



Delaware National Estuarine Research Reserve Education Market Analysis Results

The Delaware National Estuarine Research Reserve conducted a market analysis of agencies and organizations that provide formal education, informal education, and/or outreach opportunities related to estuaries and the coastal environment to identify gaps in existing programs offered to the K-12 community in the State of Delaware.

In particular, we focused on science based information offered in the form of:

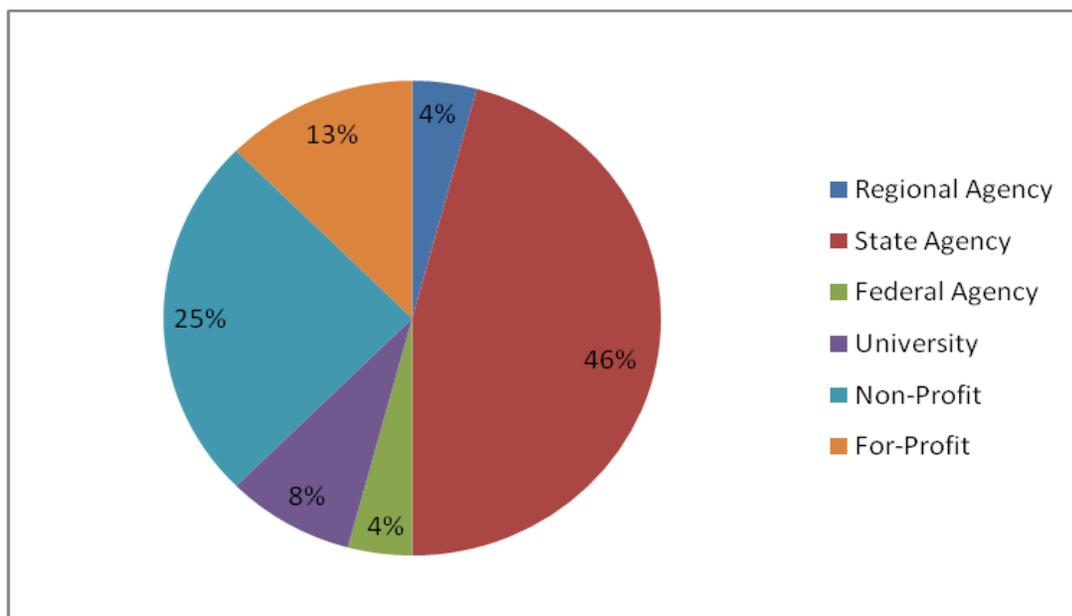
- K-12 Field Trips
- K-12 Outreach
- Teacher Professional Development

RESULTS:

A total of 24 responses were collected from 93 e-mail invitations for a response rate of 26%. Of those who responded to the survey, 45.8% represented state government agencies, 29.2% represented local/regional non-profit organizations, 8.3% represented educational institutions (universities/colleges), 4.2% represented each of the following federal government agencies, national non-profit organizations, for profit businesses, and utility companies. Of 24 respondents, only one participant (4.2%) was a partner or affiliate with the National Oceanic and Atmospheric Administration.

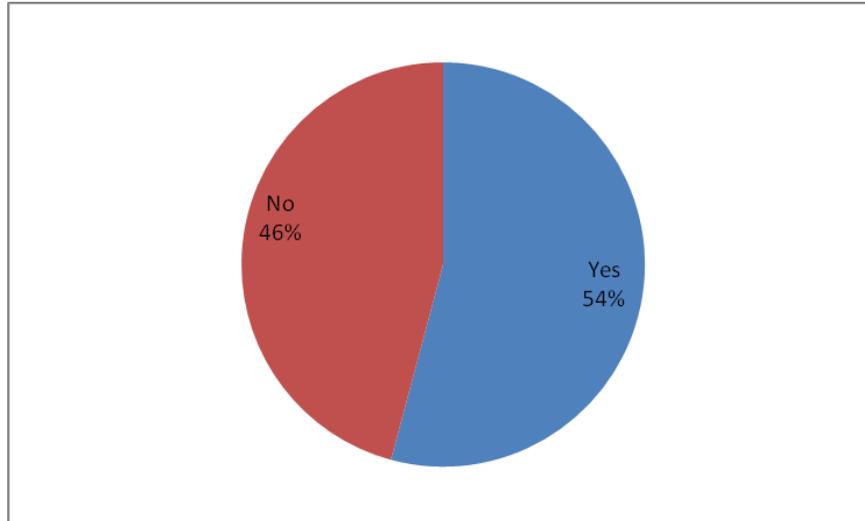
We had respondents from federal, state and regional government agencies, universities, non-profit, and for-profit organizations (Fig. 1).

Figure 1: Type of Organization



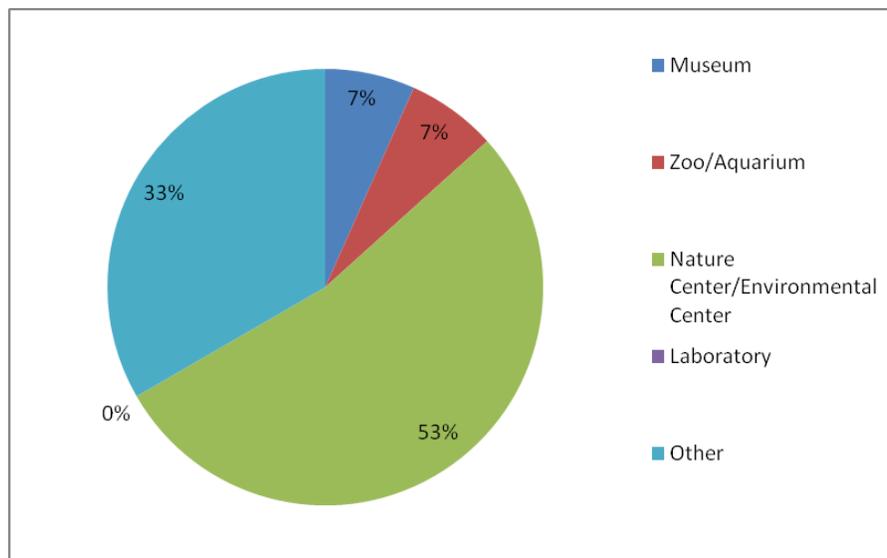
Approximately half of all respondents represent organizations/agencies with a placed-based education center (Fig. 2). Of those who do have a place-based education center, 33.3 % primarily serve New Castle County, 20.8% primarily serve Kent County, 8.3% primarily serve Sussex County; and 17.7% primarily serve all three counties.

Figure 2: Does your organization have a place-based education center (n=24)?



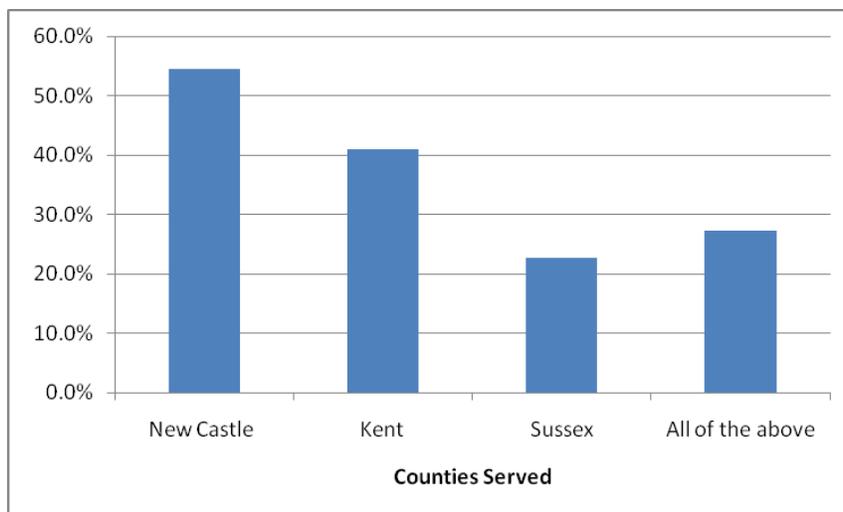
Out of the 54% of organizations who have a placed-based education center, over half (53%) stated that the type of facility is a nature center/environmental center and 33% represent other facilities such as botanical gardens, herbariums, historical parks, etc. (Fig. 3).

Figure 3: What type of place based education center does your organization have? (n=13)



Of the 20 respondents who answered this question, over half (54.5%) serve New Castle County, 40.9% serve Kent County where the St. Jones Reserve component is located, and 22.7% serve Sussex County. Approximately 27% serve all three counties with their environmental education efforts (Fig. 4).

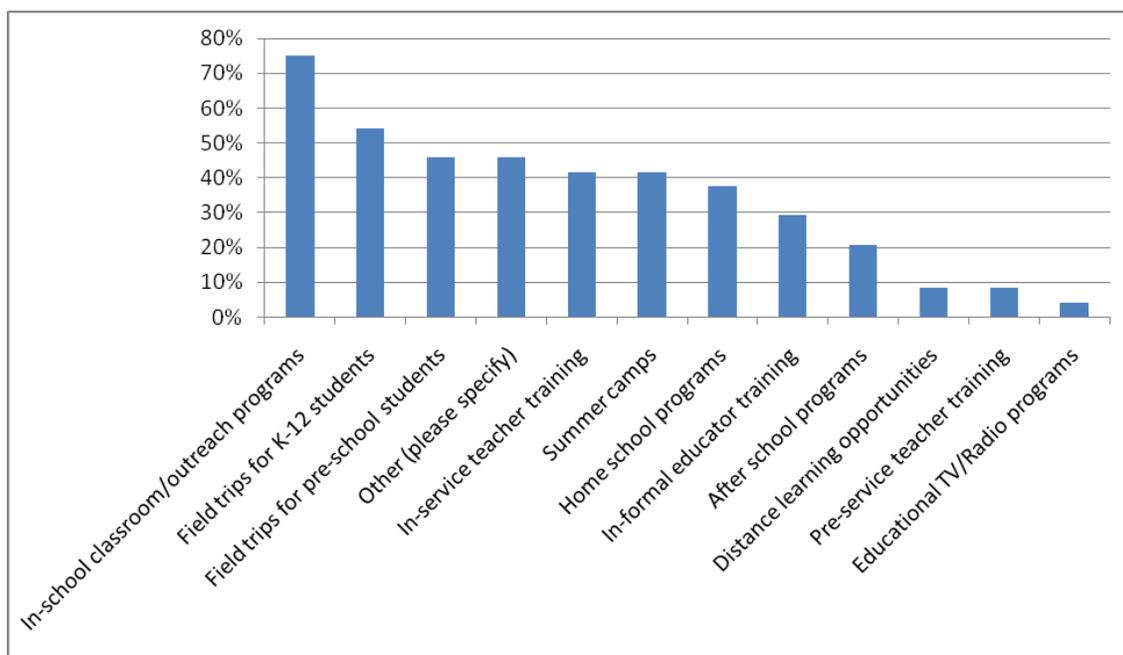
Figure 4: Which Counties do you primarily serve? (n=20; multiple responses)



Education Programs:

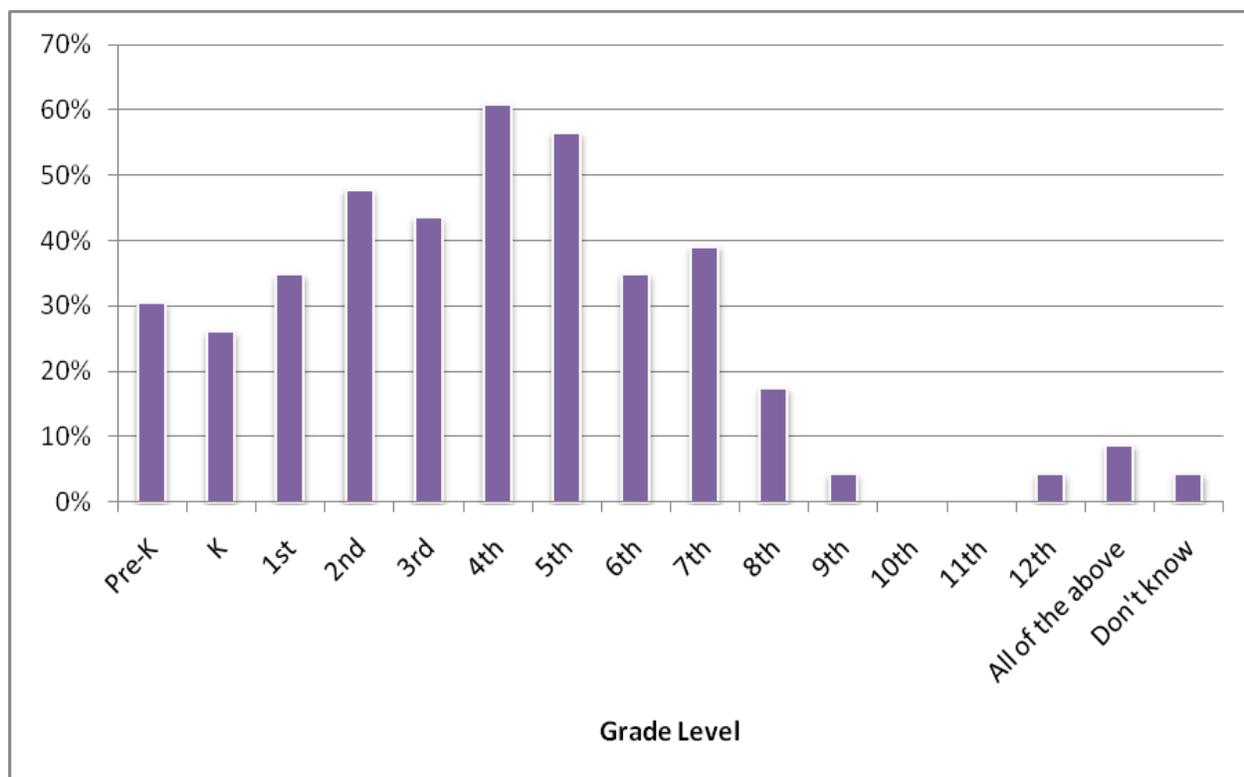
Approximately 75% of the respondents indicated that they utilized in-school classroom/outreach programs. The other types of educational programs provided included Field Trips for K-12 students (54.2%), field trips for pre-school students (45.8%), in-service teacher training (41.7%), and summer camps (41.7%). It is interesting to note that only 8.3% provide pre-service training and distance learning opportunities; and only 4.2% utilize educational TV and radio programming (Fig. 5).

Figure 5: What types of educational programs does your organization provide? (n=24, multiple responses)



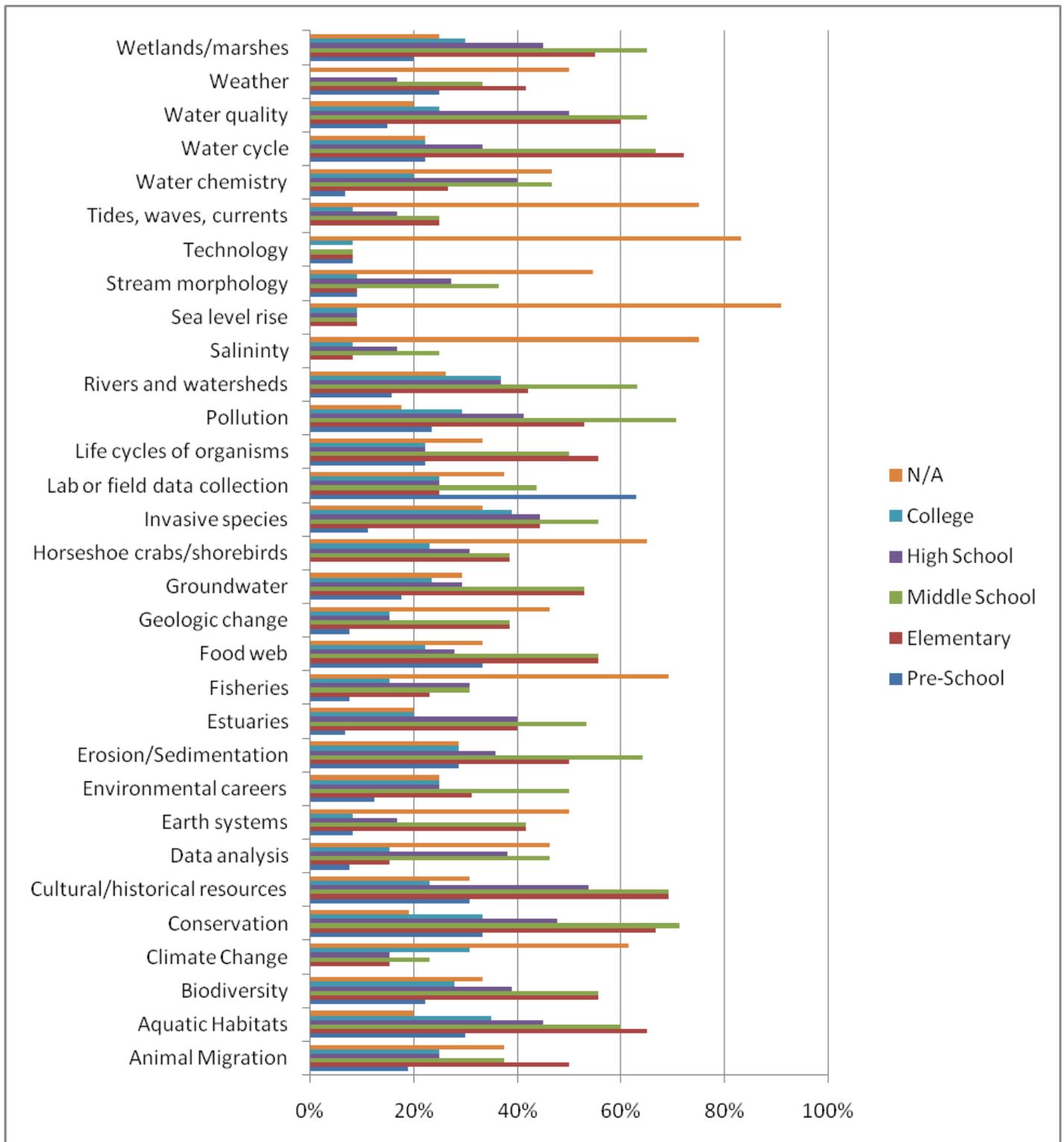
Approximately 61% of the respondents focus on 4th grade followed closely by 5th grade (56.5%). The grades levels that did not participate in programs were 10th and 11th grade with only 4.3% of programs being attended by 9th and 12th graders (Fig. 6). This may indicate that the high school grade level is either not being targeted or are unable to participate in programs. Of the 23 respondents who answered this question, 4th grade was the primary grade that participated in programming for those programs serving New Castle County (75%), serving Kent County (77.8%), and those serving Sussex County (80%).

Figure 6: What grade levels primarily participate in your programs?



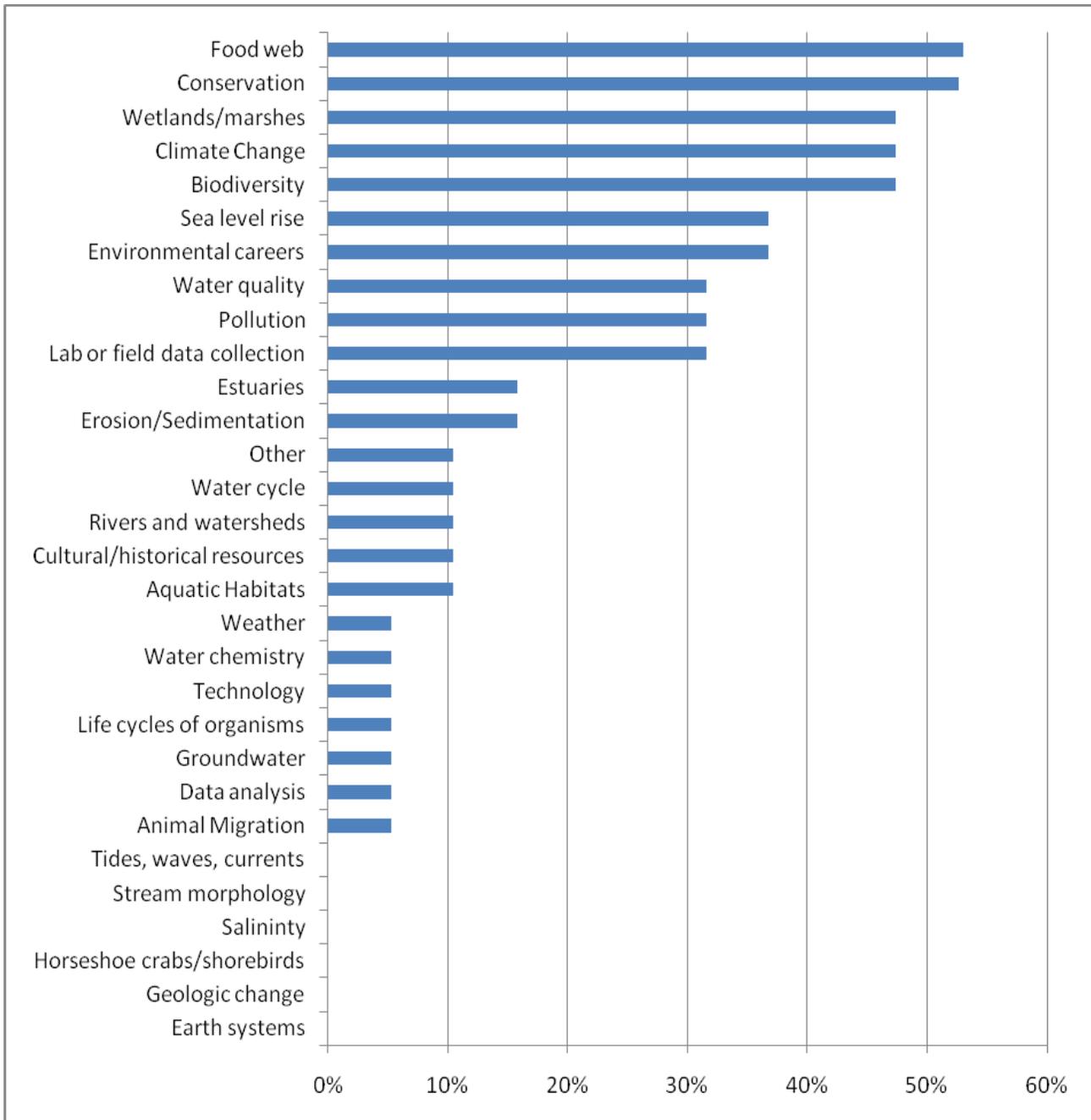
Several topics are not covered by a majority of the respondents programs (answer would be N/A – not applicable). These topics include sea level rise (90.9%), technology (83.3%), salinity (75%), tides/waves/currents (75%), fisheries (69.2%), climate change (61.5%), horseshoe crabs and shorebirds (61.5%), and stream morphology (54.5%). The topics which are being heavily addressed (greater than 50%) at the elementary school level include animal migration, aquatic habitats, biodiversity, conservation, cultural/historical resources, erosion and sedimentation, food web, groundwater, life cycles of organisms, physical properties of water, pollution, and the water cycle. The topics which are being heavily addressed (greater than 50%) at the middle school level include aquatic habitats, biodiversity, conservation, cultural/historical resources, environmental careers, erosion and sedimentation, estuaries, food web, groundwater, invasive species, lab/field data collection, life cycles of organisms, pollution, rivers and watersheds, the water cycle, water quality, and wetlands/marshes. The topics which are being heavily addressed (greater than 50%) at the High School level include cultural/historical resources and water quality. None of these topics are being heavily addressed (greater than 50%) at the college level or pre-school levels by the respondents programs. See Figure 7.

Figure 7: Which of the following topics are addressed by your educational programs and for what age? (n=23, multiple answers)



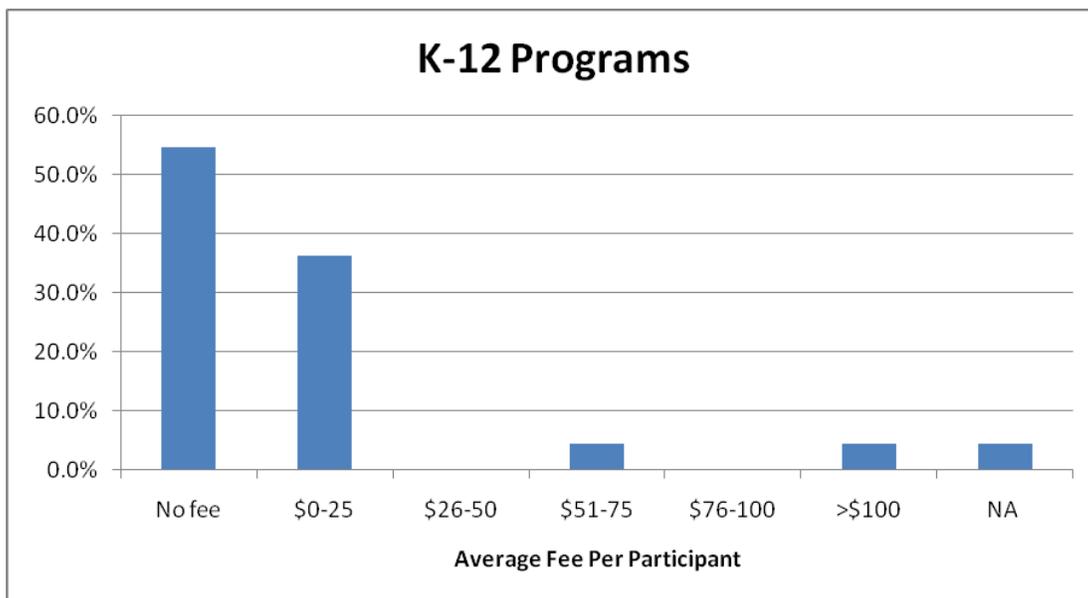
The respondents believed that topics including the food web (53%), conservation (53%), wetlands/marshes (53%), climate change (47%), and biodiversity needed more attention (Fig. 8) followed by sea level rise (32%) and environmental careers (32%).

Figure 8: What topics do you think need more attention? (n=19, multiple answers)



Approximately 55% of the organizations responding to the survey do not charge a fee for their programs while approximately 36% do not charge more than \$25 per participant per program (Fig. 9).

Figure 9: Average fee per participant for K-12 program. (n=20)



Professional Teacher Development

Approximately 44% of the question respondents provide professional development for teachers in the form of field based programs followed by distance learning programs (28%) and curriculum workshops (20%). Lab courses were only offered by 4% of the respondents (Fig. 10). The majority of the respondents offer half day to full day programs (Fig. 11).

Figure 10: What type of professional teacher development formats do you offer? (n= 13)

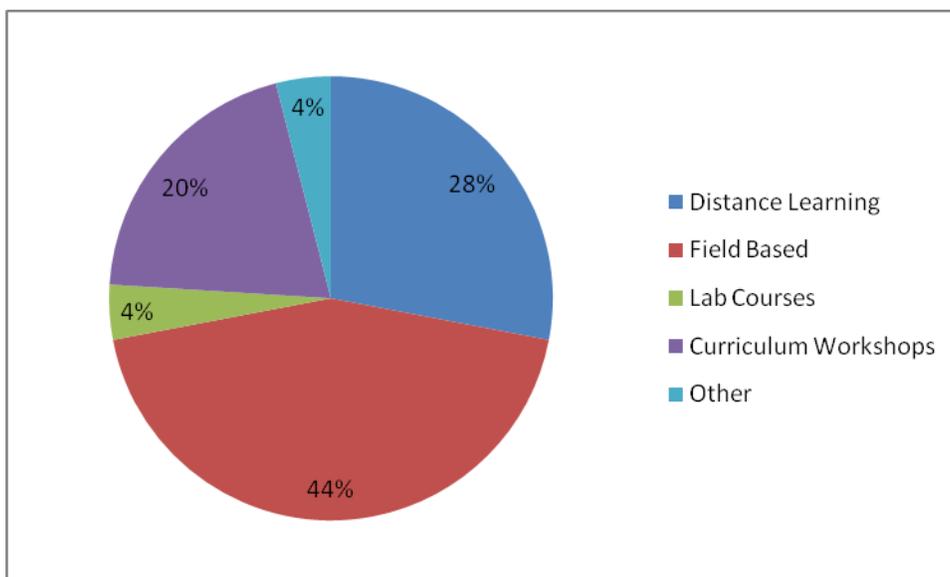
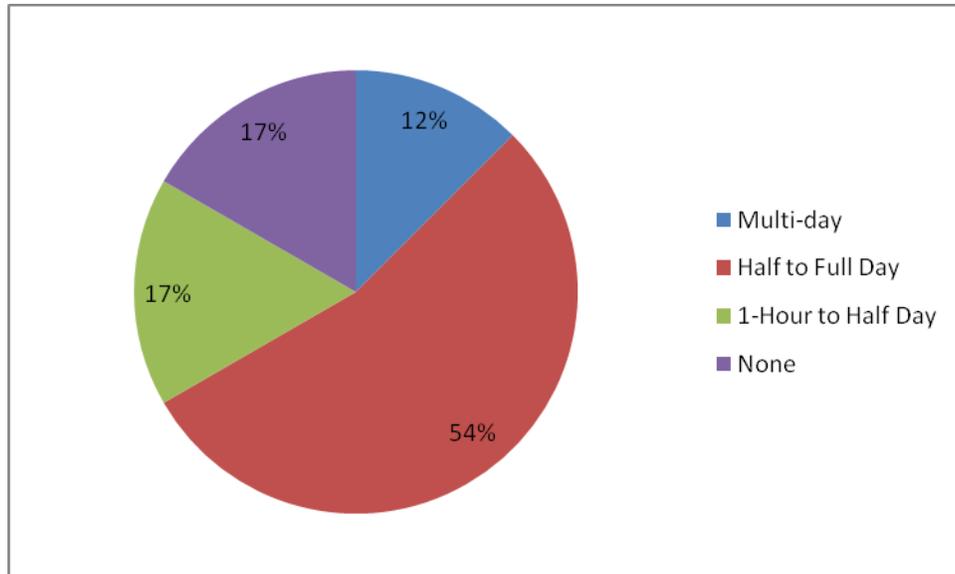
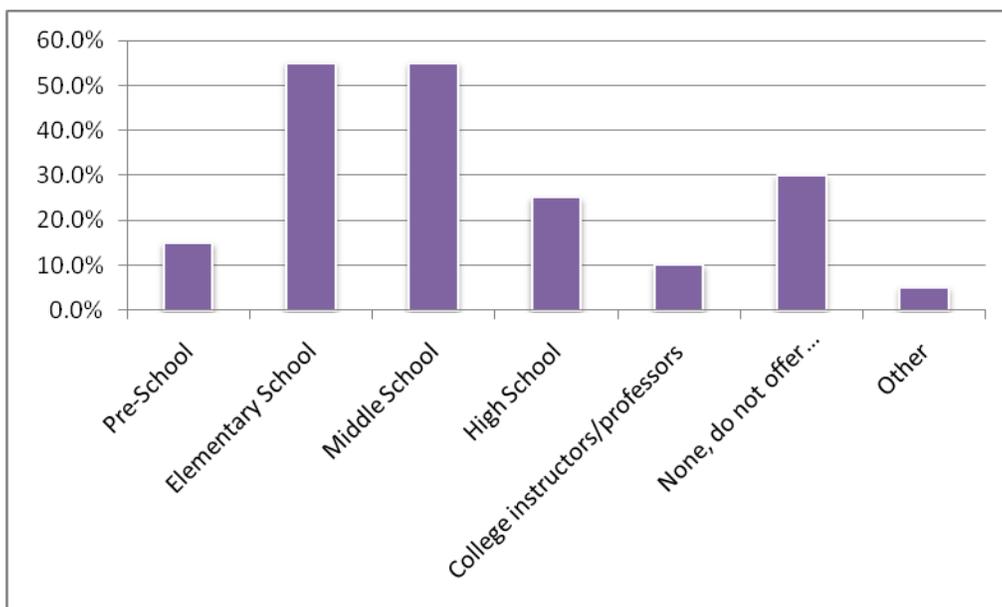


Figure 11: What length of professional teacher development opportunities do you offer? (n=17)



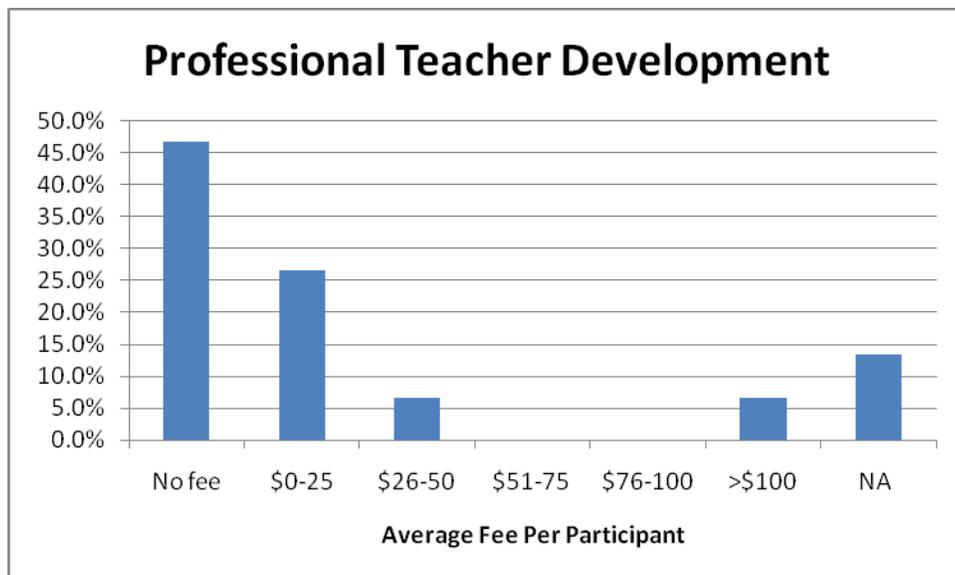
The majority of the respondents' professional teacher development programs target elementary (55%) and middle school (55%) educators. Only 10% of the respondents offer trainings for college instructors/professors (Fig. 12). Only 50% of those responding offer educational/professional development credits for program participants.

Figure 12: What grade level educator do your professional teacher development programs target?



The majority of the respondents (73 %) charge less than \$25 per participant for professional teacher development programs. Out of that 73%, approximately 47% do not charge any fee for their professional teacher development.

Figure 13: Average fee for professional teacher development. (n=15)



The majority of the respondents market their professional teacher development directly to teachers (75%), by word of mouth (70%), through their organizational website (55%), and/or by contacting past participants (50%).

Figure 12: How do you market your programs? (n=20; multiple responses)

