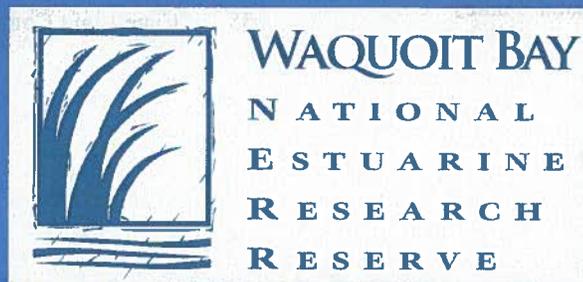


Market Analysis Survey Report of Environmental Education

Programs and Resources on Cape Cod

June, 2011



With Support from:

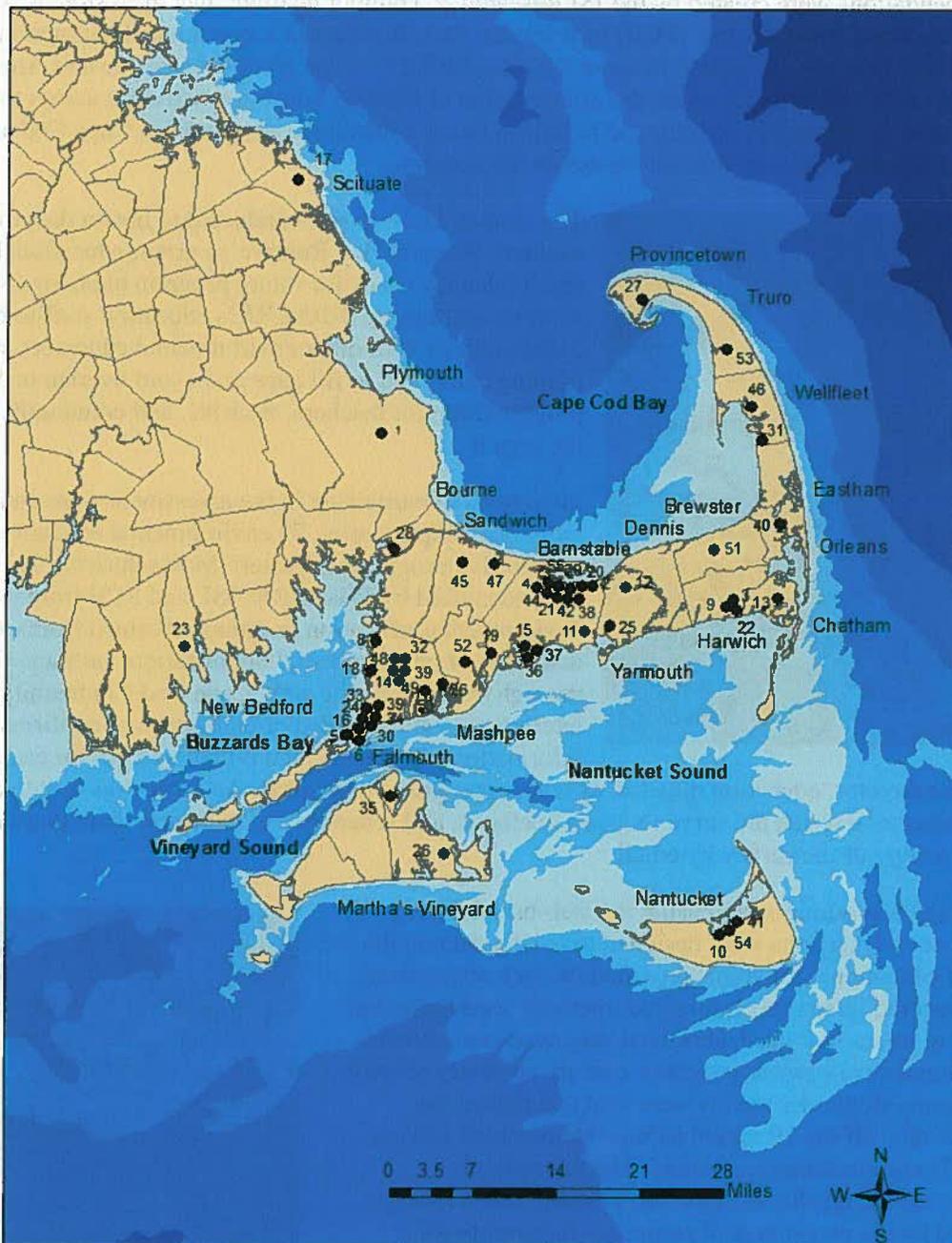
JSI Research & Training Institute, Inc.

Family Center Institute, Inc.

Survey Participants on Cape Cod and the Islands

<u>Map ID</u>	<u>Organization</u>		
1	Whale and Dolphin Conservation Society	29	Long Pasture Wildlife Sanctuary
2	Cape Cod Cooperative Extension	30	Sea Education Association
3	Harwich Conservation Trust	31	Mass Audubon/ Wellfleet Bay Wildlife Sanctuary
4	GreenCAPE (Cape Alliance for Pesticide Education)	32	The 300 Committee
5	NOAA/National Marine Fisheries Service	33	Woods Hole GLOBE Student Water Sampling Program
6	Marine Biological Laboratory	34	Woods Hole Science and Technology Education Partnership
7	Association to Preserve Cape Cod	35	Mass Audubon at Felix Neck
8	Self-Reliance	36	Three Bays Preservation, Inc.
9	Pleasant Bay Alliance	37	Jr.Tech, Inc.
10	Nantucket Conservation Foundation, Inc.	38	Cape Cod Commission
11	Cape Cod Maritime Museum	39	Woods Hole Research Center
12	IFAW Marine Mammal Rescue and Research	40	Cape Cod Lighthouse Charter School
13	Cape Cod Commercial Hook Fishermen's Assoc.	41	Nantucket Maria Mitchell Association
14	League of Women Voters of Falmouth	42	The Compact of Cape Cod Conservation Trusts, Inc
15	Cape Cod Collaborative	43	Massachusetts Marine Educators - Statewide
16	Woods Hole Sea Grant	44	Cape Cod Community College
17	Stellwagen Bank National Marine Sanctuary	45	Heritage Museums and Gardens
18	Salt Pond Areas Bird Sanctuaries, Inc.	46	Cape Cod National Seashore
19	Barnstable Land Trust	47	Thornton W. Burgess Society
20	Cape Wildlife Center/Humane Society of U.S.	48	Zephyr Education Foundation, Inc.
21	AmeriCorps Cape Cod	49	Falmouth Associations Concerned with Estuaries/ Saltponds
22	IFAW International Fund for Animal Welfare	50	Cape Cod & the Islands Group- Sierra Club
23	The Coalition for Buzzards Bay	51	Cape Cod Museum of Natural History
24	Nature's Circle	52	Mashpee Environmental Coalition
25	ZOOQUARIUM	53	N.E.E.D. Collaborative
26	Friends of Sengkontacket, Inc.	54	Linda Loring Nature Foundation
27	Provincetown Center for Coastal Studies	55	Cape Light Compact
28	National Marine Life Center		

Organizations Offering Environmental Education on Cape Cod and the Islands



Created by: WBNERR GIS Group

Projection: NAD 83 StatePlane MA Mainland FIPS 2001

Date: 3.30.2011

Source Data: MassGIS, Consultant

INTRODUCTION

This report is a summary of results of a market analysis of environmental education and interpretive programs offered by organizations on Cape Cod in eastern Massachusetts. The survey was conducted by Waquoit Bay National Estuarine Research Reserve (WBNERR) and the survey report and recommendations were created by the JSI Research & Training Institute, Inc. in Boston, MA (JSI) and the Family Centered Institute, Inc. (FCII) in Brewster, MA. It is part of a coordinated national initiative by the National Estuarine Research Reserve System (NERRS) of the National Oceanic and Atmospheric Administration (NOAA) to ensure the effectiveness of NERRS education activities across the country. It will be used for strategic planning and to inform future educational programs on Cape Cod and on National Estuarine Research Reserves across the country.



The market analysis was conducted to obtain data to inform and evaluate Waquoit Bay Reserve's current educational programs and to identify needs for future program planning. Findings of the analysis will enable WBNERR's education staff to form collaborations with other environmental educators to meet training needs and to fill gaps and avoid overlap in educational programming for teachers, students, and community members in the region.

Invitations to participate in the assessment were emailed to individuals representing 79 environmental education and interpretive programs in eastern Massachusetts. The programs were identified by WBNERR, JSI, and FCII from lists of environmental education programs obtained from existing databases of environmental organizations on Cape Cod and through research on the web. Cape Cod Community College intern Nancy Dunn called organizations to confirm contact information of the name and e-mail address for each program's

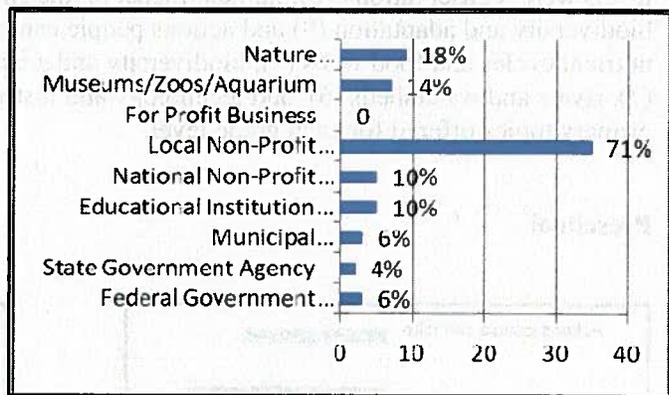
executive director, education director, or other appropriate individual. An email was sent to all potential participants to describe the survey's goals, methods, and schedule and to inform them that they would receive a copy of the survey by email.

The survey was administered using the web-based *Survey Monkey* tool. Questions were designed to collect data on the types of educational programs provided by each respondent, topics covered, grade levels targeted, methods used to market programs, topics that need additional programming, and the professional development programs that are currently offered for teachers. Reminder emails were sent to enhance the response rate. Of the 79 organizations that received surveys, 72% (57) organizations responded. The following is a summary of the results. Results are provided with a number followed by the percentage of responses in parentheses. Throughout the report, percentages were rounded and may not sum to 100%. Many of the questions have "Other" responses that are listed in the data set, but are too few in number to be included here. For complete details on these and other responses, please contact Joan Muller at the Waquoit Bay National Estuarine Research Reserve. Please note, since Waquoit Bay Reserve conducted the survey to refine their niche in this area, WBNERR programs are not included in this survey.



1. See page 2 for a list of programs that responded to the survey and the map on page 3 for the location.
2. How would you classify your organization?

Of the 49 organizations that responded to this question, 71% (35) identified themselves as local non-profit organizations. The next highest in number were Nature/Environmental Education Centers, Museums/Zoos, followed by Educational Institutions and then public and governmental organizations. None self-identified as for-profit organizations. Under the comments section for this question, some respondents indicated that they represented other types of governmental agencies, were part of national or international organizations, or were part of associations that cut across specific organization lines, i.e. land trusts.

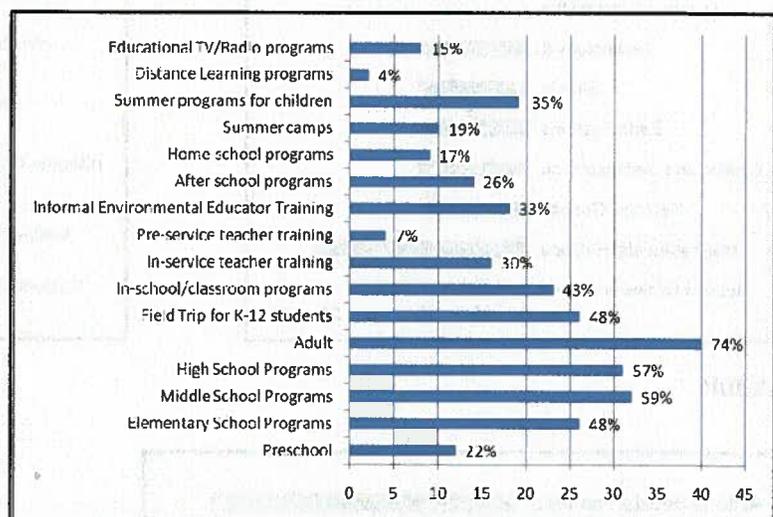


3. Are you a program of the National Oceanographic and Atmospheric Administration (NOAA) or a NOAA partner?

Of the 54 organizations that answered this question, only 3 are NOAA programs (Sea Grant, National Marine Sanctuaries, and NOAA fisheries). One organization is partially funded through the Woods Hole Oceanographic Institution Sea Grant program.

4. What types of environmental educational programs does your organization provide?

The 54 organizations that answered this question represent the great diversity in the types of environmental education programs offered on Cape Cod. Slightly more organizations offer programs for adults 74% (40), followed by middle school programs 59% (32), high school programs 57% (31), and elementary school programs 48% (26). Fewer organizations offer preschool programs 22% (12).

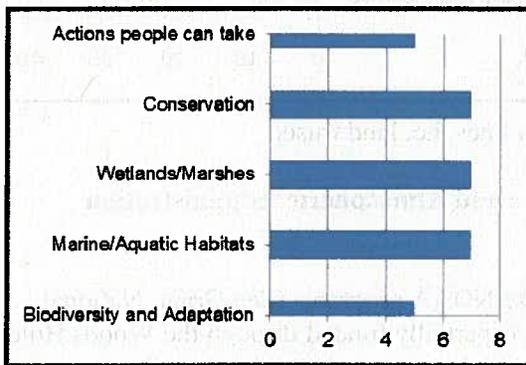


With the exception of organizations that offer field trips for K-12 students 48% (26), the greatest number of organizations offer in-school classroom programs 43% (23), summer programs for children 35% (19), informal environmental educator training 33% (18), in-service teacher training 30% (16), and after school programs 26% (14). Distance learning is only offered by 2 organizations, identifying a possible need and potential for collaboration that could be further explored with those organizations that offer distance learning.

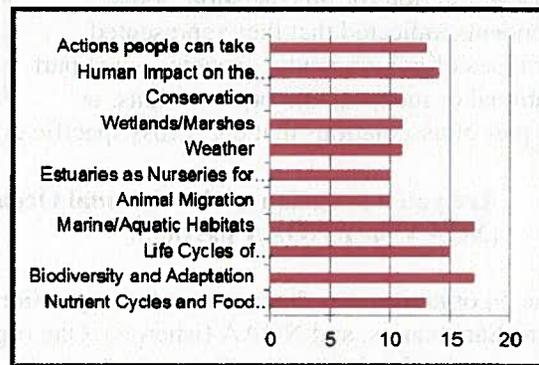
5. Which of the following topics are addressed by your educational programs and for what grade levels?

Fifty-four organizations responded to this question. The top five educational topics addressed across age levels were: conservation (15), human impact on the environment (14), wetlands/marshes (10), biodiversity and adaptation (9) and actions people can take (8). The next highest topics offered were: nutrient cycles and food webs (7), biodiversity and adaptation (7), estuaries and nurseries for marine life (7), rivers and watersheds (6), and technology and instrumentation (6). The following charts show the primary topics offered for each grade level.

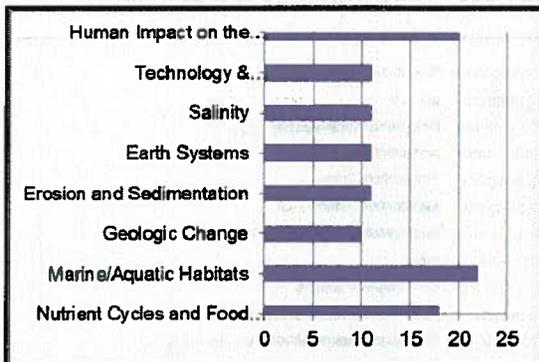
Preschool



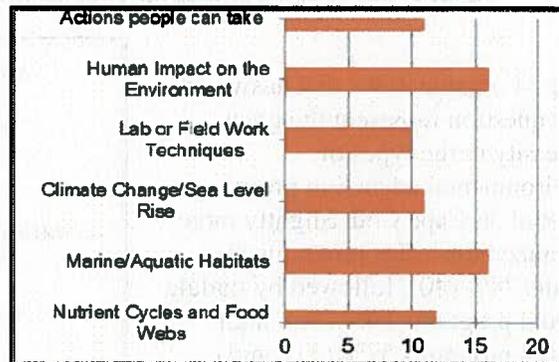
Elementary School



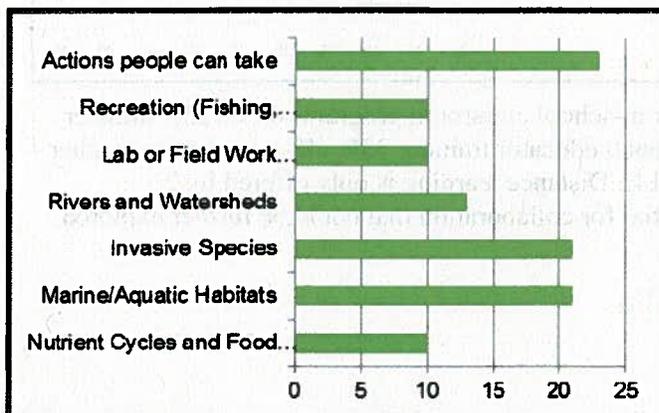
Middle School



High School



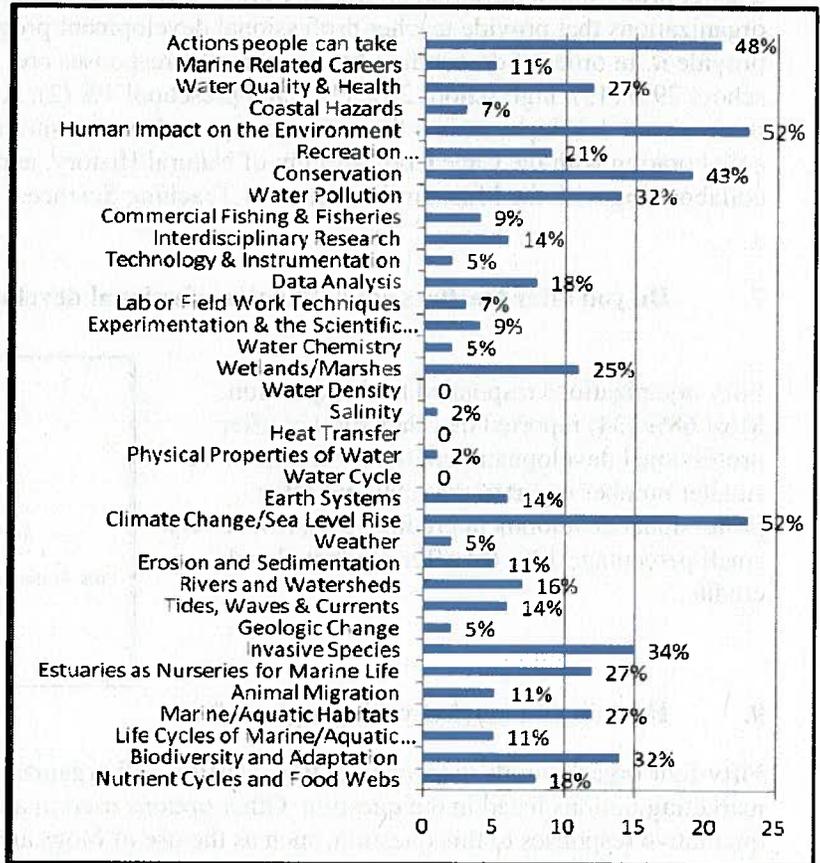
Adult



6. What topics do you think need more attention?

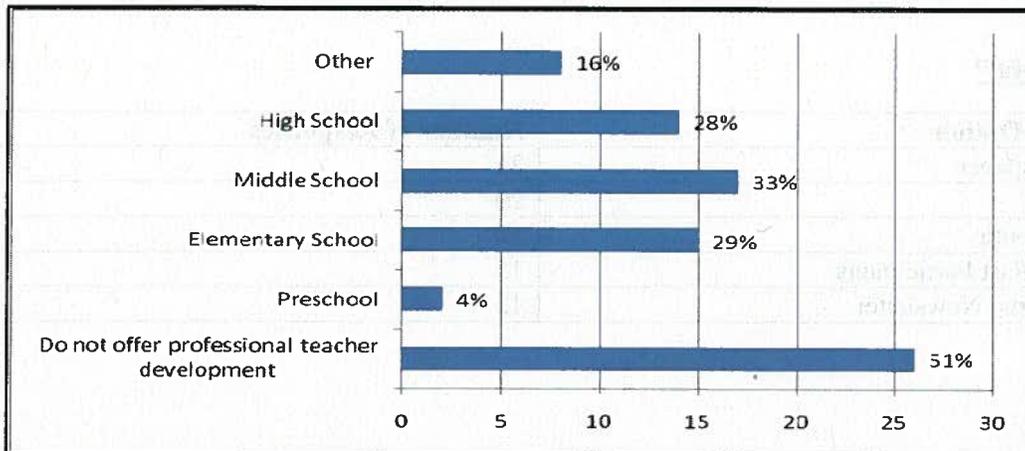
Forty-four organizations responded to this question. The top highest responses in descending order are: 52% (23) human impact on the environment and climate change/sea level rise; 48% (21) actions people can take; 43% (19) conservation; 34% (15) invasive species; 32% (16) water pollution, biodiversity and adaptation; 27% (12) water quality and health, estuaries as nurseries for marine life and marine/aquatic habitats.

Note that the topics environmental educators identified as needing more attention are similar to those for which they want additional training (Question 13). However, the topics needing more attention may be those prompted by current major environmental changes and concerns (i.e. climate change), having implications for a knowledgeable citizenry and therefore of key importance for educating both school children and adults.



Comments regarding this question included suggestions to: 1) offer local examples of specific educational issues, 2) increase resources for additional programming, and 3) give both teachers and students a sense of wonder in the world and the importance of biodiversity.

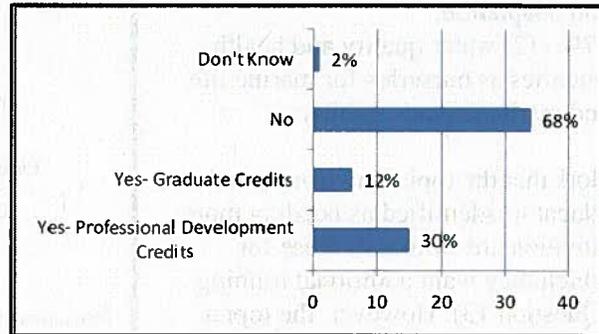
8. If your organization provides teacher professional development, at what grade level educator are your programs targeted?



Approximately one half 51% (26) of the 51 organizations that responded to the question do not offer teacher professional development for any grade level. The chart above shows the percentages of organizations that provide teacher professional development programs and the grade level for which they provide it. In order of descending frequencies, the responses are: middle school 33% (17), elementary school 29% (15), high school 28% (14), and preschool 4% (2). A few organizations engage in teacher professional development in a limited capacity, such as the International Fund for Animal Welfare collaborating with the Cape Cod Museum of Natural History, and the National Marine Life Center collaborating with the Museum Institutes for Teaching Science.

7. Do you offer teachers educational/professional development credits?

Fifty organizations responded to this question. Most 68% (34) reported that they did not offer professional development credits for teachers. A smaller number reported that they did offer professional development credits 30% (15). A very small percentage 12% (6) offer graduate level credits.



9. How do you market your programs?

Fifty-four organizations responded to this question. All organizations reported using at least some of the marketing options listed in the question. Other options used in a limited capacity were identified in the qualitative responses to this question, such as the use of blogs and other social media, radio, notices at professional conferences and workshops, organizational mailers, and list serves. The responses are as follows.

Top 5 “Most Useful”

Marketing Option	Number of Responses
Directly to past participants	27
Directly to individual school teachers	20
Word of mouth	20
Website(s)	16
List-serves	14

Top 5 “Useful”

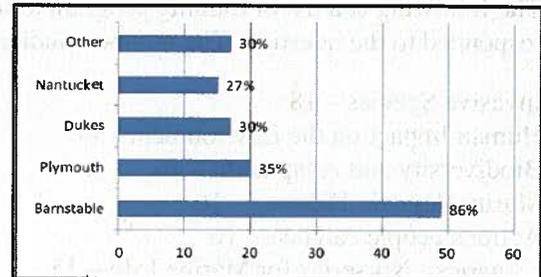
Marketing Option	Number of Responses
Local Newspaper	21
Website(s)	20
Word of Mouth	18
Directly to Past Participants	15
Organizational Newsletter	12

Top 5 “Don’t Use”

Marketing Option	Number of Responses
Local Television	26
School District Coordinators	14
School Principals	12
Organizational Newsletter	10
School Coordinators and Listserves	9

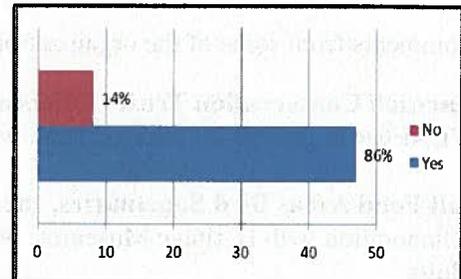
10. Which of the following counties do you serve?

Of the 57 organizations that responded to this question, the greatest percentage serve Barnstable County 86% (49). Some also serve Plymouth 35% (20), Dukes 30% (17) and Nantucket 26% (15) counties. Other counties represented in smaller numbers are (in descending order of service): Bristol, Suffolk and Norfolk. A few organizations are national or international in scope.



11. Are you aware of the Environmental Education programs provided by Waquoit Bay National Estuarine Research Reserve?

Of the fifty-five organizations that answered this question, 85.5% (47) are aware of the environmental education programs provided by the Waquoit Bay National Estuarine Research Reserve. Only 14% (8) were not aware.



12. Would staff in your organization find value in collaborating with Waquoit Bay National Estuarine Research Reserve on environmental education programs?

Of the fifty-five organizations that responded to this question, more than one half 55% (30) expressed interest in collaborating with the Research Reserve on environmental education programs and 36% (20) offered suggestions for ways to collaborate. The responses included sharing information on animal strandings that Waquoit could incorporate into educational programs; co-sponsoring events on topics of shared interest; sharing event information posted on websites; utilizing walks, talks, and presentations lead by staff from WBNERR; partnering to develop curriculum materials and professional development opportunities related to animals/biodiversity, habitat/ecosystems, conservation, sustainability; provide water quality monitoring and include water samples taken at WBNERR in the GLOBE database; and have WBNERR offer additional training for teachers. Two specific recommendations included having WBNERR conduct follow-up programs for the Falmouth Public Schools to support the curriculum/experience that 6th grade students get from Morse Pond and co-programming to broaden programs on marine animals, strandings, and rehabilitation including outdoor field trips to sites and additional information on habitats.

13. For which topics would you be interested in attending training?

Thirty-seven respondents to this question reported interest in attending training on the content of the topics listed in the question, but only 2 organizations indicated an interest in learning “how” to teach the topics at a particular grade level.

Further analysis of the responses provides important insights for future educational programming from WBNERR or from Cape Cod environmental organizations working together and/or in collaboration with WBNERR.

The following is a list of training program topics that are of greatest interest to organizations that responded to the question. The numbers indicate the number of organizations interested in each topic.

Invasive Species – 18	Wetlands/Marshes - 15
Human Impact on the Environment - 17	Erosion and Sedimentation – 14
Biodiversity and Adaptation – 16	Water Pollution - 12
Marine/Aquatic Habitats – 16	Lab or Field Work Techniques - 11
Actions people can take - 16	Nutrient Cycles and Food Webs - 10
Estuaries - Nurseries for Marine Life – 15	Tides, Waves & Currents - 10
Water Quality & Health - 15	Rivers and Watersheds – 10
Climate Change/Sea Level Rise – 15	

14. Is there anything else you would like to tell us?

Comments from some of the organizations offered richness to the quantitative data. They include:

Harwich Conservation Trust - Offers a winter lecture series; interested in inviting people affiliated with WBNERR to present on selected land, water, and wildlife related topics.

Salt Pond Areas Bird Sanctuaries, Inc. - Summer programs for children ages 4-9 are done in collaboration with Heritage Museums; would love to have WBNERR do a program for us and also for adults.

Woods Hole Science and Technology Education Partnership - WHSTEP does not have set topics that are covered regularly, instead our teacher training and community meetings are based on current research and topics at local science institutions.

Heritage Museums and Gardens - Thank you for taking the time to ask! Wonderful effort for an important cause! I look forward to collaborating to make a difference in our world.

League of Women Voters of Falmouth - Attended the Water Reuse and Groundwater Recharge Conference and reported on the conference via online newsletter.

Cape Cod Collaborative - Was established by the 20 school districts on the Cape and the Islands to develop programming to support and strengthen district programs for students. We coordinate programs, activities, and training for school districts as needs are identified.

Stellwagen Bank National Marine Sanctuary - The sanctuary offers only a limited number of formal education programs due to staff and funding limitations.

Barnstable Land Trust – Would love to have your email list.

Nature's Circle - This is a small nature center where the staff works with other educational centers more than establishing its own curriculum.

Friends of Sengkontacket, Inc. - Please visit our website <http://www.sengekontacket.org/>

National Park Service - Interested in knowing what other organizations provide to direct requests to appropriate organizations.

The Compact of Cape Cod Conservation Trusts, Inc. - We appreciate all the WBNERR has done over the years to bring global research local.

Cape Cod Community College - Thank you for offering these opportunities

Comments on the Responses

Organizational Representation

There is strong interest and a great many environmental education programs offered on Cape Cod through the auspices of non-profit and governmental organizations. This point is underscored by the large number of nature and environmental education centers as well as local museums and aquariums. Some already collaborate together to offer programs to pre-school, school-age and adult populations on the Cape, including collaborations with the Waquoit Bay National Estuarine Research Reserve.

Responding organizations were well-represented over the entire Cape, with clusters located in the Falmouth and Hyannis areas. It should be noted that these are areas of high population density, and Falmouth is home to several marine education and research institutions.

Programs for Students of all Ages

Most responding organizations offer programs for adults and middle and high school students, with lesser numbers of programs offered for elementary and preschool students. This may offer an opportunity for WBNERR both in terms of offering programs and in collaborating with other organizations.

It may also be important to consider programs for middle and high school students, and for adults in collaboration with other responding organizations; perhaps developing programs with a more intensive, scientific focus. For example, college-level marine and environmental science programs might be offered to middle and high school students who are considering this as a future career. Such proactive education may bring young people back to the Cape when they start working - an important consideration today with so many young families moving off Cape.

Educational Topics of Interest

The following topics scored high when respondents were asked which topics need more attention: climate change/sea level rise, human impact on the environment, actions people can take, conservation and biodiversity. These are all contemporary topics of high interest in our country today and have the potential for making a significant difference in the quality-of-life for U. S. citizens as well as for those of our international neighbors.

Teacher Education and Certification

WBNERR, which already offers teacher education and professional development certification, might work with other organizations to increase the availability of these programs at all levels from preschool through graduate level education.

Other Opportunities and Venues

Although the survey did not ask questions about the use of social media, such as Linked In, Facebook and webinars, it might benefit WBNERR to conduct an informal survey among those who attend educational programs or visit the reserve to find out their interest in the use of these media to reach a broader audience.

ATTACHMENT

Survey Instrument

ACKNOWLEDGEMENTS



This report was prepared by Gretchen P. Latowsky, M.Ed. Project Director, Venessa Centofanti, Staff Associate, JSI Research & Training Institute, Inc. 44 Farnsworth St., Boston, MA 02210 and Alice E. Smith, Ph.D. Consultant, Family Centered Institute, Inc. 66 Massasoit Trail, Brewster, MA 02631.

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Acknowledgements:

A very special thanks to Joan Muller, Education Coordinator of the Waquoit Bay National Estuarine Research Reserve (WBNERR) for her vision and guidance in formulating the questions on the survey form, identifying the organizations surveyed, managing the logistics of its distribution and guidance with editing and formatting the document; to Nancy Dunn, WBNERR intern from Cape Cod Community College for her great organizational, editing, and logistical skills, as well as stick-to-it-tiveness in contacting organizations and following through on a myriad of details ; and to Peter Wells for mapping the locations of organizations on Cape Cod that conduct environmental educational programs. To the 57 organizations that took the time to fill out and return the survey form, we extend very hearty thanks as well. We look forward to the opportunity to share these results in support of future environmental education and collaboration on Cape Cod.

