are tested and additional units written, the Department of Education should add this information to the disks.

Dissemination of the Environmental Education Integration Process and Model Curriculum

To realize this project's full potential, it is important that it be disseminated in a manner that best ensures that school districts will use the process and the model curriculum. That can only happen if the results of this project can be taken individually to each district, and district staff have the opportunity to work through the process with expert guidance. As one teacher said at the Blandin sponsored Center for School Change conference in June, "Someone has to come and show us how to do it".

Recommendation: The statewide implementation plan contained in the process guide should be carried out with enough funding to run workshops and provide follow through for all districts in the state.

The Legislature has allotted \$60,000 for this project for the coming fiscal year. During that period, the remaining teaching units will be collected and assembled on Macintosh disk. Project personnel are to alert, interest and gain potential

members of dissemination teams and seek fiscal support from legislators and the private and private non-profit community. Personnel will introduce the project at as many conferences and meetings of administrators and teachers as can be accessed. The materials should be in place and the project should be ready for statewide dissemination to districts at the end of the next fiscal year.

- B.1. **Narrative:** Community education programs are vibrant in most every school district in Minnesota. The cornerstones of community education include two vital components of citizen involvement and life-long learning.

Local community education programs utilize "grass roots" involvement and a localized delivery system. Program brochures are mailed to every household in each school district three or four times annually in addition to targeted mailings which promote locally sponsored programs.

Community education is a process which can introduce localized environmental education opportunities to individuals of all age groups.

B.2. **Procedures:**

a. Analysis of the LCMR funded DNR study of Minnesota's environmental education needs.

b. Conduct training seminar for MCEA Board of Directors. Board members have been given quarterly reports on the progress of the Project. During the 1992 MCEA Delegate Assembly a resolution was passed to the Board that the Board form a committee of Board members whose function will be to continue network with environmental organizations and providing support for the Environmental Education Project. An advisory committee composed of non-board community educators still actively promotes environmental education through the Environmental Education Project.

c. ~~Publicize in-service training opportunities for Community Education Directors and Program Coordinators state-wide.~~ Trainings include:

- **Adult Basic Education (ABE) Summer Training Institute:** presented workshop to 15 teachers and distributed resource/information packet to 75 teachers statewide.
- **School-Age Childcare Environmental Education Conference:** facilitated a 1/2 day environmental education conference for over 100 childcare providers, teachers and Youth Service/Development coordinators from across Minnesota.
- Organized a **Community Leaders Training Program** on the environment in the Freshwater Education District in central Minnesota.
- Workshops have also been presented at the following events: OEE Conference, Mid-Minnesota Community Education Directors Meeting, Rotary club, West St. Paul, National Community Education Association Conference
- Cooperative workshops with the Minnesota Horticulture Society, Tree Trust, and the Mississippi Headwaters River Watch program are scheduled for January and February in Mankato, Minneapolis, and Grand Rapids.

d. Conduct environmental education workshops for community education personnel and advisory council members as a part of four state-wide community education conferences.

Terry Gipps from the International Alliance on Sustainable Agriculture was a keynote speaker at the MCEA Fall Conference, which had over 500 participants. An additional 7 environmental education workshops were presented by different environmental organizations and community educators, with positive responses from participants.

e. Develop an integrated outcome-based environmental education program package of materials/curricula that can be duplicated and replicated in local communities. Curriculum packages may include:

1. Environmental unit for integration with Early Childhood Family Education programs.
2. Programs with tie-in to Community Education Youth Development/Youth Service.
3. One night (2-3 hour) adult enrichment class offering.
4. Four week (2-3 hours/night) adult enrichment class offering.

The Environmental Education Resource and Action Guide has been distributed in draft form to over 200 Community Educators. The final copy is due to be distributed in January.

f. Promote use of curriculums as described above.

g. Coordinate and disseminate an environmental education resource guide.

h. Develop a special edition of the SCENE, Newsletter of the Minnesota Community Education Association, to highlight environmental education issues.

Articles on Community Education sponsored environmental programs have appeared in every issue, along with resources and commentaries on environmental issues. A special issue focusing on environmental education is tentatively planned for early spring.

The project manager is on the steering committee of the proposed Minnesota Association for Environmental Education. The MCEA Environmental Education Project Advisory Committee will be holding a planning retreat in conjunction with the MNA spring conference at Moundsview North Environmental Learning Center in March to promote increased cooperation and partnerships. Handouts, brochures and curriculum guides from other environmental organizations have been copied and promoted to Community Educators. Partnerships between Community Education and environmental organizations and centers have developed throughout the state as a result of networking efforts. Other efforts as described in the Juratatus report continue.

- i. Increase communication efforts between state agencies involved in environmental education programs and local community education leaders.
- j. Promote attendance at conference and workshop opportunities sponsored by environmental education organizations.

B.3. Budget:

LCMR Funds

- a. Amount Budgeted: \$30,000
- b. Balance: \$ 0

B.4. Timeline for Products/Tasks:

	July91	Jan92	June92	Jan93	June93
Analyze DNR study	—	—			
Training Seminar		—	—	—	—
Inservice Training		—	—	—	—
Workshops/Conferences	—		—	—	—
Curriculum Development	—	—	—	—	—
Curriculum Promotion		—	—	—	—
Resource Guide		—	—	—	—
Newsletter	—	—	—	—	—
Increased Communication	—	—	—	—	—
Shared Conferences		—	—	—	—

B.5. Status:

- a. The DNR study has been analyzed by the project manager and several MCEA Board members. The results will continue to be used when planning programs.
- b. Board members have been inserviced and updated regularly on the Environmental Education Project. An MCEA Environmental Education Committee was established to promote environmental education and provide networking and training opportunities through MCEA. This committee reports to the Board, and has over 50 members consisting of Community Education professionals and Board members. The committee will be responsible for maintaining partnerships with environmental agencies, and providing direction for the Board and MCEA in regards to environmental education. The Board also passed a resolution to the National Community Education Association to hold the 1993 National Training Institute on Community-Based Environmental Education, and to have National Community Education Day 1994 focus on the same theme. The 1994 Institute will be held in Minnesota. The formation of this committee, and the environmental education themes for the 1994 Institute indicate a strong, on-going commitment by MCEA to environmental education.

c. The MCEA Environmental Education Project facilitated over intensive environmental education training sessions and inservices throughout Minnesota, with over 700 Community Education professionals and advisory council members participating. In addition, many teachers, volunteer directors, civic leaders, youth workers and other environmental educators also participated. Many of these trainings were cooperative efforts involving environmental organizations such as MN Horticultural Society, MN Office of Waste Management, World Population Balance, Freshwater Foundation, DNR and others. Response to the programs was extremely positive, with an increased number of communities addressing environmental issues through cooperative efforts between Community Education and other environmental education providers. Several Community Education programs have begun organizing their own local trainings and workshops for staff and community members.

d. Over 15 environmental education workshops were offered as part of the four state-wide community education conferences. In addition, Terry Gipps from the International Alliance on Sustainable Agriculture was a keynote speaker at the Fall Conference, addressing over 500 Community Educators on community-based efforts. Feedback on evaluations indicates that workshops relating to environmental issues are one of the top requests for future Community Education conferences. Environmental Education is also one of the tracks, or theme areas, for future conferences.

e. “Let’s Go Green”, an environmental education resource and action guide for Community Educators, has been distributed to over 1,000 Community Educators statewide. It was developed with the input of community educators from all program areas. In addition, surveys were distributed to 250 Community Educators statewide to determine what their needs were, and information forms were distributed to 110 environmental learning centers statewide to determine how they could best partner with community education to provide environmental education programming. The MN EarthDay Directory and Environmental Activity Guides have been distributed to an additional 1,000 Community Educators. Resources and curriculum from other organizations such as the Office of Waste Management have been made available to individuals on request and at statewide conferences and workshops. The guidebook has helped many Community Educators determine a direction for their programming, and has helped them to locate the appropriate resources and agencies to work with in delivering environmental education programming.

f. “Let’s Go Green” and other environmental education curriculum and resources have been promoted in the SCENE, a newsletter of MCEA, through MCEA committees, regional networks, MN State Department of Education mailings, and at numerous conferences, trainings, workshops and meetings.

g. no additional information.

h. Articles on Community Education sponsored environmental programs have been highlighted in every issue of the SCENE, along with environmental tips, funding information, resources and commentaries. In addition, a special column called "Earth Notes" has been established, where Community Educators can write in with specific questions on environmental issues. One issue is highlighted each month in the column. The regular column in the newsletter has helped to educate hundreds of Community Educators on issues ranging from recycled paper to water quality monitoring, along with providing an ongoing spot for news and information relating to environmental education. Community Educators have begun contributing their own articles on environmental education success stories, indicating that the environmental focus will continue.

i. The Project Manager is on the Board of the recently formed Minnesota Association for Environmental Education, and helped to create a section for community outreach, which includes community education programs. Partnerships between Community Education programs and other environmental education providers have been developing statewide through increased networking and shared workshops. Many government agencies, nonprofits, environmental learning centers and other environmental organizations have been involved in trainings and workshops sponsored by MCEA. The Project Manager and several Community Educators have represented Community Education at environmental education retreats, meetings, and focus groups including the Office of Environmental Education State Plan focus groups, MN Earth Day Network, Urban Environmental Education Coalition, Earth Forum, EE Circle, Arbor Day Network, and others. The Project Manager was instrumental in getting resource information from other organizations out to over 600 Community Educators, including Arbor Day packets, Earth Day Resource Guides, ECOL reference lists, OWM resource lists, Activity Packets, Waste Reduction Week brochures and clip art, and many others.

j. Conference and workshop opportunities sponsored by environmental organizations have been promoted through the SCENE newsletter, statewide mailings and regional and statewide meetings and conferences. Previously, many Community Educators were unaware of the training opportunities available through agencies such as the Science Museum, Project Wild, Office of Environmental Education, Mn Horticultural Society and others. Because of the efforts of the Project Manager, Community Educators are more involved in environmental education conferences and workshops, both as presenters and participants.

Summary

Community Education is becoming a major delivery system for environmental education in Minnesota, working in partnership with hundreds of environmental organizations, businesses, government agencies and educational institutions to reach people where they live, work and play. Community Education revolves around the principles of lifelong learning and citizen involvement, concepts which

they are bringing to the environmental education movement. As society awakens to the importance of environmental issues and their implications, Community Education has embraced the need and begun addressing environmental issues at the local level involving all sectors of the community.

Community Education programs have access to a wide range of audiences through its established programs, including pre-K-12 students, senior citizens, families, adults, minority/ethnic groups, persons with disabilities, local business leaders, and others. Because of the existing connections, Community Education has become an ideal delivery system for environmental education. Through partnerships with environmental organizations, and active participation by community members, Community Education programs will continue to be major players in the environmental movement.

Findings:

- Environmental Education should be integrated into existing Community Education program areas rather than creating a whole new department devoted to environmental education. This ensures continuity, because environmental education then becomes an integral part of the other ongoing programs.
- Programs and classes need to be designed so that they are relevant to participants needs in order to increase participation. (i.e. involve local citizens in determining an environmental issue which is relevant to their community, and then plan the program around that issue)
- Community Educators need additional training and support to continue integrating environmental education into their programs. The MCEA Environmental Education Project Coordinator position should continue to be funded for another 2 years to provide training, resources and support to Community Educators, and to continue developing partnerships and alliances between Community Education and other environmental agencies.
- Environmental organizations need to be educated further about Community Education programs and opportunities for partnerships. Many environmental educators are not aware of what Community Education is or how it operates.
- Partnerships between Community Education and other environmental organizations will be the key to successful community-based environmental education programs. Community Educators can facilitate the process, but the expertise needs to come from the environmental field.

B.6. **Benefits:** Effective utilization of Minnesota school district based community education system as a broad-based flexible delivery mechanism for informal environmental education.

C.1.0 **Statewide Environmental Education Plan:** Develop a statewide environmental education plan which integrates the plans, strategies and policies of the department of education, postsecondary institutions, department of natural resources and other deliverers of environmental education.

C.1.1 **Narrative:** The Office of Environmental Education at the Minnesota Department of Education will develop a Minnesota environmental education plan that will identify a process to achieve the goals of environmental education and integrate the plans, strategies and policies developed by the Department of Education, post-secondary institution, DNR and other deliverers of environmental education. This plan will be coordinated with and incorpoarte objectives C92)&C(3), as well as objective A&B.

The Plan will identify the need for and role of environmental education resource centers. In addition, the plan will dientify other deliverers of environmental educa-tion and assess, at a minimum, the roles of nature center, environmental learning centers, state and reigonal park programs, community education, K-12 and post-secondary education, the Science Museum of Minnesota and the Extension Service. The planning effort will use the structures, authorizations and continuing planning process framework established in the 1990 Environmental Education Act.

C.1.2 **Procedures:** Using the representatives selected and the information and recom-mendations developed at the October 1990 first biannual conference of the greater environmental education community, the Office will identify task forces to guide and review the plan development process. The Environmental Education Advisory Board will review all phases of the planning effort. The office will conduct an environmental education needs assessment by the DNR and the needs assessment of environmental educators from the October 1990 conference of the greater environ-mental education community.

Identify any need for and role of environmental education resource centers.

Identify deliverers of environmental education and assess roles of nature centers, environmental learning centers, state and regional parl programs, community educaiton, K-12 and post-secondary education, the Science Museum, Extension Service, and others.

Develop an integration process for the plans, strategies and policies of the various environmental educators.

Develop a state environmental education plan by using the review process in C.1.1.

C.1.3 **Budget:** LCMR Funds
a. Amount Budgeted: \$215,000
b. Balance: \$ 0

C.1.4 <u>Timeline for Products/Tasks</u>	July 91	Jan 92	July 92	Jan 93	July 93
Scope, Timeline Established	-----				
Tasks Identified	-----				
Plan Goals and Objectives	-----				
Existing Situation Data	-----				
Collected/Analyzed					
Needs Developed and Reviewed			-----		
Recommendations Established				-----	
Draft Plan					-----
Final Plan					-----

C.1.4 **Timeline for Products/Tasks** (con't)

Audiences identified July 92
Establish outcomes for audiences July 92-Jan 93
Existing Situation Data
collected/analyzed add line: July 92 - Jan 93
Audience needs developed/reviewed and line: July 92 - Jan. 93
Recommendations established extend line: to equivalent of March 93
Research review add: July 92 - Jan. 93
Draft plan: extend line: March 93

C.1.5 **Status:**

A Greenprint for Minnesota: State Plan for Environmental Education, has been printed, and is ready for distribution and implementation. It contains recommenda-tions for action for

1. legislators, in the support of environmental education
2. the Environmental Education Advisory Board
3. any individual, organization or agency that intends to provide environmental education.

The plan does set priorities for environmental education, based on the ten identified target groups. The target groups are prioritized, as are the strategies for reaching them. The plan proposes a 10 year major check point, with 3 year benchmark

evaluations to be made. It sets forth outcomes (results) to be reached for each audience that can be measured.

Problems:

1. No comprehensive attempt was made to discover “who was doing what for whom” in environmental education.” The information in the plan is good, but not complete. It tends to be biased towards state agencies.
2. The audiences were identified later than they should have been, so that only one major meeting could be held with several of the groups in order to set strategies and prioritize them. This resulted in some rather vague strategies that desperately need further refinement. This process needs to be carried further as the plan is implemented.
3. Initial information gathering meetings were loosely organized with somewhat vague agendas. The intended purpose for those meetings needed to be more clearly thought out.
4. The Office of Environmental Education was eliminated in the 1993 legislative session, so that recommendations for action by the Office now must fall to the Environmental Education Advisory Board.

Significance of the plan:

1. The priority audiences were set by the environmental education community (over 600 were constant advisors to the process).
2. Some of the priority audiences have not typically been part of the environmental education community. These have now joined together in a common endeavor, and, indeed, seemed pleased to have been invited in to the process. The potential for dialogue that has not taken place previously is now quite strong. The partnership-building proposed by the plan to meet the strategies is primed and ready to be initiated.
3. The task is, indeed, larger than many people had allowed themselves to think, but there is no gain in minimizing it. The plan, for the first time, provides a means to see and to measure just how large the task truly is, so it is possible to gauge whether particular efforts are or are going to be effective.
4. The process of creating the plan has already produced benefits in the form of:

- a. the formation of the Minnesota Association of Environmental Educators
- b. the joint application of 10 universities to the National Science Foundation for funds to produce and provide coordinated in-service training in environmental education for teachers.
- c. a database of environmental education resource people around the state.

5. The environmental education community, and, in particular, the Environmental Education Advisory Board, is committed to implementing the plan. A large amount of energy has been or is in the process of being focused towards the strategies in the plan. For instance, the Environmental Education Centers Program report has detailed what the centers are planning to do to meet the strategies and needs of the audiences in the plan. The potential for cooperative, concerted action towards the plan strategies in the environmental education community is great.

6. In the Environmental Education Advisory Board’s August, 1992, meeting, they described their criteria for the plan. The plan should be:

- clear and understandable
- balanced - all people who want to participate in the plan should find a way to do so.
- immediately useful
- useful in the long run
- addresses all priority audiences
- acceptable to legislators
- specific
- bold, demanding
- doable and assessable
- evaluated by Minnesota citizens
- visible to state residents

Most of these criteria have been met. Some have yet to be met, e.g. making the plan visible to more state residents. It is a plan that allows everyone in, and provides environmental educators with specific, prioritized tasks to accomplish in the following years.

- C.2.0 **Department of Natural Resources:** Complete a long-range plan for the development and program coordination of environmental learning centers statewide.
- C.2.1 **Narrative:** The Department of Natural Resources will complete a long-range plan of the development and program coordination of environmental learning centers statewide by evaluating related environmental education programming needs.

The second phase of the environmental learning center plan will include plan drafting, public comment, distribution and incorporation into the statewide environmental education plan.

The first phase of this plan is a LCMR \$60,000 effort funded in September 1990 to survey schools and other potential users of environmental learning centers and nature centers to assess programming needs and the geographic location of facilities. Both phases will include working with a steering committee of representatives of the environmental education community.

- C2.2 **Procedures:** Demand for environmental learning and nature centers will be measured by the current use of centers as shown in center records, and the potential demand shown in surveys of schools and others such as parents and administrators. Surveys will be used to develop existing and needed "programming profiles." These profiles will describe the current offerings of centers and the programs desired by customers (teachers, parents, students and administrators.) Recommendations on programming will be based on expressed needs of customers, existing efforts to meet these needs and the current unmet program needs. Geographic location analysis will be conducted using standard population potential centers.

The state student population base, willingness to use and willingness to travel data, will form the basic data. The analysis will be conducted for residential and day use centers and program offering categories of significant statistical differences which exist between these categories and willingness to use and willingness to travel. This model will yield a potential use figure for each center. Next, roughcost estimates for center development will be added to the centers following. These initial findings will be reviewed by the steering committee. The potential population of each center will form the initial priority for development. These priorities will be adjusted based on other considerations, such as estimated development cost per student and local support, raised by the steering committee and general public review.

C2.3 **Budget**

LCMR Funds

- a. Amount Budgeted: \$60,000
b. Balance 7,363

C2.4	Timeline for Products/Tasks	July 91	Jan 92	June 92	Jan 93	June93
	Survey Analysis	----		----		
	Potential Modeling	----		----		
	Cost Estimation		----		----	
	Review and Prioritization		----		----	
	Final Report Drafting and Publication		----			----

C 2.5 **Status:**

The steering committee representing the effected agencies and the administrators of existing sites has completed development of a review draft. At this writing, there appears to be strong consensus for the recommendations, it became necessary to expand the scope to include suggested policies regarding field-based environmental education experiences. The draft contains overall policy recommendations and individual capital improvement recommendations for three classes of facilities. The three classes examined are day use facilities, special emphasis facilities, and residential centers. The day use category includes urban and rural nature centers and parks, both community based and resource based. Potential sites identified include existing local facilities and state operated areas. Special emphasis facilities include zoos and museums, with specific recommendations for the Minnesota Zoo, the Science Museum of Minnesota, Lake Superior Center and other similar facilities.

The residential center portion contains recommendations for the renovation and expansion of existing centers such as Long Lake and Wolf Ridge and the addition of a limited number of new learning centers. Investment recommendations cover a four biennium period, out to the year 2000. The current level of recommendation is between seventy and one hundred million depending on development of a few missing figures and the method of financing. The steering committee has asked that financing recommendations be provided as alternatives rather than final recommendations.

The DNR, Office of Planning, is incorporating their analysis of needs and proposed solutions into a draft suitable for public comment. Comments will be sought from the OEE Advisory Committee and other interested public. The comment period will remain open through the month of January.

- C2.6 **Benefits:** The plan will set forth the role of environmental learning and nature centers and provide an approach to development of those facilities.
- C3.0 **Nature Centers and Environmental Learning Center Program Assessment**
- C3.1 **Narrative:** This study is an audit and assessment of programs and services being offered by these centers as related to the MN Department of Education K-12 guidelines and other state environmental goals will be conducted by the Audubon Center of the Northwoods in cooperation with the Minnesota Naturalist Association, Coalition of Environmental Learning Centers, Department of Education, Department of Natural Resources and Office of Environmental Education.

This study will address the need to coordinate efforts by cooperation between centers and other deliverers of environmental education. It will analyze the potential for existing environmental learning centers and nature centers to serve as regional resource centers.

This study will be coordinated with the DNR Environmental Learning Center study and be incorporated into the statewide environmental education plan.

The DNR study is an assessment of user needs. The study by the Audubon Center of the Northwoods is an assessment of programs/services being offered by the centers. It will help in the coordination of services among the centers and inform users of opportunities.
- C3.2 **Procedures:**
1. Review DNR Study
 2. Receive input from SPA, DNR, MDE for questions, needs, coordination.
 3. Establish coordinating committee from state ELCs/NCs
 4. Establish administrators conference to formulate work plan to address questions.
 5. Conduct a program audience audit of NCs/ELCs related to Minnesota Department of Education K-12 guidelines and other state EE objectives.
 6. Increase effectiveness and cooperation in the state ELCs/NCs network.
 7. Analyze potential for existing ELCs/NCs to serve as state resource centers in support of office of EE.
 8. Coordinate with state EE needs as related to NCs/ELCs for the office of education and be incorporated into the statewide environmental education plan.
 9. Produce a special edition on MNA journal with results of studies.
 10. Coordinate with conferences of SPA, DNR, MDE.
 11. Hold state conferences for MNA to share results.
 12. Establish a communication process between state agencies, NCs and ELCs.
- C3.3 **Budget:**
- LCMR Funds**
- | | |
|--------------------|--------------|
| a. Amount budgeted | \$ 85,000.00 |
| b. Balance | 0 |
- C3.4 **Timeline for Products/Tasks**
- | | July 91 | Jan 92 | July 92 | Jan 93 | July 93 |
|------------------------------------|---------|--------|---------|--------|---------|
| Review DNR Report with DNR/MDE/SPA | ----- | | | | |
| Establish Coordinating Committee | — | | | | |
| Administrators Conference | — | — | — | | |
| Audit/Survey | | ----- | | | |
| MNA Journal and Findings | | | | ----- | |
| State Conference | | | | ----- | |
- C3.5 **Status**
1. A committee representing the EEC community was formed to conduct the study and write the report.
 2. A literature search was conducted to determine what was documented about EECs.
 3. A preliminary survey went to all the organizations listed in EEC 2000 to determine who was EEC. As a result 44 3/4 - fulltime EEC's and 78 part-time deliverers were identified.

4. A background survey was developed with input from Ed Hessler, who represented the MDE at the beginning of the process, the Minnesota Environmental Education Administrators group, and the committee.
5. The survey was tested twice by a total of 28 EEC administrators and survey researchers before being sent to the EEC list.
6. Results were tabulated by UMD.
7. Two statewide conferences and a series of regional meetings addressed the specific needs, roles, and potential of the EEC community within the state plan.
8. Preliminary results were shared in another state conference, at the national conference for the National Association of Interpretation, and in focus groups.
9. Discussions were held with Pam Landers on the format and the development of the **Greenprint for Minnesota: A State Plan for Environmental Education**.
10. The EEC plan was revisited to address the specific design that was now determined for the state plan so that the two documents would be parallel and supportive.
11. UMD was asked to reconfigure data.
12. A new round of focus meetings concentrated on the presentation of findings in the new format.
13. The new materials were reviewed by selected EEC directors for consensus.
14. The documents are printed and will be distributed to the state EECs and other interested organizations.
15. Scientific papers, articles, and presentations will be made in the next year.
16. Efforts will be made to work with industry-related organizations to coordinate and evaluate the plan.

C3.6 Benefits. Because of this study, the EEC community has achieved a new level of communication and cooperation that will benefit the EE community as a whole. It has helped to provide the impetus for a new environmental education organization, and added a new level of scientific knowledge to environmental education nationally. Already the study is being used for a model in other states and has been recognized by the two largest national organizations in the interpretation field.

V. Context: Related Current and Future Work

Minnesota's Environmental Education Plan is on the crest of a tide of effort throughout the nation.

On the national level, an Office of Environmental education was established in the 1990 National Environmental Education Act, at the same time Minnesota was passing its state act. Similar to Minnesota's, the national act requires that the citizenry understand environmental problems and possess the skills, knowledge, and motivation to solve these problems. The EPA prepared a "Strategic Plan for Establishing the EPA Environmental education Program". The national program implements the federal policy "...to establish and support a program of education on the environment, for students and personnel working with students, through activities in schools, institutions of higher education, and related educational activities, and to encourage post-secondary students to pursue careers related to the environment.". The act also established a National Environmental education Advisory Council.

The National EE Advisory Council prepared a national report to congress on environmental education which summarized the status of EE in the United States, identified obstacles to the improvement of environmental education and recommended steps to address the obstacles. Its definition of environmental education is remarkably similar to Minnesota's environmental education mission. The national definition is "Environmental Education is the interdisciplinary process of developing a citizenry that is knowledgeable about the total environment, in its natural and built aspects, and that has the capacity and the commitment to engage in inquiry, problem-solving, decision-making, and action that will assure environmental quality."

The National EE Advisory Council sent a report to congress that identified obstacles to improvement in environmental education, or needs, that very strongly correlate with the needs identified in Minnesota, which the State Plan proposes to address.

The Council of State Governments has prepared draft environmental legislation as a model for other states to consider. Minnesota's 1990 Act was used in the formation of the draft and two of Minnesota's legislators, Allen Speer and Phyllis Kahn, helped to see that the draft was adopted.

Minnesota is in the forefront of states adopting environmental education legislation and writing state plans, status reports, or priorities. Other states that have written plans or are involved in the plan writing process are Arizona (1992), Florida (1991), Iowa (1990), Kentucky (1987), Michigan (1992), and North Carolina (1990). Iowa and New Jersey are currently working on state plans.

States which have or are in the process of developing specific environmental education curriculum guides include Arizona, California, Delaware, Hawaii, Indiana, Iowa, Louisiana, Mississippi, New Mexico, New York, North Carolina, Oklahoma, Tennessee, Texas, Utah, Vermont, and Washington.

IV. Evaluation

The five projects have all come together nicely, for the most part, in the Greenprint for Minnesota: A State Plan for Environmental Education.

- The pre-K-12 audience is the top priority audience in the plan. Preparation of teachers is of the highest priority within that audience; one of the most frequent requests of teachers has been an integrated curriculum to use and/or adapt. Dissemination of the Model Environmental Education Curriculum therefore becomes one of the top priorities of the plan as an essential tool in the preparation of those teachers.
- The Model EE Curriculum dissemination process (carried out at the state's school sites) will require the collaboration of and involve personnel from three major deliverers in Minnesota, the Department of Education, the post-secondary institutions and the environmental education centers.
- The recommendations from EEC 2000 are incorporated into the plan where the Environmental Education Advisory Board deemed appropriate based on survey data, current directions in education in Minnesota and responses of the environmental education community.
- Community Education as a deliverer is written into the plan in the audience sections for which it is most appropriate.
- Areas of the state where programs and services of EECs are lacking have been identified. The value of EEC experiences for students has been confirmed. Needed still is a description of how those programs and services could be established or improved where they are lacking, and, where they are available, how they can be better matched to the needs of the schools and other audiences identified by the state plan.

As these five projects have developed, and in part because of that development, major benefits are already occurring.

- Teacher preparation has been surfacing as a top priority. At the same time, the Board of Teaching is reviewing and revising its requirements for teacher licensure. The EE Board and EE Office staff, have, therefore, been making a major effort to work with the Board of Teaching to promote the inclusion of environmental education in teacher licensure requirements. This is aided by the membership of the Board of Teaching on the EE Advisory Board. Should this come to pass, all the post-secondary institutions would be compelled to include environmental education in the education programs of all prospective teachers.
- For the first time, eight of Minnesota's post-secondary institutions are cooperating to produce a series of environmental education programs for current teachers. These courses, to be offered in a variety of places and times, will incorporate the MDE learner outcomes,

and the Model EE Curriculum.

- Communication links have been formed between groups and organizations who have an intense interest in environmental education but have not necessarily been part of the environmental education community in the past. These include business, production landowners, outdoor recreation resource users, and the regulated community, among others. All have helped to build the plan, and all have contributed to beginning the breakdown of unproductive stereotyping. A crisscross of links are being formed across audiences.
- The State has many partners in the sharing of the funding of environmental education. As the communication required by the building of the plan has grown, it has become apparent that groups, businesses and organizations are investing their resources in environmental education, and are looking for ways to support environmental education needs.
- The Department of Education is demonstrating a major commitment to Environmental Education by including EE in its funding request, promoting EE with its service teams, accepting the responsibilities outlined for it in the State Plan for Environmental Education, including it in the process for establishing graduation requirements, and being extremely responsive to requests from the Office and the Environmental Education Supervisor.
- A broadened understanding of environmental education is being accepted as the development of the plan has included a wide range of audiences and issues. The plan highlights the interrelationships of environment and economics, consumerism, energy, and leisure time resource use. It demonstrates the relationships between environmental education and other state concerns such as sustainability (EQB's broader task), regulation (the use of education as preventative, and the permitting process as a teachable moment), and multicultural state residents (specific environmental concerns and education techniques). It builds an understanding of environmental education as it can be woven through the whole range of one's life interests and efforts.

The Minnesota plan is ambitious, and very broad based, but focused. What has begun is a pulling together of efforts by a wide variety of groups, agencies, businesses and organizations into a common set of strategies, but allowing and encouraging innovation and independent effort. The major tasks for the EE Advisory Board and Office will be to keep communication lines open, connect the groups with needs to the groups with resources, break down stereotypes and build partnerships, act as an advocate for environmental education to the legislature, provide program consulting to those who wish it, and use their position within the Department of Education to emphasize the importance of EE to school districts. They can push projects along, start balls rolling, and build bridges between audiences.

A great deal of work is already in process or has begun. The momentum needs to continue and to build. The Board and the Office need to:

- form formal advisory committees from the audience groups and from major deliverers such as the media and the EECs to implement the priority strategies for each of those groups.
- continue to work on those strategies that have already begun to be implemented:
 1. Inclusion of EE in teacher certification
 2. Implementation of the model EE curriculum
 3. Creation of a clearinghouse
- Collect baseline data for priority outcomes
- Follow up on and report progress of deliverers working with priority audience groups.
- Create a plan for accountability to the legislature

VI. Qualifications:

1. Program Manager:

Pam Landers
Minnesota Department of Education

ABD University of Minnesota
M.A. University of California, Los Angeles
B.A. Indiana University

Pam has worked in the field of environmental education for 20 years. She was regional coordinator for the Minnesota Environmental Education Board for 16 years, and Director in 1990. She has served as a private consultant for the Brainerd School District and the Department of Natural Resources, and as adjunct faculty for St. Cloud State University, Brainerd Community College and Bemidji State University.

2. Major Cooperators:

A) Susan Cairn
Minnesota Community Education Association
Community Education Specialist

Susan is trained in environmental education and has an extensive background in working with a variety of groups and agencies, and developing environmental education programs

- C) William Becker
Supervisor, Research Service
Office of Planning
Minnesota Department of Natural Resources

William has 20 years experience in survey research and the development of plans. Past work includes SCORP, DNR Long Range Planning, DNR Strategic Planning, Commission on Minnesotans Outdoors, Minnesota-Ontario Boundary Disputes, Root River Trail, Acid Rain Standards, DNR Management Studies and numerous custom studies and surveys for resource management issues.

- D) Mike Link
Director, Audubon Center of the Northwoods
International Wolf Center

Mike is co-founder of the Minnesota Naturalist Association, Coalition of Environmental Learning Centers, and the Environmental Education Administrators group. He has been an administrator in EE 19 years, has authored 13 books, served as faculty on twenty-three University and college staff.

- E) Ceil Critchley
Assistant Commissioner
Minnesota Department of Education

VII. Reporting Requirements:

Semiannual status reports will be submitted not later than January 1, 1992, July 1, 1992, January 1, 1993 and a final status report by June 30, 1993.

MINNESOTA COMMUNITY EDUCATION ASSOCIATION

LCMR ABSTRACT: JUNE 1993

Community Education is becoming a major delivery system for environmental education in Minnesota, working in partnership with hundreds of environmental organizations, businesses, government agencies and educational institutions to reach people where they live, work and play. Community Education revolves around the principles of lifelong learning and citizen involvement, concepts which they are bringing to the environmental education movement. As society awakens to the importance of environmental issues and their implications, Community Education has embraced the need and begun addressing environmental issues at the local level involving all sectors of the community.

Community Education programs have access to a wide range of audiences through its established programs, including preK-12, senior citizens, families, adults, minority/ethnic groups, persons with disabilities, and local business. Because of the existing connections, Community Education has become an ideal delivery system for environmental education. Through partnerships with environmental organizations, and active participation by community members, Community Education programs will continue to be major players in the environmental movement.

Findings:

- Partnerships between Community Education and other environmental organizations will be the key to successful community-based environmental education programs. Community Educators can facilitate the process, but the expertise needs to come from the environmental field.
- Environmental Education should be integrated into existing Community Education program areas rather than creating a whole new department devoted to environmental education. This ensures continuity, because environmental education then becomes an integral part of the other ongoing programs.
- Programs and classes need to be designed so that they are relevant to participants needs in order to increase participation, i.e., involve local citizens in determining an environmental issue which is relevant to their community, and then plan the program around that issues.
- Community Educators need additional training and support to continue integrating environmental education into their programs. The MCEA Environmental Education Project Coordinator position should continue to be funded for another 2 years to provide training, resources and support to Community Educators, and to continue developing partnerships between Community Education and other environmental agencies.
- Environmental organizations need to be educated further about Community Education programs and opportunities for partnerships. Many environmental educators are not aware of what Community Education is or how it operates.

ABSTRACT - STATE PLAN FOR ENVIRONMENTAL EDUCATION

A Greenprint for Minnesota: State Plan for Environmental Education, has been printed and is ready for distribution and implementation. It contains recommendations for action for:

1. legislators, in the support of environmental education;
2. the Environmental Education Advisory Board;
3. any individual, organization or agency that intends to provide environmental education.

The plan sets priorities for environmental education, based on the ten identified target groups. The target groups are prioritized, as are the strategies for reaching them. The plan proposes a 10 year major check point, with 3 year benchmark evaluations to be made. It sets forth outcomes (results) to be reached for each audience that can be measured.

The target groups, in priority order, are:

- PreK-12 students
- Post-secondary students
- Government officials and boards
- Consumers
- Producer/landowners
- Regulated community
- Business
- Outdoor recreation resource users
- Citizen and youth groups
- Religious groups

Significance of the Plan:

The priority audiences were set by the environmental education community (over 600 were constant advisors to the process). Some of the priority audiences have not typically been part of the environmental education community. These have now joined together in a common endeavor. The potential for dialogue that has not taken place previously is now quite strong. The partnership-building proposed by the plan to meet the strategies is primed and ready to be initiated.

The task is, indeed, larger than many people had allowed themselves to think, but there is no gain in minimizing it. The plan, for the first time, provides a means to see and to measure just how large the task truly is, so it is possible to gauge whether particular efforts are or are going to be effective.

ABSTRACT - ENVIRONMENTAL EDUCATION INTEGRATION PROCESS AND MODEL CURRICULUM

In 1991 the Minnesota Department of Education requested school districts to submit proposals for funds for developing kindergarten-through-twelfth-grade integrated, interdisciplinary, outcome-based environmental education model programs. In addition the districts were to design methods to disseminate the results of their work to all other districts in the state to enable those districts to formulate their own programs.

Results

Seven school districts and one consortium of eight districts have:

1. produced over 100 teaching units that incorporate, in some way, outcome-based, integrated, environmental education. Most of these units are or will be available for use by teachers statewide on Macintosh disk or in paper;
2. developed two options for integrating environmental education into the curriculum;
3. identified strategies for team-teaching that seem to work best, especially for use as an introduction to integration;
4. identified effective curriculum development processes for districts;
5. developed dissemination methods both within and between districts;
6. developed unique options in choices of themes, structuring class hours, community partners, and action projects; and
7. become a team that is willing to help disseminate these results to other districts.

The distillation of the integration processes, plans for implementation within districts and implementation statewide, are recorded and ready for dissemination statewide in **Addendum: A Greenprint for Minnesota Schools: Integrating Environmental Education.**

The teaching materials produced by the schools will be made ready for dissemination on Macintosh disk by 1994.

ABSTRACT - NATURE CENTERS AND ENVIRONMENTAL LEARNING CENTER PROGRAM ASSESSMENT

This study was an audit and assessment of programs and services being offered by environmental education centers (ECCs) as related to the Minnesota Department of Education K-12 guidelines and other state environmental goals. The study was conducted by the Audubon Center of the Northwoods in cooperation with the Minnesota Naturalist Association, Coalition of Environmental Learning Centers, Department of Education, Department of Natural Resources and Office of Environmental Education.

The study identified 30 to 40 full-time environmental education centers in the state, and an additional 80 to 90 locations that provide some environmental education programming. These are classified as day-use centers, special function centers (such as the Minnesota Zoo, Science Museum, and the Raptor Center at the University of Minnesota), residential environmental education centers, residential camps, and state parks. Maps showing the distribution of these centers are included.

The report gives an overview of how the environmental education centers define their own audiences and programs. It makes recommendations and identifies strategies that will help to coordinate the offerings of all these centers with each other and the **Greenprint for Minnesota: A State Plan for Environmental Education**, and to improve the communication and coordination between the centers and the Department of Education, post-secondary institutions, and the environmental education center community. The recommendations and strategies are organized according to the ten priority audiences identified by the **Greenprint**.

Because of this study, the EEC community has achieved a new level of communication and cooperation that will benefit the environmental education community as a whole. It has helped to provide the impetus for a new environmental education organization, and added a new level of scientific knowledge to environmental education on a national basis. Already this study is being used as a model in other states, and it has been recognized by the two largest national organizations in the interpretation field.