

ACE BASIN NATIONAL ESTUARINE RESEARCH RESERVE

K-12 Environmental Education Market Analysis

For the coastal counties of South Carolina

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K-12 Environmental Education Market Analysis for Coastal South Carolina

Introduction

The ACE Basin National Estuarine Research Reserve conducted a market analysis (MA) of organizations within the eight coastal counties of SC that provide informal education and/or outreach related to estuaries and the coastal environment to identify gaps in the existing programs offered to the teachers and students of these same coastal counties (Figure 1). A MA would allow the Reserve to; 1) be better aware of other local and regional programs that offer a range of services – both similar and different, and 2) identify potential services, and/or informational products, that are not being offered or audience needs that are not being met. The ACE Basin encompasses parts of Charleston, Colleton, Beaufort, and Hampton Counties (Figure 2).



Figure 1. Geographic focus area for the market analysis.

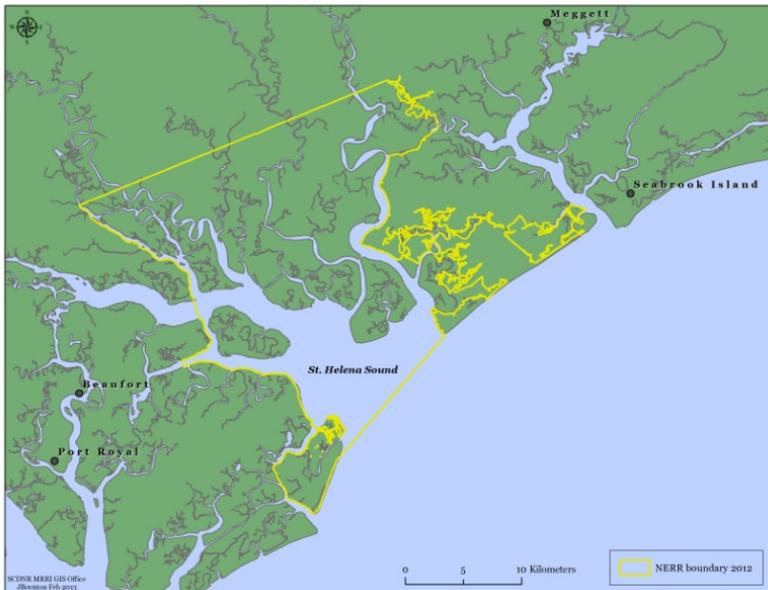


Figure 2. Map of the boundary of the ACE Basin NERR.

Market Analysis Objectives

- To find the current status of coastal zone and ocean science K-12 field and classroom offerings and principal providers, with geographic breakdown
- To identify gaps in programming that can be filled
- To identify overlaps in programming
- To identify other service providers in the area, possibly identifying opportunities for partnerships

Results

A total of 77 organizations were sent email invitations to complete the online survey and 35 organizations responded to give a response rate of 45%. See Appendix A for a list of the organizations that responded.

Organizational Information

The largest percentage of organizations surveyed were State Government Agencies or For Profit Business, such as eco-tour companies, both comprised 20% of respondents (Figure 3). The private eco-tourism businesses are a growing sector of environmental education providers. They are not limited by agency missions or funding and are able to provide the programs that schools desire more effectively. Questions do arise as to the information given during these tours as it is not regulated.

Of the remainder of organizations that responded:

- (1) 3% (1 respondent) were Federal government agencies,
- (2) 6% (2 respondents) were Educational institutions,
- (3) 6% (2 respondents) were Zoos/Aquariums, and
- (4) 14% (5 respondents) were local Non-profit organizations.

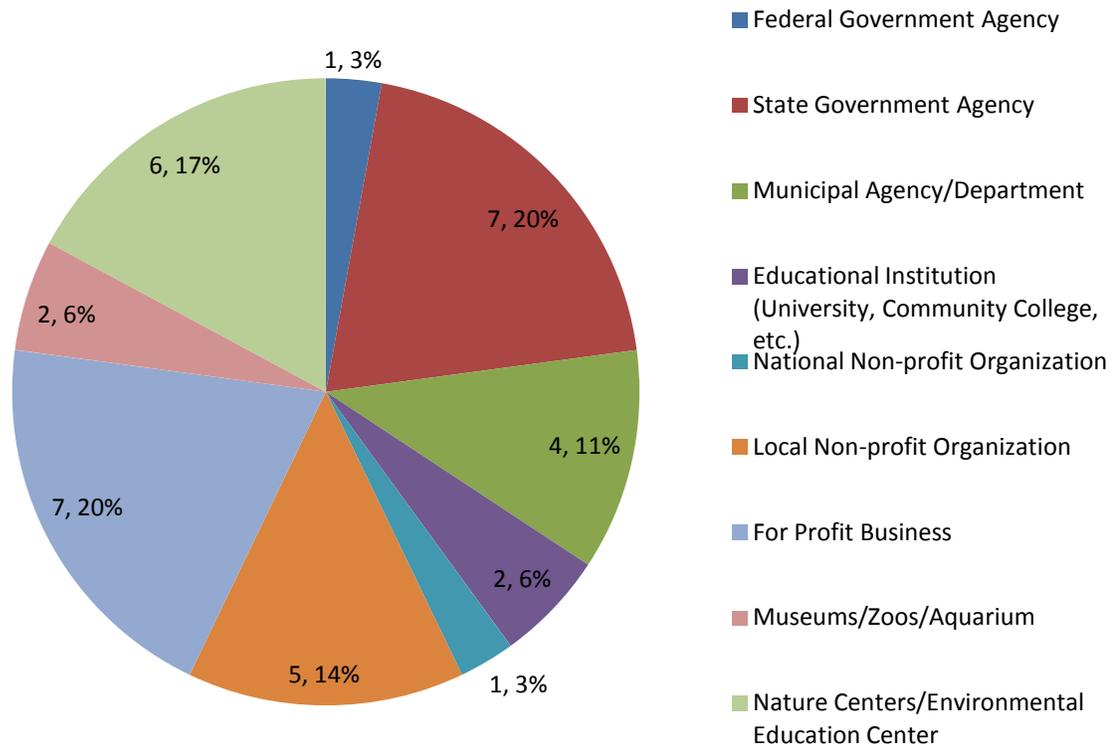


Figure 3. Type of organizations surveyed.

Six percent of the organizations surveyed were part of the NOAA family (Sea Grant, Sanctuaries, Fisheries, etc.) (Figure 4.) Our only other NOAA partners are the North Inlet-Winyah Bay NERR and COSEE-SE with SC Sea Grant.

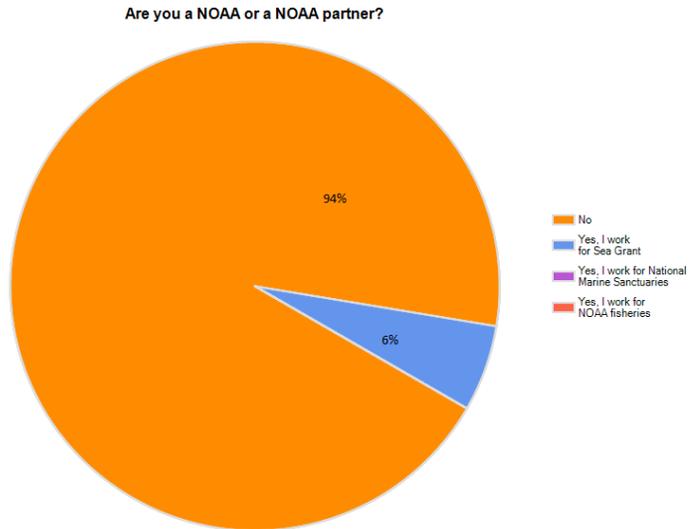


Figure 4. Organizations that are NOAA or NOAA family.

The majority (62%) of organizations surveyed were small organizations with between 1 and 10 employees (Figure 5).

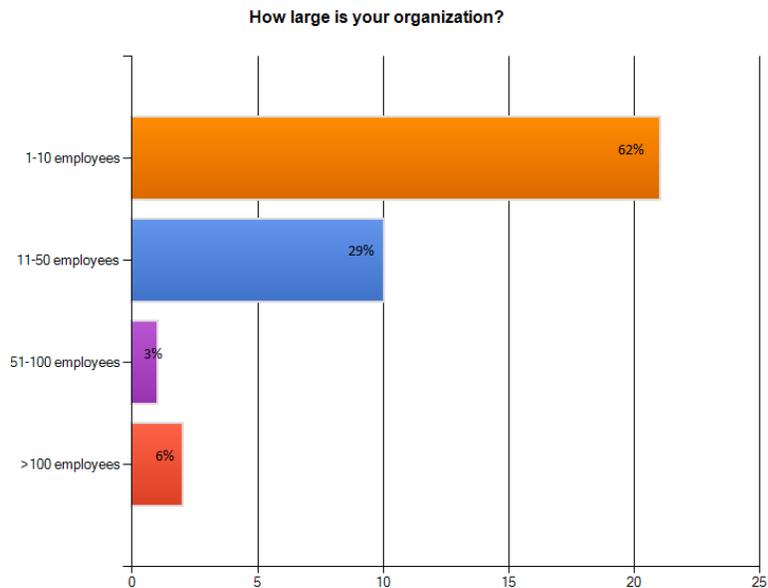
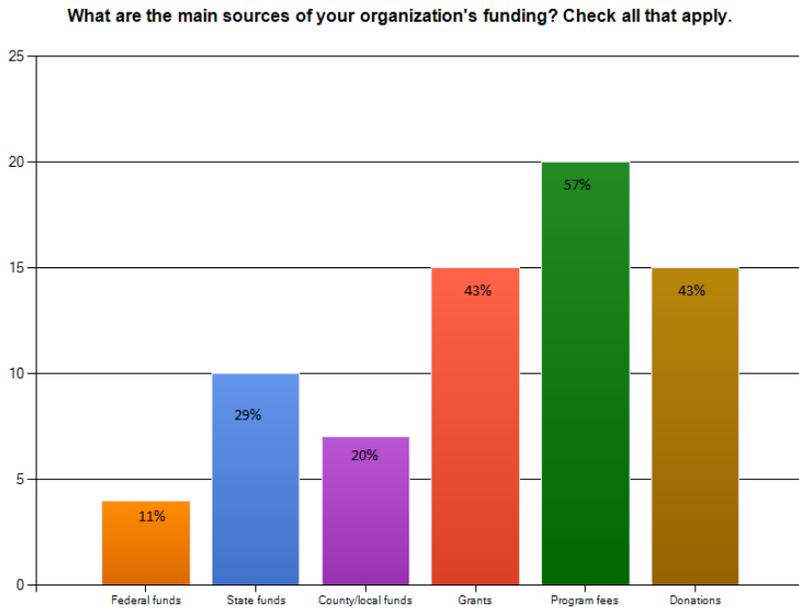


Figure 5. Number of employees in the organization.



Over half (57%) of the organizations were funded by program fees, followed by grants and donations each consisting of 43% of organizational funding (Figure 6). We have the opportunity to provide programs free of charge and should advertise this advantage. It is also important to continue to provide quality programs that address current issues and educational needs to remain competitive for grants and donations.

Figure 6. Sources of organizational funding.

Education Programs

Most of the organizations surveyed conducted field-based (83%), hands-on (77%), and/or stewardship (63%) programs (Figure 7). Research methods and experimentation were not a common format of programs and could be a niche for our programs.

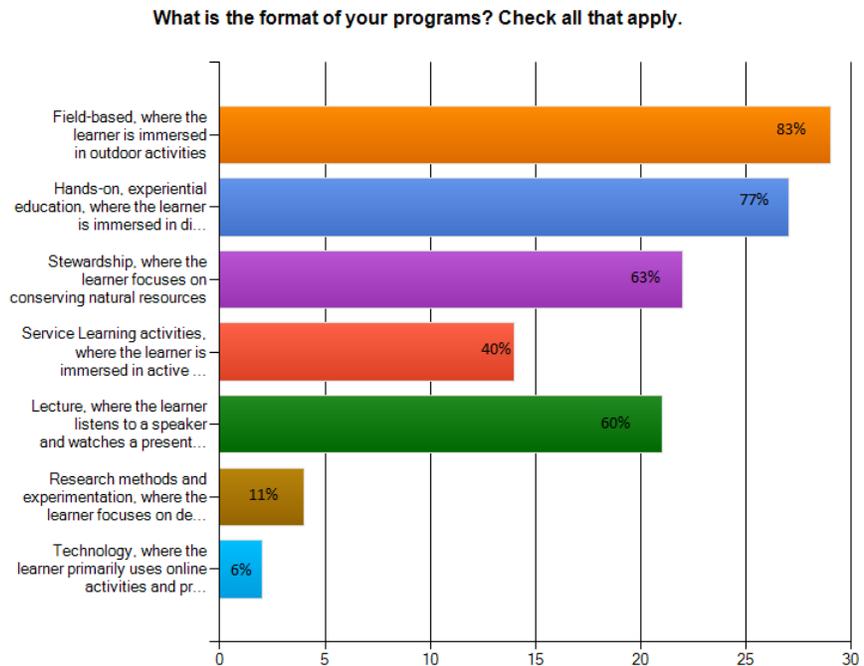


Figure 7. Format of programs.



School programs aboard the E/V Discovery.

The top five types of educational programming provided by other organizations were: field trips for k-12 students (86%), informal educator training (43%), in school/classroom programs (40%), homeschool programs (40%) and other types of programs (51%). These other types of programs include: boy and girl scouts groups, church youth groups, overnight camping experiences, university groups, master naturalist programs, family programs, and programs for property owners (Figure 8).

The organizations mainly targeted elementary schools (74%), and middle schools (74%). High schools were targeted less often (65%) (Figure 8).

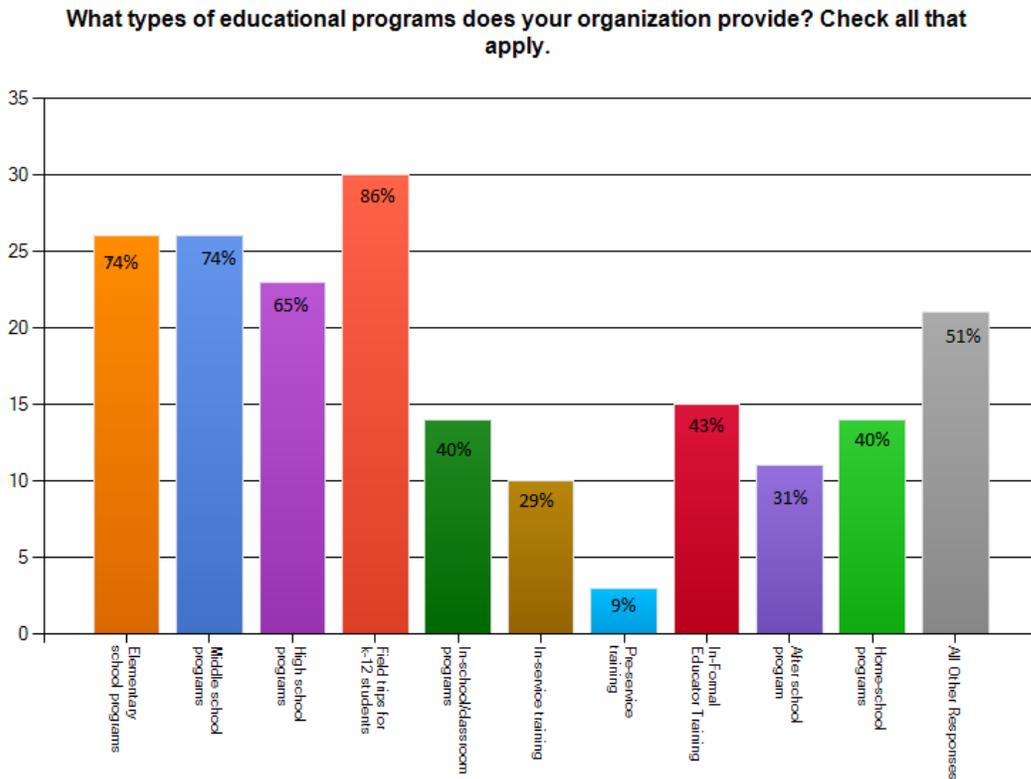


Figure 8. Type of educational programs and age level targeted.

Top five topics addressed by other organizations were: Conservation (67 respondents), Wetlands/marshes (66), Estuaries as nurseries for marine life (64), Human impact on the environment (63), and Marine/aquatic habitats (61) (Figure 9). These are also topics covered in our education programs. Field techniques, experimentation, and marine careers were three topics that are incorporated into our programs that were not commonly addressed by other organizations. We could focus on those topics more in the future. All of these topics were geared to elementary and middle school students more than high school students.

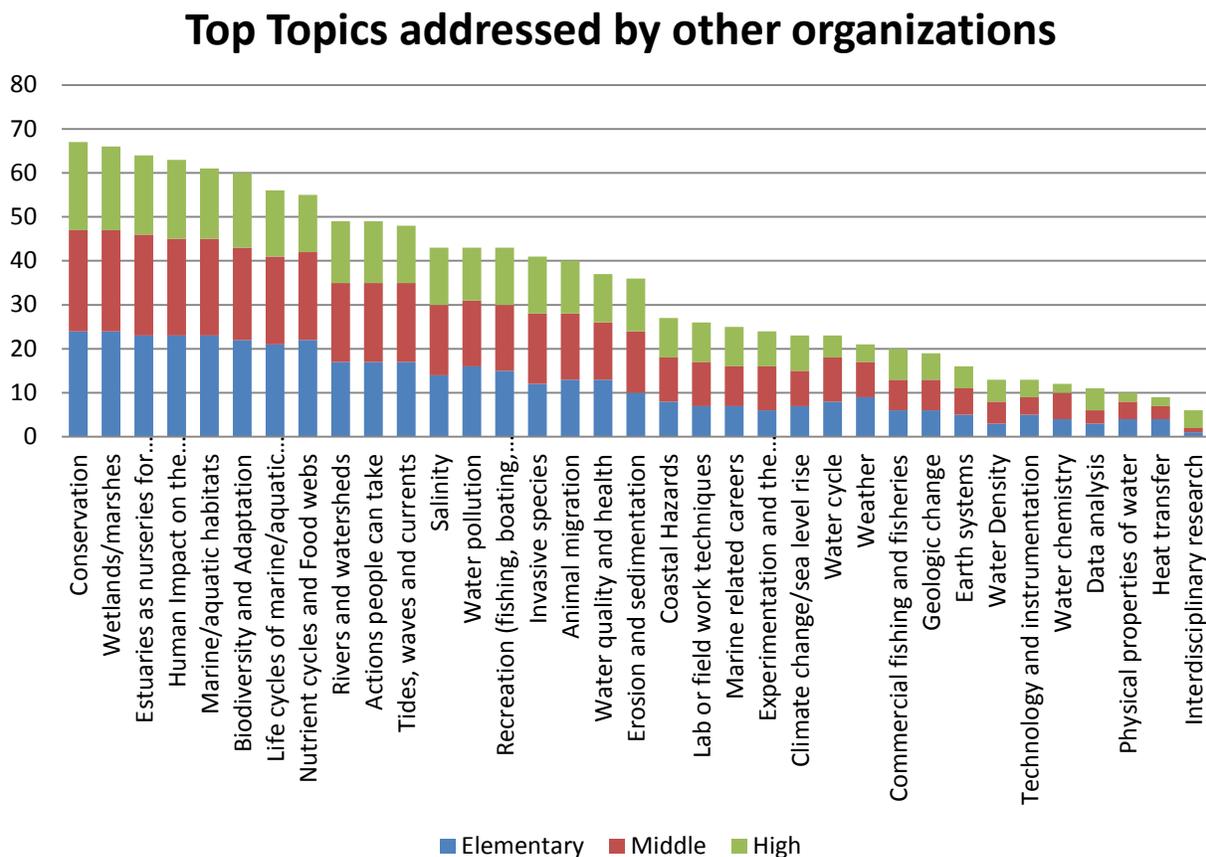


Figure 9. Topics addressed by other organizations.

Top five topics that other organizations think need more attention according to survey respondents were: Conservation (23 respondents), Human impact on the environment (21), Actions people can take (19), Invasive species (18), and Climate change/sea level rise (14) as shown in Figure 10. Other topics that were suggested were: STEM, evolution, and marine debris.

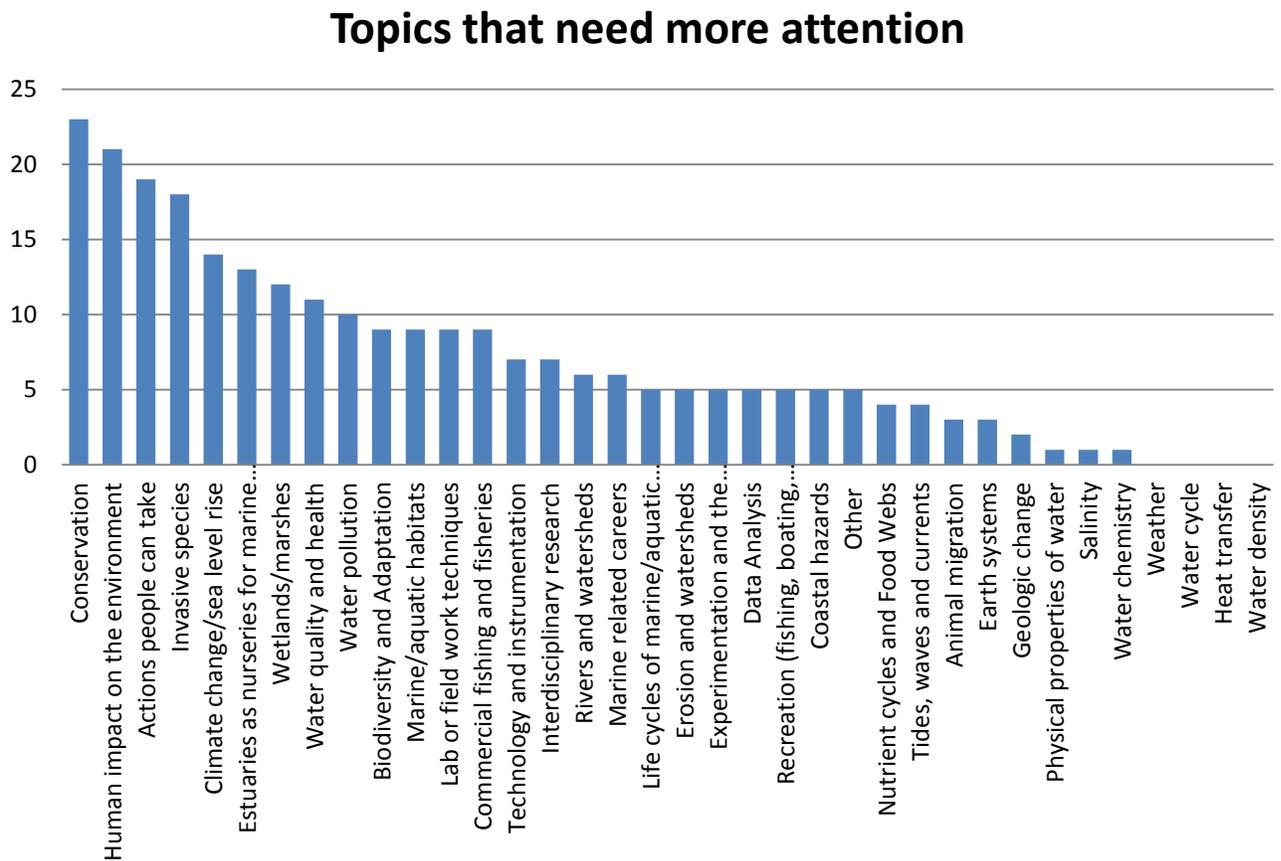


Figure 10. Topics that need more attention.

According to Figure 11, 77% of the organizations conduct programs that are correlated to SC state curriculum standards for science. Only 20% do not correlate their programs to any curriculum standards, while the rest cover standards other than science such as language arts, math, or social studies.

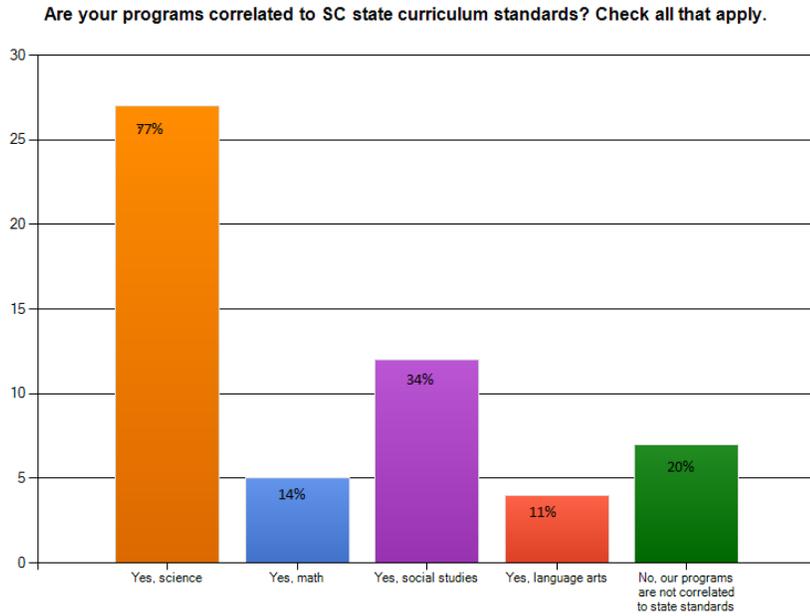


Figure 11. Are programs correlated to SC state curriculum standards?

The minimum number of people the organizations were willing to accommodate during a program was an average of 7.36. The mode and median number was 10 students.

The maximum number of people the organizations were willing to accommodate during a program was an average of 80.25. The mode and median number was 50 students.

As shown in Figure 12, 49% of the organizations reach between 1,001 and 10,000 students annually. This is also within the range of students that our programs reach annually. 34% of the organizations reach under 1,000 students per year.

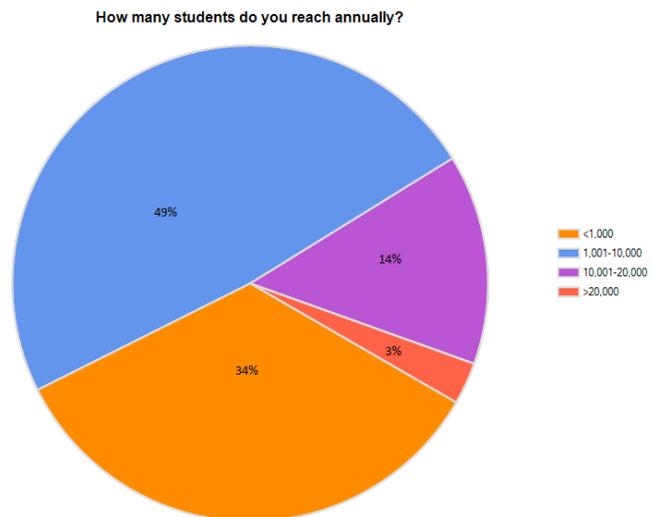


Figure 12. Number of students reached annually.

The highest number of organizations (63%) responded that they conduct programs that last one to two hours and 54% responded that their programs last half a day (Figure 13). The one hour to half a day program length is probably due to bus schedules and is typical for our programs as well.

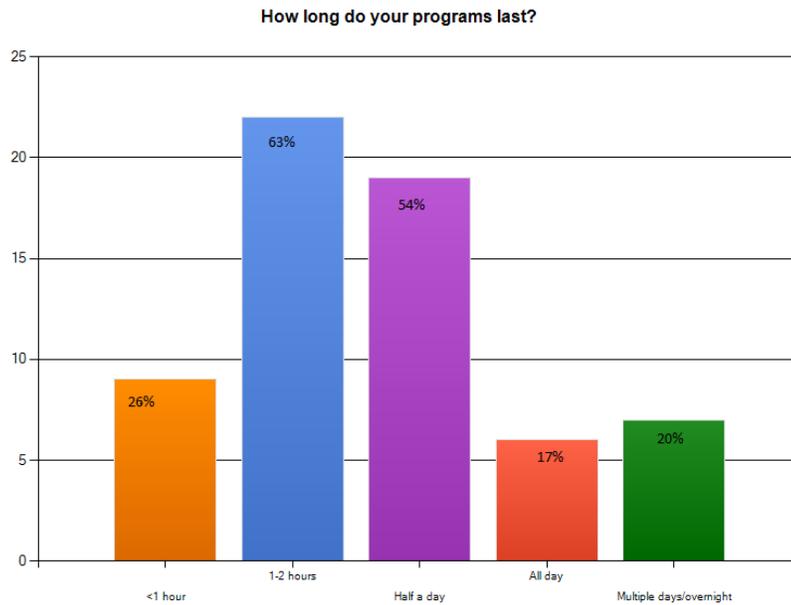


Figure 13. Length of program.

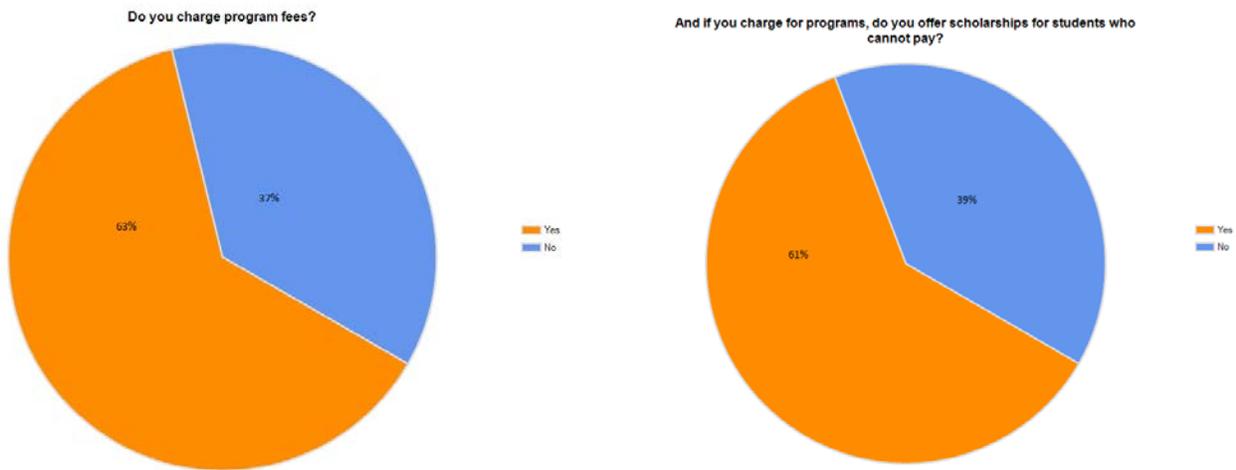


Figure 14. Do organizations charge program fees? Figure 15. Do you offer scholarships for students who cannot pay?

According to Figure 14, 64% of organizations charge program fees and 37% do not charge a fee. Of the organizations that charge fees, the average cost of a program per student was \$10. And of the organizations who charge for programs, 61% of them offer scholarships to students who cannot afford to pay (Figure 15). Our programs are offered to students for free.

The facilities most often used by organizations for environmental education include: Outdoor classrooms, exhibits, picnic areas, restrooms, and trails (Figure 16.). Other responses included: no facilities, Butterfly House & Aquarium, Guest Speakers, Educational Animal Collection, and a pond with dock. Only 10 respondents have a boat to conduct programs. Most of these organizations were eco-tour businesses that charge for programs. We have a unique advantage to provide a free boat program to schools. We can also utilize our connection to laboratory facilities when advertising for programs.

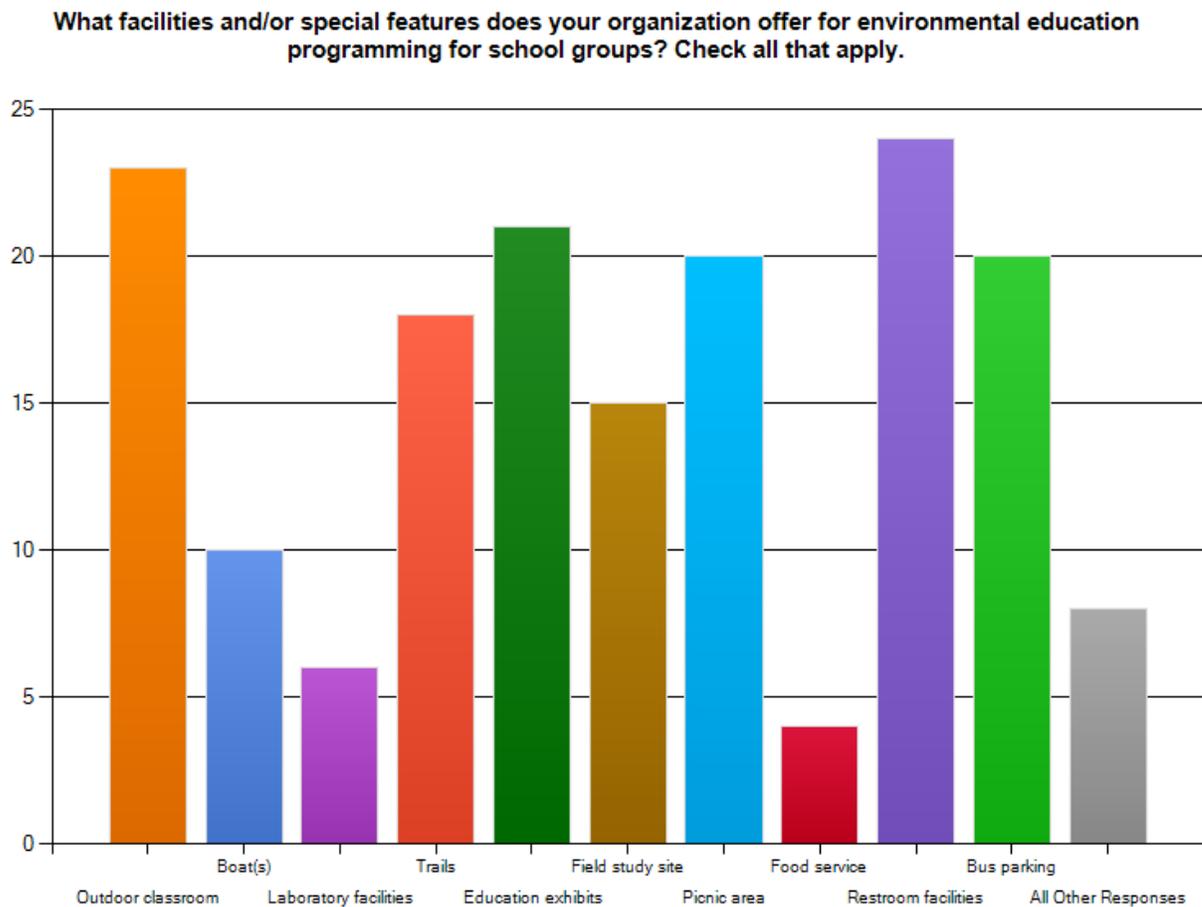


Figure 16. Facilities used for education programs.

The most common methods of marketing programs were: Word of mouth, website, directly to teachers, directly to past participants, and directly to individual school department head/coordinators (Figure 17). Our advertising methods are similar to most other organizations in that we use: website, word of mouth, talking directly to past participants, and individual teachers. We could improve our relationships with district staff, especially science coordinators/department heads, which is already beginning with our needs assessment process.

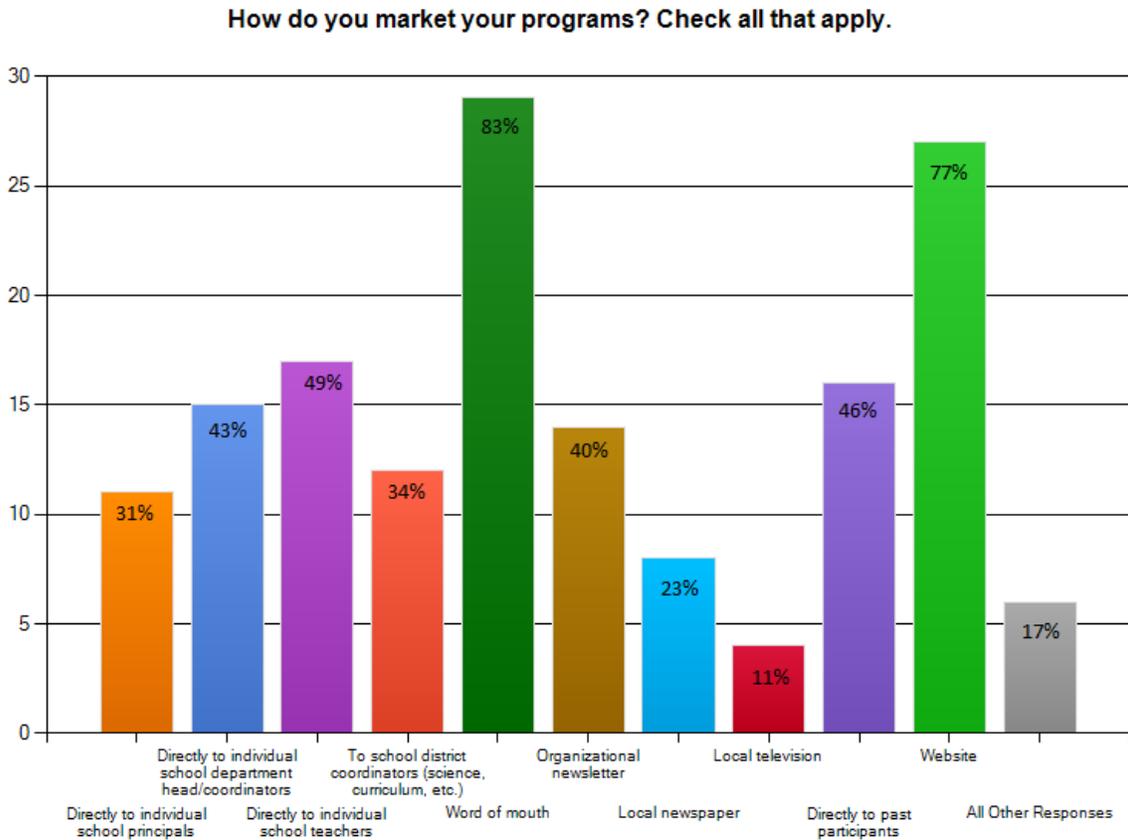


Figure 17. Marketing techniques.

The ACE Basin NERR mostly serves students from Charleston, Berkeley, Colleton, and Beaufort counties. These four counties are also the most served counties by other organizations as shown in Figure 18. These are also the most populated counties on the coast and where the environmental education organizations are located. Dorchester, Jasper, and Hampton counties are a possible source of growth for our education programs as they are still in proximity to the NERR.

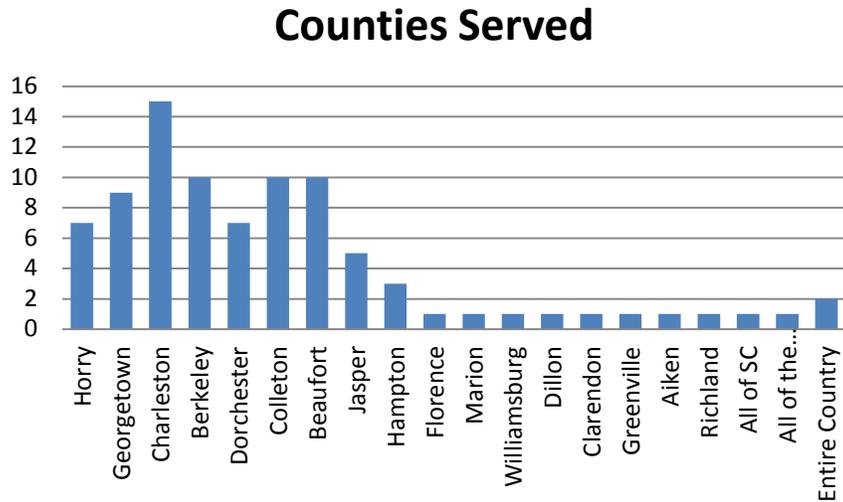


Figure 18. Counties served by organizations.

Professional Development

Over half (57%) of the organizations surveyed did not provide professional development to teachers (Figure 19). Organizations that offered professional development to teachers targeted middle school teachers (40%), elementary school teachers (29%), and high school teachers (23%). Professional development opportunities are lacking and we could provide these workshops targeting high school or elementary school teachers to fill the need. Of those organizations that offer professional development to teachers, 63% of them do not offer credits (Figure 20). Providing credits for professional development workshops would not only increase teacher participation, but benefit the teachers as they need to acquire a certain number of credits per year.



Teachers kayaking through the watershed during the ACE Basin Adventure Teacher Workshop in 2009.

If your organization provides teacher professional development, what grade level educator are your workshops targeted? Check all that apply.

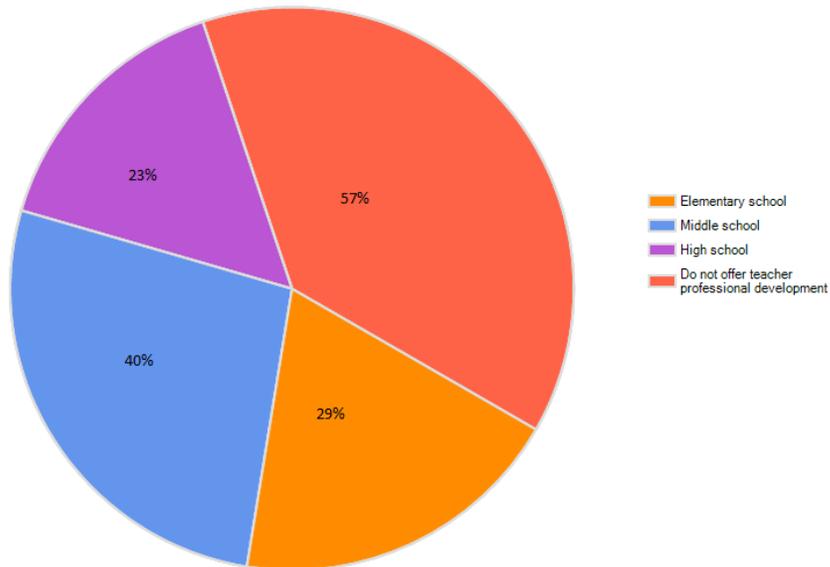


Figure 19. Percentage of organizations that provide teacher professional development.

Do you offer teachers educational/professional development credits?

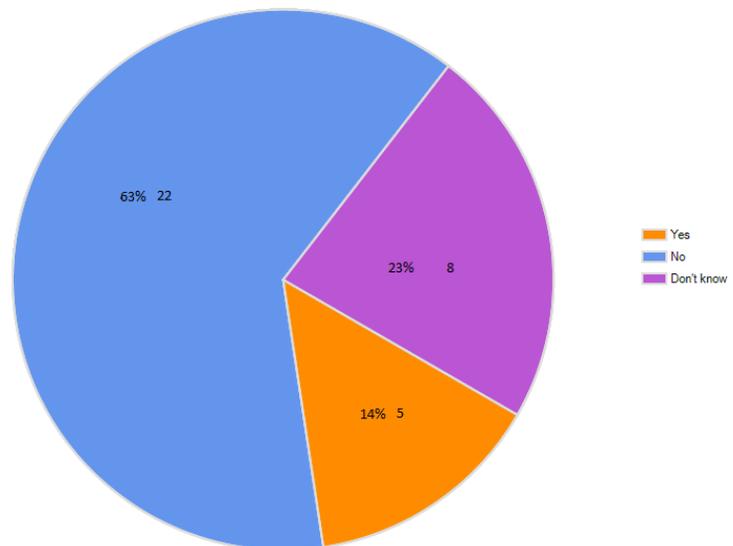


Figure 20. Percentage of organizations that offer educational credits to teachers for professional development.

The most common resources made available to teachers through the organizations surveyed were: curriculum, pre and post activities, and staff/volunteer led activities (Figure 21). Other resources provided that were not listed included Master Naturalist trainings. There are not many distance learning services (3%) provided currently. This is an opportunity for growth.

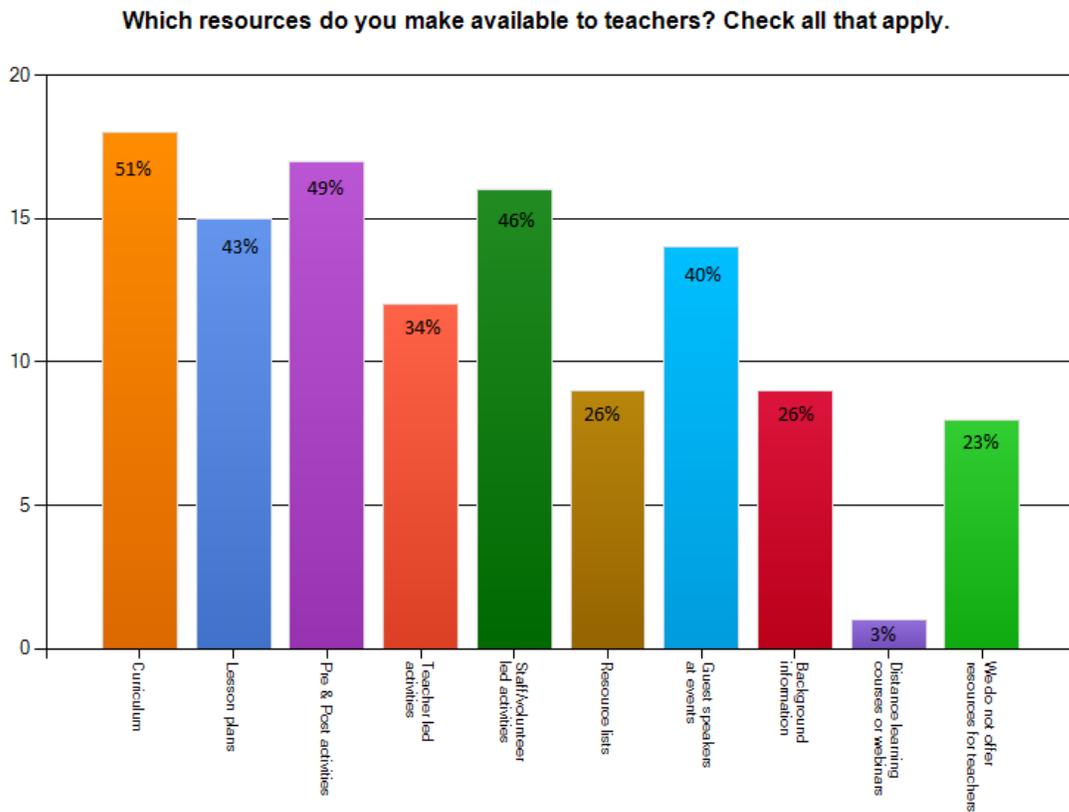


Figure 21. Resources that are made available to teachers.

Relationship to ACE Basin NERR

Almost all of the organizations surveyed (94%) were familiar with the ACE Basin NERR, as shown in Figure 22. According to Figure 23, 66% of the organizations have conducted programs within the NERR. There is no list of the organizations that conduct programs within the NERR but some of them may be eco-tour businesses. There could also be confusion between the entire ACE Basin watershed and the ACE Basin NERR.

Are you familiar with the ACE Basin National Estuarine Research Reserve (NERR)?

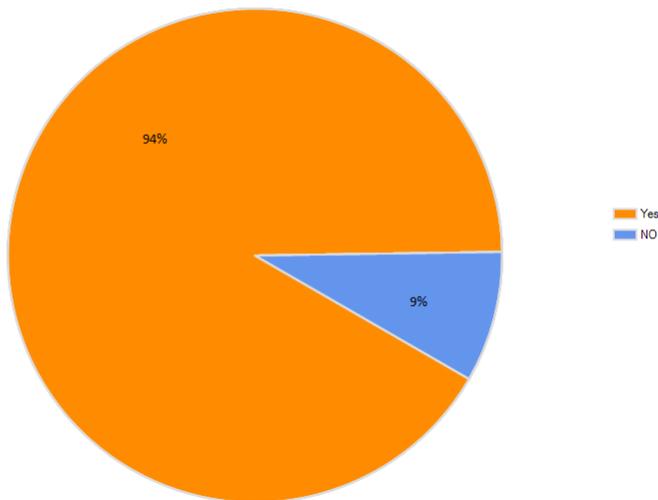


Figure 22. Percentage of organizations familiar with the ACE Basin NERR.

Have you conducted education programs within the ACE Basin NERR?

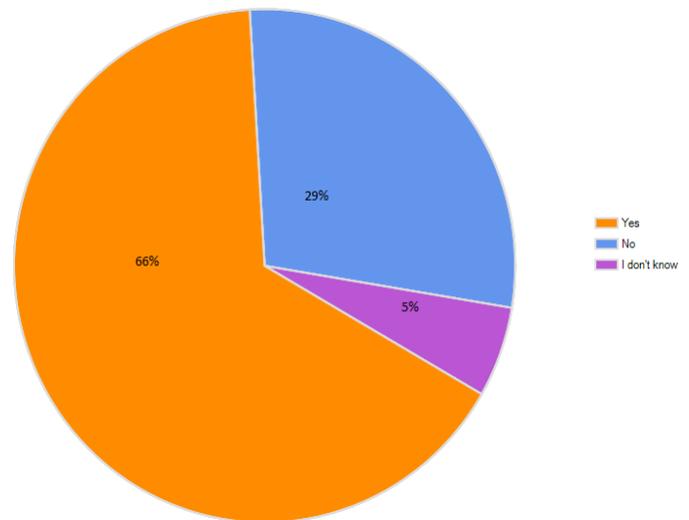


Figure 23. Percentage of organizations that conducted programs in the ACE Basin NERR.

Summary

- Ecotourism businesses comprise 20% of environmental education providers along the South Carolina coast.
- Funding sources are mainly program fees, donations, and grants. Over half of the organizations charge program fees to students.
- Program topics that are not currently focused on: research methods, utilizing laboratory facilities, field techniques, and marine careers.
- Programs were offered mainly for elementary and middle school students, and less often for high school students. We could increase our program offerings and advertisement to high school teachers about our programs.
- Jasper, Dorchester, and Hampton counties could be contacted to promote more participation with their schools.
- Professional development opportunities, especially for elementary and high school teachers, are lacking.
- Providing credits for teachers to attend professional development could increase participation.
- Organizations rarely provide distance learning resources to teachers (3%).
- Fostering relationships with science coordinators/department heads and other school district staff is important for program advertisement, connecting with teachers, and keeping up with education requirements.

Appendix A. List of Organizations that completed the survey.

#	Name of Organization	City	County
1	Barrier Island Environmental Education Center	Seabrook Island	Charleston
2	Ernest F. Hollings ACE Basin National Wildlife Refuge	Hollywood	Charleston
3	Hampton Plantation State Historic Site	McClellanville	Charleston
4	Clemson Carolina Clear	Charleston	Charleston
5	Black River Outdoors Center	Pawleys Island	Georgetown
6	Beaufort Soil & Water Conservation District	Port Royal	Beaufort
7	Beaufort River Tours	Beaufort	Beaufort
8	Blue Heron Nature Center	Ridgeland	Jasper
9	Huntington Beach State Park Nature Center	Murrells Inlet	Georgetown
10	Earth Force	Gramling	South Carolina
11	Nature Adventures Outfitters, Inc.	Awendaw	Charleston
12	SC Sea Grant/COSEE SE	Charleston	Charleston
13	The Belle W. Baruch Foundation	Georgetown	Georgetown
14	Beaufort kayak tours	Beaufort	Beaufort
15	Cypress Gardens	Moncks Corner	Berkeley
16	Colleton Museum & Farmer's Market	Walterboro	Colleton
17	Nemours Wildlife Foundation	Yemassee	Beaufort
18	The Center for Birds of Prey	Charleston	Charleston
19	Edisto Beach State Park Environmental Learning Center	Edisto Island	Charleston
20	City of Charleston Environmental Education (Rec. Dept.)	Charleston	Charleston
21	Botany Bay Ecotours	Edisto Is	Colleton
22	Edisto Watersports & Tackle	Edisto Island	Colleton
23	Patriots Point Naval and Maritime Museum, The Institute of History, Science and Technology	Mount Pleasant	Charleston
24	SC Dept. of Health and Environmental Control, Ocean and Coastal Resource Management	Charleston	Charleston
25	South Carolina Aquarium	Charleston	Charleston
26	Charleston County Park & Recreation Commission	Ravenel	Charleston
27	Learning through Loggerheads	Edisto Is	Charleston/Colleton
28	Oldfield Club	Okatie	Beaufort
29	Brays Island Nature Center	Sheldon	Beaufort
30	Sewee Association	Awendaw	Charleston
31	Sandlapper Water Tours	Charleston	Charleston
32	The LowCountry Institute	Okatie	Beaufort
33	North Inlet-Winyah Bay National Estuarine Research Reserve	Georgetown	Georgetown
34	Myrtle Beach State Park	Myrtle Beach	Horry
35	Mount Pleasant Recreation Department	Mt. Pleasant	Charleston

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