

A Descriptive Review of Florida's Environmental Education Grants Programs

Martha C. Monroe, *School of Forest Resources and Conservation,
University of Florida, Gainesville, FL, USA*

Thomas Marcinkowski, *Science and Mathematics Department,
Florida Institute of Technology, Melbourne, FL, USA*

Janice Chang, *University of Florida, Gainesville, FL, USA*

Lynna Kauchek and Renee Smith, *Florida Institute of Technology,
Melbourne, FL, USA*

Greg Ira, *Office of Environmental Education, Florida Department
of Environmental Protection, Tallahassee, FL, USA*

A statewide environmental education (EE) grants program operated in Florida from 1990 to 2003. Interviews of grant recipients were undertaken to explore and describe the contributions of these funded projects to EE in the state. This report of the descriptive review presents and summarizes findings from these interviews. Grant funds increased the diversity of EE programs available to citizens, increased the diversity of agencies and organizations engaged in providing EE programs, and enabled those already involved in EE to undertake more extensive projects. This article describes the process of the review and suggests recommendations that may help strengthen other grant-funded programs.

The authors thank Elise Cassie for her work in identifying historic ACEE grant recipients, all the grantees who provided memories and insights that formed the basis of this report, and Trina Hofreiter and Kristy Bender who assisted with producing the report. This research was supported by the Florida Agricultural Experiment Station and a grant from the Advisory Council for Environmental Education of the Florida Fish and Wildlife Conservation Commission, and approved for publication as Journal Series No. R-10439.

Address correspondence to **Martha C. Monroe**, School of Forest Resources and Conservation, University of Florida, PO Box 110410, Gainesville, FL 32611-0410, USA.
E-mail: mcmonroe@ufl.edu

Environmental education (EE) programs in many states and in many parts of the world are not well funded. In the United States there is great variation from state to state; while some provide strong support and leadership through state agencies, others offer little in the way of funding or resources for programs and materials. While a state grants program is among the initiatives recommended by The National Environmental Education Advancement Program for an ideal state-level comprehensive EE program (Ruskey & Wilke, 1994), fewer than half the states in the U.S. have such programs

(Ruskey, Wilke, & Beasley, 2001). Few articles have been written to describe these grant programs, and the literature offers little guidance for developing programs. This paper uses the opportunity of a review of the Florida environmental education grants program to describe its benefits and challenges and to offer recommendations to others.

Grants programs are usually designed to enable organizers to redistribute resources according to a stated goal; this goal can change from year to year as new needs, or priorities, or both become apparent. The grant proposal review process can promote different aspects of the agency's mission. For example, the U.S. Environmental Protection Agency has used an Environmental Education Grants program to launch a set of small regional grants programs with relatively little risk of a perception of wasted funding by limiting the amount of funding for each project to less than \$5000. The Public Information and Education program of the Puget Sound Water Quality Authority encouraged a wide variety of applicants, effectively enabling dry cleaners and the construction industry to become environmental communicators. Because their messages about dry cleaning chemical disposal and erosion on a building site were more likely to be understood and respected by their colleagues, this strategy helped more people become aware of water issues.

The state of Florida developed an environmental education grants program with funding from manatee and panther specialty license plates under the auspices of the (Florida) Advisory Council for Environmental Education (ACEE) at the Florida Fish and Wildlife Conservation Commission. Although ACEE and its grants program were established by the Legislature in 1989 and housed within the Joint Legislative Management Committee, they were preceded by an earlier incarnation of an Advisory Council authorized in Florida's first Environmental Education Act in 1970 and dismantled in 1981. In 1996, the Legislature reduced ACEE's budget (by 33%) and transferred the staff and programs to the then Florida Game and Fresh Water Fish Commission. The

purpose of the Council was to coordinate a comprehensive EE program for teaching residents and visitors about Florida's environment. In 1998 the Game and Fish Commission was reorganized into the Florida Fish and Wildlife Conservation Commission (FWCC). From 1989 to 2003, ACEE funded 178 EE projects with approximately \$7.5 million that required matching funds. In 2000, a budget shortfall required the reduction of all programs funded by the Trust Fund (education grants, research, and enforcement). These reductions disproportionately affected ACEE and its education grant program. Declining revenues from the two funding sources (Save the Manatee Trust Fund and the Florida Panther Research and Management Trust Fund) were the stated reason for the FWCC recommendation to eliminate the program. The request to conduct this review came about as a result of insufficient funding to conduct a full round of grants and the desire to document the benefits generated by the grant program. This article summarizes the review of Florida's ACEE grants program with an emphasis on suggestions that others might use to strengthen their grants-based programs.

METHODS

The grants program coordinator provided a list of projects funded, grantees, addresses, phone numbers, funding amounts, and years of funding. Names and addresses were not available for first 36 projects, nor were the records maintained over time, so some contact information was no longer accurate. Because of the great diversity of grant recipients (e.g., schools, businesses, agencies) and the uncertainty of reaching an individual who knew about the grant project, due to the high turnover in educational staff at many institutions, we attempted to contact and interview the program coordinator associated with each of the projects. If the program coordinator was not familiar with the grant project, we asked to speak to someone

who remembered the activity. Four interviewers were trained to use the interview guide and enter data in the spreadsheet. While no attempt was made to check the reliability of their interview technique or data, in several cases, interviewees were recontacted for clarification, giving interviewers an opportunity to compare perceptions. In all cases, the data were accurate.

This review involved four phases of activity: (1) deciding how many of the 178 funded projects to include in the sample, obtaining current contact information, and determining how often to repeat calls; (2) developing, piloting, and training interviewers to use the interview guide consistently to collect information from these ACEE-funded projects; (3) analyzing coded quantitative data with measures of central tendency and frequency, and gathering examples and supportive quotes from the qualitative data; and (4) the developing 10 vignettes that describe selected programs in greater detail to help readers better understand the breadth and perceived accomplishments of the grants program.

Telephone interviews were used to collect information about the program and perceived outcomes. The interview guide included 27 questions and took between 20 and 40 minutes to administer. The first eight questions asked the respondent to describe the organization, partners, funding period, matching funds, and current status of the project. Fourteen questions covered the purpose, goals, audience (intended and actual), benefits, and perceived outcomes of the grant-funded project. Four questions asked respondents to describe the evaluation process associated with the project. The final four questions enabled respondents to offer advice to improve EE in Florida and the ACEE program. While most of these questions asked respondents to check off categories or complete rating scales, portions of 18 questions enabled respondents to clarify and explain in their own words. The ACEE staff reviewed the interview guide, and it was pilot tested with six environmental educators who were eligible for but never received ACEE funding. Revisions were completed and as current contact infor-

mation for the grant recipients was discovered, the interviews began. Interviewers quickly realized that some respondents would prefer to complete the interview guide in writing, so provisions were made for E-mail, fax, and posted responses. Data were entered into Excel spreadsheets, qualitative responses were coded by faculty and graduate student members of the research team into a limited number of response categories using basic content analysis procedures and entered, and frequencies were used to summarize the results. While these quantitative data could be reported in tables, we believe the summary statistics are more useful in support of recommendations that others might use to strengthen their grant programs.

When interviews were completed we purposely selected a set of 10 successful projects that maximized the diversity of organizations, issues, and locations in order to develop descriptive vignettes of their projects. These vignettes were included in the report to help the stakeholders (including legislators) develop a better sense of the grants program. The vignettes were written from the interview data and ancillary materials, if available, and sent to each respondent to review, correct, and expand.

RESPONDENTS AND NONRESPONSES

Over the 3-month interview period, 107 interviews were completed, each representing a different grant project. We were more successful at contacting more recent grant recipients (72% response rate) than those funded in the first few years (49% response rate) (see Table 1). Nonresponses included a variety of problems: in 23 cases the organization, person, or information could not be found to speak about the program; and in 41 cases the respondent was not available to complete the questionnaire. The reasons for no response in the remaining cases are either unknown or combinations of the above.

Table 1
Responses and nonresponses by recipient category

	Awarded	Interviewed	Nonresponse (%)
NGO and nonprofits	45	28	17 (38)
Public K-12	24	10	14 (62)
University or College	23	14	9 (38)
City or County	20	13	7 (35)
State and Regional	23	18	5 (22)
Nature Center or Museum	11	10	1 (10)
Business or Media Firms	11	4	7 (64)
Federal	4	4	0 (0)
Other	17	6	11 (59)
Total	178	107	71 (40)

OVERVIEW OF ALL ACEE GRANT RECIPIENTS

The original grant recipient database included information about the organization or agency receiving the funds, the amount of funds, and the nature of the project. With that information we summarized basic information about the grant recipients. Over the 13 years of operation, ACEE funded a wide variety of organizations and agencies to implement environmental education projects in a variety of forms for various audiences (see Table 1). More than 40 grants were given to environmental organizations such as Reef Relief, The Nature Conservancy, natural history museums, and Archbold Biological Station. Colleges and universities were awarded over 20, as were K-12 school systems. State agencies received a similar number for EE programs at special sites (e.g., Rookery Bay National Estuarine Research Reserve) or for statewide initiatives (e.g., Panther Net Website and Florida Outdoors video programs). Grants also went to survey research companies and mass media firms.

Half of the ACEE grants were authorized for less than \$30,000. The majority of the projects (75%) were funded at less than \$50,000. Only eight of the 178 projects received more than \$100,000. These largest grants represent a change in ACEE granting procedure toward selected FWCC priorities (e.g., prescribed

fire, panther, and manatee education). Larger nonprofits, universities, and school boards tended to capture mid-sized grants (\$25,000-\$50,000) and private businesses, universities, state agencies, and large museums garnered most of the large grants (\$75,000-\$100,000).

DESCRIPTION OF RESPONDENTS' PROJECTS

The 107 grants for whom recipients provided information are not easily described, because their purpose, context, and methods vary so greatly. To help describe the types of projects that were undertaken with these funds, we identified seven areas that encompassed the main purpose of the projects: Curriculum development, Resource development, Programming, Training and Workshops, Mass Media, Data Collection, and Public Participation. All of the projects were coded into the areas that fit their major accomplishments, resulting in the following descriptions. Because some projects had multiple and apparently equivalent purposes, these may be described in several areas.

Curriculum development

Twelve projects involved the development of new curricular materials to guide educators to

implement a program or course that conveys specific information and skills to an audience. Most targeted teachers, though a few did not. "Earth Connections" was developed for 4-H club leaders to engage youth in environmental exploration, "Master Naturalist" trains nonformal educators including ecotourism providers to interpret natural features of the environment, and "Build Green and Profit" is a course that helps building contractors construct energy efficient homes. The latter has been so successful that, according to the recipient, "Florida now has more knowledgeable and capable contractors than any other state."

Resource Development

Over half of the projects used some funding to develop educational resources. Some of these were for sites such as arboreta, demonstration gardens, or outdoor classrooms. Most were for educational materials, such as a slide show, brochure, Web site, magazine, or laboratory activities. About 20 projects developed resource kits, assembling a variety of program tools for extension agents or teachers to use. One project recipient described the outcome of her marine resource kits.

Teachers had to be interested and get the approval of their principal. Most of them had not been using science or environmental education and learned to engage students in hands-on work for the first time! We took them beyond the textbook and they applied what they learned. These teachers are ahead of the curve for the new science standards and are still using the resource kits.

Programming

About half of the projects were involved in distributing materials or conducting programs (i.e., a coherently designed, interactive opportunity intended to accomplish project objectives). Twenty-six of these were designed for K–12 youth, 14 targeted other segments of the public, and another 12 were for visitors to nonformal sites. Youth programs covered a wide

range of subjects (e.g., natural history, environmental science, performance art, and language arts) or audiences (e.g., homeschoolers, disadvantaged youth, and minority students) in field trips, biodiversity surveys, natural area management, and site restoration. Programs for the general public were designed to increase awareness of four issues: manatee protection, coral reef impacts, water quality monitoring, and native plants. Interpretive displays or materials were designed for visitors to state and county parks, museums, marinas, boat ramps, and preserves. Respondents report that many of the program materials: brochures for divers, signs for boaters, and puppet shows for youth were used long after the grant period to continue to educate audiences.

Training and Workshops

Thirty of the grant recipients offered training or workshops, and only 10 of these targeted teachers. The remainder involved nonformal educators, the business community, or the general public. Many of these workshops introduced and made available new curricula and resources. Others trained volunteers or dive operators to communicate information to the general public. When projects that were not primarily training activities included training, it helped to disseminate the materials to other users. One recipient commented,

The funding enabled me to write, field test, and publish instructional materials. Later, on my own, I used the books to do inservice workshops and present at conferences for teachers. I also wrote articles about the curriculum for magazines and professional journals.

Mass Media

Just less than 30% of the recipients used some type of mass media to inform the public, with over half of these including a Web site. One of the more common types of projects included the development and distribution of videos. The

topics ranged from boat groundings to establishing a land trust. Newspaper inserts were developed on smart growth and a water quality monitoring project. Media campaigns were designed around prescribed fire, coastal development, and manatee protection. Most of the projects involving Web sites occurred after 1998. The Florida PantherNet receives over 35,000 hits a month.

Data Collection

Several of the projects (4) were designed to answer on-going questions that could assist educators in developing more appropriate programs. An assessment of environmental education needs was conducted, as were surveys to gauge public awareness on manatees and panthers. While the recipient is not aware of how the data have been used, he did know that the results are in demand. "I still get requests to give conference presentations and send article reprints from both the general public and policy makers."

Public Participation

Several projects were designed to engage a group of people in learning or building new resources. A series of regional forums helped develop networks of environmental educators, a multilingual EE program involved the Hispanic community in site restoration, a volunteer network monitored northern right whale migrations, and a monofilament recycling program enabled those who fish to help protect marine birds and mammals.

Respondents report that, as has been common in EE for decades, the majority of the funded projects were designed to increase knowledge and attitudes (72%), while a smaller percentage focused on building skills (36%). Although this pervasive emphasis on knowledge and attitudes is somewhat disappointing, it is not entirely unexpected. A large number of projects were funded to raise awareness through

media or interpretation. One could not expect these projects to develop skills. Still, a surprising number of youth-based educational programs were limited to natural history information and experiences. If this is not an artifact of ACEE funding guidelines and selection criteria, then there is room to train environmental educators to build problem-solving skills into their environmental programs.

RECOMMENDATIONS TO GRANT PROGRAMS

We have identified nine recommendations that arise from the interviews and vignettes and supported each with examples from the study.

1. *Small grants helped attract new organizations to EE.* Many of the small grants went to organizations whose missions are not generally recognized primarily as environmental education, for example, Keep Winter Haven Clean and Beautiful, Space Coast Sport Fishing Foundation, American Littoral Society, and Florida State University's College of Law. Their participation expanded the types of audiences who received an EE message and connected these messages to novel issues and locations. Without professional EE staff, however, such small organizations may not know about the grant program and may not be able to compete successfully. If this is a goal of a grant program, an outreach effort should include a training program for prospective applicants and a technical support system for providing assistance if they are funded.
2. *Grants built EE partnerships.* ACEE grantees were required to provide matching resources. While many met these requirements with in-kind salary, more than three-quarters (77%) of the respondents reported at least one significant partner on the project. Respondents explained that their partners provided access to resources (financial and

- material) and expanded the expertise of the project team by providing specific skills. By encouraging partnerships, the grant guidelines helped recipients identify and cooperate with other agencies and institutions. Of course, having funds to support a project makes it easier for partners to be involved, particularly if they are earning some of that money.
3. *ACEE grants helped organizations leverage additional funds for EE programs.* While only 42% of the respondents indicated that ACEE funds helped them obtain additional funding, other respondents indicated that their success in the ACEE program helped launch additional EE efforts with other funding sources. However, in a majority of cases (73 of 87 reporting), ACEE funds provided over 50% of the project budget, suggesting that these programs might not have been possible without ACEE's grants program.
 4. *Grant recipients learn new skills.* The grant program also presented opportunities for individuals to develop skills: writing resources, leading workshops, and creating exhibits, in some cases for the first time. One interviewee stated, "This [developing a curriculum program] was a wonderful experience. I had no idea I could do this, but it was a great experience and very successful. It really helped our organization a lot."
 5. *Evaluation efforts are possible, even with small grants.* A majority of the funded projects took steps to ensure the quality of their products and programs through expert reviews (81%) and summative evaluations (87%), probably because of grant requirements. This appears to be a substantially higher rate of use of evaluation than is common in some sectors of the field (Chenery & Hamnerman, 1984/85). Using two or three forms of evaluation (i.e., expert review, pilot test, and needs assessment) is more often associated with programs that won additional awards and recognition (70% of the projects that received awards had completed two or three types of evaluation, while only 48% of the other respondents had).
 6. *Adult programs addressed behavior change more often than did youth programs.* A full 38% of the projects claimed to focus on changing the behavior of adult audiences. Respondents mention that teachers are using materials, contractors are building energy efficient homes, divers are doing less damage, boaters are traveling slowly in manatee-filled waters, and fishers are depositing used fishing line in containers.
 7. *Institutions that train educators or work with a number of school systems were strategically better suited to have a large impact with ACEE grants.* Respondents who worked with regional EE programs and teacher education institutions developed training programs and resources that compound the impact of the ACEE resources. They mentioned that their materials were still in demand and many of them found supplemental resources to continue to do workshops and reprinting. The impact of these efforts, however, is rarely reported by the conclusion of a grant cycle if it lasts only one year, so this information is often lost to granting programs. Selected recipients may be better able to make use of multiyear grants or longer reporting expectations.
 8. *Individual schools and locally based NGO's, while less able to have a widespread impact, were able to succeed in creating opportunities that provide examples of what others might do.* For example, Pelican Island Elementary School completed an outstanding unit and helped to manage a local natural area. However, nearby residents may be the only ones aware of their activities. If locally limited projects were encouraged to write an article, present at a conference, or share their success, other teachers and students might see possibilities in their own community for similar actions. Teachers in Florida are frequently assigned to different schools which hampered our ability to contact schools that received grants. Therefore it is difficult to say how successful schools are as a grant recipient. Those who were reached may be unusually productive or average.
 9. *Continued funding for successful approaches or projects and repeated funding for successful*

grantees helped increase the perceived success of the grants program. While sensitive to concerns about funding the same organizations again, a grants program that can allocate a percentage of funds to organizations that have demonstrated the ability to complete a successful project will help establish a positive impression of the grants program. Which organizations are good managers would not be known until their first project has concluded. Having a few known successes in the mix each year might enable grant programs to take a risk by funding a few unknown entities. The ACEE program funded 31 entities more than once in a combination of continued grants and new projects, presumably because they submitted competitive proposals. Charlotte Harbor Environmental Center was funded for four distinctly different projects; Reef Relief received funding over several years to design and reprint a brochure. In some cases respondents explain that their first proposal was for the first step of the program development process and subsequent proposals helped them continue. The University of Florida received 14 grants, but nearly all were for different projects administered by different units. To improve the likely success of projects while funding new recipients, a grants program could request that proposals focus on the successful models from early grant cycles.

SUMMARY

A State-level competitive grant program could influence the direction, scope, and focus of EE projects, enhance the quality of EE projects, build capacity among EE providers, help small organizations leverage funds, and serve as a repository for lessons learned from a wide range of EE experiences. In Florida, some of these benefits were realized while others were not. A majority of the projects (70%) used funding to develop and launch new activities, clearly attributing ACEE funds to new program develop-

ment. Capacity building, however, was not available to all, though some individuals took the opportunity of the project to gain new skills. Forty-two percent of the respondents indicated that ACEE funds helped them obtain additional funding. Unfortunately, there is no accessible repository of lessons learned. The guidelines for the grant proposals changed over the years to steer EE projects toward a topic, a geographic region, or an audience, most obviously during the final years, reducing the range of EE projects and recipients that were funded. Guidelines can be designed to require evaluation and partnerships, for example. More than one-third of the respondents reported that the grant guidelines significantly influenced the design of their proposed project (35%), indicating that guidelines can indeed shape the project.

If a grant program's goals include furthering the field of environmental education, a few policies and practices could be incorporated into their annual program, such as training for grant applicants, technical support in evaluation for grant recipients, a database of experts who could be used to review and improve projects, membership in the state or national EE association for grant recipients, and the expectation to present the project at an appropriate venue. Additional funding could be made available to successful projects to disseminate their materials and products to others. Since broader dissemination is often not included in the initial proposal to develop a program, some good projects were shelved when their initial audience was reached and the grant period concluded. Others were able to obtain additional grants from ACEE to continue with their outreach efforts.

From our review of these interview data, it was clear that there is a wealth of expertise and materials across the state that 13 years of state funding helped create. Unfortunately, it was not nurtured, nor were individuals retained in any community of EE providers to help support others. Florida's grant program focused on distributing funds, but this is only one outcome of a grant program. We encourage others to think broadly about their long-term

achievements and design a program to build environmental education capacity for the long-term and extend the reach of programs to new audiences.

REFERENCES

- Chenery, M., & Hammerman, W. (1984/85). Current practice in the evaluation of Resident Outdoor Education Programs: Report of a national survey. *The Journal of Environmental Education*, 16(2), 35-42.
- Ruskey, A., Wilke, R., & Beasley, T. (2001). A survey of the status of state-level environmental education in the United States—1998 Update. *Journal of Environmental Education*, 32(3), 4-14.
- Ruskey, A., & Wilke, R. (1994). *Promoting environmental education: An action handbook for strengthening EE in your state and community*. Stevens Point, WI: University of Wisconsin-Stevens Point Foundation Press; League City TX: National Association of Conservation Districts; Washington DC: National Wildlife Federation.