Training Needs Assessment of Professional Decision Makers in the Coastal Counties of South Carolina

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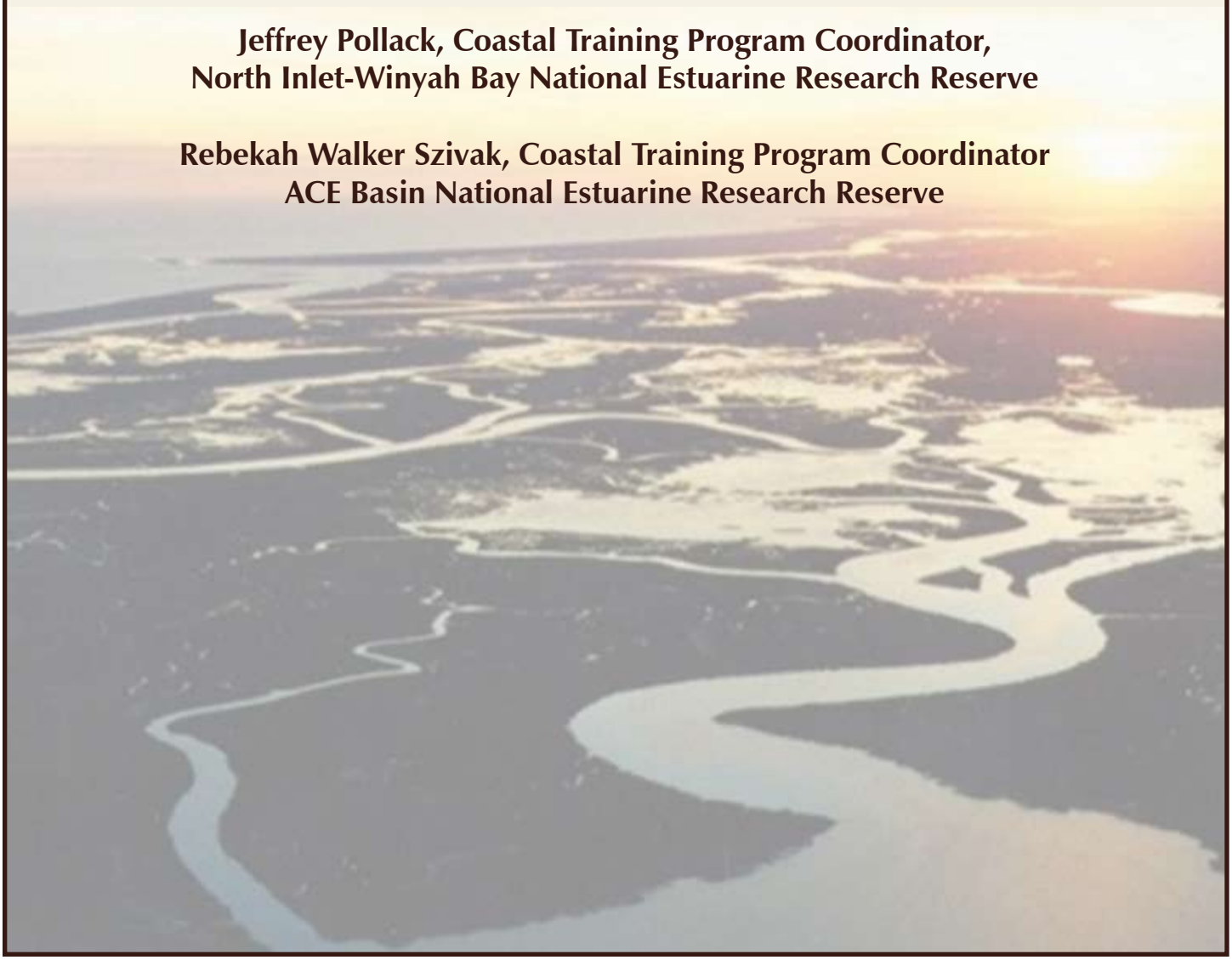

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Executive Summary

After three years of full program implementation, the ACE Basin and North Inlet-Winyah Bay Coastal Training Programs (CTP) re-assessed the training and information needs and training delivery preferences of municipal and county officials and select private sector professional in the six coastal counties of South Carolina during the spring of 2006. A total of 1,306 paper surveys were sent to municipal and county level elected, appointed, and staff officials in Horry, Georgetown, Charleston, Colleton, Beaufort, and Jasper Counties; 181 electronic surveys were sent to select private sector professionals (e.g. developers, engineers, architects, and landscape architects). Follow-up protocols were based on the Total Design Method (Dillman, 1978). Response rates were around 16% for government officials and around 25% for private sector professionals. Data were binned and analyzed by professional sector on the coast-wide scale (reported here) and on the individual county scale to guide CTP program strategy development.

Educational and professional background information were among the data collected. Elected officials exhibited the greatest diversity in educational background. The average time in office was around four years for appointed officials and around eight years for elected officials; these data have implications for the frequency with which training topics might need to be repeated and the means by which training outcomes might be evaluated.

For every sector of respondents, the median self-assessed level of knowledge of "coastal environmental issues" in general was higher than the median level of knowledge calculated from respondents' self-assessed knowledge of 44 discrete coastal issues. This disparity suggests that the surveyed coastal decision makers may over-estimate their own knowledge about coastal environmental issues. The median knowledge about coastal issues (as calculated from respondents' self-assessed knowledge of 44 coastal environmental topics) was equivalent (2.0 out of 5) for all sectors of respondents. However, private sector professionals reported spending an average of 13 hours or more per week addressing coastal issues, while elected and appointed officials reported spending an average of 2.0 and 3.7 hours per week, respectively. Government staff reported spending an average of 10 hours per week addressing coastal issues.

The median interest among all sectors of respondents was above average for each of the five coastal issue categories: Coastal Growth Management, Beach and Shoreline Management, Pollution Management, Natural Resource/ Habitat Issues, and Water Resource Issues. Each sector of decision makers surveyed reported the highest level of interest in the Coastal Growth Management issue category. Each sector of decision makers reported the lowest level of knowledge about the Water Resource Issues and Natural Resource/ Habitat Issues categories.

Significant differences in knowledge about and in interest in discrete coastal environmental topics were evident among different sectors of respondents and are reported here. In addition, distinct trends in knowledge and interest emerged across all sectors. All sectors of respondents reported a high interest in storms/ other coastal hazards under the Beach/ Shoreline Management category. All sectors also reported below average knowledge of two other topics listed in this category: dredging impacts and management and marina impacts and management.

Under the Coastal Growth Management coastal issue category, elected and appointed officials reported the highest level of interest in community planning and zoning but reported below average knowledge of creating watershed management plans; watershed management plans are an important tool for prioritizing the protection of natural waterways during the planning process.

In the Pollution Management category, all sectors of respondents reported a high (4.0 out of 5) interest in the topic of designing/ installing stormwater Best Management Practices (BMPs). Respondents' low median knowledge about technical pollution topics, such as PAHs/ other organic pollutants and mercury and other heavy metals, suggests an immediate need for science-based training and information.

Elected, appointed, and staff officials, as well as

private sector professionals, each reported a below average median level of knowledge (2.0 out of 5) about illicit discharge detection, which is a central component of the EPA NPDES Phase II Program in which many of the coastal communities surveyed are required to participate. This finding may reflect the fact that there are not yet any designated Phase II communities in the southern three coastal counties surveyed here but certainly reflects an immediate need for additional information and guidance.

The below average median level of knowledge about topics in the Water Resource Issues category reported for each sector of respondents may reflect the fact that fresh water scarcity and distribution issues do not yet figure as prominently into local leaders' rubric in South Carolina as they do in communities in the western United States. The high median self-reported interest in these topics among elected and appointed officials suggests an awareness that these topics are not long from entering the public consciousness in this region.

All sectors of respondents indicated a high level of interest in freshwater wetland ecology and management and in watershed protection strategies. Decision makers' interest in freshwater wetlands likely reflects the general state of confusion and uncertainty regarding the ecological importance and regulatory jurisdiction of certain categories of freshwater wetland (particularly 'isolated' wetlands) that resulted from the US Supreme Court's Swank decision in 2001.

Distinct preferences about training logistics also emerged among different sectors of respondents. Elected and appointed officials prefer half day training to full day training; likewise, elected and appointed officials reported very low interest in multi-day training. All four sectors of respondents clearly prefer that half day training events are held in the morning. Government staff and private sector professionals both prefer full day training (definitively so in the case of private sector professionals), which may reflect the fact that these two sectors are the most likely to have continuing education requirements to satisfy.

All sectors of respondents reported that PowerPoint presentations, hands-on field activities, and site visits or demonstration projects hold equally high appeal as delivery methods, but more interactive training delivery methods—small group activities and panel or breakout discussions—received just an average rating by all sectors of respondents.

Willingness to travel for training peaks at 60 miles for elected and appointed officials; both private sector professionals and staff officials are willing to travel twice that distance, likely because, as this report details, a higher proportion of these two sectors must satisfy continuing education requirements. These respondents are presumably accustomed to paying for training to satisfy continuing education requirements, which may explain their higher reported willingness for training. Around 15% of elected and appointed officials reportedly have no capacity to pay for training, which suggests that a significant proportion of elected and appointed officials are largely opportunistic in terms of the information and training they acquire to inform their decisions. This information speaks to the critical role that providers of accessible, low-cost, high-quality information and training fill in local information transfer and in informing local government decision making.

Seven percent of local government staff (and up to 25% of staff in specific coastal counties covered in this survey) reported that they are unable or unwilling to retrieve reference materials from the Internet (Figure 14), which is consistent with some anecdotal data collected during this needs assessment indicating that some of the smallest municipalities on the South Carolina coast do not have reliable (or any) Internet access. This finding speaks to the challenge of designing training that is relevant and accessible to decision makers from different communities (even those in close geographic proximity) and reinforces the need to customize training and technical assistance offerings for specific target audiences.

Respondents' preferred means of receiving notification for upcoming training opportunities parallels their preferences for accessing reference materials. Regular post is the single most popular means of notification among elected and appointed officials,

while a majority of private sector professionals and local government staff prefer email notification. Despite the limited access to digital materials reported by some respondents, electronic submission of training registration is as popular as or more popular than any other mode of submission with all sectors of respondents.

Introduction

Created in 1972, the National Estuarine Research Reserve (NERR) system is dedicated to conservation, research, education, and stewardship activities in America's estuaries—coastal areas where rivers meet the sea. Most of the nation's 27 NERRs have implemented Coastal Training Programs (CTP) to bring science-based information about coastal environmental issues to professional decision makers. Local government officials, private sector professionals (e.g. developers, engineers), and primary resource users, (e.g. fishermen) are among the audiences targeted by the CTP.

Otter Island in the ACE Basin from the air. (Photo courtesy, NOAA Photo Library)

The ACE Basin and North Inlet-Winyah Bay NERRs conducted a market analysis of regional training service providers in 2003 as part of the Coastal Training Program planning process. This analysis revealed that local level government officials (elected, appointed, and staff) within the coastal counties of South Carolina were underserved and would benefit from additional tools, training, and information about coastal environmental topics. The results of a survey-based training needs assessment of these target audiences (2003) revealed real differences in training priorities and in training delivery preferences among audience sectors; these results were used to guide early program development of both the ACE Basin and North Inlet-Winyah Bay Coastal Training Programs.

Faced with required program strategy updates after three years of full program implementation, the ACE Basin and North Inlet-Winyah Bay CTPs reassessed the training and information needs of municipal and county officials and select private sector professional in the six coastal counties of South Carolina during the spring of 2006.

Methods

I. Survey Dissemination

Geographic scope

For the purposes of this needs assessment, the six South Carolina counties with significant coastal boundaries were divided between the two Coastal Training Programs (CTPs). The three northern counties (Horry, Georgetown, and Charleston) fell under the auspice of the North Inlet-Winyah Bay CTP; the three southern coastal counties (Beaufort, Jasper, and Colleton) were the jurisdiction of the ACE Basin CTP. In addition to the logistical rationale for this division (as the 3 northern coastal counties are closest to the NI-WB CTP and vice versa), this grouping also reflects different rates of coastal growth and development and historical differences in the political treatment of coastal environmental issues between the two regions.

Identifying Survey Targets

The staff at the two NERR CTPs were systematic in their identification of target recipients for the needs assessment survey. The staff began by reviewing the staff listings on each of the county web sites. This information was cross referenced with the 2005 Municipal Officials and Legislative Directory, published by the Municipal Association of South Carolina, to create an initial contact list that was augmented with information gleaned through telephone conversations

with administrative staff and department heads in county governments. County-level 'coastal decision makers' were identified in the following sequence:

1. Elected officials (i.e. county council members)
2. Appointed officials (e.g. planning commission members, boards of zoning appeals, stormwater advisory boards)
3. County government staff (e.g. planning staff, public works staff)

Survey response rates are reported in the Results Section I.

While there was no ambiguity about which counties, and therefore which county government bodies, to include in the survey, the CTP staff needed to create a master list of target municipalities before identifying target municipal respondents. The 2005 Municipal Officials and Legislative Directory was used in conjunction with the regional council of governments websites to create a complete list of incorporated municipalities in the target region. Once this list of municipalities was created, target municipal-level coastal decision makers were identified in the same sequence described for county-level coastal decision makers. Other potential sources of elected, appointed, and staff contacts include the State Association of Planners and the Association of Municipal Stormwater Managers, but neither of these sources were utilized for this study.

The level of staffing and appointed boards varied between counties and, to a greater extent, between municipalities. Interestingly, while core government staff size seemed to vary as a function of community size, there did not seem to be a correlation between the size of a given municipality and the number of appointed boards and commissions. After creating a comprehensive list of municipal and county elected, appointed, and staff officials for the six coastal counties being surveyed, the CTP staff prioritized staff positions and appointed boards, beginning with the core positions found at even the smallest counties and municipalities, and culled the list accordingly. Emphasis was placed on covering the same relative decision making structure between different communities, and a checklist was created to insure that all critical staff elements were covered. A total of 1306 paper surveys were distributed to local government officials.

The hierarchy of target recipients in the six coastal counties of South Carolina was as follows:

1. All county and municipal elected officials received the survey
2. All appointed planning commission members, members of boards of zoning appeals, and stormwater advisory boards received the survey
3. All planners, all public works staff whose positions related to stormwater, drainage, or environmental services, and (select division heads) received the survey

* Members of architectural review boards and community redevelopment boards were among the coastal decision makers who were deemed possible priorities for CTP training but who were excluded from this needs assessment because these bodies are not ubiquitous across communities in coastal SC.

All mail surveys were accompanied by an introductory letter and a self-addressed, stamped envelope.

Target private sector professionals, including developers, engineers, realtors, architects, and landscape architects were also surveyed to identify their training needs as coastal decision makers. Lists of registered engineers were obtained from both the South Carolina State Board of Registration for Professional Engineers and Land Surveyors and from SC Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management, but both lists proved to be of limited utility because of a lack of organization. Subsets of these lists were combined with lists of private sector participants from past CTP events to yield a list of target private sector recipients, each of whom received an introductory email with a link to an on-line (Survey Monkey) version of the needs assessment questionnaire. An electronic survey was used with the expectation that these professionals would generally have a high level of technical proficiency and a preference for

digital materials. A total of 181 electronic surveys were distributed to private sector professionals.

Survey Follow-up

An interpretation of the Total Design Method (Dillman 1978) was employed to follow up on the initial survey distribution. A postcard reminder about the survey was mailed to all target elected, appointed, and staff officials 11 days after the initial mailing of the survey. Private sector decision makers (recipients of an electronic survey) were not sent follow up postcards but did receive the electronic survey link a second time approximately one month after the initial contact.

Approximately one week after the postcard was mailed (between 2 and 3 weeks after the initial survey was sent), CTP staff began making follow up phone calls. Calls were made to county level officials in each of the six counties before they were made to municipal level officials. Each county and municipality received between one and three phone calls to key targets, depending on the size of the community and the number of staff and appointed boards and commissions. Whenever possible, all calls to a given community were made in immediate succession.

In most cases, the first call was made to the administrative coordinator(s) of the council (elected) and planning commission (appointed) if such staff positions existed. If those staff positions were unavailable, the chair of the council or planning commission was targeted. The second call typically targeted the planning director, and a third call would target another staff department head (e.g. public works).

In each case, the caller identified himself as an affiliate of the Coastal Training Program, a grant-funded provider of science-based information and training about coastal environmental issues. The caller would mention the survey and its original recipients and offer to resend it digitally if the key target would be kind enough to redistribute it, or at least make it available, to their colleagues.

Target private sector decision makers did not receive any follow-up telephone calls but were re-sent an electronic request for participation and the survey link six weeks after the initial on-line survey was distributed.

II. Data Compilation and Analysis

Data Entry

The Excel spreadsheet output from the electronic (Survey Monkey) version of the needs assessment survey was used as a template for data entry. Select column headings were modified and dropdown menus were added in some fields to facilitate data entry and to capture multiple responses.

Data Analysis

1. Data were quality checked and transferred into a Microsoft Access database.
2. In anticipation of binning and analysis by professional sector, respondents who described their professional position as 'other' were binned into new sectors or re-categorized when appropriate.
3. Data for all six counties were divided into tables based on professional sector and location according to the following scheme:

   a. Public sector vs. private sector

   b. [within the public sector] elected vs. appointed vs. staff

* County by county analyses were also conduced to inform CTP program strategy development; these results are reported elsewhere

4. Ordinal data (i.e. Lichert Scale responses) were analyzed in Systat to generate median responses by professional sector
5. Non-ordinal data were analyzed in Microsoft Access and Microsoft Excel.
6. For each individual respondent, the median of all self-assessed knowledge values for the listed coastal environmental topics (survey question #8) was compared to that respondent's self-assessed knowledge about coastal environmental issues in general (survey question #7).

Section I - Coastal Decision Maker Background and Experience

Results

Table 1 reports total number of survey respondents for each sector of coastal decision maker surveyed, the percentage of each sector of surveyed decision makers who responded to the survey, the mean number of years that respondents have held their current jobs, and the mean number of times that decision makers from each sector have attended workshop-style training of some sort in the last year.

Figure 1 reports the percentage of each sector of respondent who must satisfy some type of continuing education requirement.

Figure 2 reports the percentage of each sector of respondent who must satisfy various types of continuing education requirements.

Figure 3 reports the percentage of respondents from each sector who have completed various education levels.

Figure 4 reports the percentage of respondents from each sector who have (or have not for assorted reasons) previously attended CTP events.

Section I – Coastal Decision Maker Background and Experience

Discussion

As seen in Table 1, response rates were around 16% for government officials and around 25% for private sector professionals. The average time in office was around four years for appointed officials and around eight years for elected officials, suggesting that most respondents had been in their positions for more than one term. These findings have implications for the frequency with which training topics need to be repeated and the means by which training outcomes might be evaluated. Higher turnover rates necessitate more frequent repetition of training topics and fundamentals; the longer office terms recorded here suggest that elected and appointed tend to be in office long enough that cumulative training series (rather than repetitive, serial events) might prove effective. It appears that appointed and elected officials are holding office long enough to shepherd initiatives through an entire political cycle (2-3 years for most local offices), which increases the likelihood that any knowledge gained will be translated into changes in behavior. Further, it seems that appointed and elected officials in coastal South Carolina hold office long enough to allow for outcome-based evaluation of changes in decision making behavior that might take a full political cycle to manifest.

We see from the past year's training attendance (Table 1) that both paid government staff and private sector professionals are nearly twice as likely to attend workshop-style training as elected or appointed officials. These results reflect the fact that nearly all non-retired elected and appointed government officials at the municipal and county level have non-government professional obligations during normal business hours and are unable or unwilling to impinge on these professional obligations in order to attend training. Presumably for this reason, nearly all local council and commission meetings occur during the late afternoon and evening. We see in Figure 4 that elected officials had the highest proportion of respondents who had been interested in CTP events but were unable to attend because of conflicts. Figure 4 also illustrates that a higher proportion of local government staff have attended CTP training than other types of local government officials. Private sector respondents were not included in this particular analysis as most of the private sector decision makers to whom the survey was sent were identified from attendance lists at past Coastal Training Program events, thus biasing this population of respondents.

Both staff and private sector professionals' willingness to travel for, pay for, and attend training is likely to be influenced by whether a particular training opportunity satisfies their specific continuing education requirement. As illustrated in Figure 1, fewer elected officials reported a continuing education requirement than any other sector of survey respondent. As expected, a much higher proportion of private sector professionals and local government staff (around 80% and 60%, respectively) are required to

Table 1 - Basic survey respondent information

	6 Coastal Counties of South Carolina			
	Appointed	**Elected**	**Private**	**Staff**
Number responses (municipal and county levels)	94	39	42	72
% Response Rate	15.35	12.34	25.14	19.04
Average years in position	4.06	8.25	10.28	7.56
Number of training workshops attended in past year	1.92	1.94	3.94	3.48

Figure 1 - Percentage of survey respondents required to enroll in continuing education.

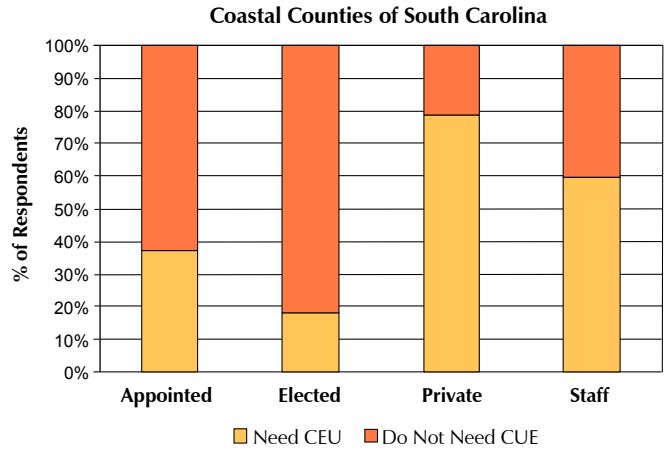


Figure 2 - Percentage of survey respondents required to satisfy various types of continuing education requirements.

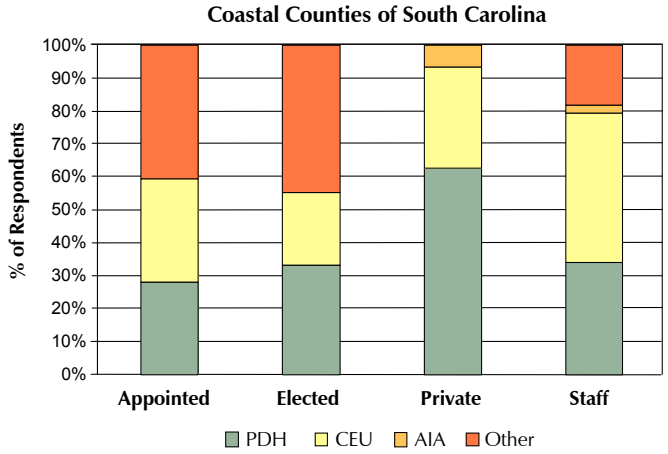


Figure 3 - Highest education level completed by survey respondents.

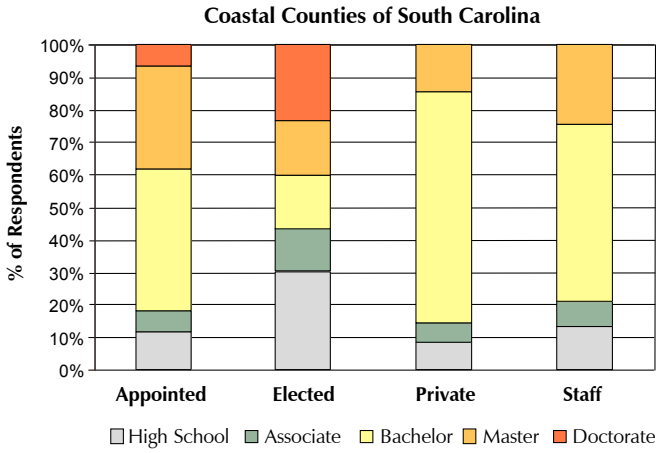
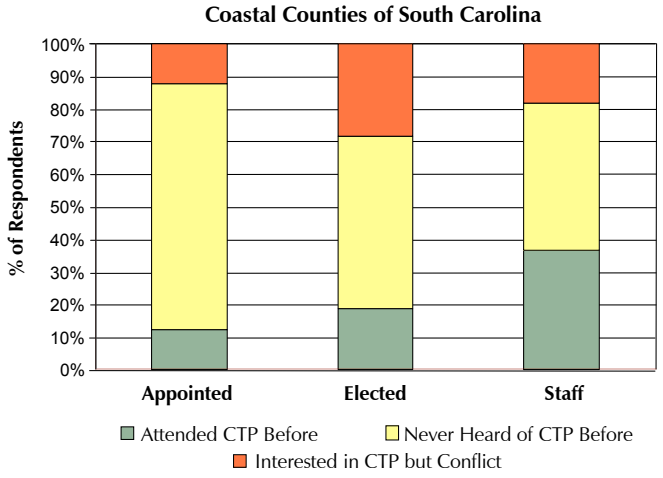


Figure 4 - Survey respondents' past interaction with the Coastal Training Program.



participate in some sort of continuing education. The high proportion of private sector professionals who specified Professional Development Hours (PDH) as their required type of Continuing Education Unit (CEU) (Figure 2) reflects the fact that the majority of the private sector respondents were engineers.

As captured in Figure 3, elected officials exhibited the greatest diversity in educational background,

as this sector included the highest percentage of respondents (by sector) whose highest degree was a high school diploma, an associate's degree, or a PhD. Private sector professionals were the most homogeneous sector in terms of educational level, a finding that might be expected for players in a competitive market place.

Section II – Coastal Decision Maker Coastal Issue Priorities

Results

Table 2 compares the median self-assessed knowledge of "coastal environmental issues" in general for each sector of survey respondents with the median of the median levels of self-assessed knowledge given for 44 discrete coastal environmental issues. Table 3 also reports the mean of respondents' self-reported estimates of hours per week spent addressing coastal environmental issues.

Table 3 reports the median self-assessed levels of knowledge of and median self-reported interest in training about discreet coastal environmental topics listed under each of the five categories that were calculated for each sector of respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest levels of knowledge or interest in a given coastal issue category.

Table 4 reports the median self-assessed level of knowledge of and self-reported interest in training about the discreet coastal environmental topics listed for each sector of respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest levels of knowledge or interest in a given coastal environmental topic.

Table 5 reports the median self-assessed level of knowledge of and self-reported interest in training about the discreet coastal environmental topics listed for each sector of respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest levels of knowledge or interest in a given coastal environmental topic.

Table 6 reports the median self-assessed level of knowledge of and self-reported interest in training about the discreet coastal environmental topics listed for each sector of respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest levels of knowledge or interest in a given coastal environmental topic.

Table 7 reports the median self-assessed level of knowledge of and self-reported interest in training about the discreet coastal environmental topics listed for each sector of respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest levels of knowledge or interest in a given coastal environmental topic.

Table 8 reports the median self-assessed level of knowledge of and self-reported interest in training about the discreet coastal environmental topics listed for each sector of respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest levels of knowledge or interest in a given coastal environmental topic.

Figure 5 reports the percentage of each sector of respondents who listed each of the five coastal issue categories among their three highest priority for science-based information or training. The coastal environmental topics written in response to the open-ended question were binned into the five coastal issue category listed in this table.

Figure 6 reports the percentage of each sector of respondents who listed each of the five coastal issue categories for each of their top three priorities for science-based information or training. The coastal environmental topics written in response to the open-ended question were binned into the five coastal issue category listed in this figure.

Section II – Coastal Decision Maker Coastal Issue Priorities

Discussion

We see in Table 2 that for every sector of respondents, the median self-assessed level of knowledge of "coastal environmental issues" in general was higher

Table 2 - Survey respondents' self-assessed knowledge of coastal environmental issues

	6 Coastal Counties of South Carolina			
	Appointed	**Elected**	**Private**	**Staff**
Average hours per week spent addressing coastal issues	3.65	2.01	13.88	10.06
Median self-assessed knowledge of coastal issues (in general)	3.00	3.00	4.00	3.00
Median self-assessed knowledge score (based on 44 discrete coastal issues)	2.00	2.00	2.00	2.00

than the median level of knowledge calculated from respondents' self-assessed knowledge about discreet coastal issues. The 44 discrete coastal issue topics included in this survey reflect input from research scientists and coastal resource managers in the National Estuarine Research Reserve system and are intended to represent a well rounded body of knowledge of coastal issues. The disparity in the results between the self-reported general level of knowledge and the calculated level of knowledge about coastal environmental issues suggests a ubiquitous overestimation by each sector of respondent of their own science-based understanding about coastal environmental issues.

The median knowledge about coastal issues (as calculated from respondents' self-assessed knowledge of individual coastal environmental topics) was equivalent for all sectors of respondents (2.0 out of 5) (Table 2). However, private sector professionals reported spending and average of 13 hours or more of their work week addressing coastal issues, while elected and appointed officials reported spending an average of just 2.0 and 3.7 hours per week, respectively. Government staff reported spending an average of 10 hours per week addressing coastal issues. The low self-reported estimates for time spent addressing coastal issues on the part of elected and appointed officials suggests that there may be an overall lack of awareness among these sectors about the degree to which their professional choices influence, or are influenced by, coastal environmental issues.

Great Egret at impoundments in Donnelley Wildlife Management Area. (Photo courtesy, R. Szivak)

Private sector professionals, who reported the highest average number of hours per week spent addressing coastal issues, also had the highest median self-assessed knowledge about coastal issues in general (4.0 out of 5). That their calculated median knowledge about coastal issues (2.0 out of 5) was equal to that of the other sectors of respondents may actually reflect a heightened awareness among private sector professionals of what they do not know that manifests as a more stringent scale of self-evaluation and thus a lower overall score.

The median interest among all sectors of respondents was above average for each of the five coastal issue categories. The results captured in Table 3 indicate that of the five coastal issue categories listed, each sector of decision maker surveyed reported the strongest level of interest in the Coastal Growth Management issue category. Each sector of decision maker reported the lowest level of knowledge about the Water Resource Issues and Natural Resource/ Habitat Issues categories. There does not appear to be a clear relationship between level of knowledge and level of interest for a given coastal issue category for any of the sectors of decision maker surveyed.

According to the results captured in Table 4, each sector of decision maker surveyed here reported an average or above (3.0 or higher out of 5) interest in

Table 3 - Survey respondents' median self-assessed knowledge of and self-reported interest in training about coastal environmental issues (binned by category)

		6 Coastal Counties of South Carolina			
Coastal Issue Categories		**Appointed**	**Elected**	**Private**	**Staff**
Beach & Shoreline Management	**Knowledge**	3.00	3.00	2.00	2.00
	Interest	4.00	4.00	3.00	3.00
Coastal Growth Management	**Knowledge**	2.75	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Pollution Management	**Knowledge**	2.50	3.00	3.00	3.00
	Interest	3.00	3.50	3.00	3.00
Water Resource Issues	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	4.00	3.50	3.00
Natural Resource/ Habitat Issues	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	4.00	3.00	3.00

Table 4 - Survey respondents' median self-assessed knowledge of and self-reported interest in training about coastal environmental topics related to Beach and Shoreline Management

Beach and Shoreline Management		6 Coastal Counties of South Carolina			
Coastal Environmental Topics		**Appointed**	**Elected**	**Private**	**Staff**
Coastal geology/ Beach processes	**Knowledge**	3.00	2.50	2.00	2.50
	Interest	4.00	4.00	3.00	3.00
Beach renourishment/ Stabilization alternatives	**Knowledge**	3.00	3.00	2.00	3.00
	Interest	4.00	4.00	3.00	3.00
Storms/other coastal hazards	**Knowledge**	3.00	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Global climate change/ Sea level rise	**Knowledge**	3.00	3.00	2.50	2.00
	Interest	3.00	3.00	3.00	3.00
Public access issues	**Knowledge**	3.00	3.00	2.00	3.00
	Interest	4.00	4.00	3.00	3.00
Dock and pier impacts and management	**Knowledge**	2.00	3.00	3.00	2.00
	Interest	3.00	4.00	3.00	3.00
Dredging impacts and management	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	3.00	3.00	3.00
Marina impacts and management	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	4.00	3.00	3.00
Bulkheads/ Marsh shoreline stabilization alternatives	**Knowledge**	2.00	3.00	3.00	2.00
	Interest	4.00	3.50	4.00	3.00

Stormy sunrise in Pawleys Island. (Photo courtesy, J. Pollack)

each of the coastal environmental topics presented under the Beach and Shoreline Management issue category; the median self-assessed knowledge of those same topics was average or below (3.0 out of 5 or lower) for each sector of decision maker. All sectors of respondents reported a high interest in storms/ other coastal hazards under the Beach/ Shoreline Management category. All sectors also reported below average knowledge of 2 other topics listed in this category: dredging impacts and management and marina impacts and management.

In all but 2 cases, each sector of respondent reported a high or very high (4.0 or greater out of 5) level of interest in the topics presented under Coastal Growth Management related topics (Table 5). The

Table 5 - Survey respondents' median self-assessed knowledge of and self-reported interest in training about coastal environmental topics related to Coastal Growth Management.

Coastal Growth Management		**6 Coastal Counties of South Carolina**			
Coastal Environmental Topics		**Appointed**	**Elected**	**Private**	**Staff**
Better Site Design/ Low Impact Development	**Knowledge**	3.00	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Creating watershed management plans	**Knowledge**	2.00	2.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Urban/ suburban sprawl	**Knowledge**	3.00	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Infrastructure planning (e.g. coastal roads)	**Knowledge**	3.00	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Community planning and zoning	**Knowledge**	3.00	4.00	3.00	4.00
	Interest	5.00	4.50	4.00	4.00
Managing growth impacts to cultural resources	**Knowledge**	2.50	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00
Retrofit & redevelopment opportunities	**Knowledge**	2.00	3.00	3.00	3.00
	Interest	3.00	4.00	4.00	4.00
High-performance ('green') building	**Knowledge**	2.00	2.00	3.00	2.00
	Interest	4.00	3.00	4.00	4.00
Land conservation, ect.	**Knowledge**	3.00	3.00	2.00	3.00
	Interest	4.00	4.00	4.00	4.00
Land use mapping/ GIS app.	**Knowledge**	2.50	3.00	3.00	3.00
	Interest	4.00	4.00	4.00	4.00

A failing bulkhead allows sediment to wash directly into a tidal creek in coastal South Carolina. (Photo courtesy, J. Pollack)

median interest of elected officials in high performance 'green' building was average (3.0 out of 5); this finding makes sense in that this topic does not (yet) figure prominently into the socio-political consciousness in the coastal zone of the southeastern United States. The reported median interest among appointed officials in retrofit and redevelopment opportunities topic was surprisingly low (3.0 out of 5). This sector of respondent comprised mainly planning commission members and architectural review board members, both of whom would be expected to have a principle stake in community redevelopment decisions and opportunities. The low level of reported interest by these sectors in this topic may reflect the fact that many of the coastal communities in South Carolina are not yet urbanized to the extent that planning officials consider retrofitting and redevelopment to be one of the primary modes of development.

Elected and appointed officials reported the highest level of interest in community planning and zoning but reported below average knowledge of creating watershed management plans; watershed management plans are an important tool for prioritizing the protection of natural waterways during the planning process.

As expected, elected officials reported a high (4.0 out of 5) interest in several topics under the Pollution Management category that figure prominently among constituents' priorities, including wastewater treatment, solid waste management, and septic system issues in Table 6. All sectors of respondents reported a high (4.0 out of 5) interest in the topic of designing/ installing stormwater Best Management Practices. As expected, private sector decision makers—a sector of respondents made up largely of engineering consultants—reported the highest median level of knowledge about this topic.

Interestingly, elected, appointed, and staff officials, as well as private sector professionals, each reported a below average median level of knowledge (2.0 out of 5) about illicit discharge detection. This result is surprising and potentially troubling, as illicit discharge detection is a central component of the EPA NPDES Phase II Program in which many of the coastal communities surveyed are required to participate. Because there are not yet any designated Phase II communities in the southern three coastal coun-

Contaminated stormwater runoff flows through a drainage ditch en route to a downstream coastal waterway. (Photo courtesy, J. Pollack)

Table 6 - Survey respondents' median self-assessed knowledge of and self-reported interest in training about coastal environmental topics related to Pollution Management.

Pollution Management		6 Coastal Counties of South Carolina			
Coastal Environmental Topics		**Appointed**	**Elected**	**Private**	**Staff**
Mercury and other heavy metals	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	3.00	3.00	3.00
Wastewater treatment and management	**Knowledge**	2.00	3.00	3.00	2.50
	Interest	3.00	4.00	3.00	3.00
Septic system issues	**Knowledge**	2.00	3.00	3.00	2.00
	Interest	4.00	4.00	3.00	3.00
Illicit discharge detection	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	4.00	3.00	4.00
Marine debris	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	3.00	2.00	3.00
Nutrient over-enrichment (associated w/ algal blooms)	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	3.00	3.00	3.00
Designing/ installing stormwater Best Mgmt. Practices	**Knowledge**	2.00	2.50	4.00	3.00
	Interest	4.00	4.00	4.00	4.00
Total Maximum Daily Load (TMDL) implementation	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	3.00	4.00	3.00
PAHs/ other organic pollutants	**Knowledge**	1.00	2.00	2.00	2.00
	Interest	3.00	3.00	3.00	3.00
Solid waste management (including litter & recycling)	**Knowledge**	2.00	3.00	2.00	3.00
	Interest	4.00	4.00	3.00	3.00

ties included in this survey, government officials in those counties may be lacking detailed knowledge of the Phase II program, and their responses may have skewed the data to suggest a lower overall level of knowledge on the subject. The high (4.0 out of 5) level of interest in this topic among all sectors of government decision makers (elected, appointed, and staff) reflects an awareness that this topic is one that they will ultimately be required to address. The discrepancy in the levels of interest and knowledge among these sectors suggests a general lack of understanding about what is required under the Phase II Program and indicates an immediate need for additional information and guidance.

The low median knowledge about technical pollution topics, such as PAHs/ other organic pollutants and mercury and other heavy metals, reported by both public and private sector respondents (Table 6) suggests an immediate need for science-based training and information.

The below average (2.0 out of 5) median level of knowledge about topics in the Water Resource Issues category (Table 7) for each sector of respondent may reflect the fact that fresh water scarcity and distribution issues do not yet figure as prominently into local leaders' rubric in South Carolina as they do in communities in the western United States. Elected and appointed officials' interest in scarcity and ground water issues likely reflects their understanding that

Table 7 - Survey respondents' median self-assessed knowledge of and self-reported interest in training about coastal environmental topics related to Water Resource Issues.

Water Resource Issues		6 Coastal Counties of South Carolina			
Coastal Environmental Topics		**Appointed**	**Elected**	**Private**	**Staff**
Saltwater intrusion/ other groundwater mgmt. issues	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	4.00	3.00	3.00
Water supply issues (eg scarcity, water rights)	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	4.00	4.00	3.00

reliable access to fresh water is among the fundamental expectations that constituents have and for which they hold their local leaders accountable. This high (4.0 out of 5) median self-reported interest in these topics suggests an awareness on the part of government officials that these topics are not long from entering the public consciousness in this region, and that when they do, constituents will expect guidance to come from local leaders.

Table 8 reports a below average median self-assessed knowledge level (2.0 out of 5 or lower) for all sectors of decision maker for almost all coastal environmental topics under the Natural Resource/ Habitat Issues category. Local government staff reported an average (3.0 out of 5) level of knowledge about both riparian buffers and watershed protection strategies. While follow up assessments would be necessary to identify the specific sources of their information on these topics, riparian buffers and watershed protection have been among the most pervasive themes in Coastal Training Program training and technical assistance offerings by the North Inlet-Winayh Bay NERR.

Rice field trunks, such as this, control the water flow between tidal creeks or rivers and the impoundments. (Photo courtesy, R. Szivak)

All sectors of respondents indicated a high (4.0 out of 5) level of interest in training on freshwater wetland ecology and management and on watershed protection strategies. Decision makers' interest in the first of these topics likely reflects the general state of confusion and uncertainty regarding the ecological importance and regulatory jurisdiction of certain categories of freshwater wetland (particularly 'isolated' wetlands) that resulted from the US Supreme Court's Swank decision in 2001. Respondents' interest in watershed protection could be interpreted to reflect a general understanding that watershed-based management and planning decisions are critical to protecting the quality of the natural water bodies that distinguish the South Carolina coastal zone; such an understanding would mean these audiences are primed for training on these subjects.

When the top three priority coastal environmental topics (written in) are binned for each sector respondents (Figure 5), there is a striking consistency across all four sectors. When each respondents' responses are divided into their first, second, and third priority (Figure 6), several differences in priorities emerge. A higher percentage of appointed and staff government officials listed coastal growth management-related topics as their first priority than did elected officials or private sector officials. Given that the body of appointed officials surveyed comprised largely planning commission members and that plan-

Table 8 - Survey respondents' median self-assessed knowledge of and self-reported interest in training about coastal environmental topics related to Natural Resource/ Habitat Issues.

Natural Resources/ Habitat Issues		6 Coastal Counties of South Carolina			
Coastal Environmental Topics		**Appointed**	**Elected**	**Private**	**Staff**
Freshwater wetland ecology and management	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	4.00	4.00	4.00
Freshwater impoundments	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	3.00	3.00	3.00
Fisheries (including shellfish) management	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	4.00	3.00	3.00
Sustainable aquaculture	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	4.00	3.00	3.00
Threatened & endangered species management	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	3.50	3.00	3.00
Invasive species management	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	3.50	3.00	3.00
Habitat restoration	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	4.00	4.00	3.00	4.00
Mining in the coastal zone	**Knowledge**	1.00	2.00	1.00	1.00
	Interest	3.00	3.00	3.00	3.00
Oil and gas development in coastal ocean	**Knowledge**	2.00	2.00	1.00	1.50
	Interest	4.00	4.00	3.00	3.00
Watershed protection strategies	**Knowledge**	2.00	2.00	2.00	3.00
	Interest	4.00	4.00	4.00	4.00
Harmful algal blooms	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	4.00	3.00	3.00
Riparian buffers	**Knowledge**	2.00	2.00	2.00	3.00
	Interest	3.00	3.50	3.00	4.00
Visitor use management and eco-tourism	**Knowledge**	2.00	2.00	2.00	2.00
	Interest	3.00	4.00	3.00	3.00

ning staff were among the most consistent respondents among the staff surveyed, it follows that coastal growth management topics would be foremost on their list of topics of interest. The top ranking of pollution management-related topics among elected and private sector respondents presumably reflects the ubiquitous interest in stormwater management (non-point source pollution) associated with the NPDES Phase II federal mandates. The interest in beach and shoreline management-topics expressed by elected officials, while not significantly different from other sectors of respondents, likely reflects their awareness that attractive beaches are the lifeblood of the tourist economies in coastal communities. Local elected officials' interest in beach and shoreline management issues, the bulk of which may fall under state level

Sunset on St. Helena Sound from aboard a shrimp boat. (Photo courtesy, NOAA Photo Library)

Figure 5 - Survey respondents' priority coastal issue categories

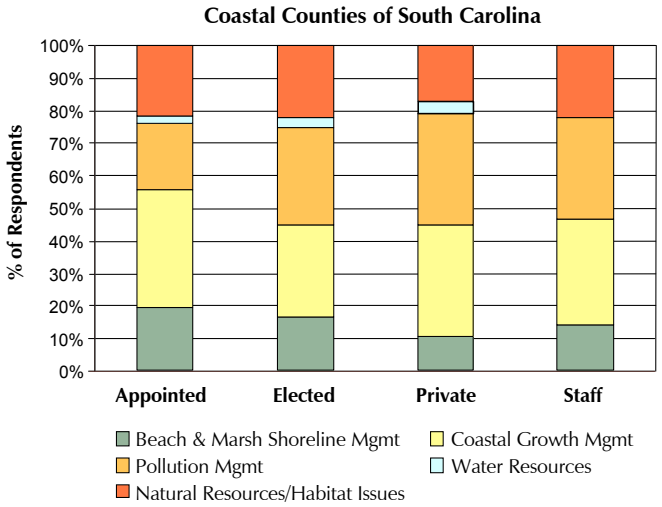
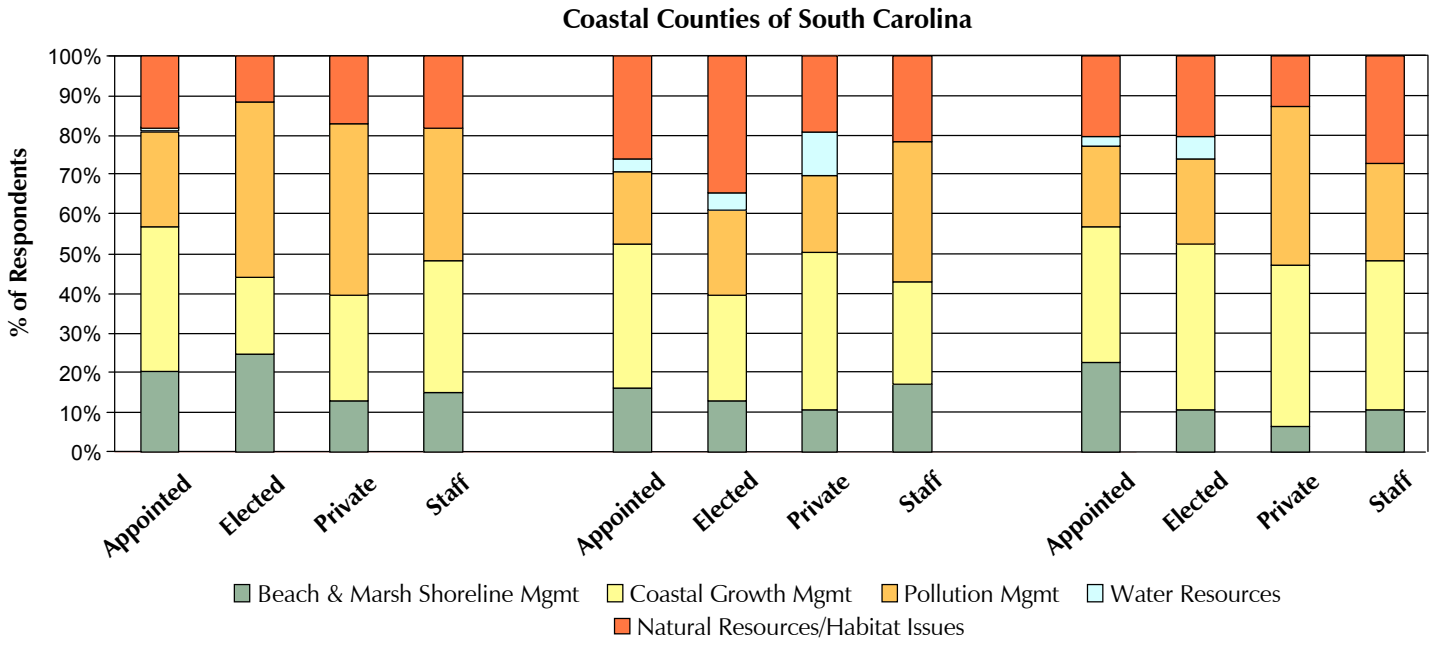


Figure 6 - Survey respondents' first, second, and third priority coastal issue category



coastal policy, could also reflect the degree to which local elected officials are held politically accountable by constituents for a range of quality of life issues (including many that may not be within their realm of jurisdiction or control).

SECTION III – CDM Preferences for Training Delivery & Format

Results

Table 9 reports the median level of importance of a range of training delivery and logistical parameters for each sector of survey respondents. The resultant values are color coded, where warm colors (red, orange) denote the highest level of importance.

Table 10 reports the median of each sector's valuation of a range of different workshop-style training components. The resultant values are color coded, where warm colors (red, orange) denote the highest level of preference.

Figure 7 reports the percentage of respondents from each sector who prefer training during each season.

Figure 8 reports the percentage of respondents from each sector who prefer training on different days of the week.

Figure 9 reports the percentage of respondents from each sector who prefer training of different durations.

Figure 10 reports the percentage of respondents from each sector who prefer half-day training to be scheduled during various parts of the day.

Figure 11 reports the percentage of respondents from each sector who prefer multi-day training to be scheduled at various intervals.

Figure 12 reports the percentage of respondents from each sector who are willing to travel various distances to participate in training opportunities.

Figure 13 reports the percentage of respondents from each sector who are willing to pay different amounts to participate in full-day training opportunities.

Figure 14 reports the percentage of respondents from each sector that are willing to pursue training resources that are housed on the World Wide Web.

Figure 15 reports the percentage of respondents from each sector who are willing receive various forms of training notification.

Figure 16 reports the percentage of respondents from each sector who prefer various means of registering for training.

Table 11 reports the median likelihood that each sector of respondents will utilize each of assorted technical assistance services offered by the CTP. The resultant values are color coded, where warm colors (red, orange) denote the highest level of preference.

Table 12 reports the median likelihood that each sector of respondents will utilize each of the various types of reference materials provided by the CTP. The resultant values are color coded, where warm colors (red, orange) denote the highest level of interest.

Table 9 - Importance of training delivery factors to survey respondents

	6 Coastal Counties of South Carolina			
Factors	Appointed	Elected	Private	Staff
Scheduling	4.00	5.00	4.00	4.00
Availability of professional Continuing Ed	1.00	1.00	4.00	3.00
Familiarity with speakers' reputations	3.00	3.00	3.00	3.00
Endorsement by a professional organization	3.00	3.00	3.00	3.00
Interest in topic	5.00	5.00	5.00	5.00
Distance to travel to attend	4.00	4.00	3.50	4.00
Availability of food	1.50	2.00	2.00	2.00
Cost	3.00	4.00	2.00	3.00
Who else is attending	2.00	2.00	1.00	2.00

Figure 7 - Survey respondents' seasonal training preferences

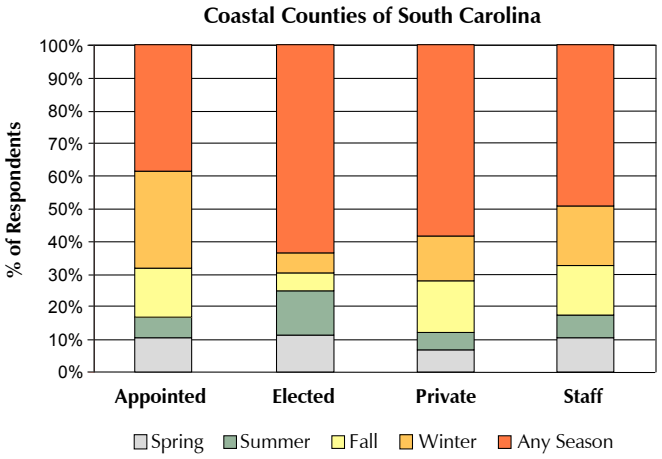
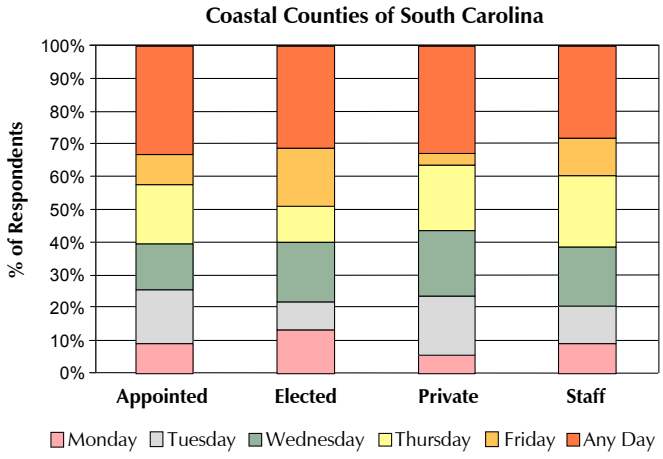


Figure 8 - Survey respondents' weekday training preferences



SECTION III – CDM Preferences for Training Delivery & Format

Discussion

The findings summarized in Table 9 indicate that aside from training topic, all sectors of respondents consider scheduling and distance of travel to be the factors most likely to influence their participation in training opportunities. Elected officials reported that scheduling was of the highest importance (5.0 out of 5), which is consistent with the information reported in Figure 4 that elected officials had the highest proportion of respondents who had been interested in CTP events but unable to attend because of conflicts. Elected and appointed officials both reported that the availability of continuing education credits (CEU) was of the lowest importance (1.0 out of 5), while local government staff and private sector professionals rated the availability of CEU credits to be of average or above importance (3.0 and 4.0 out of 5, respectively). These findings are consistent with the data captured in Figure 11 pertaining to CEU requirements. As expected, cost and distance to attend were less important to private sector professionals than to any of the sectors of government officials.

As reported in Table 10, all sectors of respondents reported that PowerPoint presentations, hands-on field activities, and site visits or demonstration projects hold equally high appeal as delivery methods (4.0 out of 5). Surprisingly, the more interactive

Table 10 - Survey respondents' preferred components for workshop-style training

	6 Coastal Counties of South Carolina			
Delivery Methods	**Appointed**	**Elected**	**Private**	**Staff**
Informational PowerPoint presentations	4.00	4.00	4.00	4.00
Case study PowerPoint presentations	4.00	3.00	4.00	4.00
Hands-on field activities	4.00	4.00	4.00	4.00
Small group break-out activities	3.00	3.00	3.00	3.00
Panel or round-table discussions	3.00	3.00	3.00	3.00
Site-visits or demonstration projects	4.00	4.00	4.00	4.00
Computer-based work sessions	2.00	2.00	3.00	3.00
Technology fairs	2.00	3.00	3.00	3.00

Table 11 - Survey respondents' likelihood of using various technical assistance services offered by the CTP

	6 Coastal Counties of South Carolina			
Type of Technical Assistance	Appointed	Elected	Private	Staff
Code/ ordinance review	3.00	3.00	4.00	3.00
Targeted, customized training on a specific coastal issue	4.00	3.00	4.00	4.00
Facilitation of/ outreach for demonstration projects	3.00	3.00	4.00	3.00
Assistance with relevant grant proposals	2.00	3.00	2.00	3.50
Referral to reference materials or scientific experts	3.00	3.00	4.00	4.00

training delivery methods—small group activities and panel or breakout discussions—received just an average (3.0 out of 5) rating by all sectors of respondents.

As illustrated in Table 11, elected officials expressed average interest in each of the technical assistance services offered by the Coastal Training Programs (3.0 out of 5). Private sector respondents reported a high (4.0 out of 5) interest in all services other than assistance with grant proposals. Appointed officials expressed below average (2.0 out of 5) interest in receiving assistance with relevant grant proposals; this rating may reflect the fact that unlike elected officials, who rated this service a 3.0 out of 5, appointed officials are typically not responsible for budgeting decisions and may not be as preoccupied with funding sources and issues. Government staff reported an above-average interest in each of the services listed and a high (4.0 out of 5) interest in

Participants learn about isolated freshwater wetlands in the field at the North Inlet-Winyah Bay NERR. (Photo courtesy, W. Allen)

Figure 9 - Survey respondents' preferred duration for training

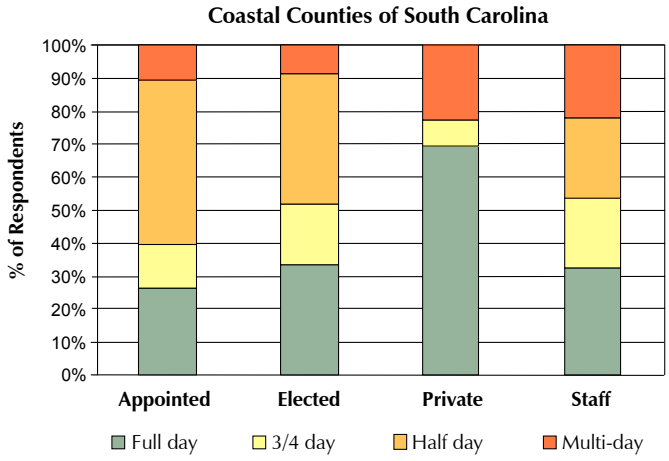


Figure 10 - Survey respondents' scheduling preferences for half-day training events

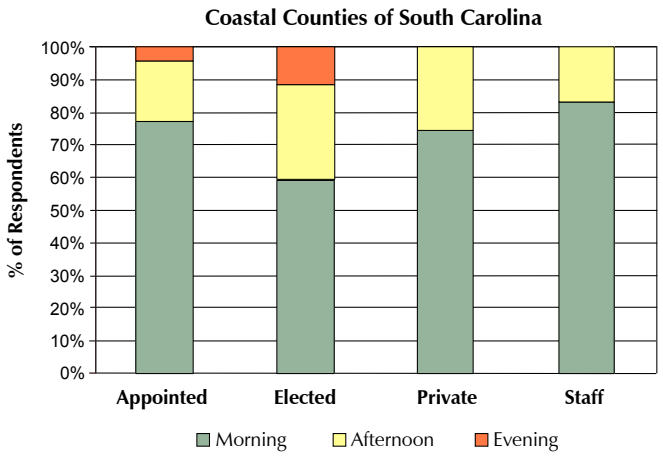


Table 12 - Survey respondents' likelihood of using various reference materials provided by the CTP

	6 Coastal Counties of South Carolina			
Type of Reference Tool	Appointed	Elected	Private	Staff
Model codes and ordinances (downloadable)	3.00	3.00	3.00	4.00
Index w/ links to useful web sites	3.00	3.00	4.00	4.00
Technical reports and manuals (downloadable)	3.00	3.00	4.00	4.00
Peer-reviewed scientific publications (downloadable)	3.00	3.00	4.00	3.00
PowerPoint presentations from past CTP events	3.00	3.00	3.00	3.00

those services that involve a transfer of knowledge (targeted, customized training on a specific coastal issue and referral to reference materials or scientific experts) as compared to those services that involve more active and independent assistance from the CTP (code and ordinance review, facilitation of/ outreach for demonstration projects).

Contractors Thomas Homono and John Cobb demonstrate the permeability of pervious concrete at a Coastal Training Program event. (Photo courtesy, J. Pollack)

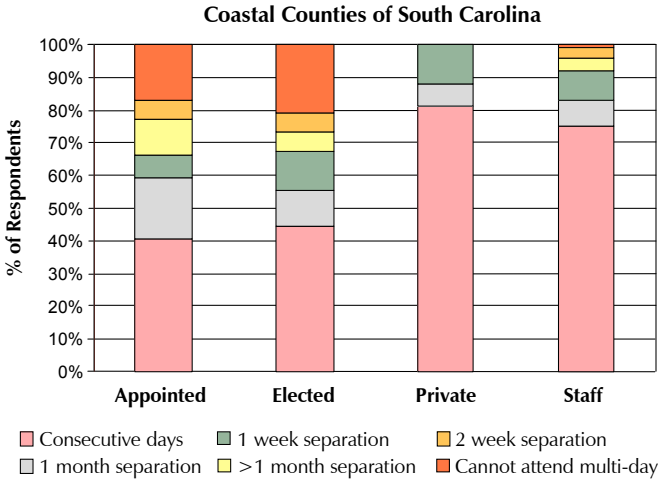
Both staff and private sector professionals reported a high (4.0 out of 5) interest in select types of reference materials (Table 12). These two sectors of respondents differed in their relative interest in model codes and ordinances and in peer-reviewed scientific publications; these modest but significant differences are consistent with the differences in the professional functions served by these of respondents. Even though the task of crafting local ordinances is often contracted to private engineering consulting firms, local government staff are naturally more likely to deal with local codes and ordinance and thus more likely to use model documents. Even though Figure 1 suggest that staff are likely to have comparable educational backgrounds to private sector professionals, their lower interest in technical peer-reviewed materials may reflect a preference for more applied, management-oriented materials rather than reports of primary research.

Elected and appointed officials reported an average level of interest (3.0 out of 5) in each of the different types of reference materials typically provided by the CTP (Table 12). Elected officials' moderate (3.0 out of 5) interest in peer reviewed literature may reflect the fact that this sector of respondents has the highest proportion of PhD graduates—individuals who would presumably have experience using primary literature during their academic careers and who would be willing and able to use these materials in their current positions if such materials were made available.

The results captured in Figure 9 illustrate that elected and appointed officials prefer half day training to full day training, which likely reflects the num-

ber and range of commitments faced by these sectors of respondents. Likewise, elected and appointed officials reported very low interest in multi-day training, and Figure 11 indicates that around 20% of elected and appointed officials are unable to attend multi-day training at all.

Figure 11 - Survey respondents' scheduling preferences for multi-day training



Government staff and private sector professionals both prefer full day training (definitively so in the case of private sector professionals), which may reflect the fact that these two sectors are the most likely to have continuing education requirements to satisfy (Figure 1) and are eager to make the most out of any time spent away from the office. Private sector professionals and government staff were equally willing to attend multi-day training (23% of respondents).

As reflected in Figure 11, all four sectors of respondent prefer to minimize the amount of time between the components of multi-day training, and all four sectors of respondents prefer that multi-day training be held on consecutive days. This preference is strongest among private sector professional and staff officials.

Figure 10 reports that all four sectors of respondents clearly prefer that half day training events are held in the morning. Twelve percent of elected and 7% of appointed officials prefer that half day sessions be held in the evening, which may reflect the diversity and number of responsibilities (and potential

Participants in a Coastal Training Program on Hilton Head Island plant dune grass after a morning session on the importance of dunes. (Photo courtesy, R. Szivak)

scheduling conflicts) faced by elected and appointed officials. Many of these decision makers—particularly those whose daily professional activities are unrelated to their government service—are accustomed to devoting evening hours and personal time to the meetings and obligations associated with their positions. In contrast, private sector professionals and staff officials, for whom training activities are likely to relate to daily professional activities, are entirely uninterested or unwilling to attend evening training.

Figure 12 - Survey respondents' willingness to travel for training opportunities

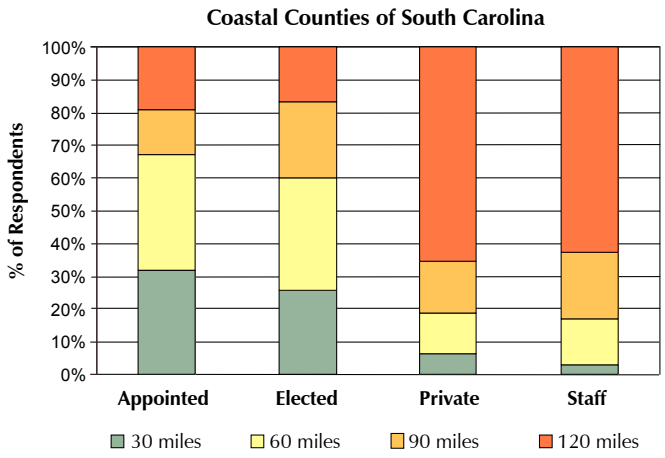
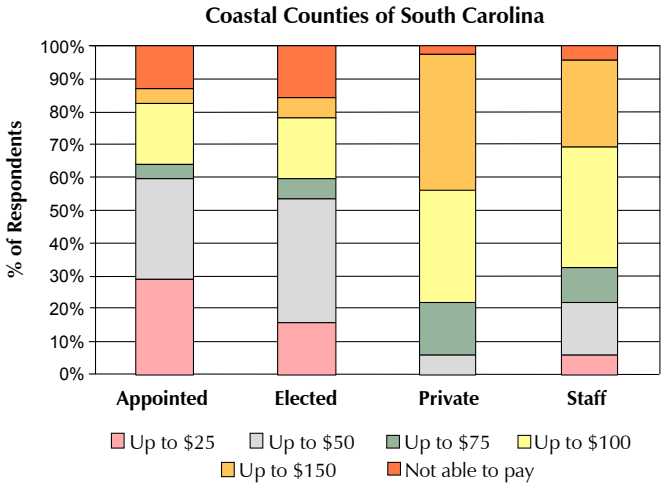


Figure 13 - Survey respondents' willingness to pay for training opportunities



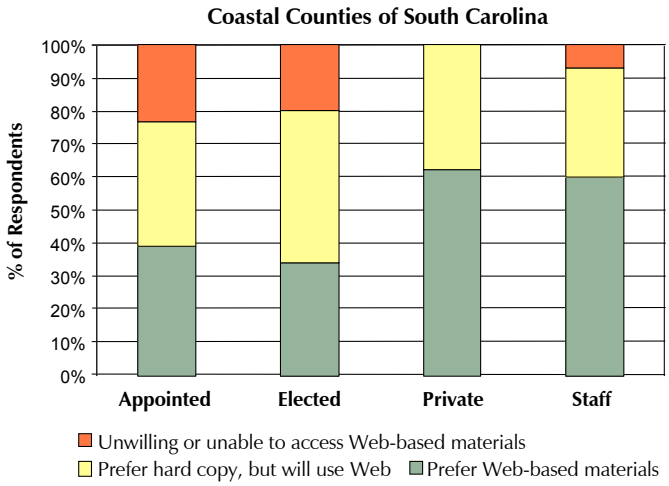
Willingness to travel for training peaks at 60 miles for elected and appointed officials, yet private sector professionals and staff officials report that they are willing to travel twice that distance (Figure 12). This difference may reflect the fact that these two sectors of respondents are the most likely to have continuing education requirements to satisfy (Figure 1), are more likely to be reimbursed for travel expenses, and are accustomed to devoting an entire day to training. Likewise, a commute of more than 60 miles would negate the scheduling advantage of the shorter (half-day) training sessions that elected and appointed officials prefer (Figure 10).

Coastal Training Program participants in Edisto practice a visioning process by placing notes on a map marking important places on the Island. (Photo courtesy, R. Szivak)

The higher willingness to pay reported by private sector professionals and staff officials as compared to elected and appointed officials may reflect the fact that these two sectors of respondents are the most likely to have continuing education requirements to satisfy (Figure 1) and are accustomed to paying for training to satisfy those requirements. As expected, private sector professionals reported the highest willingness to pay for training. Around 15% of elected and appointed officials reportedly have no capacity to pay for training, which suggests that a significant proportion of elected and appointed officials are largely opportunistic in terms of the information and training they acquire to inform their decision making. This information speaks to the critical role that providers of accessible, low-cost, high-quality information and training fill in local information transfer and in informing local government decision making.

Figure 14 indicates that roughly 80% of elected and appointed officials are willing to visit a specific location on the World Wide Web to download digital versions of reference materials although nearly half of those respondents would prefer to receive hard copies of those materials if given the choice. The remaining 20% of elected and appointed officials (many of whom are retirees or volunteers) reported that they are unwilling or unable to retrieve materials in digital form off of the Internet. As expected, a majority of private sector and staff official respondents prefer to work with digital materials, presumably be-

Figure 14 - Survey respondents' willingness to retrieve training reference



Coastal Training Program participants learn about the causes of erosion control in the field. (Photo courtesy, W. Allen)

cause individuals in these sectors are more likely to be making decisions about coastal issues as part of their professional activities and are also more likely to have had specific technical training or advanced education related to these functions (Figure 1).

Seven percent of local government staff (and up to 25% of staff in specific coastal counties covered in this survey) reported that they are unable or unwilling to retrieve reference materials from the Internet (Figure 14), which is consistent with some anecdotal data collected during this needs assessment that indicates that some of the smallest municipalities on the South Carolina coast do not have reliable (or any) Internet access. This finding speaks to the challenge of designing training that is relevant and accessible to decision makers from different communities—even those in close geographic proximity—and reinforces the need to customize training and technical assistance offerings for specific target audiences. Planning and delivering these offerings is inherently time consuming, labor intensive, and depends in large part on the capacity of a training coordinator who is intimately familiar with both the audience and the training topic. Communities that lack technological capacity are also likely to lack specialized staff as well as the capacity to fund specialized training; the compounded effect of these factors serves to widen the gap between these communities and those that have state of the art tools and staffing.

Respondents' preferred means of receiving notification for upcoming training opportunities (Figure 15) parallels their preferences for accessing reference materials. Regular post is the single most popular means of notification among elected and appointed officials, while a majority of private sector professionals and local government staff prefer email notification.

Interestingly, electronic submission of training registration is as popular as or more popular than any other mode of submission (Figure 16). While the number of elected and appointed officials who prefer electronic submission to regular post is nominal, a clear majority of private sector professionals and local government staff prefer electronic submission.

Figure 15 - Survey respondents' preferred means of receiving training notification

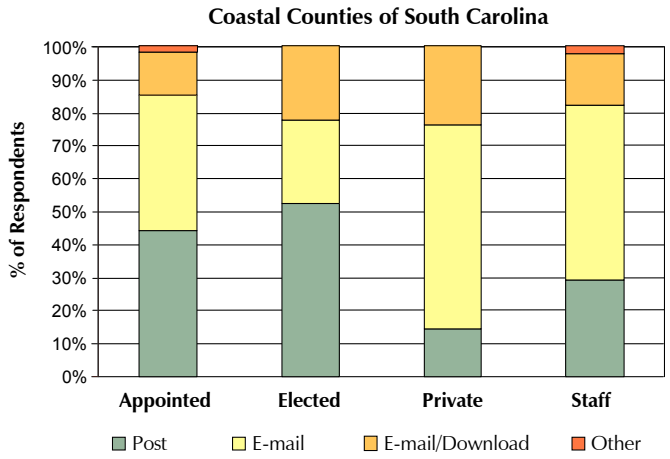
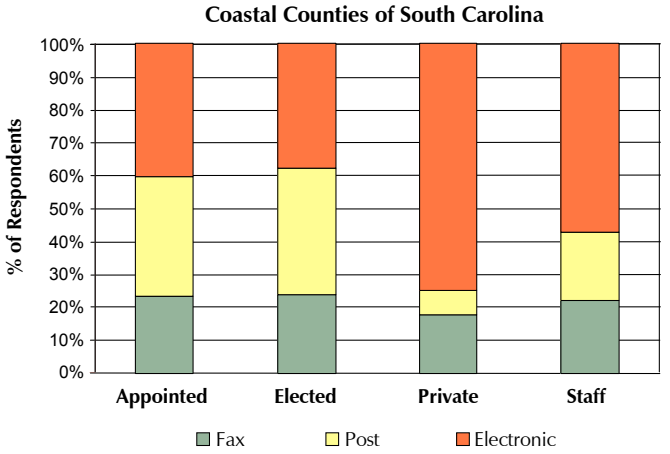


Figure 16 - Survey respondents' preferred means of submitting training registration



Facsimile was the least preferred method among elected and appointed officials but was more popular than regular post among private sector professionals and government staff.

Conclusion

The findings reported here about the science training and information needs of professional decision makers in the coastal counties of South Carolina reaffirm the need for customized, needs-based training at the local level. Data about the educational background, experience, and time in office of different sectors of coastal decision makers have implications for the frequency with which training topics might need to be repeated and for the means by which training outcomes might be evaluated.

For every sector of respondents, the median self-assessed level of knowledge of "coastal environmental issues" in general was higher than the median level of knowledge calculated from respondents' self-assessed knowledge of 44 discrete coastal issues. This disparity suggests that the surveyed decision makers may over-estimate their own knowledge about coastal environmental issues. The calculated median knowledge about coastal issues was equivalent for all sectors of respondents (2.0 out of 5).

The low estimates by elected and appointed officials of the number or hours per week spent on coastal issues (2.0 and 3.7 hours per week, respectively), as compared to the average time spent by private sector professionals (13 hours per week or more), suggests that there may be an overall lack of awareness among these sectors about the degree to which their professional choices influence, or are influenced by, coastal environmental issues. Our 2003 Training Needs Assessment of Municipal and County Officials revealed very similar results: elected officials reported spending only two hours per week on coastal issues while private sector professionals reported spending an average of nine hours per week.

The median interest among all sectors of respondents was above average for each of the five coastal issue categories: Coastal Growth Management, Beach and Shoreline Management, Pollution Management, Natural Resource/ Habitat Issues, and Water Resource Issues. Each sector of decision maker surveyed reported the highest level of interest in the Coastal Growth Management issue category. Each sector of decision maker reported the lowest level of knowledge about the Water Resource Issues and Natural Resource/ Habitat Issues categories.

Significant differences in knowledge about and in interest in discrete coastal environmental topics were evident among different sectors of respondents, although some clear trends in knowledge and interest did emerge across all sectors. Distinct preferences for training logistics were also evident among different sectors of respondents.

Willingness to travel and pay for training was highly variable between different sectors and was highest among private sector professionals. Around 15% of elected and appointed officials reportedly have no capacity to pay for training, which suggests that these officials are largely opportunistic in terms of the information and training they acquire to inform their decisions. This finding speaks to the critical role that the Coastal Training Program and other providers of accessible, high-quality training play in informing local government decision making.

Findings about some local government officials' limited access to technology and digital information speak to the challenge of designing training that is relevant and accessible to decision makers from different communities and reinforce the need to customize training and technical assistance offerings for specific target audiences. Designing and delivering these offerings is inherently time consuming, labor intensive, and depends in large part on the capacity of a training coordinator who is intimately familiar with both the audience and the training topic.

Literature Cited

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