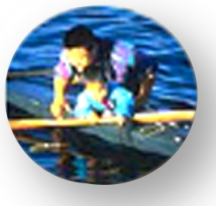
Town Meeting on America's Coastal Future:
Using the Internet to Promote Coastal Stewardship



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Background

Coastal regions are economically vital and biologically diverse. More than half the people in the U.S. live and work within fifty miles of the coast. Maintaining and improving the quality of life in coastal regions as well as economic health and ecological diversity is the preeminent challenge for coastal stewards.

National Dialogues

During 1998, the International Year of the Ocean, leaders from every region and economic sector of the U.S. discussed the future of the coasts, and specifically steps that can be taken to strengthen coastal stewardship in the U.S. These discussions occurred at: congressional hearings[1]; forums organized by The Heinz Center, an independent center for the study of science, economics and the environment[2]; a meeting on ocean governance organized by the University of Delaware and the National Ocean Service[3]; and at the National Oceans Conference, the highest-level and most successful national gathering of ocean and coastal leaders ever convened.[4]

Building on these discussions, the National Ocean Service of the National Oceanic and Atmospheric Administration and a number of other national organizations that had begun to work together and to share their views and visions, continued to explore coastal issues beyond the Year of the Ocean framework. These discussions became known as the National Dialogues on Coastal Stewardship. The National Dialogues brought together diverse partners (box below) to focus on the most important coastal and ocean issues. The intent was to employ systematic approaches and interactive problem solving, and in so doing, to build partnerships and a sense of community among stakeholders. The idea was, through dialogue, to attain tangible outcomes that might not be achieved in any other way.

National Dialogue Partners

American Association of Port Authorities
Boat Owners Association of the United States
Center for Marine Conservation
The Coastal Society
Coastal States Organization
Consortium for Oceanographic Research and Education
Pacific Coast Federation of Fishermens' Associations
National Fisheries Institute
National Ocean Industries Association
National Ocean Service/NOAA

The National Ocean Service facilitated the National Dialogues. The NOS coordinated several meetings of the partner organizations, and implemented activities at their behest and

[1] U.S. House of Representatives. Oceans Act of 1998. Report of the Committee on resources, 105th Congress, 2nd Session. House report 105-718, September 15, 1998. Washington, DC: U.S. Government Printing Office.
U.S. Senate. 1997. Oceans Act of 1997. Report of the Committee on Commerce, Science and Transportation, 105th Congress, 1st Session. Senate report 105-151, November 8, 1997. Washington, DC: U.S. Government Printing Office.

[2] The Heinz Center. 1998. Our Ocean Future. Washington, DC: H. John Heinz III Center for Science, Economics and the Environment. Available on-line at http://www.heinzctr.org

[3] National Ocean Service. 1998. The Stratton Roundtable. Proceedings of a May 1, 1998 workshop organized by the National Ocean Service and the Center for the Study of Marine Policy, University of Delaware. Available on-line at http://state-of-coast.noaa.gov/natdialog/

[4] National Oceanic and Atmospheric Administration. 1999. National Ocean Conference: Oceans of Commerce, Oceans of life. Proceedings of a June 11-12, 1998 conference convened in Monterey, CA. Washington, DC: NOAA Office of Public and Constituent Affairs.

National Dialogue Activities

June-October 1998	Formative discussions
November 1998	Panel at Oceans Conference
January 1999	Coastal trends symposium
February 1999	Coastal Futures 2025 vision statement
March 1999	Forum with coastal managers
April - June 1999	Develop Web site for Internet town meeting
July 1999	Roundtables at Coastal Zone 1999 Conference Debut Internet town meeting
August - December 1999	Outreach campaign/ promote Internet town meeting
November 1999	CD distributed to educators

with their oversight and direct engagement (box above).

NOS facilitated these activities in the spirit of partnership. It did not in any sense direct them. All of the products from the National Dialogues remain available on-line at:
http://state-of-coast.noaa.gov/natdialog/

Coastal Futures 2025

The most far-reaching endeavor undertaken by the National Dialogue Partners was an effort to develop a comprehensive set of vision statements concerning America's coastal future (Appendix A), and then to disseminate the vision and promote discussion about it. The National Dialogue Partners proposed a vision of the future because they believed that:

- Working together and having common goals leads to better understanding;
- A vision of the future helps each of the partners become a more informed and effective coastal steward;
- A vision enriches our understanding of one another's values, and provides a reference to be consulted when economic and environmental interests need to be balanced.

The vision was developed through a sequence of activities that included a national conference on coastal trends, and a national forum on coastal stewardship. Information from these activities was relied on by the partner organizations as they discussed and drafted vision statements, including goals and objectives, addressing each of eleven major coastal themes (box below).

Coastal Futures 2025 Themes

Coastal Hazards
Community Heritage
Energy and Minerals
Environmental Quality
Food Supply
Population and Settlement
Public Awareness
Recreation and Tourism
Responding to Change
Technology
Waterborne Commerce

[5] Major products include and are available on-line as PDFs at http://state-of-coast.noaa.gov/natdialog/ (1) Cicin-Sain, Biliana, Robert Knecht and Nancy Foster. 1998. The Stratton Roundtable. Proceedings of a May 1, 1998 Workshop. Silver Spring, MD: National Ocean Service/NOAA. (2) Cicin-Sain, Biliana, Robert Knecht and Nancy Foster. 1999. Trends and Future Challenges for U.S. National Ocean and Coastal Policy. Proceedings of a January 22, 1999 workshop. Silver Spring, MD: National Ocean Service/NOAA. (3) National Ocean Service. 1999. Forum on the Future of Coastal Stewardship. Proceedings of a March 22, 1999 workshop. Silver Spring, MD: National Ocean Service, and (4) products from the Internet Town Meeting on America's Coastal Future such as this review paper and appendices (available on-line at: http://coast2025.nos.noaa.gov).

The partners defined a vision as a clear and specific description of a desired outcome. The year 2025 was set as the time horizon because it represented a time as far into the future as has elapsed since the onset of comprehensive coastal planning and management. The partners expressed their vision in terms of national goals and objectives. A goal is an aim, an end, the result, achievement or outcome toward which effort is directed. Goals need not be quantifiable, nor achievable in a defined time frame. An objective is a quantifiable, definable target or outcome. Achieving objectives contributes to reaching goals. While consensus—meaning the absence of disagreement—was not a specific goal, the partners found overwhelming agreement concerning their vision for the future.

The National Dialogues partners viewed their vision as a remarkable development because of its content, its comprehensiveness and its breadth, and the extent of agreement that cut across geographic regions and economic interests. Even though the vision, goals and objectives were proposals only, for discussion, the National Dialogues partners were interested in disseminating their vision and promoting discussion about it, because of its widespread implications.

NOS stepped up to this opportunity to inform the public about coastal conditions and to energize companies, organizations and even individuals to be better informed coastal stewards. The major means for this was the Internet Town Meeting on America's Coastal Future.

Internet Town Meeting

The Internet Town Meeting was an interactive Web site constructed around the National Dialogues partners' Coastal Futures 2025 vision statement. On-line participants in the Internet Town Meeting found the vision and goals developed by the National Dialogues partners and viewed other background, including coastal trend information and detailed objectives correlated with the goals. They participated by responding to critical issues in an on-line ballot, and by providing written comments, which were available to all. The results of the town meeting were instantly available on-line. Interested participants could check back from time to time and review the progress of the dialogue on the issues of greatest interest, and many did. Participants in the town meeting could also download key documents (in PDF format), including a definitive paper on coastal trends and also a text version of the vision statement. About one in six visitors to the Web site downloaded one or more documents.

A three-tiered communications strategy was devised to publicize the Internet town meeting and to explain the benefits of participating. The three tiers were the National Dialogue partners and their members, other national and regional stakeholder organizations representing a variety of coastal interests, and the general public—anyone who lives in, uses or is interested in the coastal and ocean environment. The essence of the communications strategy was to get the word out through established communications channels, and then to depend heavily on personal interest and voluntary cooperation.

The Internet town meeting employed state of the art methods including, for example, interactive participant response methodology, which turns the Internet into an on-line focus group. These concepts and methods are available for use in other projects.

All of the partner organizations were interested in learning from the dialogue about alternative visions, how issues are perceived, and how they might be addressed. With the Internet town meeting, the partner organizations found new ways to listen to the concerns of the nation.

Initial communications efforts included:

- Exhibits at professional and regional meetings, including the Coastal Zone 99 conference (July 1999), activities organized by state coastal management programs during Coastweeks (September/October1999), and also regional meetings of the National Science Teachers Association (October/November 1999).
- Articles in national and regional publications and links with other organizations' Web sites.
- Targeted mailings to state coastal program outreach coordinators, Sea Grant educators and extension leaders, educators including regional coordinators for the National Ocean Sciences Bowl, and others

Evaluation of Initial Communications Efforts and Town Meeting

The town meeting and initial outreach effort were evaluated after the first six weeks. Those who participated considered the strengths of the town meeting to be the effort to reach a broad audience through the Internet and the usefulness of the information. The material provoked thought about coastal stewardship. The corresponding weakness was that sharing ideas in an on-line forum took time and effort.

Another concern that came to light was a disconnect between the content and the audience. The comprehensive and possibly pedantic design was more appropriate to a professional than a grass roots audience. Yet, some professionals came away frustrated because they felt that the material was too general for their purposes. Educators and grassroots participants, in contrast, were more likely to learn about coastal stewardship through their participation.

Another perceived deterrent was the absence of any particular incentive for participating. Taking the time to register views did not result in any specific consequence. There was little individual feedback or inducement to participate other than self-motivation and interest in coastal stewardship.

There were technical barriers to participation as well. Some potential participants found their computers were slow to handle the graphics and JAVA-based programming in any convenient timeframe. An optional page that requested demographic information may have been a deterrent for some participants.

Finally, a few users took the time to comment on a perceived bias in the proposed vision statements of the National Dialogues partners. The bias might best be described as a belief in the usefulness of planning and decision-making based on sound science, and a slight tilt in favor of environmental and community values such as those favored by the "slow growth" movement and exemplified in the Clinton-Gore Administration's Livability initiatives.[6]

Revised Communications Effort

Two revisions were made to the outreach effort as a result of the initial assessment.

First, outreach efforts were focused more directly on educators and students, because this group appeared to be the most interested and self-motivated to participate in the Internet town meeting. Specifically, teachers could require that their students participate in the town meeting as a learning and civic experience. This did indeed turn out to be the case. By encouraging participation at the high school and college level, the potential barriers of too much time required and absence of motivation to participate were lessened.

Second, a CD-ROM version of the town meeting was prepared and distributed, mostly to educators. The CD-ROM version was of course not interactive, but it made it much easier to download information—an important consideration in the classroom. For those who used the CD-ROM version and wished to register their views on the issues and provide comments, NOS provided a return address and entered all feedback received (this service was not widely used, but it was used).

The revised outreach efforts more effectively reached potential participants. Table 1 documents the usage of the Internet town meeting from its launch in July 1999 through the conclusion of the outreach effort at the end of December 1999.[7] During this period, information about the town meeting was delivered to more than 3,000 individuals. Over 200 of the CD-ROMs were provided directly to classroom teachers in response to their requests. "Hot links" were established from many Web sites to the Internet town meeting. In all, more than 500,000 interested individuals were made aware of the Internet town meeting.

	August 23, 1999 (Week 6)	September 27, 1999 (Week 11)	October 4, 1999 (Week 12)	November 29, 1999 (Week 20)	December 31, 1999 (Week 24)
Total Visitors	611	3,951	4,079	5,167	5,528
Repeat Visitors	153	574	606	911	996
Average Daily Visitors	29	101	96	79	72

Table 1: Cumulative participation in the Internet Town Meeting

[6] cf. Executive Office of the President. June 9, 1999, Building Livable Communities for the 21st Century: A Report from the Clinton-Gore Administration. Washington, DC: U.S. Government Printing office.

[7] These data are derived from a Web access statistical package that can both understate and overstate actual Web usage. The number of actual meeting participants is considerably higher. Examples of introduced statistical errors include (a) counting all users who enter through an intermediate service such as AOL in a given time period as one user (resulting in an undercount), and (b) counting a user who spends in excess of a given period of time on the site as more than one user (resulting in an overcount). These data are, however internally consistent. Therefore, they are most useful for trend analysis.

Results from the Internet Town Meeting

The results of the town meeting provide valuable insight into the concerns and desires of all for America's coastal future. The town meeting was conceived as a vehicle for dialogue and learning. It was not a data gathering exercise, nor was it an effort to build consensus around positions. The information and opinions found on the Web site are those of individuals and not necessarily the views of any of the sponsoring organizations. Written comments (over 200 comments were received) from individuals are anonymous.

The ballot on the critical issues was intended to stimulate communication. It was not designed to be a statistically valid polling instrument. While the results are not statistically valid for the population of the country at large, they are internally consistent for the population that participated in the town meeting.

The types of statistical analysis conducted were appropriate to the kinds of data collected—primarily nominal and ordinal data. Frequency distributions were prepared with the quantitative data and displayed in bar graphs. Statistical testing (e.g. chi-square contingency analysis) that would establish a relationship between the results from the sampled population as compared to the results for the general population was not conducted because of limitations in the data acquisition design, especially allowing participants to respond to any number of issues in any number of theme areas. The resulting inconsistencies in numbers of responses make it difficult to avoid sparcity constraints (too many response categories with few observations would tend to bias the analysis of the results). Any thought of conducting more sophisticated statistical analysis on the participants and the results was abandoned when the demographic information on participants was suppressed, early in the outreach effort.

From July-December 1999, the period when the Internet town meeting was actively promoted, more than seven thousand visited the Web site (Figure 1). Of these seven thousand, more than six hundred (about 8 percent) participated in the town meeting directly by registering their views through the automated ballot system (5 percent), or by providing a text comment on a matter of special interest or concern (2.5 percent). No single critical issue on the ballot attracted more than 200 votes and these votes were usually

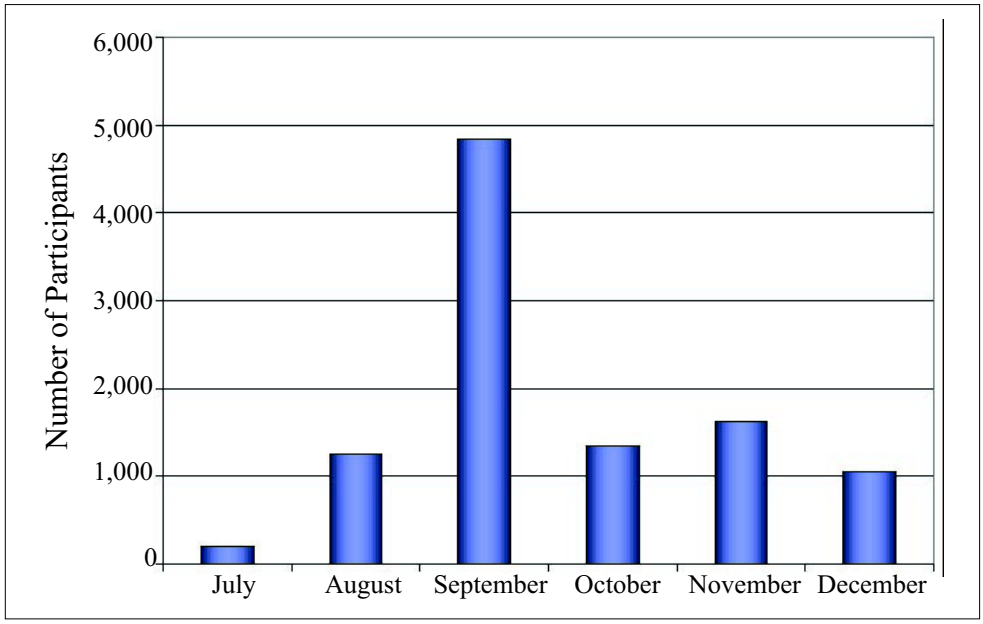

Figure 1: Coast2025 Web site monthly usage[8]

distributed among five potential responses. In contrast to the relatively low rates of participation in the interactive portions of the Web site, over 1500 people (20 percent) downloaded information (either the complete vision statement or information about coastal trends, or both) from the town meeting. The relatively large number of downloads is particularly striking, as it implies that people valued the information from the town meeting; they wanted to share it with others, or refer to it later.

Demographic Analysis of Meeting Participants

Demographic information is available on about 400 of the 7,000 who visited the Web site.[9] The ages of participants fit a normal distribution (Figure 2). However, the data in the figure do not reflect the effort that was made subsequently to engage students in the Internet town meeting. Therefore, high school and college students are likely to have participated in the town meeting to a significantly greater extent than indicated by the sample of participants who provided demographic information.

Affiliation of Participants

Most of the participants were affiliated with federal, state or local government, or were students or teachers (Figure 3). Nevertheless, participants in the Internet town meeting came from a wide variety of backgrounds. Moreover, grass roots and recreational participants probably increased significantly after the demographic

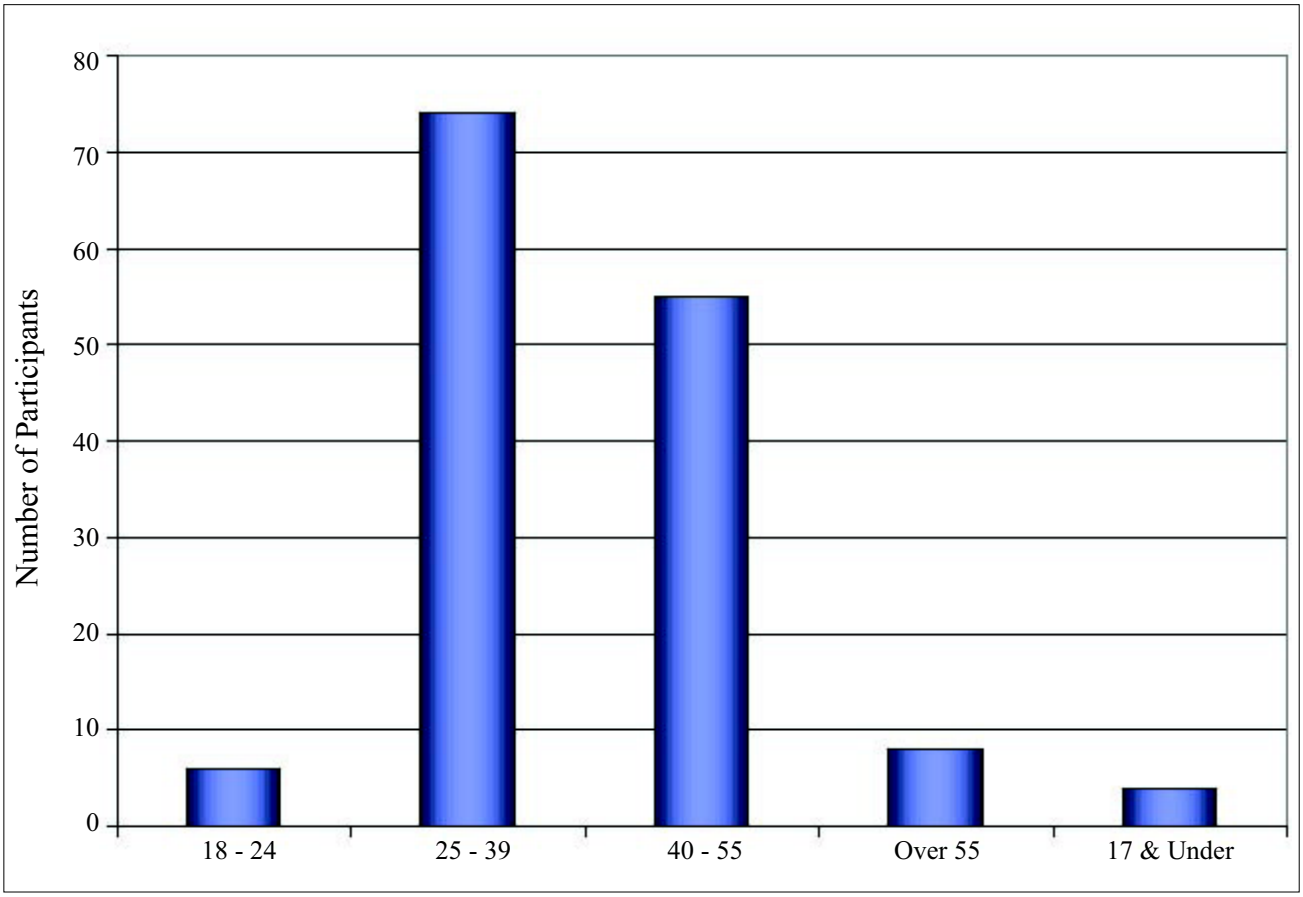

Figure 2: Age Distribution of Participants

[8] Comments in footnote 7 apply to these data as well.

[9] During the first two months of the Internet town meeting, a demographic window appeared on the Web site immediately after the home page and before entering the substantive/interactive portions of the Web site. Completing the demographic information was entirely voluntary. The demographic window was suppressed in the course of reviewing early outreach efforts, as it emerged that providing demographic information to a government Web site might be a potential disincentive to participate in the Internet town meeting.

information was obtained as the result of the outreach efforts that continued, and that included an article in a magazine with a national circulation of over 500,000 (BOAT/US Magazine).

Participants in the Internet town meeting came from every coast of the U.S. and most of the coastal states. The town meeting also attracted participants from at least 56 countries, even though it focused on U.S. coastal stewardship.

Quantitative and Qualitative Results

The results of the Internet town meeting are summarized in Table 2. They are presented in context, with the vision statements and goals to which they pertain. The results are of two types. First, participants responded to critical issues by means of a ballot. This produced quantitative measures of perceptions of the issues and potential responses. These results are conveyed in a series of bar graphs.

Participants in the town meeting had the opportunity to respond to one topic or even just one issue within one topic; they did not have to respond to all topics or all issues within a topic. This flexibility resulted in considerable variance in the participation rates. The most popular topics were population and settlement patterns, coastal hazards, and environmental quality. The topics that attracted the fewest participants were responding to change, food supply, and water-dependent commerce. The relative popularity of the topics reflected outreach efforts to some extent. The coastal hazard topic boomed in popularity in September 1999, for example, when major hurricanes tracked up the East Coast and NOAA featured the Internet town meeting on its home page. The lower participation in some of the other topics reflects in part the lack of outreach efforts targeted to potential participants with those interests; this in turn reflects the degree of engagement of the partner organizations.

The second kind of result is a set of written comments provided by individuals, as a result of their reading the vision statements, the goals and objectives, and other information on the Web site. The comments are remarkable for their insight and diversity, reflecting highly personal experiences and concerns. Selections from the complete comment database appear in Appendix B. The complete comment database remains accessible on-line (http://coast2025.nos.noaa.gov).

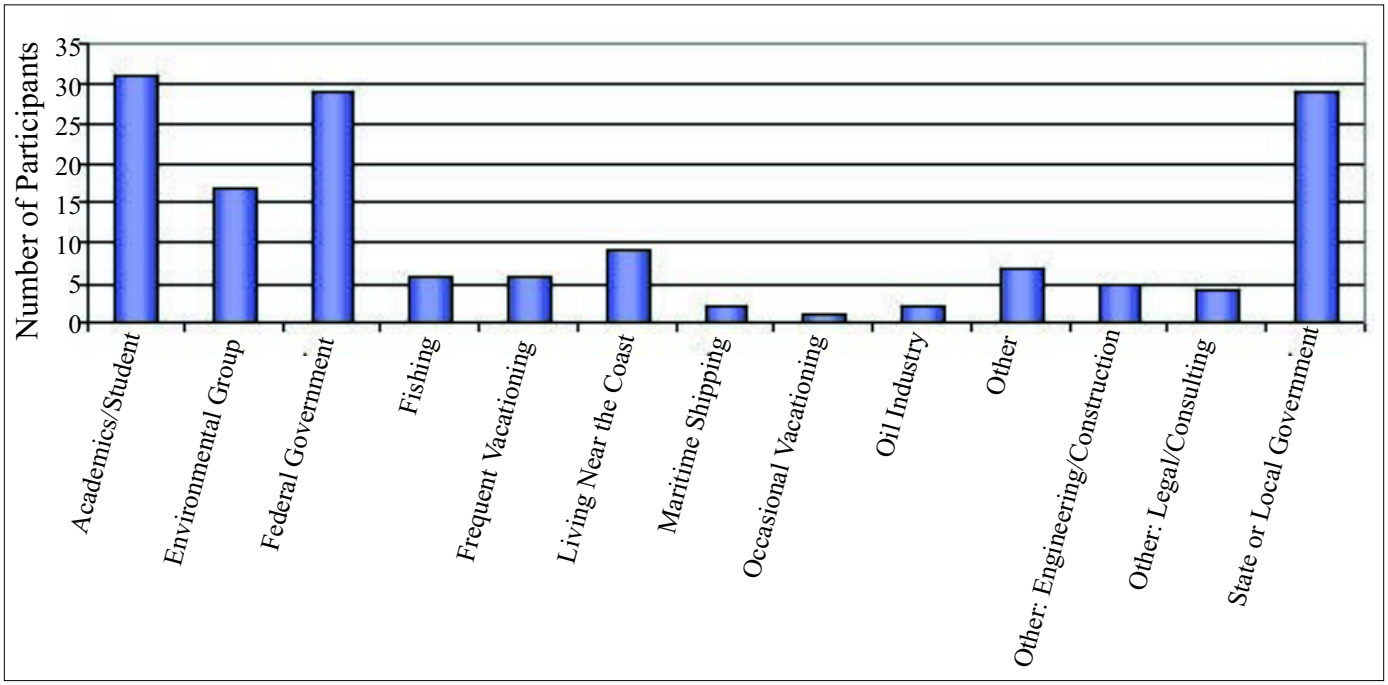

Figure 3: Affiliations of Participants

National Implications for Coastal Stewardship

Table 2 summarizes the results of the Internet town meeting by topic area. The table reflects the author's effort to integrate and synthesize both the quantitative and qualitative results from the Internet town meeting. Since the data are a set of opinions and perspectives, others might draw somewhat different inferences and insights.

Designed as a forum for insight and understanding, the Internet town meeting was also a work in progress, and a test-bed or model for using the Internet to reach stakeholders and constituents. A number of lessons were learned from the process of developing and conducting the Internet town meeting, which may help coastal stewards and others who seek to use the Internet to expand public participation in their activities. Moreover, as the number of participants increased, the Internet town meeting became a rich trove of perspectives and ideas about coastal stewardship.

Power of the Internet for Disseminating Ideas and Promoting Grass Roots Interest and Involvement

The Internet town meeting successfully applied the Internet to promote widespread discussion of ideas. One innovation was a custom programming module to conduct on-line balloting, with instantaneous, on-line display of the results. This may be adapted for use in other applications.

A particularly striking development was the number of times that Web users downloaded documents from the Internet town meeting, either the vision statement or a comprehensive report of coastal trends. Fully one in six visitors to the Web site downloaded one of these documents for future reference. This type of design has an indisputable power for making technical information more readily available and accessible to the general public.

After the Internet town meeting was launched, several potential participants complained that the heavy graphics content and use of Javascript programming made the Web site cumbersome to download via modem. A schoolteacher cited the slow download as a factor in not including the Internet town meeting in the school's environmental science curriculum. Future efforts of this sort might minimize non-essential graphics and sophisticated programming, and possibly offer an option of more simple designs and downloads for those with less sophisticated computers.

Another consideration for future endeavors is the importance of knowing your audience and designing the Web site for that audience. As previously explained, some professional coastal stewards anticipated more thought-provoking content from the Internet town meeting, while grass roots participants found the material on the Web site to be somewhat dense. The broad content of the Internet town meeting was intended to reach a broad spectrum; the lesson learned is that it may be better to tailor content for specific audiences. A future effort to reach the interested public might focus on one theme or region at a time, and pitch the presentation more directly to a specific audience. A similar effort focused on one region, issue or program would likely be as or more successful. This is because the more focused the project, the easier it is to identify and reach a target audience.

Much of the intellectual richness comes from over 200 written comments that were entered into the Internet town meeting. Unfortunately, written comments do not lend themselves easily to statistical analysis. Their interpretation is more likely to be biased by the analyst's views. Even so, future efforts of this sort should retain the written comment feature, especially because thoughtful comments can be so informative.

The question inevitably arises, was the Internet town meeting worth the effort? Leaving aside the considerable effort that went into developing the

Coastal Futures 2025 vision statement, the level of effort involved (a) about 8 person-weeks to develop the Web site, including developing the critical issues and undertaking some custom programming, (b) about 16 person-weeks devoted to outreach, and (c) about 5 person-weeks directed to site editing, maintenance and operations over a six-month period. While a formal cost-benefit analysis was not conducted, certain results were obtained that could not be obtained in any other way, namely, (a) more than 500,000 learned about the Internet town meeting and became aware of the Coastal Futures 2025 vision statement, (b) more than 1500 interested persons obtained the vision statement or supplemental information on coastal trends, or both, and (c) hundreds shared their views and perspectives on coastal stewardship. The ten partner organizations did not have any other means at their disposal to achieve these ends, at that level of effort. The Internet town meeting set an example for reaching a broad and diverse audience in a short time. Others who follow may proceed somewhat differently. Their efforts will be more efficient and effective because of the lessons learned from the Internet town meeting.

Unanimity of Vision

Diverse parties with very different interests developed the proposed vision. Despite their diversity they found much in common concerning their visions for the future of the coast. This probably reflects certain shared underlying experiences and perceptions, namely,

- We are all coastal stewards;
- Coastal resources and areas are fragile and increasingly threatened;
- New ways are needed to manage oceans and coasts. Progress increasingly lies beyond direct federal control, and will be achieved through partnership approaches;
- There is considerable hope for the future because a rich experience base for solving problems and seizing opportunities is emerging that builds on the markets and innovations of the private sector; the knowledge of scientific researchers and engineers, and the conservation and economic development tools of local, state and federal governments.

The unanimity of purpose and vision cuts across interests, economic sectors and regions. The breadth of support suggests some directions for the Nation in some areas and might offer some hope of finding the political will to move in those directions. The need for political courage and bold leadership is a recurrent theme in the text comments in the Internet town meeting.

Strong Grass Roots Support for Coastal Stewardship

Responses to the critical issues often go far beyond current policies and programs. For example,

- There is strong interest in conserving cultural heritage.
- The public seems ready and willing to accept occasional limited restrictions on where, when or how it engages in coastal recreational pursuits provided that the restrictions will enhance the quality of the recreational experience, or if they are necessary to protect the environment.
- There is strong support in the admittedly somewhat biased sample of individuals who took the time to register their views on the matter for taking stronger measures to actively manage growth and settlement patterns in coastal regions. In general, the support is for master planning to guide specific project development decisions, coupled with more aggressive implementation, enforcement and updating of the master plans.
- Some of the Internet town meeting participants are very interested in eliminating stimuli that contribute to inappropriate development. One example cited repeatedly in the comments is federally subsidized flood insurance on barrier beaches.

Just as participants in the Internet town meeting plead (in their comments) for bold leadership

and innovation to strengthen coastal stewardship, the strong support for the visions in these and other areas implies that the necessary political support for bold leadership might reasonably be expected, should that leadership be forthcoming.

The vision developed by the national dialogue partners may have widespread implications especially because efforts to inform the public about coastal conditions and to energize companies, organizations and even individuals to be informed coastal stewards will become increasingly important. Future efforts to engage the public in a dialogue about coastal stewardship can learn from the Internet town meeting, from the process followed and the lessons learned. Perhaps more importantly, future efforts will be informed by the vision of America's coastal future, and more particularly, by the broad agreement on goals and objectives of ten diverse national organizations, which are captured in the Coastal Futures 2025 vision statement.

Table 2: Synthesis of Vision and Results

MEETING TOPIC	SYNOPSIS OF VISION	SYNTHESIS OF RESULTS
Population and Settlement Patterns	Accommodate population growth/additional settlement without compromising environmental values	• Most popular topic (highest number of votes) • Strong agreement with vision. • Difficult to achieve the vision • More information and tools for managing growth would help, but bolstering political will to make tough decisions about settlement would help more.
Community Heritage	Every community will have its own unique feel and flavor. Cultural heritage and diversity will be protected and perpetuated through master planning. Historic structures will be preserved. Tradition occupations will flourish where they have community support. New cultural resources will be accepted and incorporated over time.	• Strong support for conserving community history and culture. • Vision that every community is unique is somewhat more controversial
Coastal Hazards	Improvements in knowledge of environmental phenomena and better delivery of predictions and services will enhance the capacity to predict, mitigate and respond. This knowledge will be used to steer development away from hazard prone regions and to develop disaster-resistant communities. Also, sand will be managed as a resource.	• Most text comments • Strong agreement with vision • Strong sense of importance of prevention • Strong support for directing development away from hazard-prone regions • Vocal minority believes the vision tramples on private property rights • Strong support for idea that those benefiting the most from dune/beach protection should pay the most for their upkeep • Strong support for eliminating subsidized insurance on barrier beaches
Environmental Quality	Successful communities in 2025 will have protected the environment even as they progressed economically. Coastal waters will exceed statutory standards (fishable, swimmable) by also being inviting and healthful. Coastal flora and fauna will be protected and recovered.	• Strong support for vision • Sense that progress is being made, expect progress to continue • More progress is being made in cleaning up contamination; relatively less progress is being made in protecting wildlife and habitats
Recreation/Tourism	These will continue to be the most significant water-dependent economic activities. People will continue to be attracted because the environment will be clean and inviting, there will be open space, and there will be public access. The public will be much more aware of ways in which they can help protect the environment for the future by following safe environmental practices in their recreational activities.	• Strong agreement with vision especially guaranteed public access and protection from other uses • Some willingness to accept personal restrictions to avoid use conflicts and to protect environment • Users willing to pay more/take more responsibility for access and upkeep
Water-dependent Commerce	Demands on ports to continue to operate safely and efficiently will continue to increase, in step with the growth in world trade. Trends towards efficiency and consolidation will continue, leading to increased demand for superports, dedicated cargo facilities, and excellent intermodal connections. A trend towards specialized assets and services such as high-speed cargo shipping and more use of ferries will continue. Channels and berths will be routinely dredged to appropriate depths, and real-time navigation information will be routinely available.	• Good agreement with vision • Sense that water-dependent uses merit protection in community development, also legacy pollution problems on the waterfront need to be cleaned up • Vision compatible with new interagency and national vision for marine transportation system

Table 2: Synthesis of Vision and Results, continued

MEETING TOPIC	SYNOPSIS OF VISION	SYNTHESIS OF RESULTS
Energy and Minerals	Petroleum will continue to be the dominant fuel, and the percentage that comes from or over the oceans will be even greater. New energy sources from the ocean will begin to enter the mainstream by 2025. Clean energy sources will begin to have an economic advantage. Large-scale energy projects will continue to receive extensive environmental, safety and economic scrutiny. High demand for sand to maintain beaches will cause offshore sand deposits to be managed as public resources. The doctrine of sand rights will have developed.	• Good agreement with vision • Strong interest in reducing reliance on petroleum and developing alternative energy sources • Particularly strong agreement that sand should be managed as a resource
Food Supply	Fish stocks will be restored and managed sustainably. Local stocks will contribute in important ways to the national food supply and local communities will benefit directly as a result. Community-based aquaculture will play an increasingly important role.	• Good agreement with vision • Some sense that land use priorities in coastal regions should favor commercial fishing • Less support for aquaculture
Public Awareness	Widespread public awareness of coastal issues...will be an important factor in stewardship. Public education will provide the basis for this. Communications media will reinforce stewardship messages and disseminate them throughout society.	• Strong agreement with vision • Educated public is important prerequisite to political action
Technology	Remote sensing, imaging and "smart" instruments will bring new data and ways to analyze and present information. Modeling and simulation will become important aids to consensus building and decision-making. Communications and information technology will help managers reach new constituencies and bring in new ideas.	• Strong agreement with vision • Enabling technologies can improve quality and quantity of information for coastal management • Technology can also improve how information is used
Responding to Change	Coastal communities will respond to pressures with more reasonable, less adversarial management approaches. These will typically involve public/private partnerships that (a) have a regional or ecosystem focus, (b) are based on sound science and engineering, and (c) involve extensive collaboration across interests and at all levels.	• Vision not completely shared • Skepticism that ambitious goals of controlling sprawl, conserving open space and protecting and restoring habitats can be achieved by simply using "less adversarial approaches"