

NOAA Coastal Services Center

COASTAL RESOURCE MANAGEMENT CUSTOMER SURVEY

Final Report



NOAA Coastal Services Center
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

2006 COASTAL RESOURCE MANAGEMENT CUSTOMER SURVEY

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
COASTAL SERVICES CENTER**

2006

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EXECUTIVE SUMMARY

The National Oceanic and Atmospheric Administration's (NOAA) Coastal Services Center (CSC) supports the environmental, social, and economic well-being of the coast by linking people, information, and technology. Its primary purposes are to provide information to the nation's coastal resource managers and facilitate wise coastal resource management. As part of its self-assessment regarding how to better serve its clients, every few years the CSC sponsors a survey of coastal resource managers. This is the fourth such survey; previous surveys were administered in 1996, 1999, and 2002.

The 2006 survey discussed herein was Web-based, conducted to determine opinions on and interaction with the CSC among coastal resource stakeholders. The survey was developed cooperatively by Responsive Management and the CSC, partly based on the previously administered surveys. The survey was administered from September to November 2006. Responsive Management obtained a total of 434 completed survey questionnaires. The Web-based survey was developed using Adobe Acrobat Professional 7.0.8; the data collection was performed by FormRouter, Inc. The analysis of data was performed using Statistical Package for the Social Sciences software, Microsoft Excel, and proprietary software developed by Responsive Management.

FAMILIARITY AND CONTACT WITH THE COASTAL SERVICES CENTER

- Just more than half of respondents (52.8%) indicated that they are very familiar or familiar with the CSC and use or have used CSC products and/or services. A large majority of respondents (70.9%) are aware of CSC products and services, whether they use them or not.

- The Web is the most common contact medium, used by more than half of respondents (53.0%), although having received a CSC publication (46.3%) or attended a workshop/training session (42.4%) are important modes of contact.

PRIORITIES FOR COASTAL MANAGEMENT TOPICS AND FOR SPATIAL DATA USE

- The survey asked respondents to indicate the priority that their office gives to each topic within four broad topic areas (Coastal Land Use Planning, Ocean and Great Lakes Planning, Coastal Conservation Planning, and Coastal Hazards). The most important topics are shown below.
- Within the *Coastal Land Use Planning* topic area, the most important topics (all with more than a third indicating high priority):
 - Land use planning/growth management (59.5% say it is a high priority)
 - Watershed planning (50.5%)
 - Public access (46.0%)
 - Within the *Ocean and Great Lakes Planning* topic area, the most important topics (all with more than a third indicating high priority):
 - Shoreline change management (42.7%)
 - Protected area management (41.1%)
 - Nearshore and offshore habitat mapping (36.6%)
 - Within the *Coastal Conservation Planning* topic area, the most important topics (all with more than a third indicating high priority):
 - Habitat restoration and monitoring (54.7%)
 - Water quality monitoring (46.0%)
 - Nonpoint source pollution (45.6%)
 - Erosion and beach nourishment (36.9%)
 - Invasive species management (36.1%)
 - Protected species management (33.5%)
 - Within the *Coastal Hazards* topic area, the most important topics (all with more than a third indicating high priority):
 - Flooding/inundation/storm surge (44.5%)
 - Erosion (42.9%)
 - Hurricanes (36.0%)
- The survey also asked respondents to indicate whether they needed to know about six hazards management topics for their job and whether they needed to learn more about the topics; the survey then asked them to rank the six topics.
- The hazards management topics about which the greatest percentage of respondents need to learn more are long-term recovery (61.9% need to learn more) and risk and vulnerability assessment (59.4%).
 - In looking at combined percentages of those who need to know about the topic, regardless of whether they feel that they need to learn more, the most important topics are

long-term recovery (71.6% need to know about this for their job), risk and vulnerability assessment (70.2%), and hazards mitigation (68.1%).

- Respondents most often ranked risk and vulnerability assessment as first in priority.

CURRENT USE OF DATA LAYERS

➤ The survey asked respondents about their office's use of spatial data layers within four broad topic areas (Coastal Land Use Planning, Ocean and Great Lakes Planning, Coastal Conservation Planning, and Coastal Hazards). Prior to the main question, the survey first screened out those who could not answer because of lack of knowledge: 81.6% of respondents knew about their office's use of spatial data layers and were thus asked the main questions regarding whether their office uses each of the data layers indicated and/or would find the data layer useful. Listed in the bullets below are the data layers markedly above the rest.

- Within the *Coastal Land Use Planning* area, the data layers most commonly used are (used by at least 60%):
 - Current shoreline (73.5% currently use this layer)
 - Coastal land cover (69.8%)
 - Coastal land use (64.5%)
- Within the *Coastal Land Use Planning* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 90%):
 - Coastal land use (95.8% currently use or would find useful)
 - Coastal land cover (95.3%)
 - Current shoreline (94.4%)
 - Coastal demographics (90.7%)
- Within the *Ocean and Great Lakes Planning* area, the data layers most commonly used are (used by at least 35%):
 - Bathymetry (46.3%)
 - Marine jurisdictional boundaries (36.5%)
- Within the *Ocean and Great Lakes Planning* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 70%):
 - Bathymetry (80.6%)
 - Dump/discharge sites (NPDES) (71.8%)
 - Aquaculture sites (70.9%)
- Within the *Coastal Conservation Planning* area, the data layers most commonly used are (used by at least 45%):
 - Protected areas (51.5%)
 - Public access (49.2%)

- Within the *Coastal Conservation Planning* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 90%):
 - Sensitive habitats (e.g., Environmental Sensitivity Index) (91.3%)
 - Public access (91.0%)
 - Protected areas (90.4%)
- Within the *Coastal Hazards* area, the data layers most commonly used are (used by at least 40%):
 - Elevation/topography (62.3%)
 - Flood maps/inundation zones/tsunami zones (46.3%)
 - Shoreline change/erosion (44.0%)
- Within the *Coastal Hazards* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 85%):
 - Elevation/topography (93.2%)
 - Shoreline change/erosion (92.6%)
 - Flood maps/inundation zones/tsunami zones (88.7%)

CURRENT USE AND UTILITY OF TECHNOLOGY TOOLS TO SUPPORT COASTAL RESOURCE MANAGEMENT AND CONSTRAINTS TO USE

- Awareness/knowledge of use of the eight broad types of technology tools is fairly high, at least 60% for each. Respondents are most aware of GIS (93.2% aware), followed by online mapping (87.6%) and online databases (84.0%).
- The most commonly used (by the respondent or by another coworker) types of technology tools are GIS (88.7%), online databases (77.8%), and online mapping (77.7%).
- The survey asked about the utility of each of the broad types of technology tools. GIS is, by far, the type of tool with the most utility (73.8% say GIS is highly useful in their job), distantly followed by online mapping (43.4% say it is highly useful), online databases (39.9% say they are highly useful), and visualization tools (39.6% say they are highly useful).
- The most important constraints to using the technology tools overall are lack of knowledge/skills and conflicting demands on time.

USE OF PROGRAM MANAGEMENT AND SOCIAL SCIENCE TOOLS, METHODS, AND INFORMATION

- Awareness/knowledge of use of the twenty types of program management and social science tools is high for most of the tools; only five of them had less than half saying that they are aware of them/know how to use them. The tools for which there are the most awareness and knowledge are:
 - surveys (75.8%)
 - meeting facilitation (74.9%)
 - strategic planning (74.8%)
 - performance measures or indicators (73.5%)
 - needs assessments (70.3%)
 - focus groups (70.0%)

- The most commonly used (by the respondent or by another coworker) types of program management and social science tools are:
 - performance measures or indicators (67.1%)
 - strategic planning (66.9%)
 - meeting facilitation (65.3%)
 - surveys (65.0%)
 - stakeholder engagement processes (63.3%)

- The program management and social science tools most commonly used by the respondent personally are:
 - meeting facilitation (27.7%)
 - strategic planning (24.3%)
 - performance measures or indicators (24.0%)
 - stakeholder engagement processes (24.0%)
 - project management (23.8%)
 - evaluation of individual products or projects (23.7%)

- The survey asked about the utility of each of the program management and social science tools. The most useful tools include stakeholder engagement processes (44.8% say it is highly useful), meeting facilitation (39.3%), and strategic planning (39.2%).

- The most important constraints to using program management and social science tools are conflicting demands on time and lack of enough staff.

ACTUAL PARTICIPATION IN TRAINING

- The survey asked respondents to indicate their past participation in training in each topic within four broad topic areas (Coastal Zone Management Issues, Process and Management Skills, Technology Training, and Metadata Training). The most important topics are shown below.
- Within the *Coastal Zone Management Issues* topic area, the most past training by NOAA was in:
 - Visitor use management (7.8% had some past training by NOAA in this)
 - Hazard risk-vulnerability assessments (5.0%)
 - Within the *Coastal Zone Management Issues* topic area, the most past training by NOAA or by another facility or school was in:
 - Land use planning (45.0% have had some training by NOAA or another entity in this)
 - Smart growth (39.6%)
 - Within the *Process and Management Skills* topic area, the most past training by NOAA was in:
 - Needs assessments (11.4%)
 - Project design and evaluations (11.2%)
 - Conflict management (8.7%)
 - Facilitation/meeting management (7.9%)
 - Within the *Process and Management Skills* topic area, the most past training by NOAA or by another facility or school was in:
 - Effective communication skills (58.8%)
 - Conflict management (49.8%)
 - Facilitation/meeting management (45.1%)
 - Within the *Technology Training* topic area, the most past training by NOAA was in:
 - Coastal applications of GIS (21.7%)
 - Introduction to GIS (20.0%)
 - Within the *Technology Training* topic area, the most past training by NOAA or by another facility or school was in:
 - Introduction to GIS (73.9%)
 - Introduction to GPS (45.2%)
 - Coastal applications of GIS (36.9%)
 - Within the *Metadata Training* topic area, the most past training by NOAA was in:
 - Metadata training workshops (11.1%)
 - Within the *Metadata Training* topic area, the most past training by NOAA or by another facility or school was in:
 - Metadata training workshops (29.7%)

UTILITY OF TRAINING

- The survey asked about the utility of training (either the usefulness of training that the respondent took or the usefulness of training that the respondent could take) within four broad topic areas.
 - Within the Coastal Zone Management Issues topic area, the most useful training topics are (all with at least 35% saying that training in the topic was/would be highly useful):
 - Land use planning
 - Integrated coastal management
 - Within the Process and Management Skills topic area, the most useful training topics are (all with at least 40% saying that training in the topic was/would be highly useful):
 - Effective communication skills
 - Science to management
 - Project design and evaluation
 - Facilitation/meeting management
 - Within the Technology Training topic area, the most useful training topics are (all with at least 45% saying that training in the topic was/would be highly useful):
 - Introduction to GIS
 - Applying GIS to your projects
 - Coastal applications of GIS
 - Advanced GIS
 - Within the Metadata Training topic area, the most useful training topic is:
 - Metadata training workshops (28.9% said training in this was/would be highly useful)

CONSTRAINTS TO PARTICIPATION IN TRAINING AND TO APPLYING TRAINING

- By far, the most limiting constraint to participation in training is conflicting demands on time/that the topic is not a priority (66.5% say this constraint always or often limits their ability to attend training).

RECEIVING ASSISTANCE WITH SOFTWARE

- The types of assistance that would be of high utility to the greatest percentage of respondents are providing data (65.6% said this assistance would be highly useful) and providing training on existing software (57.5%).

REASONS FOR PARTNERING

- Reasons to partner most commonly pertained to economies of scale/pooling of resources and data, the ability to use expertise of personnel in another organization that is lacking in the respondent's own office, or the need to coordinate efforts.

CONSTRAINTS TO PARTNERING

- The constraints to partnerships that have been the largest factors in preventing or discouraging coordination and/or partnerships with other organizations are time constraints (27.4% say this has always or often been a constraint), lack of communication with potential partner organizations (16.5% say this has always or often been a constraint), and lack of knowledge of whom to contact/talk to in the other organization (16.2% say this has always or often been a constraint).

PERSONAL PARTICIPATION IN ORGANIZATIONS AND PROFESSIONAL SOCIETIES

- The organizations or professional societies with the highest percentage of personal participation by respondents are the Coastal States Organization (23.6% participate), the American Planning Association (22.8% participate), the Estuarine Research Federation (21.7% participate), and the National Estuarine Research Reserves Association (21.7% participate).

SOURCES OF INFORMATION AND CREDIBILITY OF THOSE SOURCES

- The most commonly used mediums for exchanging information are talking with colleagues (nearly universally used at 99.5%), professional meetings and conferences (93.7%), and workshops (91.4%).
- The most credible sources of information are colleagues (74.9% consider them highly credible), private sector relationships (72.8% consider them highly credible), and Web sites (70.2% consider them highly credible).

- The survey asked about the utility of the sources of information. The sources that are ranked high in utility are colleagues (77.1% say colleagues are highly useful—far above any other source), Web sites (57.5% consider them highly useful), and workshops (53.5%).

TARGET AUDIENCES

- The survey asked respondents if there are any groups that are particularly hard to engage. Many respondents listed types of people (e.g., African-Americans, shoreline homeowners, teenagers); others listed individual agencies or entities (e.g., NOAA, the U.S. Army Corps of Engineers) or government agencies in general. Also commonly listed were particular economic groups, such as commercial fishermen.
- The survey also asked about barriers and constraints to connecting with target audiences. Time and staffing are most commonly named, although apathy/lack of interest, lack of skills, and lack of equipment (e.g., not enough video conference sites, not enough Internet access for the target audience) are also prominent.

ON-LINE DISTANCE LEARNING

- Respondents are about evenly divided in whether they have ever participated in on-line distance learning—44.0% have participated, but 56.0% have not. Nonetheless, more than two-thirds of respondents (68.9%) have a high or medium interest in on-line distance learning.

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INTRODUCTION AND METHODOLOGY

The National Oceanic and Atmospheric Administration's (NOAA) Coastal Services Center (CSC) (all housed within the Department of Commerce) supports the environmental, social, and economic well-being of the coast by linking people, information, and technology. Its primary purposes are to provide information to the nation's coastal resource managers and facilitate wise coastal resource management. As part of its self-assessment regarding how to better serve its clients, the CSC solicits input from the coastal resource management community. As part of its information-gathering efforts, every few years the CSC sponsors a survey of coastal resource managers. This is the fourth such survey; previous surveys were administered in 1996, 1999, and 2002.

The 2006 survey discussed herein was Web-based, conducted to determine opinions on and interaction with the CSC among coastal resource stakeholders. The survey was developed cooperatively by Responsive Management and the CSC, partly based on the previously administered surveys. Responsive Management conducted a pre-test of the questionnaire, and revisions were made to the questionnaire based on the pre-test.

Developing the sample for the 2006 NOAA-CSC survey was a multi-step process. NOAA-CSC submitted to Responsive Management a "Respondents to Target" list of audience types to which surveys were to be sent (see tabulation that follows). NOAA-CSC submitted names for some target audiences; Responsive Management obtained other target audiences from meticulous on-line research and/or through extensive telephone and e-mail requests. For some target audiences, Responsive Management sent more than 300 individual e-mails to managers/directors within those audiences outlining survey topics and requesting appropriate respondents from their staffs or other agencies that address coastal matters; in some cases, follow-up e-mails were sent. Names submitted in return were added to the master sample. After the survey was distributed, some additional names were suggested, either as substitutions for people who did not think that they were the appropriate respondents or as additional people who should take the survey. Such additions required individual e-mails to explain and distribute the survey.

The tabulation below shows the target audiences surveyed.

Target Audience	Category
Coastal Zone Management Programs	Coastal Zone Management Programs
National Estuarine Research Reserves	National Estuarine Research Reserves
Other state agencies that deal with coastal issues (DNRs, F&W agencies, DEPs)	Other state agencies that deal with coastal issues (DNRs, F&W agencies, DEPs)
Sea Grants	Sea Grants
National Estuary Programs	National Estuary Programs
Regional Associations	Regional Associations
Department of Interior	U.S. Fish and Wildlife Service Coastal Program
	National Wildlife Refuges (coastal)
	National Park/Preserves/Monuments (coastal)
Emergency Management	State floodplain managers (coastal)
	State emergency managers (coastal)
	County-level/local people doing emergency management activities
	National Flood Insurance Program
	State Hazard Mitigation Officers (coastal)
County	County planners (coastal)
	Associations of counties for each coastal state
Lead contacts for National States Geographic Information Council	Lead contacts for National States Geographic Information Council
Land Stewardship	The Conservation Fund
	Land trusts (coastal)
Estuarine Reserves Division of Office of Ocean and Coastal Resource Management	Estuarine Reserves Division of Office of Ocean and Coastal Resource Management
Coastal Programs Division of Office of Ocean and Coastal Resource Management	Coastal Programs Division of Office of Ocean and Coastal Resource Management
U.S. Army Corps of Engineers Districts	U.S. Army Corps of Engineers Districts
EPA	Environmental Protection Agency
U.S. Forest Service	U.S. Forest Service

Responsive Management worked closely with NOAA-CSC personnel to write the e-mail used to distribute the survey link. Responsive Management then sent the e-mail to each person in the master sample. For those who did not respond to this original e-mail, Responsive Management followed this with as many as two additional e-mails and a telephone call, if necessary. This entailed more than 1,000 telephone calls. Callers shared information about the aims of the survey, encouraged survey participation, and collected updated e-mail and facsimile information. When possible and appropriate, after two unsuccessful attempts to reach each person for whom telephone numbers proved valid, callers left messages requesting that the non-respondents contact Responsive Management about the survey.

Throughout the data collection period, Responsive Management responded to numerous telephone calls and e-mails from potential respondents asking questions, requesting assistance, and/or requesting copies of the survey. As part of that effort, more than 250 surveys were re-sent by mail, e-mail, or facsimile. The survey was administered from September to November 2006. Responsive Management obtained a total of 434 completed survey questionnaires. The Web-based survey was developed using Adobe Acrobat Professional 7.0.8; the data collection was performed by FormRouter, Inc. The analysis of data was performed using Statistical Package for the Social Sciences software, Microsoft Excel, and proprietary software developed by Responsive Management.

Developing the sample and managing this survey required a high level of thoroughness and attention to detail. NOAA-CSC emphasized that reminders were to be sent *only* to non-respondents, and careful tracking was required to remove respondents' names before each follow-up e-mail or telephone call. In addition, the many telephone conversations and e-mails required a high level of professionalism and communications skill to gather information, answer questions, give directions, and persuade people to invest time in a survey that many felt was too long and/or inappropriate for them.

FAMILIARITY AND CONTACT WITH THE COASTAL SERVICES CENTER

- Just more than half of respondents (52.8%) indicated that they are very familiar or familiar with the CSC and use or have used CSC products and/or services. A large majority of respondents (70.9%) are aware of CSC products and services, whether they use them or not.
- The Web is the most common contact medium, used by more than half of respondents (53.0%), although having received a CSC publication (46.3%) or attended a workshop/training session (42.4%) are important modes of contact.

Which of the following best describes how familiar you are with the NOAA Coastal Services Center? (Check only one.)	Percent
I am very familiar with CSC and use CSC products and services	9.8
I am familiar with CSC and have used CSC products and services	43.0
I am aware of CSC products and services but have not used them	15.3
I have heard about CSC but am not at all familiar with CSC products and services	18.1
I am not at all familiar with CSC	13.7

How have you come in contact with the NOAA Coastal Services Center (CSC)? (Check all that apply.) (Sorted by the percentage using the specific contact medium.)	Percent
I have visited the CSC Web site	53.0
I receive one or more CSC publications	46.3
I have attended a CSC workshop or training	42.4
I have used data or other products from CSC	34.7
My office has partnered with CSC on a particular project	34.7
I have attended a <i>Coastal Zone</i> conference	27.5
This survey is my first contact	22.9
I have received technical assistance from CSC	22.5
My office has received a grant or other financial support from CSC	21.3
My office has received a NOAA Fellow/Assistant through CSC	14.6
I have attended a <i>Coastal GeoTools</i> conference	13.4

PRIORITIES FOR COASTAL MANAGEMENT TOPICS AND FOR SPATIAL DATA USE

- The survey asked respondents to indicate the priority that their office gives to each topic within four broad topic areas (Coastal Land Use Planning, Ocean and Great Lakes Planning, Coastal Conservation Planning, and Coastal Hazards). The most important topics are shown below; the tabulation shows the full results of the survey.
- Within the *Coastal Land Use Planning* topic area, the most important topics (all with more than a third indicating high priority):
 - Land use planning/growth management (59.5% say it is a high priority)
 - Watershed planning (50.5%)
 - Public access (46.0%)
 - Within the *Ocean and Great Lakes Planning* topic area, the most important topics (all with more than a third indicating high priority):
 - Shoreline change management (42.7%)
 - Protected area management (41.1%)
 - Nearshore and offshore habitat mapping (36.6%)
 - Within the *Coastal Conservation Planning* topic area, the most important topics (all with more than a third indicating high priority):
 - Habitat restoration and monitoring (54.7%)
 - Water quality monitoring (46.0%)
 - Nonpoint source pollution (45.6%)
 - Erosion and beach nourishment (36.9%)
 - Invasive species management (36.1%)
 - Protected species management (33.5%)
 - Within the *Coastal Hazards* topic area, the most important topics (all with more than a third indicating high priority):
 - Flooding/inundation/storm surge (44.5%)
 - Erosion (42.9%)
 - Hurricanes (36.0%)

How much of a priority is each of the topics listed below for your office? (Sorted by percentage saying topic is of high priority.)					
	Percent giving the following response:				
	High	Med	Low	Not at all	Don't know
Coastal Land Use Planning					
Land use planning/growth management	59.5	20.7	11.2	6.7	1.9
Watershed planning	50.5	26.9	13.7	7.1	1.9
Public access	46.0	27.3	14.5	10.3	1.9
Recreation and tourism planning	31.5	30.0	21.6	15.3	1.6
Port, harbor, or marina development	29.6	26.8	24.6	16.9	2.1
Permit tracking	29.1	22.2	22.2	23.9	2.6
Dredging	26.5	27.2	23.9	20.9	1.4
Waterfront or brownfield redevelopment	25.6	29.6	22.1	19.3	3.3
Infrastructure/utilities development	20.5	28.8	28.3	19.3	3.1
Transportation planning	17.7	22.7	32.2	23.9	3.5
Ocean and Great Lakes Planning					
Shoreline change management	42.7	26.8	16.0	12.7	1.9
Protected area management	41.1	24.3	17.3	13.9	3.3
Nearshore and offshore habitat mapping	36.6	24.5	15.8	21.0	2.1
Submerged lands management	29.2	22.4	20.2	24.7	3.5
Marine jurisdictional boundaries	18.2	20.3	27.1	29.0	5.4
Energy development	14.5	22.5	26.5	32.9	3.6
Marine transportation planning	7.0	15.5	33.1	39.0	5.4
Coastal Conservation Planning					
Habitat restoration and monitoring	54.7	18.9	11.9	13.3	1.2
Water quality monitoring	46.0	22.0	17.5	13.3	1.2
Nonpoint source pollution	45.6	25.7	14.0	12.4	2.3
Erosion and beach nourishment	36.9	25.2	22.1	14.4	1.4
Invasive species management	36.1	28.3	15.2	18.7	1.6
Protected species management	33.5	26.9	19.2	19.0	1.4
Fisheries management	25.9	23.8	25.7	22.2	2.3
Cultural and heritage resource management	25.7	32.5	23.1	16.0	2.6
Pollutant transport and dispersion	25.3	26.0	23.7	21.1	4.0
Point source pollution	24.5	29.7	25.7	17.5	2.6
Shellfish management	21.8	23.9	23.7	28.6	1.9
Coral reef management	10.8	6.8	17.6	63.1	1.6

How much of a priority is each of the topics listed below for your office? (Sorted by percentage saying topic is of high priority.)					
	Percent giving the following response:				
	High	Med	Low	Not at all	Don't know
Coastal Hazards					
Flooding/inundation/storm surge	44.5	24.0	15.9	14.0	1.6
Erosion	42.9	27.7	16.6	11.2	1.6
Hurricanes	36.0	18.0	13.1	30.8	2.1
Sea level rise	28.6	31.9	18.7	18.5	2.3
Public health concerns	27.2	31.6	23.9	14.3	3.0
Bluff erosion	26.5	20.8	22.5	26.5	3.7
Oil/pollutant spill response	23.5	27.0	24.2	21.9	3.3
Harmful algal blooms	18.7	22.0	31.6	23.9	3.7
Tsunami	15.3	14.0	24.4	43.5	2.8
Beach safety related to rip tides and currents	13.1	15.0	30.4	38.4	3.0
Search and rescue	12.5	10.6	26.1	48.2	2.6
Landslides	12.1	15.6	25.1	44.2	3.0

- The survey also asked respondents to indicate whether they needed to know about six hazards management topics for their job and whether they needed to learn more about the topics; the survey then asked them to rank the six topics.
- The hazards management topics about which the greatest percentage of respondents need to learn more are long-term recovery (61.9% need to learn more) and risk and vulnerability assessment (59.4%).
 - In looking at combined percentages of those who need to know about the topic, regardless of whether they feel that they need to learn more, the most important topics are long-term recovery (71.6% need to know about this for their job), risk and vulnerability assessment (70.2%), and hazards mitigation (68.1%).
 - Respondents most often ranked risk and vulnerability assessment as first in priority.

Priority of hazards management topics: Select the response that best characterizes your current desired level of knowledge about each of the six topics.									
	Percent selecting this response (check all that apply):			Percent ranking the topic:					
	I need to know about this for my job, and I know enough.	I need to know about this for my job, and I need to learn more.	I do not need to know about this topic for my job.	1st	2nd	3rd	4th	5th	6th
	I need to know about this for my job...								
Risk and vulnerability assessment	10.8	59.4	29.8	31.5	19.7	19.7	10.5	8.6	9.9
	70.2								
Risk communication	11.3	49.3	39.4	7.2	14.8	20.3	19.7	19.3	18.7
	60.6								
Hazards mitigation	12.7	55.4	31.9	19.5	21.5	17.6	15.3	15.3	10.7
	68.1								
Forecasts and warnings	14.6	41.6	43.8	18.0	12.3	11.7	14.7	16.7	26.7
	56.2								
Response immediately after a hazard disaster	11.7	51.8	36.5	16.1	14.8	20.0	14.8	17.7	16.7
	63.5								
Long-term recovery	9.7	61.9	28.4	14.5	13.6	18.3	18.0	14.5	21.1
	71.6								

CURRENT AND DESIRED USES OF SPATIAL DATA, TOOLS, AND SOFTWARE

CURRENT USE OF DATA LAYERS

- The survey asked respondents about their office's use of spatial data layers within four broad topic areas (Coastal Land Use Planning, Ocean and Great Lakes Planning, Coastal Conservation Planning, and Coastal Hazards). Prior to the main question, the survey first screened out those who could not answer because of lack of knowledge: 81.6% of respondents knew about their office's use of spatial data layers and were thus asked the main questions regarding whether their office uses each of the data layers indicated and/or would find the data layer useful. Listed in the bullets below are the data layers markedly above the rest; the tabulation that follows shows the full results of the survey.
- Within the *Coastal Land Use Planning* area, the data layers most commonly used are (used by at least 60%):
 - Current shoreline (73.5% currently use this layer)
 - Coastal land cover (69.8%)
 - Coastal land use (64.5%)
 - Within the *Coastal Land Use Planning* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 90%):
 - Coastal land use (95.8% currently use or would find useful)
 - Coastal land cover (95.3%)
 - Current shoreline (94.4%)
 - Coastal demographics (90.7%)
 - Within the *Ocean and Great Lakes Planning* area, the data layers most commonly used are (used by at least 35%):
 - Bathymetry (46.3%)
 - Marine jurisdictional boundaries (36.5%)
 - Within the *Ocean and Great Lakes Planning* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 70%):
 - Bathymetry (80.6%)
 - Dump/discharge sites (NPDES) (71.8%)
 - Aquaculture sites (70.9%)
 - Within the *Coastal Conservation Planning* area, the data layers most commonly used are (used by at least 45%):
 - Protected areas (51.5%)
 - Public access (49.2%)
 - Within the *Coastal Conservation Planning* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 90%):
 - Sensitive habitats (e.g., Environmental Sensitivity Index) (91.3%)
 - Public access (91.0%)
 - Protected areas (90.4%)

- Within the *Coastal Hazards* area, the data layers most commonly used are (used by at least 40%):
 - Elevation/topography (62.3%)
 - Flood maps/inundation zones/tsunami zones (46.3%)
 - Shoreline change/erosion (44.0%)
- Within the *Coastal Hazards* area, the data layers most commonly used currently or which could be useful are (used or useful to at least 85%):
 - Elevation/topography (93.2%)
 - Shoreline change/erosion (92.6%)
 - Flood maps/inundation zones/tsunami zones (88.7%)

Screener question: The survey asked respondents to check a box if they were not familiar with spatial data use in their office.	Percent
I am familiar with spatial data use in my office	81.6
I am not familiar with spatial data use in my office	18.4

Current use of the following data layers: Select the response that best represents current use of the following data layers by your office. (Asked of the 81.6% who indicated familiarity with spatial data use in their office.) (Sorted by percent who say their office uses the data layer or would find the data layer useful.)			
	Percent giving the following response (check only one):		
	My office uses this data layer.	My office does not use this data layer, but it would be useful.	My office does not use this data layer and does not need it.
Coastal Land Use Planning			
Coastal land use	64.5	31.3	4.2
Coastal land cover	69.8	25.4	4.7
Current shoreline	73.5	20.9	5.6
Coastal demographics	36.0	54.7	9.3
Water quality	40.4	47.2	12.4
Marine and coastal economic data	20.4	66.0	13.6
Sediments	28.6	54.4	17.0
Docks and piers	37.7	44.6	17.7
Suspended sediments	16.1	59.2	24.6

Current use of the following data layers: Select the response that best represents current use of the following data layers by your office. (Asked of the 81.6% who indicated familiarity with spatial data use in their office.) (Sorted by percent who say their office uses the data layer or would find the data layer useful.)			
	Percent giving the following response (check only one):		
	My office uses this data layer.	My office does not use this data layer, but it would be useful.	My office does not use this data layer and does not need it.
Ocean and Great Lakes Planning			
Bathymetry	46.3	34.3	19.4
Dump/discharge sites (NPDES)	23.6	48.1	28.2
Aquaculture sites	25.4	45.6	29.1
Marine jurisdictional boundaries	36.5	32.8	30.8
Primary productivity	18.6	48.9	32.6
Sea surface temperature	26.9	40.4	32.7
Marine infrastructure (e.g., cable locations, oil and gas lines)	21.7	45.3	33.0
Salinity	26.6	39.1	34.3
Marine transportation (e.g., shipping lanes, ports, anchorages)	26.4	33.8	39.8
Vessel groundings	14.6	38.3	47.1
Coastal Conservation Planning			
Sensitive habitats (e.g., Environmental Sensitivity Index)	37.6	53.7	8.7
Public access	49.2	41.9	9.0
Protected areas	51.5	38.9	9.6
Cultural and historic resources	39.6	47.9	12.5
Fish habitat distribution maps	26.3	54.1	19.5
Shellfish bed distribution	28.8	45.3	25.9
Seagrass distribution	35.9	37.0	27.1
Coral/live bottom distribution	16.9	33.1	50.0
Coastal Hazards			
Elevation/topography	62.3	31.0	6.8
Shoreline change/erosion	44.0	48.6	7.4
Flood maps/inundation zones/tsunami zones	46.3	42.4	11.3
Currents	26.1	53.2	20.7
Tides	33.0	45.5	21.6
Wind	26.5	51.6	21.9
Waves	26.3	51.6	22.1
Critical facilities (e.g., shelters, evacuation routes, hospitals)	25.1	43.1	31.7

CURRENT USE AND UTILITY OF TECHNOLOGY TOOLS TO SUPPORT COASTAL RESOURCE MANAGEMENT AND CONSTRAINTS TO USE

- Awareness/knowledge of use of the eight broad types of technology tools is fairly high, at least 60% for each. Respondents are most aware of GIS (93.2% aware), followed by online mapping (87.6%) and online databases (84.0%).
- The most commonly used (by the respondent or by another coworker) types of technology tools are GIS (88.7%), online databases (77.8%), and online mapping (77.7%).
 - Regarding GIS, a tabulation shows how many people in the respondents' offices use GIS; most commonly, only one or two staff members in the office use GIS.
- The survey asked about the utility of each of the broad types of technology tools. GIS is, by far, the type of tool with the most utility (73.8% say GIS is highly useful in their job), distantly followed by online mapping (43.4% say it is highly useful), online databases (39.9% say they are highly useful), and visualization tools (39.6% say they are highly useful).
- Constraints to using the technology tools vary by type; nonetheless, the most important constraints overall are lack of knowledge/skills and conflicting demands on time.
 - There is wide variation in the percentage saying that inadequate equipment/facilities/technology is a constraint; it is an important factor for remote sensing tools, visualization tools, GIS, and online mapping.
 - There is wide variation in the percentage saying that lack of required knowledge and/or skills is a constraint; it is an important factor for models or model outputs, GIS, decision-support tools, visualization tools, and remote sensing tools.
 - There is wide variation in the percentage saying that there are no constraints to using the tool; GIS and online databases have the highest percentages saying that there are no constraints to use of the tool.

Are you aware of this type of tool and how it can be used? (Ranked by percentage aware.)	Percent	
	Yes	No
GIS	93.2	6.8
Online mapping (browsing / viewing data)	87.6	12.4
Online databases (data portals, data clearing houses)	84.0	16.0
Visualization (GIS-based, 3D-based, and photo-based)	76.9	23.1
Remote sensing tools	70.8	29.2
Decision-support tools (manipulating / analyzing data)	67.5	32.5
Coastal and ocean observations	65.6	34.4
Models or model outputs (habitat modeling, SLOSH, HURREVAC)	60.5	39.5

Indicate the use of this tool by you or your office. (Ranked by total use.)				
	Percent giving the following response (check only one):			
	I use this	My office uses this	My office does not use this	Don't know
	I or my office uses this			
GIS	35.0	53.7	8.4	2.9
	88.7			
Online databases	35.1	42.7	12.0	10.2
	77.8			
Online mapping	33.3	44.3	13.6	8.8
	77.7			
Visualization	22.6	40.3	25.6	11.5
	62.9			
Remote sensing tools	19.4	39.5	28.0	13.2
	58.9			
Decision-support tools	22.1	35.3	24.1	18.5
	57.4			
Coastal and ocean observations	19.1	35.5	29.5	15.9
	54.6			
Models or model outputs	11.4	25.1	44.2	19.4
	36.5			

Staff use of remote sensing: About how many current staff members (i.e., permanent or temporary full-time equivalents) in your office use remote sensing software regularly?	Percent
Six or more	6.5
Five	3.5
Four	4.0
Three	7.8
Two	11.8
One	12.1
Half	0.5
None	27.7
Don't know	25.9

How useful is this tool for your job? (Ranked by percentage saying tool is highly useful.)						
	Percent giving the following response:					
	High	Med	Low	Not at all	Don't know	N/A
GIS	73.8	15.9	4.9	1.6	2.4	1.4
Online mapping	43.4	29.3	14.1	1.7	9.5	2.0
Online databases	39.9	35.2	12.3	1.3	8.6	2.6
Visualization	39.6	28.0	11.2	3.7	13.1	4.4
Decision-support tools	37.8	23.9	13.6	5.3	15.6	3.9
Remote sensing tools	35.4	26.3	15.8	4.4	13.7	4.4
Coastal and ocean observations	24.9	30.8	13.8	6.5	18.5	5.6
Models or model outputs	22.3	21.4	18.0	11.3	20.9	6.1

Which of the following constraints have prevented you and/or others in your office from using each type of tool as often as you would like? (Tools are listed in same order as presented in survey.)									
	Percent giving the following response (check all that apply):								
	Conflicting demands on time	Not enough staff	Inadequate equipment / facilities / technology	Lack applicability / interest	Lack organizational policy / process supporting use	Lack relevant / necessary data	Lack required knowledge / skills	No constraints	Don't know
Online mapping	39.1	28.5	24.0	10.1	12.9	24.2	30.3	18.4	11.6
Online databases	36.7	25.0	14.1	11.2	10.6	24.5	27.4	21.0	13.6
Decision-support tools	33.5	27.7	16.6	12.5	15.0	19.1	34.3	13.6	21.6
GIS	35.5	31.5	24.2	7.8	11.8	19.4	35.5	25.0	6.7
Remote sensing tools	28.2	28.5	26.2	12.1	14.4	20.2	32.9	14.1	19.6
Coastal and ocean observations	27.8	22.2	16.8	13.5	11.7	20.4	23.1	17.7	26.9
Models or model outputs	28.4	20.9	17.5	16.6	12.6	24.6	38.1	11.7	26.1
Visualization	30.8	26.5	25.4	9.1	13.1	24.5	33.9	16.8	18.8

CURRENT AND DESIRED USE OF PLANNING OR VISUALIZATION SOFTWARE

- The table on the following two pages shows all the planning and visualization software listed in the survey, including those that are currently used and those for which the respondent indicated desired use by the respondent's office.

Planning and Visualization Software Used or Desired by Respondents	
2-D and 3-D mapping	CLAMMR
3-D	Coastal bluff
3D Analyst [6 entries]	Community Viz [15 entries]
3-D software	Comprehensive digital
3D Visualization software	Current conditions
ACAD	Custom desktop
Adobe Acrobat [2 entries]	Custom writer
Adobe Acrobat Professional	CVAT
Aerial photography [3 entries]	ER Mapper
ALCES model	ERDAS [3 entries]
Alternative development	ERDAS GIS
Arc extensions	Decision
ArcGIS – ArcInfo	Diurnal tidal inundation
ArcGIS / ArcView	ERDAS IMAGINE [8 entries]
ArcGIS [40 entries]	ERDAS Pro
ArcGIS 3D Analyst [2 entries]	Dock Build-Out Tool
ArcGIS 9 [3 entries]	ERSI Space
ArcGIS 9.1 [3 entries]	ESRI
ArcGIS 9.2 and extensions	ESRI Arc GIS
ArcGIS Desktop [2 entries]	DockMap Extension
ArcGIS Spatial Analysis	ESRI ArcView GIS
ArcGlobe	ESRI GIS
ArcIMS [3 entries]	DSAS
ArcIMS/ArcSDE [2 entries]	ESRI Path
ArcInfo [4 entries]	ESRI products [2 entries]
ArcInfo/ArcView	ESRI spatial
ArcInfo/GIS	E-TEAM
ArcMap [3 entries]	EcoPath with Ecosim [2 entries]
ArcMap, ArcIMS	Feature Analyst [2 entries]
ArcOIS	FEMA flood map web
ArcReader	ENVI [2 entries]
ArcScene [2 entries]	FEMA flood mapping
ArcView [14 entries]	Fieldview
ArcView 3.3 [2 entries]	FileMaker Pro
ArcView 9 [2 entries]	ENVI/PCI
ArcView 9.0 from ESRI	Focus groups
ArcView and related software	ENVI+IDL
ArcView/ArcMap	Freehand [2 entries]
AutoCAD [5 entries]	e-Planning (BLM)
Avenza MAPublisher	Geostatistical analysis
Beach Access Mgt.	GIS - ArcInfo
Beach morphology	GIS - ArcMap 9.1
Benthic mapping tools	GIS - VIZ
Biosonics: Subtidal	GIS [49 entries]
Blue Line	GIS and GIS Visual
Buildout visualization	GIS ArcInfo 9.x
C CAP	GIS ArcView
CAD	GIS ArcView and ArcMap
CADD	GIS extensions
Caliper	GIS for land use
CAMEO	GIS integration
CanVis [4 entries]	GIS Viewer/MapInfo
CARIS	Google Earth [9 entries]
CEM/CEDAS	Google Maps
CITYgreen	GPS [5 entries]

Planning and Visualization Software Used or Desired by Respondents (continued)	
Growth Build Out	Photogrammetry
Habitat [2 entries]	Photoshop [4 entries]
HAZUS - FLOOD	Pictometry
HAZUS-MH [2 entries]	Pictometry (GIS)
HURREVAC [7 entries]	Plan Ahead
Hurricane tracking	P-Load and Basins
HURRTRAK	Population TR
IDRISI ANDES	Project Planner
Illustrator	QT Modeler [3 entries]
Image analysis [3 entries]	QUICK 2
Image editor	Radar
Imagine [2 entries]	Rectified aerial photography
Impervious surface	Remote sensing software [2 entries]
INDEX [2 entries]	Remote video sensors
Integrated Coastal Management	Risk Vulnerability
Internet	Satellite
Internet accessibility	SAVEWS: Submerged
Invasive species	Scenario 360
ISAT	Sediment
JMP	Several software packages
Land use	SG Index
Land use/land cover	Shoreline change [2 entries]
LEICA ERDAS IMAGINE	SigmaPlot
LiDAR [3 entries]	SITES
Long term sea level	SketchUp
L-THIA	Skyline Products
MapInfo Professional	SLOSH [6 entries]
Mapping [2 entries]	Smart growth index
Mapserver GIS, ESRI	SMS [2 entries]
MARXAN [3 entries]	Spatial Analyst (ESRI)
MATLAB [2 entries]	Spatial Analyst [11 entries]
MATLAB: Water	Stereo Analyst
Microsoft Access [3 entries]	STORM
Microsoft Excel [2 entries]	Surfer [4 entries]
Microsoft Office	Techplot
Microsoft PowerPoint [2 entries]	T-Hat
Microsoft Publisher	The Nature Conservancy
Microsoft Visio	Time series plotting
Microsoft Word	TNC custom
Mobile GIS	TNT maps
Modeling software	TOPO
NASA WorldWin [2 entries]	Tracking Analyst
NatureServe	Vertical Mapper
NC Flood Maps web site	Virginia Base Mapping
NetCharts	VISSIM
New software	Visual Basic
NFF	Visual Nature Studio [2 entries]
NHC	Visualization
NPS PEPC	Visuals that morph
N-SPECT [2 entries]	Wave Height
NWS	Weather
OGC WMS,	Web based topographic mapping
On-line hurricane	Web EOC
On-line mapping [2 entries]	WhatIf [2 entries]
Open standard Web-based	WinRIVER
Paint the Region	WMS - on-line mapping
Passaic Basin Flood	World Construction Set

USE OF PROGRAM MANAGEMENT AND SOCIAL SCIENCE TOOLS, METHODS, AND INFORMATION

- Awareness/knowledge of use of the twenty types of program management and social science tools is high for most of the tools; only five of them had less than half saying that they are aware of them/know how to use them. The tools for which there are the most awareness and knowledge are:
 - surveys (75.8%)
 - meeting facilitation (74.9%)
 - strategic planning (74.8%)
 - performance measures or indicators (73.5%)
 - needs assessments (70.3%)
 - focus groups (70.0%)

- The most commonly used (by the respondent or by another coworker) types of program management and social science tools are:
 - performance measures or indicators (67.1%)
 - strategic planning (66.9%)
 - meeting facilitation (65.3%)
 - surveys (65.0%)
 - stakeholder engagement processes (63.3%)

- The program management and social science tools most commonly used by the respondent personally are:
 - meeting facilitation (27.7%)
 - strategic planning (24.3%)
 - performance measures or indicators (24.0%)
 - stakeholder engagement processes (24.0%)
 - project management (23.8%)
 - evaluation of individual products or projects (23.7%)

- The survey asked about the utility of each of the program management and social science tools. The most useful tools include stakeholder engagement processes (44.8% say it is highly useful), meeting facilitation (39.3%), and strategic planning (39.2%).

- The most important constraints to using program management and social science tools are conflicting demands on time and lack of enough staff.
 - Meeting facilitation has the highest percentage saying that there are no constraints to use of this tool.

Are you aware of this type of tool and how it can be used? (Ranked by percentage aware.)	Percent	
	Yes	No
Surveys	75.8	24.2
Meeting facilitation	74.9	25.1
Strategic planning	74.8	25.2
Performance measures or indicators	73.5	26.5
Needs assessments	70.3	29.7
Focus groups	70.0	30.0
Cost-benefit analysis	68.5	31.5
Project management	68.1	31.9
Interviews	67.2	32.8
Demographic analysis	64.8	35.2
Stakeholder engagement processes	64.0	36.0
Evaluation of individual products or projects	62.3	37.7
Evaluation of entire programs	56.9	43.1
Observation	54.7	45.3
Policy/legislative analysis	53.3	46.7
Stakeholder analysis	45.3	54.7
Social assessments	45.0	55.0
Logic models	36.7	63.3
Non-market valuation	30.9	69.1
Content analysis	29.2	70.8

Indicate the use of this tool by you or your office. (Ranked by total use.)				
	Percent giving the following response (check only one):			
	I use this	My office uses this	My office does not use this	Don't know
	I or my office uses this			
Performance measures or indicators	24.0	43.1	16.1	16.8
	67.1			
Strategic planning	24.3	42.6	17.3	15.8
	66.9			
Meeting facilitation	27.7	37.6	22.3	12.4
	65.3			
Surveys	16.3	48.7	23.1	11.9
	65.0			
Stakeholder engagement processes	24.0	39.3	16.8	19.9
	63.3			
Evaluation of individual products or projects	23.7	32.4	22.6	21.3
	56.1			
Needs assessments	17.3	37.6	26.1	19.0
	54.9			
Project management	23.8	30.5	26.4	19.2
	54.3			
Interviews	15.3	38.3	27.2	19.2
	53.6			
Evaluation of entire programs	15.5	32.7	24.5	27.3
	48.2			
Focus groups	10.2	35.3	35.6	18.8
	45.5			
Observation	20.5	23.7	25.3	30.6
	44.2			
Policy/legislative analysis	16.7	25.1	31.3	26.9
	41.8			
Demographic analysis	10.0	26.9	41.2	22.0
	36.9			
Stakeholder analysis	9.9	26.3	29.2	34.6
	36.2			
Cost-benefit analysis	9.9	24.3	44.8	21.0
	34.2			
Social assessments	6.0	21.8	40.7	31.6
	27.8			
Logic models	9.8	11.8	40.1	38.3
	21.6			
Content analysis	7.2	12.3	33.2	47.3
	19.5			
Non-market valuation	3.4	8.9	43.5	44.3
	12.3			

How useful is this tool for your job? (Ranked by percentage saying the tool is highly useful.)						
	Percent giving the following response:					
	High	Med	Low	Not at all	Don't know	N/A
Stakeholder engagement processes	44.8	23.1	5.3	3.9	18.7	4.2
Meeting facilitation	39.3	26.5	12.5	3.3	14.0	4.5
Strategic planning	39.2	31.4	9.2	2.9	13.0	4.3
Evaluation of individual products or projects	33.7	26.9	13.0	2.7	18.6	5.0
Project management	33.3	23.9	15.5	2.9	19.5	4.9
Performance measures or indicators	33.1	32.5	14.6	2.1	12.8	4.9
Needs assessments	31.2	30.7	14.4	3.0	16.0	4.7
Policy/legislative analysis	31.1	19.3	13.0	6.9	21.8	7.9
Evaluation of entire programs	23.8	30.7	12.1	4.3	23.8	5.3
Stakeholder analysis	22.8	24.6	9.9	4.2	30.8	7.8
Observation	22.6	21.0	11.3	5.5	33.2	6.5
Surveys	21.7	37.9	17.1	3.7	13.5	6.1
Interviews	19.9	27.6	15.5	7.1	23.0	6.8
Cost-benefit analysis	18.4	25.2	19.9	5.8	24.5	6.1
Demographic analysis	16.1	28.6	17.9	5.8	23.1	8.5
Focus groups	14.5	31.2	18.0	7.6	20.5	8.2
Social assessments	12.3	23.9	14.4	6.1	32.8	10.4
Content analysis	11.3	13.2	10.0	7.1	47.1	11.3
Non-market valuation	10.4	12.3	11.0	8.1	47.1	11.0
Logic models	6.6	18.1	17.5	6.3	40.8	10.6

Which of the following constraints have prevented you and/or others in your office from using each type of tool as often as you would like? (Tools are listed in the same order as presented in the survey.)									
	Percent giving the following response (check all that apply):								
	Conflicting demands on time	Not enough staff	Inadequate equipment / facilities / technology	Lack applicability / interest	Lack organizational policy / process supporting use	Lack relevant / necessary data	Lack required knowledge / skills	No constraints	Don't know
Needs assessments	35.2	27.7	7.2	9.3	13.6	14.8	17.2	18.4	24.1
Strategic planning	31.6	23.2	5.0	5.3	13.0	8.4	13.9	27.9	19.5
Policy/legislative analysis	23.4	20.7	3.9	7.2	10.5	6.9	12.5	21.4	36.5
Evaluation of individual products or projects	31.0	25.6	5.4	7.7	9.6	7.0	12.8	22.4	29.7
Evaluation of entire programs	30.2	26.3	4.5	7.1	11.4	7.8	12.0	21.1	32.8
Performance measures or indicators	34.9	27.9	5.4	8.3	9.5	15.6	14.0	21.0	23.2
Logic models	22.3	16.0	3.3	8.3	8.3	5.7	14.7	12.3	47.3
Project management	29.5	21.0	7.6	10.0	11.2	6.4	19.8	24.3	25.5
Social assessments	22.1	23.4	6.4	9.9	13.5	14.7	19.9	11.5	40.7
Stakeholder engagement processes	32.5	25.6	4.4	5.0	9.1	6.9	13.6	24.3	25.9
Meeting facilitation	19.4	21.6	4.7	5.0	5.6	3.4	15.0	35.9	25.0
Demographic analysis	19.7	19.4	7.1	7.1	7.4	14.2	18.7	17.4	36.5
Cost-benefit analysis	20.8	18.6	7.1	9.9	8.0	12.8	18.3	15.4	36.2
Non-market valuation	11.0	13.4	6.2	7.2	8.2	13.4	18.9	9.3	52.2
Stakeholder analysis	25.6	21.1	5.2	7.8	7.8	9.4	17.9	14.9	41.2
Content analysis	15.1	14.0	3.1	8.2	4.1	7.2	12.3	12.0	54.8
Observation	22.5	19.7	3.5	6.2	4.8	7.6	8.3	22.5	41.5
Interviews	25.1	24.7	2.0	6.7	6.4	5.0	10.0	23.4	33.1
Focus groups	27.0	24.3	2.7	8.3	8.7	6.3	14.0	20.3	32.3
Surveys	31.1	29.1	4.6	7.3	9.9	5.0	13.6	25.8	23.8

PARTICIPATION IN TRAINING AND RECEIVING ASSISTANCE WITH SOFTWARE

ACTUAL PARTICIPATION IN TRAINING

- The survey asked respondents to indicate their past participation in training in each topic within four broad topic areas (Coastal Zone Management Issues, Process and Management Skills, Technology Training, and Metadata Training). The most important topics are shown below; the tabulation that follows shows the full results of the survey.
- Within the *Coastal Zone Management Issues* topic area, the most past training by NOAA was in:
 - Visitor use management (7.8% had some past training by NOAA in this)
 - Hazard risk-vulnerability assessments (5.0%)
 - Within the *Coastal Zone Management Issues* topic area, the most past training by NOAA or by another facility or school was in:
 - Land use planning (45.0% have had some training by NOAA or another entity in this)
 - Smart growth (39.6%)
 - Within the *Process and Management Skills* topic area, the most past training by NOAA was in:
 - Needs assessments (11.4%)
 - Project design and evaluations (11.2%)
 - Conflict management (8.7%)
 - Facilitation/meeting management (7.9%)
 - Within the *Process and Management Skills* topic area, the most past training by NOAA or by another facility or school was in:
 - Effective communication skills (58.8%)
 - Conflict management (49.8%)
 - Facilitation/meeting management (45.1%)
 - Within the *Technology Training* topic area, the most past training by NOAA was in:
 - Coastal applications of GIS (21.7%)
 - Introduction to GIS (20.0%)
 - Within the *Technology Training* topic area, the most past training by NOAA or by another facility or school was in:
 - Introduction to GIS (73.9%)
 - Introduction to GPS (45.2%)
 - Coastal applications of GIS (36.9%)
 - Within the *Metadata Training* topic area, the most past training by NOAA was in:
 - Metadata training workshops (11.1%)
 - Within the *Metadata Training* topic area, the most past training by NOAA or by another facility or school was in:
 - Metadata training workshops (29.7%)

Indicate your past training participation for each topic. (Check all that apply.) (Ranked within each broad topic area by percentage who have participated in training from any entity.)			
	Percent giving the following response (check all that apply):		
	... by NOAA Coastal Services Center.	... by other training facility or school.	I have not had training on this topic.
Coastal Zone Management Issues			
Land use planning	3.1	44.3	55.0
Smart growth	3.9	37.7	60.4
Coastal Zone Management Act	3.3	26.9	71.9
Hazard risk-vulnerability assessments	5.0	22.6	74.3
Visitor use management	7.8	17.0	76.6
Public Trust Doctrine	1.7	21.5	77.8
Integrated coastal management	2.9	18.5	80.0
Tourism development planning	1.5	13.2	86.6
Process and Management Skills			
Effective communication skills	3.1	57.1	41.2
Conflict management	8.7	44.2	50.2
Facilitation/meeting management	7.9	39.1	54.9
Performance measures	7.2	35.8	59.0
Project design and evaluations	11.2	29.2	61.3
Media relations	3.0	36.0	62.0
Collaborative processes	4.9	32.8	64.8
Needs assessments	11.4	25.7	65.4
Evaluating program effectiveness	7.6	28.0	66.8
Science to management	2.9	25.7	72.9
Outreach planning	2.2	26.2	73.6
Managing multiple perspectives	2.0	22.7	76.5
Social assessments	3.7	15.4	82.2
Leadership in coastal management	2.9	14.4	84.7

Indicate your past training participation for each topic. (Check all that apply.) (Ranked within each broad topic area by percentage who have participated in training from any entity.)			
	Percent giving the following response (check all that apply):		
	... by NOAA Coastal Services Center.	... by other training facility or school.	I have not had training on this topic.
Technology Training			
Introduction to GIS	20.0	59.8	26.1
Introduction to GPS	5.7	41.6	54.8
Coastal applications of GIS	21.7	18.1	63.1
Applying GIS to your projects	4.1	29.1	68.5
Photo interpretation	1.9	27.8	71.4
Advanced GIS	4.1	24.5	73.3
Remote sensing for spatial analysts	4.4	15.0	83.0
Introduction to coastal remote sensing	5.5	13.0	83.1
Habitat assessment methods	1.4	15.2	84.5
Identifying and mapping coastal habitats	2.9	13.8	84.7
GIS for managers	3.4	11.1	86.7
Spatial analysis for coastal applications	3.6	10.4	88.1
Application of data visualization software	1.5	10.7	89.1
Assessing GIS for your organization	1.9	9.4	89.9
Coastal land conservation with GIS	2.0	9.0	90.5
Coastal inundation mapping	1.7	8.2	91.3
Remote sensing for managers	2.2	6.9	92.1
GIS for code enforcement / permitting	1.2	5.6	94.4
Metadata Training			
Metadata training workshops	11.1	20.0	70.3
Metadata train-the-trainer (how to train others in developing FGDC-compliant metadata)	2.5	3.2	95.6

UTILITY OF TRAINING

- The survey asked about the utility of training (either the usefulness of training that the respondent took or the usefulness of training that the respondent could take) within four broad topic areas.
- Within the Coastal Zone Management Issues topic area, the most useful training topics are (all with at least 35% saying that training in the topic was/would be highly useful):
 - Land use planning
 - Integrated coastal management
 - Within the Process and Management Skills topic area, the most useful training topics are (all with at least 40% saying that training in the topic was/would be highly useful):
 - Effective communication skills
 - Science to management
 - Project design and evaluation
 - Facilitation/meeting management
 - Within the Technology Training topic area, the most useful training topics are (all with at least 45% saying that training in the topic was/would be highly useful):
 - Introduction to GIS
 - Applying GIS to your projects
 - Coastal applications of GIS
 - Advanced GIS
 - Within the Metadata Training topic area, the most useful training topic is:
 - Metadata training workshops (28.9% said training in this was/would be highly useful)

If you have had training on this topic, how useful was it for your job? If you have not had training on this topic, how useful would it be for your job. (Ranked within each broad topic area by percentage saying tool is highly useful.)					
	Percent giving the following response:				
	High	Med	Low	Not	Don't know
Coastal Zone Management Issues					
Land use planning	47.5	28.0	15.7	6.0	2.8
Integrated coastal management	35.8	32.6	18.4	8.2	5.0
Hazard risk-vulnerability assessment	33.6	26.4	21.0	13.2	5.8
Coastal Zone Management Act	33.1	34.4	21.6	7.5	3.3
Smart growth	30.2	36.8	21.2	7.8	4.0
Public Trust Doctrine	25.3	27.8	24.7	13.5	8.7
Visitor use management	22.8	20.1	27.9	25.2	4.1
Tourism development planning	14.2	22.7	29.1	29.4	4.6

If you have had training on this topic, how useful was it for your job? If you have not had training on this topic, how useful would it be for your job. (Ranked within each broad topic area by percentage saying tool is highly useful.)					
	Percent giving the following response:				
	High	Med	Low	Not	Don't know
Process and Management Skills					
Effective communication skills	59.6	31.3	6.8	1.8	0.6
Science to management	44.9	29.1	12.5	7.4	6.1
Project design and evaluation	43.0	34.4	13.4	6.6	2.6
Facilitation/meeting management	40.4	35.1	15.4	6.6	2.5
Collaborative processes	35.8	37.7	15.9	5.6	5.0
Evaluating program effectiveness	35.1	39.7	15.6	7.3	2.3
Conflict management	34.7	42.3	16.6	5.2	1.2
Media relations	33.9	33.2	21.3	8.2	3.4
Performance measures	33.7	41.3	16.2	6.0	2.9
Outreach planning	33.1	36.8	15.5	8.4	6.1
Needs assessment	32.5	38.7	17.0	7.2	4.6
Leadership in coastal management	30.0	28.6	22.0	13.2	6.3
Managing multiple perspectives	29.0	35.0	18.7	9.2	8.1
Social assessment	16.6	31.8	26.3	15.6	9.7
Technology Training					
Introduction to GIS	58.2	26.0	11.8	3.8	0.3
Applying GIS to your projects	51.4	27.9	13.2	6.0	1.6
Coastal applications of GIS	48.1	32.0	9.8	7.9	2.2
Advanced GIS	47.6	21.1	16.9	12.1	2.2
Introduction to GPS	38.2	33.8	18.7	7.9	1.5
Identifying and mapping coastal habitats	38.2	25.0	17.9	15.2	3.7
Habitat assessment methods	33.6	28.2	16.4	16.4	5.4
Spatial analysis for coastal applications	32.8	29.0	16.4	15.7	6.1
Coastal land conservation with GIS	31.7	27.3	18.4	17.4	5.1
Photo interpretation	29.8	35.8	16.2	13.6	4.6
Coastal inundation mapping	28.6	23.1	24.1	18.7	5.4
Introduction to coastal remote sensing	28.2	32.3	18.0	15.6	5.8
GIS for managers	27.8	29.8	20.2	15.9	6.3
Application of data visualization software	27.6	27.9	15.5	16.2	12.8
Remote sensing for spatial analysts	26.4	27.7	18.8	20.5	6.6
Assessing GIS for your organization	24.3	21.6	23.3	21.6	9.1
Remote sensing for managers	22.5	30.4	20.1	17.3	9.7
GIS for code enforcement / permitting	17.8	19.2	25.2	32.5	5.2
Metadata Training					
Metadata training workshops	28.9	27.7	18.0	15.1	10.3
Metadata train-the-trainer (how to train others in developing FGDC-compliant metadata)	14.4	19.0	24.3	29.6	12.7

NEEDED TRAINING TOPICS

- The survey asked respondents to list additional technology topics in which they would like training; the listing is presented below.

Additional Training Topics
Analysis of data, presentation of data
Analysis of traditional ecological knowledge
ATLAS.ti
Coastal erosion assessment
Coastal land use issues, nonpoint source tracking
Database design and management
Engineering alternatives to shoreline protection
Integrating fisheries monitoring data
Interpreting HAB models, climate forecasting
Laws and regulations for GIS users
LiDAR
Natural Resource Damage Assessment Process
Open Geospatial Consortium (OGC)
Services offered by CSC, annual priorities
Specialized GIS/remote sensing tools/training
Training on planning for climate change
Use of data visualization for public education
Web-based GIS/ArcIMS
Workshops at the CSC

CONSTRAINTS TO PARTICIPATION IN TRAINING AND TO APPLYING TRAINING

- By far, the most limiting constraint to participation in training is conflicting demands on time/that the topic is not a priority (66.5% say this constraint always or often limits their ability to attend training).
 - Following the questions about constraints to participation in training, the survey allowed respondents to list any barriers or constraints to applying the training that they have taken. Time and staffing are important constraints, as is the timeliness of the training—many indicated that they lose the knowledge if too much time passes between training and the application of the training.

Constraints to participation in training: To what extent has each of the following constraints limited your ability to attend training? (Ranked by percentage saying the constraint was always or often a limitation.)					
	Percent giving the following response:				
	Always	Often	Sometimes	Seldom	Never
	Always or often			Seldom or never	
Conflicting demands on time / Not a priority	14.7	51.8	25.7	6.2	1.7
	66.5			7.9	
Awareness of training opportunities	5.8	30.5	48.9	12.6	2.2
	36.3			14.8	
Availability of training	3.4	30.1	47.0	16.1	3.4
	33.5			19.5	
Travel restrictions	6.0	26.0	31.6	24.3	12.0
	32.0			36.3	
Lack of management support to attend	2.2	10.8	30.6	35.7	20.7
	13.0			56.4	

Application of training information and skills: What barriers or constraints have limited your ability to apply the knowledge or skills you have acquired during trainings?
Limited staff means no time for practicing what you’ve learned; just trying to keep up with core job tasks. 2. Do not have needed software on personal computer.
Administrative nonsense.
Applicability to our work; availability of data.
Availability of up-to-date software in the office, lack of sufficient data sets.
Available time, travel restrictions, background in subject area.
Blank stares by people who can’t follow me because they haven’t had the training and don’t understand its practice.

Application of training information and skills: What barriers or constraints have limited your ability to apply the knowledge or skills you have acquired during trainings? (continued)
Changes in job responsibilities requiring use of different skills; not using some training information and skills for awhile; you loose it over time. Could benefit from additional training in some areas, but work demands make it difficult to fit it in.
Time conflicts. [36 respondents indicated time constraints with no other comments.]
Conflicting demands on time and small staff
Conflicting demands on time; lack of management support.
Conflicting work schedule/lack of time.
Convincing management and some staff that changing our ways or how we do our work will succeed. No support for conducting work differently out of fear of failure, fear of change, or whatever else motivates individuals not to try a different tack.
Creativity: ability to translate ideas presented in training into tools useful to program staff.
Current planning, e.g., building permits, disallows staff from engaging in long-range planning projects.
Demands on my time to complete projects. Not having time to apply or test new methods/skills to do project.
Disconnect between time of training and the time when that knowledge needs to be applied.
Equipment and software.
Financial resources to conduct outreach, acquire data, and institutional barriers, e.g., concern by political bodies.
Funding and time.
Funding to obtain equipment and software; space and personnel shortages.
Have been able to put training to great use. The limiting factor is support to attend professional society meetings such as AFS and the lack of availability of good advanced training.
Software and the knowledge of how to use it.
Heavy administrative workload limiting the time to utilize and further develop skills gained in GIS and Coastal Applications training.
Highly specialized data analysis and, for GIS, my time, as I am not interested in becoming more proficient than my current passing knowledge.
I have not always been able to put my newly learned skills to work in my job right away, and I forget them in time.
If not used regularly, I have to relearn each time I use it.
If the training isn't applied shortly after returning, the new skill is diminished.
Inadequate follow-up and continued application of skills.
In-house support for GIS and other technical applications; really needed but not available.
Insufficient data for individual projects, lack of specific applicability, limited time and funding.
Integration into existing programs.
Job is more program managing than actual science applications. Limited funds, resources, time, and personnel.
Lack of ability to put into practice.

Application of training information and skills: What barriers or constraints have limited your ability to apply the knowledge or skills you have acquired during trainings? (continued)
Lack of adequate staff to implement training once learned.
Lack of budget to travel for training.
Lack of current software applications (latest versions, most current data layers, etc.).
Lack of equipment and software.
Lack of follow-up support for GIS use.
Lack of funding for equipment, software, consulting services, staff.
Lack of GIS and spatial analysis tools, training to use them, and time to apply to tools.
Lack of institutional support.
Lack of integration of particular skills into office/program process.
Lack of interest from management.
Lack of knowledge as to what is available/time to do it if it were.
Lack of necessary equipment; time constraints.
Lack of opportunity to practice application of new skills due to conflicting time constraints, inadequate staffing.
Lack of real-world relevance; training is too conceptual/not application-oriented.
Lack of skill and time for training; lack of training seminars with direct application to coastal resource management.
Lack of support from colleagues.
Lack of support from supervisor or management to expand job responsibilities or change the way things are done.
Lack of time and awareness of training opportunities.
Lack of time and funding.
Lack of time, and multiple needs are more urgent.
Lack of time and opportunity to apply learned tools.
Lack of time back in the office (i.e., lack of staff to do day-to-day operations that would allow me to do more advanced tasks).
Lack of time due to staffing shortage.
Lack of time to consistently use software (ArcGIS) that allows me to maintain my knowledge of it.
Lack of time to convert to the newer technology due to existing deadlines.
Lack of time to practice GIS skills and maintain proficiency.
Lack of time, insufficient staffing levels, and the ever-present conflicting demands on what little time I do have for specific tasks.
Lack of time, lack of follow-up exercises to work on after training.
Lack of training and skills in co-workers.
Lack of up-to-date and trend datasets to implement tools and application software.
Lack of use due to the fact that I'm the only one with the proper training.
Length of time between taking training and applying it—the longer the wait, the less I have retained.
Limited contact within the organization with others doing similar work.
Limited technology/equipment; constraints on time.
Limited time and staff, conflicting demands.

Application of training information and skills: What barriers or constraints have limited your ability to apply the knowledge or skills you have acquired during trainings? (continued)
Little need to convey information to others.
Mainly, with training, particularly GIS training, I find that I pick up bits and pieces that are useful to my job, but that, unless the training is quite customized, much of the material covered is not relevant to my day-to-day tasks.
Management of multiple projects: specific training may apply to only one of several ongoing projects, or training opportunity arises after project is completed.
Many others with GIS training and not enough GIS tasks.
More often than not, time; there is no organizational support.
Mostly time to properly plan and execute work since many projects are under-budgeted in terms of time. Personnel changes also.
No immediate work project that requires use of the information or skills, then knowledge fades if not used.
No local GIS office, no data layers for offshore islands that are wildlife sanctuaries, no coordination of GIS in my office.
Not always applicable to my job duties.
Not being able to afford the product.
Not enough time to continue practicing lessons learned and perform regular duties.
Other duties and responsibilities.
Other work priorities and lack of funding or available staff.
Our office has ArcView, and some tools are only available on ArcInfo.
Professional activities sometimes do not match my interest in training, or time constraints do not allow full development of a project to the level of training.
Project management in particular is difficult without buy-in/support throughout the organization.
Resistance within the organizational culture.
Software.
Software funding, appropriate project availability.
Sometimes inadequate equipment (GIS does not always work), time conflicts.
Sometimes there is a disconnect between the availability of training and an opportunity to apply that training.
Sometimes you don't have a project to apply your skills to.
Taking the time to use the new knowledge; instead falling back on old habits.
Technical abilities secondary in a management process/spin-driven society/agencies.
The major constraints are paucity of data and information that is at a resolution needed by decision-makers, lack of time to apply and sharpen skills, changing audiences needs, lack of funding for equipment and software.
The multi-purpose functions of our department.
This is a huge issue, and I wrestle with it as a trainer. I get home from training and there is no time to incorporate the new knowledge.
Time: it is hard to remember to use all the skills/tools when you are facing a deadline.
Time and funding and staffing.
Time and resource constraints.

Application of training information and skills: What barriers or constraints have limited your ability to apply the knowledge or skills you have acquired during trainings? (continued)
Time constraints, monetary limitations, and lack of technology.
Time constraints and staffing are the single most significant limiting factor.
Time constraints to apply what I've learned in a timely manner. If you don't use it, then you lose it.
Time constraints, lack of relevant data.
Time to implement; projects in direct alignment with training topic.
Time to learn and time to apply what I learn to become proficient.
Time to practice the skill after learning.
Time to practice/apply new skills before they're forgotten.
Time, tools at my actual desktop.
Timeliness of the training relative to an appropriate project; in other words, oftentimes a training opportunity is taken, but by the time a project comes up to use the training, much has been forgotten.
Timing of training (get the training after started planning a project, or after a project is complete).
Too many other responsibilities.
Too much to do, too little time, too little money.
Use it or lose it: if I don't have the time or current applications/needs to apply the training right away, then the new knowledge quickly fades.
Using the new information on a regular basis to stay proficient.
Workload prevents development of analytical tools for automation of GIS-based analyses. Hard to find people who may be able to help with shortcuts.
Would like more information on available training and venues.

RECEIVING ASSISTANCE WITH SOFTWARE

- The types of assistance that would be of high utility to the greatest percentage of respondents are providing data (65.6% said this assistance would be highly useful) and providing training on existing software (57.5%). All types of assistance appear to be useful; for each type of assistance, less than 10% said the assistance would be *not at all* useful.

A federal agency dedicated to information and technology transfer might provide the following types of assistance with software. Indicate how useful each type of assistance would be for your office. (Ranked by percentage saying the assistance would be highly useful.)					
	Percent giving the following response:				
	High	Med	Low	Not at all	Don't know
Providing data	65.6	23.7	4.0	2.8	4.0
Providing training on existing software	57.5	24.2	9.9	2.8	5.6
Providing on-site technical assistance in use of software	48.9	28.7	13.1	3.1	6.2
Developing customized applications	44.6	32.6	12.4	4.0	6.3
Evaluating existing software for coastal applications	39.7	31.0	15.8	7.1	6.4
Developing case studies detailing the uses of existing software	32.4	34.3	16.8	8.5	8.0
Inventorying available software	27.8	33.2	22.8	8.0	8.2

PARTNERSHIPS WITH AGENCIES AND ORGANIZATIONS

REASONS FOR PARTNERING

- More than 1,000 responses were given regarding reasons to partner. They most commonly pertained to economies of scale/pooling of resources and data, the ability to use expertise of personnel in another organization that is lacking in the respondent's own office, or the need to coordinate efforts. (Because of the large number of responses, they are simply summarized above rather than shown in their entirety.)

CONSTRAINTS TO PARTNERING

- The constraints to partnerships that have been the largest factors in preventing or discouraging coordination and/or partnerships with other organizations are time constraints (27.4% say this has always or often been a constraint), lack of communication with potential partner organizations (16.5% say this has always or often been a constraint), and lack of knowledge of whom to contact/talk to in the other organization (16.2% say this has always or often been a constraint).

Constraints to partnerships/coordination: To what extent has each of the following constraints prevented or discouraged your office from coordinating / partnering with other organizations? (Ranked by percentage saying the constraint was always or often a limitation.)						
	Percent giving the following response:					
	Always	Often	Some- times	Seldom	Never	Don't know
Always or often		Seldom or never				
Too much time required	1.7	25.7	46.9	14.4	7.1	4.2
	27.4			21.5		
Lack of communication with potential partner organizations	1.5	15.0	46.8	25.2	6.3	5.1
	16.5			31.5		
Do not know whom to contact/talk to in other organizations	1.0	15.2	34.6	33.9	9.8	5.4
	16.2			43.7		
Do not perceive benefit for our organization	0.7	13.3	44.2	23.3	13.3	5.1
	14.0			36.6		
Do not know which organizations would be beneficial partners	1.0	12.8	39.4	30.2	10.4	6.3
	13.8			40.6		
Insufficient knowledge of others' mission priorities	0.5	11.7	43.0	30.3	7.3	7.1
	12.2			37.6		
Lack of management support for partnership	0.7	11.0	31.2	35.1	16.8	5.1
	11.7			51.9		
Cost is too high	1.7	8.0	33.8	36.2	12.8	7.5
	9.7			49.0		
Risk and resources not shared	0.5	8.8	46.3	25.6	8.8	10.0
	9.3			34.4		
Data are not compatible	0.5	7.4	35.0	30.1	11.5	15.4
	7.9			41.6		
Unsuccessful past attempts at partnership	0.5	5.6	38.7	37.0	10.2	8.0
	6.1			47.2		
Negative experiences	0.5	2.4	35.0	41.8	12.9	7.3
	2.9			54.7		

PERSONAL PARTICIPATION IN ORGANIZATIONS AND PROFESSIONAL SOCIETIES

- The organizations or professional societies with the highest percentage of personal participation by respondents are the Coastal States Organization (23.6% participate), the American Planning Association (22.8% participate), the Estuarine Research Federation (21.7% participate), and the National Estuarine Research Reserves Association (21.7% participate).

Indicate your participation or membership in the following organizations and professional societies. (Check all that apply.) (Ranked by percentage in organization or professional society.)	Percent
Coastal States Organization	23.6
American Planning Association	22.8
Estuarine Research Federation	21.7
National Estuarine Research Reserves Association	21.7
The Coastal Society	13.7
Land Trust Alliance	12.5
American Fisheries Society	11.4
Association of State Flood Plain Managers	11.0
Society for Conservation Biology	9.9
National Emergency Management Association	8.7
National Federation of Regional Associations (Integrated Ocean Observing System)	8.7
National Marine Educators Association	8.4
American Geophysical Union	8.0
National Association of Counties	7.6
Ecological Society of America	6.8
Association of American Geographers	4.2
American Society of Photogrammetry and Remote Sensing	3.8
National States Geographic Information Council	3.4
The Oceanography Society	3.0
National Association for Environmental Education	1.5

SOURCES OF INFORMATION AND CREDIBILITY OF THOSE SOURCES

- The most commonly used mediums for exchanging information are talking with colleagues (nearly universally used at 99.5%), professional meetings and conferences (93.7%), and workshops (91.4%).
- The most credible sources of information are colleagues (74.9% consider them highly credible), private sector relationships (72.8% consider them highly credible), and Web sites (70.2% consider them highly credible).
 - Note that Web sites are considered highly credible, but Web-based discussion groups, electronic journals, and electronic magazines are not widely seen as credible.
- The survey asked about the utility of the sources of information. The sources that are ranked high in utility are colleagues (77.1% say colleagues are highly useful—far above any other source), Web sites (57.5% consider them highly useful), and workshops (53.5%).

Indicate which of the following you use regularly to get or exchange information about tools, technology, or other issues related to your job. (Check all that apply.) (Ranked by use.)	Percent
Talking with colleagues	99.5
Professional meetings and conferences	93.7
Workshops	91.4
Web sites	84.9
Trainings	82.4
Technical documents, government reports, conference proceedings	73.8
Newsletters	67.5
Scientific journals	61.0
E-mail discussion groups (list serves)	55.9
Books	54.4
Magazines	47.9
Private sector relationships	47.6
CDs	44.3
Trade publications or corporate reports	43.6
Electronic journals (e-journals) and electronic magazines (e-zines)	36.5
Web-based discussion groups	23.2

How credible do you consider each of these? (Ranked by percentage saying source is highly credible.)				
	Percent giving the following response:			
	High	Med	Low	Not
Talking with colleagues	74.9	24.8	0.2	0.0
Private sector relationships	72.8	20.9	4.0	2.3
Web sites	70.2	27.3	2.2	0.3
Professional meetings and conferences	68.0	31.1	0.7	0.2
Workshops	64.2	33.8	1.8	0.3
E-mail discussion groups (list serves)	55.1	39.7	5.0	0.3
Magazines	53.6	40.1	5.5	0.7
Books	32.1	51.3	13.2	3.4
Trade publications or corporate reports	28.2	46.4	17.7	7.7
Web-based discussion groups	24.9	60.0	11.8	3.3
Electronic journals (e-journals) and electronic magazines (e-zines)	20.3	70.4	8.7	0.5
Scientific journals	17.4	60.7	18.6	3.4
Newsletters	16.1	51.4	25.3	7.2
Trainings	15.2	52.6	28.5	3.6
CDs	12.3	60.4	22.7	4.6
Technical documents, government reports, conference proceedings	8.6	40.6	36.4	14.4

How useful are each of these to you? (Ranked by percentage saying source is highly useful.)				
	Percent giving the following response:			
	High	Med	Low	Not
Talking with colleagues	77.1	22.2	0.7	0.0
Web sites	57.5	35.4	6.9	0.3
Workshops	53.5	42.7	3.6	0.3
Professional meetings and conferences	49.9	45.4	4.2	0.5
Private sector relationships	43.7	38.9	15.0	2.4
Electronic journals (e-journals) and electronic magazines (e-zines)	39.1	50.9	9.4	0.5
E-mail discussion groups (list serves)	36.9	46.2	15.6	1.2
Books	34.5	46.9	14.3	4.3
Magazines	34.3	43.7	19.8	2.2
Trade publications or corporate reports	16.7	41.0	31.0	11.4
Web-based discussion groups	16.0	48.1	30.8	5.1
Trainings	14.6	37.1	38.8	9.5
Newsletters	9.5	41.7	36.4	12.4
Scientific journals	9.3	54.0	33.2	3.5
Technical documents, government reports, conference proceedings	8.9	30.0	35.6	25.6
CDs	7.6	51.6	35.2	5.6

TARGET AUDIENCES

- The survey asked respondents if there are any groups that are particularly hard to engage. Many respondents listed types of people (e.g., African-Americans, shoreline homeowners, teenagers); others listed individual agencies or entities (e.g., NOAA, the U.S. Army Corps of Engineers) or government agencies in general. Also commonly listed were particular economic groups, such as commercial fishermen. The full tabulation is presented below.

- The survey also asked about barriers and constraints to connecting with target audiences. Time and staffing are most commonly named, although apathy/lack of interest, lack of skills, and lack of equipment (e.g., not enough video conference sites, not enough Internet access for the target audience) are also prominent. (The results to this question are summarized; no table is shown.)

Are there groups that are particularly difficult to engage?
a) State legislators; b) Hispanics and other minorities; c) retirees, newly relocated from outside of Florida
Absentee homeowners; average citizens
African-Americans
Agricultural community
Agricultural community, local officials
Agriculture and development communities
Agriculture industry; township governments
All involved with planning
Although insurance agents are not our target audience, their lack of knowledge has a negative statewide effect
Army Corps of Engineers, Soil and Water Conservation Districts, consulting engineers, planners, landscape designers
ATV users
Building industry
Business community
CalTrans, Corps of Engineers; agricultural groups at state, local, and federal level
CCA
Charter boat guides
Citizens
Citizens that are not angry or concerned about a topic
Coastal property owners
Coastal stakeholders
Coastal tourism industry members and managers
Commercial and recreational fishermen, NOAA higher level staff, Natural Sea Grant Office
Commercial fisherman and citizens sometimes believe our bureau is regulatory when it is not
Commercial fishermen

Are there groups that are particularly difficult to engage? (continued)
Commercial fishermen
Commercial fishermen
Commercial fishermen
Commercial fishermen (aren't at home to attend meetings); tribal governments
Commercial fishermen because of their distrust for managers
Commercial fishermen, hunters, campers
Commercial fishermen, private landowners
Community action groups
Community: it is difficult to achieve citizen's participation
County governments
County governments and local and state elected/appointed officials
Department of Defense
Department of Marine and Wildlife Resources [American Samoa?]
Departments of public works, some municipal boards
Developers
Developers, city and county planners, "non-environmentalists," politicians
Developers, farmers, people who watch <i>Survivor</i> (John and Jan Doe)
Developers, land planners, elected officials
Developers, municipal offices
Developers, politicians, teenagers, vegans
Developers/uninterested homeowners/overworked town officials
Due to the shortness of our organizational existence, we are still trying to more closely engage multiple audiences
Elected and appointed officials
Elected officials
Elected officials; developers (although this has improved substantially recently)
Enforcement, both state and federal; groups focused on non-consumptive activities
Environmental groups
Environmental groups that support the office or a particular project
Environmental organizations could be great partners, but, more and more, they seem to focus on the negative aspects
EPA HQ and Regional NPS staff can be difficult to engage and rarely perform their share of the workload
FEMA
Financial sector
Fishermen and fisheries managers
Fishermen, broad statewide audiences with huge diversity
Fishermen, local level stakeholders, high-level government officials
Fishermen, other government departments (notably fisheries and natural resource departments)
Fishermen/other marine trades groups
Fishing (recreational and commercial)/extractive industry
Fishing community on particular topics
Foreign (non-US) groups; we struggle to understand the barriers
General public
General public
General public

Are there groups that are particularly difficult to engage? (continued)
General public unaware or unsympathetic for the need for responsible stewardship of the environment
General public, including residents, tourists, school children, etc.
General public—getting them to attend meetings about programs or rules
General public—hard to engage in a manner that results in tangible actions
Groups that have organized to oppose a specific issue
Groups that have widely varying agendas
Hard-core environmentalists
High school aged kids
I'm a GIS guy, so I don't do a lot of partnering, but getting the US Army Corps of Engineers to release data, return calls, etc., is tough
In a general sense, just people who do not feel the topic is important or the information will not support their cause
Independent user groups without an organizational structure
Indigenous communities
Individual homeowners
Industrial interests with drastically different missions, and Native interests where economic development is a priority
Industry groups: commercial fisheries and recreational fishing groups, developmental groups
Industry sectors, such as shipping/transportation
Industry, developers
Institutional special interest groups
Interest groups, special interest groups, landowners, general public
It is hard to engage the unorganized stakeholder groups (example: recreational fishermen, coastal landowners, etc.)
K-12 teachers
Land developers
Land developers and county governments
Land trusts, mostly volunteers and they have high turnover rates
Landowners
Landowners and developers who resist land-use regulation and seek ways to dodge environmental protection
Large commercial homebuilders, universities, extension programs
Large, poorly funded government agencies
Law enforcement
Legislators
Legislators and their staff
Lending industry, real estate
Limited time from local government officials in more rural coastal areas—they often have to do A-Z
Local citizens and politicians
Local commercial and recreational fishermen
Local development NGOs
Local elected officials
Local elected officials, closest local government's planners
Local fishermen, government officials
Local governments
Local governments

Are there groups that are particularly difficult to engage? (continued)
Local governments
Local governments and NGOs
Local governments, elected officials, NOAA's Office of Ocean and Coastal Resources Management, National Marine Fisheries Service
Local governments, sometimes environmental groups/nonprofits that don't have enough staff/time/resources
Local municipalities and landowners
Local officials
Local planning and zoning boards
Local planning committees and emergency managers
Local recreational groups, and the general public who are supportive but not active
Local, middle-class residents that are not involved in nature-based activities
Locally elected officials, residents inland of the coastal zone
Low-income groups, schools, the elderly
Major land developers, elected municipal and county officials
Management
Mayors
Minority population (Hispanics): This group has other priorities that they are focused on
Municipal governments
Municipal water system managers—a large community over an extensive regional domain
Municipalities
Native American groups from local area: Tlingit, Hoonah, Tagish-Carcross, First Nations
Native corporations
Natural resource managers are often too secretive to effectively work with community planners
NOAA
NOAA CSC in a truly collaborative manner—staff seem to have limited time engaging in joint project work
NOAA ERD group; lack of interest in local governmental agencies
NOAA Fisheries, US Army Corps of Engineers' Regulatory Branch
North Carolina citizens
Officials in one coastal county; officials in some of the coastal municipalities; some relevant state agencies
Other federal agencies
Other sections within our agency
Other state agencies, especially MDE because of past interactions
Other state or local governing agencies
Our target audience is the public at large so I don't know...9th graders?
People and organizations that perceive government agencies as untrustworthy and unnecessary
People involved in the fishing industry
Personnel within the state agency in which we are housed
Power boaters
Private individual shore land property owners; manufacturers and distributors of docks and piers
Private landowners who are suspicious of government involvement in their efforts
Private owners of large properties; higher strata of elected officials
Private sector
Private sector developers, engineers, and development consulting firms

Are there groups that are particularly difficult to engage? (continued)
Private sector, public sector with strict mandates, and minorities
Private sector—far more outcome-oriented
Professional design engineers
Property owners; elected officials
Public
Public
Public accessing the coast
Public outreach opportunities
Public outside park boundary
Realtors and developers don't want to hear about environmental sensitivity and coastal hazards
Realtors, lenders
Recreational clam diggers, crabbers, recreational users of living estuarine resources, off-site/out-of-state
Religious and non-emergency groups
SCUBA spear fishermen, landowners
Small businesses
Small marine businesses, coastal property and homeowners associations
Small user groups—hard to identify and typically little-to-no organization
Some (but not all) local farmers
Some agencies often show a lack of flexibility toward other goals due to their own constraints
Some federal agencies (e.g., DOD)
Some groups are difficult to engage primarily because the group's objectives and/or mission are different than ours
Some state agencies, some federal agencies
Sometimes difficult to get development rights organizations and conservation organizations in the room together
Sometimes fishing groups are difficult to engage due to time constraints/distance/financial costs to fishermen
Sometimes it is difficult to overcome some groups' fear of government in general
State agencies
State legislators; homeowners
State legislators—some are so poorly educated they don't understand the basics
State regulatory agencies due to lack of staff
States—they are all organized differently, have their own priorities and constraints
SUNY College of Environmental Science and Forestry
Supervisors and administrators (politicians)
Surfers—they seem to be following a policy of trying to stop all coastal construction without consideration
The general public
The indifferent
The large majority of folks in the middle; those who don't/can't attend public forums; development community
The legislature
The more local a group is, the harder it is to engage them and the more you need an introduction to them
The non-special-interest public
Those who have been alienated from the agency mission/activities in the past and continue a bias against all agencies

Are there groups that are particularly difficult to engage? (continued)
Those whom we must regulate
Those with a fundamental disagreement with our mission
Those with a negative opinion of government
Tourists, second homeowners/part-time residents, the agriculture community
Tribal governments
Tribal governments, animal-rights organizations
US Coast Guard operations (although USCG research activity has been very supportive)
Very small towns/cities that don't have enough staff to partner/apply for grants, etc.
Volunteer public safety agencies—fire, rescue/state governmental agencies
We have difficulty attracting participation of the people in our local region; teenagers from all areas
Widely dispersed groups (e.g., fisheries community) pose challenges, but can be engaged eventually
Working poor

ON-LINE DISTANCE LEARNING

- Respondents are about evenly divided in whether they have ever participated in on-line distance learning—44.0% have participated, but 56.0% have not. Nonetheless, more than two-thirds of respondents (68.9%) have a high or medium interest in on-line distance learning.

Have you ever participated in on-line distance learning (other than mandatory training on topics such as safety or information technology security)?	Percent
Yes	44.0
No	56.0

Indicate your level of interest in on-line distance learning.	Percent
High	24.3
Medium	44.6
Low	25.5
None	5.5

DEMOGRAPHIC AND AGENCY/ORGANIZATION DATA

- Organizations represented in the survey are typically of fewer than 30 employees: 66.2% of respondents indicated that fewer than 30 employees work in their office.
- The most typical roles/responsibilities of respondents are program or site administration/management (19.3% say this is their role), natural resource management (17.4% say this is their role), planning (14.0% say this is their role), or education and outreach (11.4% say this is their role).
- The majority of respondents (60.1%) have worked in a coastal resource management position for less than 10 years. Another tabulation shows the length of time respondents worked in their current position. A related question found that staff turnover was highly challenging for 17.4% of the organizations in the survey. For more than half of the organizations (54.6%), staff turnover is a medium to high challenge.
- Locational information regarding the organizations represented in the survey is also tabulated, first by states, then aggregated into regions.

About how many employees work in your office?	Percent
100 employees or more	8.9
90-99 employees	0.5
80-89 employees	0.2
70-79 employees	1.2
60-69 employees	2.9
50-59 employees	5.5
40-49 employees	4.3
30-39 employees	7.9
20-29 employees	11.3
10-19 employees	22.4
1-9 employees	32.5
Don't know	2.4

Which of the following best represents your current position's role and responsibilities? (Check only one.) (Ranked by percentage saying the role and responsibilities represent their current position in their organization.)	Percent
Program or site administration/management	19.3
Natural resource management	17.4
Planning	14.0
Education and outreach	11.4
Information technology (GIS, remote sensing, or related field)	9.1
Emergency management	8.1
Research	8.1
Permitting and regulatory enforcement	6.0

How many years have you worked in a coastal resource management-related position?	Percent
Over 25 years	8.9
21-25 years	5.4
16-20 years	13.1
11-15 years	12.6
6-10 years	19.7
5 years or less	40.4

How many years have you been in your current position?	Percent
Over 25 years	3.6
21-25 years	2.1
16-20 years	6.2
11-15 years	9.3
6-10 years	23.4
5 years or less	55.4

How much of a challenge does staff turnover present to your office?	Percent
High	17.4
Medium	37.2
Low	37.7
Not at all	7.1
Don't know	0.7

In what state or territory is your office located?	Percent
Alabama	4.6
Alaska	6.7
California	8.5
Connecticut	1.6
Delaware	2.1
Florida	6.9
Georgia	4.6
Hawaii	3.2
Illinois	0.2
Louisiana	0.9
Maine	5.1
Maryland	4.4
Massachusetts	2.1
Michigan	2.5
Minnesota	0.7
Mississippi	2.5
New Hampshire	0.9
New Jersey	2.3
New York	3.4
North Carolina	3.4
Ohio	2.8
Oregon	4.1
Pennsylvania	1.8
Rhode Island	1.6
South Carolina	7.6
Texas	3.2
Virginia	2.8
Washington	3.7
Wisconsin	0.9
Washington, D.C.	1.1
American Samoa	0.7
Commonwealth of Northern Mariana Islands	0.2
Guam	0.7
Virgin Islands	0.9
Puerto Rico	0.9

Regions in which offices are located.	Percent
New England	14.7
Mid-Atlantic	12.6
Southeast	15.6
Caribbean	1.8
Gulf of Mexico	18.2
Great Lakes	9.0
West Coast	23.0
Pacific Islands	4.8

ABOUT RESPONSIVE MANAGEMENT

Responsive Management is a nationally recognized public opinion and attitude survey research firm specializing in natural resource issues. Its mission is to help natural resource agencies and organizations better understand and work with their constituents, customers, and the public.

Utilizing its in-house, full-service, computer-assisted telephone and mail survey center with 45 professional interviewers, Responsive Management has conducted more than 1,000 telephone surveys, mail surveys, personal interviews, and focus groups, as well as numerous marketing and communications plans, need assessments, and program evaluations on natural resource issues.

Clients include most of the federal and state natural resource, outdoor recreation, and environmental agencies, and most of the top conservation organizations. Responsive Management also collects attitude and opinion data for many of the nation's top universities, including the University of Southern California, Virginia Tech, Colorado State University, Auburn, Texas Tech, the University of California—Davis, Michigan State University, the University of Florida, North Carolina State University, Penn State, West Virginia University, and others.

Among the wide range of work Responsive Management has completed during the past 20 years are studies on how the general population values natural resources and outdoor recreation, and their opinions on and attitudes toward an array of natural resource-related issues. Responsive Management has conducted dozens of studies of selected groups of outdoor recreationists, including anglers, boaters, hunters, wildlife watchers, birdwatchers, park visitors, historic site visitors, hikers, and campers, as well as selected groups within the general population, such as landowners, farmers, urban and rural residents, women, senior citizens, children, Hispanics, Asians, and African-Americans. Responsive Management has conducted studies on environmental education, endangered species, waterfowl, wetlands, water quality, and the reintroduction of numerous species such as wolves, grizzly bears, the California condor, and the Florida panther.

Responsive Management has conducted research on numerous natural resource ballot initiatives and referenda and helped agencies and organizations find alternative funding and increase their memberships and donations. Responsive Management has conducted major agency and organizational program needs assessments and helped develop more effective programs based upon a solid foundation of fact. Responsive Management has developed Web sites for natural resource organizations, conducted training workshops on the human dimensions of natural resources, and presented numerous studies each year in presentations and as keynote speakers at major natural resource, outdoor recreation, conservation, and environmental conferences and meetings.

Responsive Management has conducted research on public attitudes toward natural resources in almost every state in the United States, as well as in Canada, Australia, the United Kingdom, France, Germany, and Japan. Responsive Management routinely conducts surveys in Spanish and has also conducted surveys and focus groups in Chinese, Korean, Japanese, and Vietnamese.

Responsive Management's research has been featured in most of the nation's major media, including CNN's *Crossfire*, ESPN, *The Washington Post*, *The Washington Times*, *The New York Times*, *Newsweek*, *The Wall Street Journal*, and on the front page of *USA Today*.

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