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# Coast & Estuary Management

—A need for collaboration

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*Workshop Record • Seattle, Washington • November 7-8, 1991*

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## —A need for collaboration

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*Workshop Record • Seattle, Washington • November 7-8, 1991*

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### **Workshop Sponsors**

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Administration

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## **ABOUT THE WORKSHOP**

The purpose of the workshop was to explore the potential for greater collaboration between national estuary, coastal management, and related programs of the U.S. This was considered an important question because of heightened interest in coastal water quality issues, and because of the complementary nature of the two programs. For example, there is the potential for the land use control capabilities of coastal management to be a tool for achieving some of the water quality and resource protection goals established in the estuary programs. Further, recent changes in federal law have given coastal management programs new responsibilities for protecting coastal water quality.

To explore this question about eighty people were invited to a one-and-a-half day workshop. Participants were chosen by a steering committee and selected based on expertise, geographic diversity, and role in coast and estuary management issues. The workshop included federal officials, coast/estuary program managers, state and local government officials, researchers, and others representing interest groups, tribes and related agency experts.

A brief background paper was circulated outlining the national estuary and coastal management programs, noting similarities, differences, and recent experience with collaboration. Abstracts of recent research on coast and estuary governance and management were available at the meeting. Short presentations at the outset of the meeting added additional information about program activities, research findings and needs, and collaborations in Buzzards Bay, Puget Sound and San Francisco Bay.

Each participant was assigned to one of four concurrent discussion groups (the Clams, Shrimps, Oysters and Crabs). Each group discussion proceeded from a common set of questions and produced a group report. A synthesis statement, based on the four group reports was drafted and presented to all participants at the final plenary session. After considerable discussion it was revised and is presented at the end of this summary. The workshop concluded with a wrap-up panel offering broader perspectives on specific topics discussed during the workshop.

## **STEERING COMMITTEE**

### **Chair**

Marc J. Hershman, School of Marine Affairs, University of Washington

### **Members**

Dan Ashe, U.S. House Committee on Merchant Marine and Fisheries

Jim Burgess, Coastal Programs Division, NOAA Office of Coastal Resource Management

Paul Cyr, County Commissioner, Pierce County, Washington

Louie Echols, Washington Sea Grant Program

Virginia Lee, Coastal Resources Center, University of Rhode Island, Bay Campus

Tom Leschine, School of Marine Affairs, University of Washington

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Steve McAdam, San Francisco Bay Conservation & Development Commission

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Agency

Patricia Peyton, Washington Sea Grant Program

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## **ACKNOWLEDGEMENTS**

This workshop was organized by the faculty, students, and staff of the School of Marine Affairs, University of Washington, with primary financial support from the Washington Sea Grant Program through a grant from the National Oceanic and Atmospheric Administration (NOAA). Additional financial support came from the Office of Ocean and Coastal Resources Management, NOAA; the Office of Wetlands, Oceans & Watersheds of the U.S. Environmental Protection Agency; the Washington Department of Ecology; and the Puget Sound Water Quality Authority.

The contributions of the following individuals are acknowledged: Scott McCreary for facilitation of the discussion leading to the synthesis statement; Keith Higman for managing workshop finances and arrangements; Scott Kathey for research and preparation of abstracts; Jeffrey Benoit, Paul Cyr, Ernie Estevez, and Amy Zimpfer for chairing the discussion groups; Beth Bryant, Scott Kathey, Brice McDaniel, and Sheila Semans for reporting on the discussion groups; and Robert Bish, Tom Leschine, Scott Powell, Walter Clark and Robert Knecht for moderating panels.

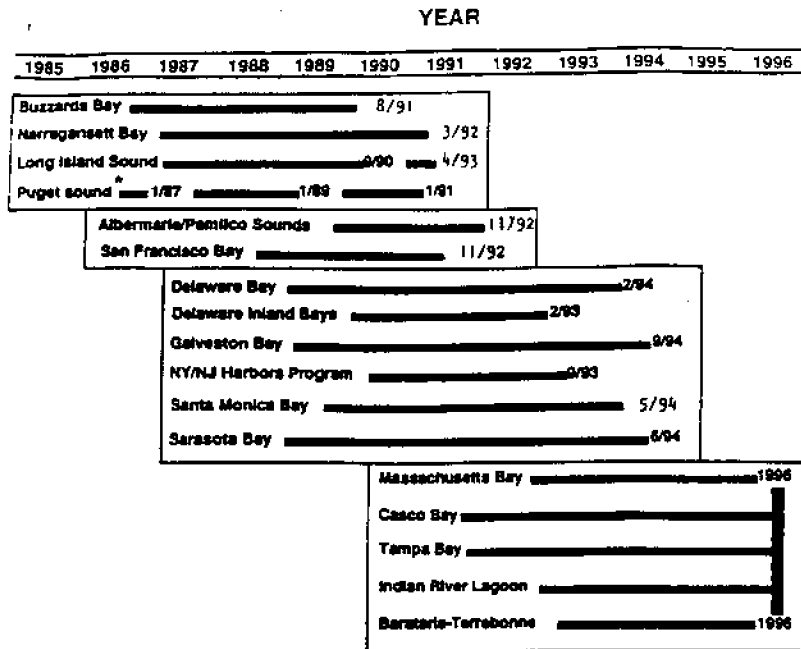


Figure 1. Start-up dates and completion deadlines for estuaries accepted into the National Estuary Program. (Modified from: Mark Imperial et al., The national estuary program. Paper presented to the Coastal Society, 12th International Conference, San Antonio, Texas, October 21-24, 1990.)

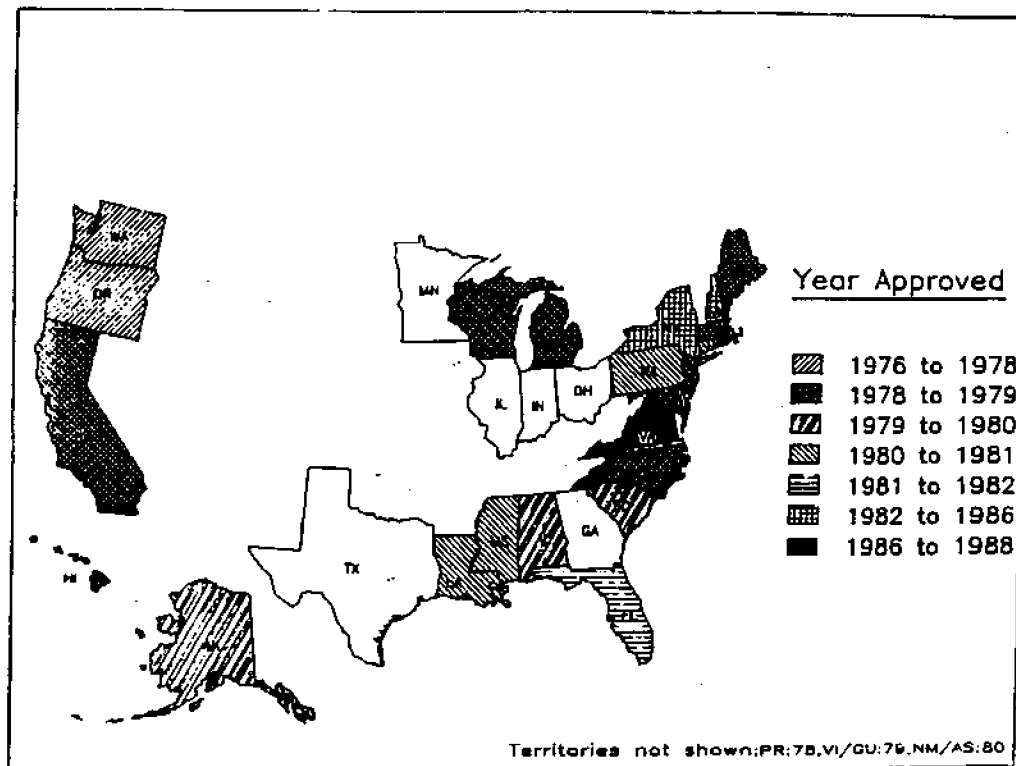


Figure 2. Coastal states participating in the federal Coastal Zone Management Program. (From: Office of Ocean and Coastal Resource Management, NODS/NOAA. "Executive Summary: 1990 Annual Meeting of Coastal Zone Program Managers, Appendix C" March 26-28, 1990.)

## **NATIONAL ESTUARINE & COASTAL MANAGEMENT PROGRAMS —AN OVERVIEW**

Following is an overview of the national estuarine and coastal management programs in the U.S., comparing these programs, and looking briefly at initial cooperative efforts.

### **The National Estuary Program**

The NEP identifies nationally significant estuaries threatened by pollution, development, or overuse, and promotes the preparation and implementation of Comprehensive Conservation and Management Plans (CCMPs) to ensure their ecological integrity. The Clean Water Act (CWA) amendments of 1987 authorized the Administrator of EPA to convene management conferences for these nationally significant estuaries, and provided Federal funds to assist them. As of May 1991, 17 management conferences in fourteen state jurisdictions have been convened under the NEP, with the first CCMP approved by the Administrator for Puget Sound on May 6, 1991. Subsequent CCMPs are due to be completed over the next 5 years (through 1996). (See Figure 1.)

The NEP represents a partnership across Federal, state, and local levels. This partnership is focused within the management conference, a series of interlocking committees addressing policy, management, science, citizen involvement and local government affairs. The management conference is convened to reach consensus concerning priority problems of the estuary, the causes of those problems, and the actions that must be taken to correct those problems. The management conference achieves this analysis through development of the CCMP.

The development of the CCMP occurs in three phases. First, a characterization study is conducted including collection and analysis of data on estuary segments to determine significant problems and data gaps. The characterization also includes a report on the various control programs in place, what EPA calls a "base program analysis," and the adequacy of the control mechanisms to resolve the problems. Second, the results of the characterization are used to formulate the goals, objectives and action plans for the CCMP. Action plans deal with particular estuary problems as well as implementation, monitoring and finance. For example, the Puget Sound CCMP, known in state law as the 1991 Puget Sound Water Quality Management Plan, contains fourteen "action plans" covering such subjects as shellfish protection, wetlands, contaminated sediments, household hazardous waste, research and education. Once the CCMP is complete, normally a five year process, it is submitted to the Administrator of EPA for approval. Third, the CCMP must be implemented. Federal law is fairly clear that implementation is primarily a state and local responsibility. No federal funds are authorized specifically for implementation except for funds that may become available through other EPA programs. There is active discussion about how EPA resources could be used to supplement state implementation, and some interest in seeing a more active Federal role after CCMP approval.

From 1987 through 1991 nearly \$53 million in Federal funds will have been committed for the development of CCMPs. These Federal funds will have been matched with non-Federal funds totaling approximately \$18 million, for a total Federal/non-Federal investment of \$71 million through 1991.

### **Coastal Zone Management Programs**

Coastal Zone Management (CZM) was initiated with the federal Coastal Zone Management Act (CZMA) of 1972, which provides incentives and policy guidance for the

development of CZM programs at state and local levels of government. The program is administered within the office of Ocean and Coastal Resources Management (OCRM) of NOAA. The CZMA, which has been amended five times since 1972, covers a wide range of coastal problems and issues. State programs have addressed these problems and issues under five major headings: protecting coastal environments and habitats; enhancing public access to the shoreline; minimizing harm from coastal hazards; planning for coastal dependent uses; and fostering coordination and cooperation among agencies with coastal interests. At present 29 states, Commonwealth's and territories have approved coastal management programs. (See Figure 2.)

The CZMA established a specially tailored intergovernmental structure. It is a voluntary program, and two types of incentives are offered to states that participate - funds and federal consistency powers. Funds for state and local CZM programs have been quite modest. Total federal expenditures have averaged about \$35.8 million per year since 1982 with a gradually increasing match requirement which is now at 50 percent.

The second incentive, federal consistency powers, has become a potent legal tool for states. Federal agencies have the duty to review their activities to determine if they are consistent with a state's approved CZM program. Further, a state with an approved CZM program has the power to declare certain federal decisions (activities, funds and permits) to be inconsistent with the state's program. The 1990 amendments to the CZMA substantially strengthened the federal consistency powers.

One result of a national program that is voluntary and based on financial and consistency incentives is great diversity among state and local CZM programs. They differ from one another in a variety of ways: geographic and jurisdictional scope, organizational structure, and regulatory controls. For example, some states rely primarily on a statewide coastal permit law while others rely on a "network" of state agencies and local authorities for implementation. Despite their variability, however, there are certain characteristics common to CZM programs. For example, CZM programs are concerned with the coastal zone itself, a "belt" of land and water area subject to intense pressure for multiple use. Further, CZM programs attempt to manage physical development so that a balance is struck between economic development needs and requirements for environmental protection. Next, CZM programs that receive federal approval must include management mechanisms for influence and control that are based on enforceable policies. States must have enforceable policies in place as a basis for decisions on the consistency of federal activities, permits or expenditure of funds. Also, CZM tends to focus on land use control, where (primarily) new development occurring on land or in water is reviewed for conformance with plans, policies, and/or performance standards. As a result CZM programs have promoted "collaborative" state/local planning and management, since land use control traditionally has occurred at the local level. Finally, CZM has developed a strong coordination function stemming from the multiple use characteristic of the coastal zone and the substantial role of many other public agencies over uses and resources in the zone.

The CZMA amendments of 1990 added coastal water quality as an explicit program objective for state CZM programs. A "Coastal Nonpoint Pollution Control Program" (CNPCP) must be developed by state coastal management and nonpoint pollution control programs and submitted to both NOAA and EPA for approval. Financial sanctions of up to 30% of state program funding are provided for failure to develop the new program. Draft guidelines for this new program are now under review.

## **Similarities and Differences**

The NEP and CZM programs have similar structural features and many overlapping and complementary objectives, but are different from one another in important respects. In spite of the differences the potential for collaboration is high. A few examples are presented here.



First, both are concerned with a large amount of territory and many resources and uses. They must see the "whole" but make choices about what specific problems can be tackled given available authority and funding. The geographic areas covered by each overlap substantially and both are marine oriented. Yet, the nature of the area they are concerned with has important differences. Estuary programs focus on the water environment and use activities that could degrade the quality of the waterbody and its natural resources. CZM programs, in general, focus attention on shoreland and submerged land uses that might have adverse effects on a variety of values such as views, access, hazards and others, as well as water quality. The potential for complementary action is high, especially in the control of nonpoint pollution sources, because of CZM's land use control orientation and its collaborative relationship with local government. But there are large areas of independent action.

A second similarity between NEP and CZM programs is in their guiding document: NEP's develop CCMP's—Comprehensive Conservation and Management Plans, and CZM programs develop CMP's—Coastal Management Programs. Both documents contain policies, authorities and program descriptions, and both require federal approval. Once approved each affords the state some federal consistency powers, though the CZM consistency is much stronger. However, they differ in at least one important respect. CCMP's emphasize "action plans" (how multiple governmental players plan to work toward achieving a priority objective in the estuary), while CMP's stress state policies and enforceable standards (laws, regulations, ordinances, etc.) which become the basis for the exercise of state controls and of federal consistency powers. CCMP's stress a strategy for change, whereas CMP's emphasize an existing regulatory and policy framework. A potential collaborative device is the incorporation of new CCMP policies into CMP programs to the extent possible.

A third similarity relates to the institutional structure set up in both programs. NEP's and CZM's establish a federal-state-local partnership to accomplish their missions. But, the nature of the partnership after program approval changes dramatically. In the case of NEP's substantially fewer federal funds will go to estuary program offices after approval, although CCMP policies can help to redirect other EPA "base program" funds to achieve certain objectives. For CZM, however, federal funding and oversight of program implementation is ongoing. In the case of both NEP and CZM the relationship of the state programs to local governments is of central concern. In some state CZM programs CZM has been successful in forming tight legal bonds between state agencies and local government. NEP's have been active in building consensus around estuary protection objectives and in encouraging new initiatives at the local level. CZM and NEP officials could collaborate more in promoting expanded local government capabilities.

A few other factors are important when comparing the two programs and considering the potential for collaboration. The programs are based in different federal agencies each of which has its own framework, style of operation and culture. EPA, for example, has strong regional organizations which influence the NEP program. NOAA's CZM program is centrally managed. Also, NOAA, in general, is known for its capabilities and interest in marine and atmospheric science and monitoring, whereas EPA emphasizes environmental management, with science and monitoring playing a supporting role. In designing collaborative efforts the challenge is to capitalize on the particular capabilities of each program.

## **CZM Participation in Estuary Program Development**

In 1988 an agreement between NOAA and EPA called upon officials of both programs to move toward greater integration of efforts. During the development of the first estuary programs some efforts were made at the program level to build linkages with CZM. In Puget Sound, for example, the CZM office did not participate directly on the

management committee for the estuary program, but did receive funds to assist in developing the wetlands and shellfish protection action plans. Both of these programs had been underway through the CZM office before initiation of the estuary program. The CZM program determined that the CCMP was consistent with the state's coastal program, but a few key issues were deferred for later consistency review. Plans call for the CZM program to be amended to incorporate particular elements of the CCMP.

In the Buzzards Bay and San Francisco Bay estuary programs, the CZM-NEP linkages have been stronger. The Buzzards Bay estuary program is housed within the Massachusetts CZM office and because of this the interaction is extensive. Once approved, all action plans will be proposed as amendments to the CZM program, and the CZM office will be directly responsible for implementing some of them. In San Francisco Bay, officials of the Bay Conservation and Development Commission (BCDC), the agency which runs the CZM program for San Francisco Bay, sit on the management and technical committees for the estuary program. More importantly, CZM is involved in the preparation of three important action plans (wetlands, dredging, land use) and discussions have begun about how BCDC's Bay Plan might be used to implement aspects of the action plans.

## **WORKSHOP PRESENTATIONS**

### **National Perspectives**

#### **The Challenge of Estuarine Management**

*Mark Curran, Chief, Coastal Management Branch, Oceans and Coastal Protection Division, U.S. EPA*

The task of "managing an estuary" is not a job you can go off and do yourself. This fact is evidenced by this workshop and the diversity of experience and expertise represented.

There has been a realization that the impacts being experienced in our estuaries cannot be controlled by individual entities implementing their own authorities. This was obviously one of the factors that drew us all to Seattle. In that sense, we have met the first challenge of managing estuaries: realizing that we all have to pull together.

The second challenge, then is to find ways to get beyond the bureaucratic boundaries we all work within to accomplish our common goals. Estuaries don't recognize our jurisdictions. Estuaries don't care about "the inland extent of the federally approved coastal zone."

The problems being experienced by estuaries don't fall neatly into "water quality" and "land use" categories.

It's time that we realize that we are not really facing "water quality" or "coastal zone problems": We are facing resource problems.

The successes we are seeing on the coasts are in areas where there has been a focus on the resource rather than on the program.

We need to begin to let that kind of focus on the resource shape our goals, then we will be able to find ways to coordinate our various programs. This will also allow us to take advantage of our strengths as well as fix our weaknesses.

#### **Building Collaboration Between EPA and NOAA Coastal Programs**

*Marian Mlay, Director, Oceans and Coastal Protection Division, EPA*

The National Estuary Program gives EPA authority to convene Management Conferences for up to 5 years for estuaries of national significance. These Management Conferences are charged with assessing environmental problems in the estuarine watershed, and developing consensus recommendations for corrective actions to be taken by federal, state and local entities and the private sector.

Many of the Management Conferences will produce a draft management plan within the first 3 years of the program. This will allow early action where causes of priority problems have been identified, and will allow participating agencies more time to develop enforceable provisions to implement CCMP recommendations.

The new coastal nonpoint pollution program (CZARA section 6217), which requires states to develop and implement coastal NPS management programs, offers additional opportunities for EPA, NOAA and state agencies to work together in coastal areas.

The NEP and CZM programs share a common environmental goal; to maintain and enhance or protect the health of the nation's coastal resources. However, there are some key differences between the programs. We should view those differences as strengths.

For example, EPA views the NEP as a national demonstration program which applies comprehensive watershed management to selected estuaries. In contrast, the CZM program provides an ongoing management framework which covers nearly all of the coastal areas of the U.S.

A Strength of the NEP is the consensus building environment and strong focus on involving the implementors and the public. The purpose of the NEP is not to create a new, permanent bureaucracy, but rather to incorporate the action components of the management plans into existing state and local institutions for implementation.

CZM provides many of the regulatory and management authorities which will be needed to carry out the consensus recommendations in an NEP management plan.

In 1988, EPA and NOAA signed a formal agreement which spelled out our concepts for coordinating the NEP and CZM programs. Jim Burgess and I do not see a need to formally revise that agreement, but to implement it. Our focus now is on developing a joint EPA-NOAA Implementation Plan for the coordination of the CZM and NEP programs, and integration with the new coastal nonpoint source control program.

#### **Components of the Implementation Plan**

Jim Burgess and I, as well as our staffs, will continue to meet periodically to identify and resolve issues, and work on joint projects.

EPA is committed to having the involvement of NOAA in our NEP program assessment project. EPA has recently given a grant to the Urban Institute, a Washington, DC based think tank, for the development of an evaluation methodology to monitor the progress being made under the NEP.

We will be working with the National Conference of State Legislatures to strengthen involvement of state legislators in the development and implementation of estuarine management programs, and I have asked Jim to work with us on this project.

Jim and I share the hope that the NEPs will lead the way as states develop and implement coastal NPS pollution control programs under CZARA 6217. NEP Management Conferences should play an integral role in developing a NPS management strategy for their watersheds, and providing information on the extent and nature of the NPS problem in those areas.

#### **Proposed EPA Policies to Ensure Integration**

EPA will require that in states where the lead agency for the NEP is different than the CZM agency, the two agencies develop an MOU describing how the CZM and NEP programs will be coordinated at the state level. Where the CZM agency is also the lead agency for the NEP, EPA will work with that agency to ensure that CZM staff are available to assist the NEP committees.

In accordance with EPA's policy of submitting NEP management plans for consistency review under CZMA 307 (c) (1), our Regional offices will be responsible for developing a consistency determination for the final CCMP and providing it to the state CZM agency 90 days prior to the EPA Administrator's decision on whether or not to approve the CCMP.

While the EPA Administrator has no authority under the Clean Water Act to require enforceable policies as part of CCMP approval, we plan to make additional funds available in FY 92 to assist Management Conferences in their final year with the development of enforceable policies necessary to implement CCMP recommendations. We hope that this, along with our increased emphasis on producing a draft CCMP by year 3, will produce CCMPs with enforceable recommendations.

EPA will continue to participate, where appropriate, in NOAA's CZM program evaluations under CZMA section 312, particularly as NEP management plans are completed and incorporated into CZM programs for implementation.

The NEP is our "great experiment" in watershed management with broad participation by all levels of government, industry and user groups, scientists, and the public. The NEP offers EPA and those other agencies the flexibility to try out different processes and solutions in different areas.

## **Status and Trends In Coordination Between EPA & NOAA Coastal Programs**

*Edward Kruse, Coastal Programs Division, Office of Ocean and Coastal Resource Management,  
NOAA*

The 1990 Amendments to the Coastal Zone Management Act provide new opportunities for further coordination between OCRM and EPA. There is a renewed effort by OCRM to further understanding and cooperation between the federal Coastal Zone Management Program (CZM) and the National Estuary Program (NEP).

The CZM and NEP programs share a common goal of maintaining and enhancing or protecting the health of the nation's coastal resources. The addition of Section 6217 now gives state coastal management programs a clear water quality mandate. Fundamentally, OCRM views the NEP conferences as being similar to Special Area Management Plans under the CZMA.

The three year old NOAA-EPA Agreement has not achieved success in all areas. NOAA has continued to use the Section 312 evaluation process as a tool to examine the NEP/CZM program interaction at the state level. There has been success in involving CZM program staff in the NEP process. However, the level of CZM involvement varies widely. The Buzzards Bay NEP is an example of an early linkage of CZM and NEP program staffs in the management conference process. There is a clear and continuing need to increase state CZM involvement in the Management Conference process. Section 307 consistency review of the CCMP remains an area of contention.

Section 6217 provides an opportunity to combine CZM and NEP resources to address coastal nonpoint pollution concerns. The legislative history supports the conclusion that the central purpose of Section 6217 is to strengthen the linkage between federal and state coastal management and water quality programs to enhance state and local efforts to manage land use activities that contribute to degradation of coastal waters and habitats. Furthermore, the statutory requirements require coordination with other existing state and local water quality plans/programs; establishment of coordination mechanisms within the state; and development of enforceable policies and mechanisms to implement the CNPCP. The program implementation schedule calls for the issuance of Final Management Measure and Program Development Guidance in May 1992; followed by submission of state programs for joint NOAA/EPA review in November 1994. Failure to submit an approvable program within 30 months after publication of the management measures guidance can result in a reduction of the state's federal Sections 319 and 306 program funding.

There are several areas where OCRM would like EPA to continue to take a stronger position. OCRM urges EPA to give clear guidance that CCMP's, as a matter of policy, will adhere to Federal Consistency review under the CZMA. Secondly, new or relatively young NEPs should focus on development of the draft CCMP within a three year period. Later work should focus on implementation issues and address Section 6217 program requirements. Lastly, there is a clear need for early involvement of the CZM agency in the Management Conference. The continuing NOAA/EPA dialogue has yielded agreement on these issues. OCRM will continue to support the use of Section 312 evaluation process to monitor and assess the interaction between state CZM and NEP programs and identify areas requiring further improvement.

## Academic Perspectives

### Recent Research Related to Estuarine Management and Governance

Tom Leschine, School of Marine Affairs, University of Washington

Studies of estuarine management and governance, like other social scientific research aimed at influencing public policy, have had mixed results in measurably affecting the course of the programs they address. Researchers who study the influence of policy research on governmental decision making now recognize a number of factors which can limit the utility of such research to decision makers. But research can strongly influence decision making when the policy area is not highly politicized, when the research field is mature, when resources for the research are adequate, and when effects don't have to be predicted far into the future (Chelimsky 1991).

*Management* studies generally assume the organization is in place. The primary questions are:

- What should we do?
- How should we do it? and perhaps,
- How well did we do? (a question in the province of evaluation research)

*Governance* studies emphasize management's "big picture", often asking what institutional arrangements are appropriate, given the nature of the problem(s) to be solved and the realities of the external and internal worlds. Questions may include:

- What kind of organization?
- What kind of decision rules?

Research in the name of *policy development* may include:

- Needs assessment (sensing problems, opportunities)
- Agenda, priority setting
- Specific approaches for addressing the problem (e.g., assessing costs, risks, benefits of options; perhaps also identifying new options)

The researcher's role includes determination of:

- What is known/needs to be known about a problem;
- How the problem is changing;
- What the results of past efforts to deal with it have been;
- How real it is, how feasible, costly the solution;
- What kinds of institutional arrangements are appropriate.

Research in the name of *program development* will emphasize program design.

The researcher's role includes:

- Ensuring logical fit between program assumptions and program objectives and activities;
- Defining objectives through past experience or pilot programs;
- Ensuring implementation takes into account practical realities and is relatively straightforward;
- Building in plans both to fill knowledge gaps and to evaluate implementation and effectiveness (program evaluation).

Much of the research to date in estuarine management and governance has consisted of relatively small scale studies aimed at pieces of larger policy issues or programs. The relatively small size of the coastal and estuarine management field has generally meant that government decision makers have not been willing to support the kind of full-scale evaluation studies which have accompanied major social and health services programs. But recent initiatives by EPA's Office of Wetlands, Oceans and Watersheds may lead to significant enhancements of the social scientific research component of program evaluations.

A major barrier for social scientific researchers to overcome in "selling" the potential value of their research to coastal and estuarine program managers has been the implicit

belief by many management and/or funding agency decision makers in a technocratic model of decision making. This has resulted in research budgets dominated by scientific and technical R&D and in monitoring programs heavily oriented toward the physical, chemical and biological characteristics of marine systems. As emphasis in management programs shifts toward non-point pollution and toward land use planning as a primary management tool, more effort will have to be put into the study of human and organizational behavior if control efforts are to succeed.

#### Reference

Chelimsky, E., 1991. On the social science contribution to governmental decision-making. *Science* 254: 226-231, 11 October 1991.

### **Managing Coastal Environmental Quality In the U.S.: An Evolutionary Perspective on the Development of the National Estuary Program**

*Tim Hennessey, Department of Political Science, University of Rhode Island*

*Mark T. Imperial, Graduate Student, Department of Marine Affairs, University of Rhode Island*

*Donald Robadue, Coastal Resources Center, University of Rhode Island*

There is a tremendous amount of historical experience in managing coastal environmental quality in the United States. Some of the programs that have had a strong influence on the development of contemporary coastal environmental quality programs, such as the National Estuary Program, have been the Delaware River Basin Commission, the Federal River Basin Planning Program under the 1965 Water Resources Planning Act, the Section 208 Areawide Waste Treatment Planning done pursuant to the 1972 Clean Water Act, the preparation of Coastal Zone Management Programs under the 1972 Coastal Zone Management Act, the Chesapeake Bay Program, and the Great Lakes Program.

We examined the strengths and weaknesses of these programs as models for managing coastal environmental quality. We also examined some of the lessons that can be learned from these experiences. Based on these strengths and weaknesses, current administrative and financial realities, and the nation's progress in managing estuarine quality, we proposed criteria for the evaluation of the strategy, structure, and process of coastal environmental quality programs. These criteria can be used to evaluate contemporary programs such as the National Estuary Program (NEP). They also help to assess the contributions that current programs can make as models for managing coastal environmental quality.

The strategy criteria reflect the need for coastal and water quality management programs to address problems in an ecological manner and across jurisdictional boundaries when necessary. They should also coordinate and improve existing regulatory planning capacities while at the same time involving the appropriate political and public actors in the management process. Finally, coastal environmental quality programs should be designed to provide for planning beyond the implementation of the first management plan. This allows programs to address new issues and correct or improve existing management strategies.

These criteria represent the greatest challenge to the future success of the NEP. Even though financial assistance is given for the planning phase, there is no significant source of funding for implementation. It is also unclear what implementation authority will be required for approved Comprehensive Conservation and Management Plans. Furthermore, there is no provision for program planning beyond the implementation of the first management plan. Planning beyond the implementation of the first management plan has been very successful in the Coastal Zone Management Programs and the Chesapeake Bay Programs.

The process criteria include the need to structure the management process such that the decision making is based on consensus. A specific role must also be given to science in the decision making process. Finally, the planning process should enable the participating

organizations to learn. Developing a learning capacity is perhaps the most important criteria for the management process of coastal environmental programs. Some of the ways that participating organizations learn is by: developing state and local capacities to plan and manage their coastal environmental quality; allowing for flexibility in the selection of management issues; utilizing cycles of planning to address new issues over time and improve management strategies based on new information; flexibly structuring programs around different jurisdictional units to generate a greater diversity of experience; transferring management innovations across programs; and sharing the management and implementation experience across programs. This appears to be one of the strongest elements in the NEP. There appears to be a firm ability for programs to learn from one another's experience. It is hoped that this continues into the future and that other coastal environmental programs make a concerted attempt to learn from the experiences of past programs that addressed similar issues.

### **How Can the Research Community Contribute**

*B. J. Copeland, Director, University of North Carolina Sea Grant College Program*

The academic community, especially those at public universities, often serves as a bridge between federal programs and state/local entities that manage state coastal resources. Universities are in the business of research, extension and education: research to find answers to questions/barriers to effective management; extension programs to educate managers, decision makers and public interest groups on environmental quality and how estuarine function; and education to enhance the ability of future stewards to utilize and conserve natural coastal resources. The objective of this workshop is to explore the potential for greater collaboration between the national estuary program and coastal zone management programs of the United States and to address measures to improve the effectiveness of the programs; with the overall goal of improving the nation's coastal water quality. I have been tasked with summarizing the role of academic institutions in achieving that goal. The following reflect comments made by workshop participants and my own sense of university responsibility. I have the following suggestions:

#### **History of Estuarine Understanding**

Investigation of estuarine function is a young discipline. We simply do not know all we need to know about how these complex ecosystems function and, therefore, how estuarine systems respond to certain management schemes (e.g., how much nutrient inflows stimulate nuisance eutrophication?). As a collective inquiry, investigations have occurred only during the past 40 years and true multidisciplinary programs during the past decade. For instance, we desperately need to know more about the effects of interactions among land-use activities, ecological responses and socio-economic ramifications. Universities have the corporate understanding to provide the synthesis of collective studies of estuarine function.

#### **Multidisciplinary Research**

Estuarine function, and the potential for improvement through management, is not manifested through the understanding of any one entity. Instead, the interrelationships that describe water quality resulting from a combination of pollution, development and use are multi-disciplinary and interactive. Most, if not all, water quality management questions are multi-disciplinary in nature, especially those involving non-point sources. Effects of management, therefore, are measured at ecological, social, economic, legal and governmental interactions.

#### **Public Awareness**

Incremental changes in effectiveness and willingness of management reflect the interests and understanding of local communities. My experience is that the people receive mixed signals depending upon the interests of those producing the information. Our responsibility at universities is to provide the best information possible about estuarine func-



tion and the potential for management and governance involvement. We need to develop education programs leading to better informed citizens, practitioners and users.

#### **Improving the Role of Research**

We must move toward a better understanding of what research is and is not and what research can provide and cannot provide. Often times, researchers do not understand the questions being asked by managers and managers do not understand the limitations of research. In addition, the time required/fundamental nature of research is often out of phase with the needs of managers. For example, there are wetlands, wetlands and wetlands : the respective roles that a watershed plays in water quality differ greatly depending upon the type, position and size of wetlands.

#### **Measuring the Success of Management**

One of the great needs of water quality management is the measurement of different management schemes both in terms of investment and the degree of success in achieving water quality improvement goals. We in university research must learn to understand the goals, degree of success required and how management may be interpreted by the local management regimes. I believe that multi-disciplinary teams from universities can come up with measurement criteria and develop ways to apply them.

#### **Need for Innovation**

We in the research community must develop new and more effective ways to achieve management goals. For example, can we apply the best fundamental research to develop water zoning techniques much like we have applied land zoning? Universities must bridge the gap between basic research and its application in the real world and do so in such a way as to attract the best researchers available.

## **Case Studies**

### **New York State and Estuary Management**

*Anne S. West-Valle, Waste Management Institute, Marine Science Research Center, State University of New York, Stony Brook*

I will present information on some of the collaborative programs New York State has been involved in; discuss some of the problems encountered with the data generated by the state and federally mandated pollution programs; and present the history of Jamaica Bay, NY as an example of inconsistent-management of a coastal system.

#### **NYS Department of Environmental Conservation Collaborative Programs**

Three successful collaborative programs, the Bi-State Oil Spill Prevention Conference, the Floatables Action Plan, and The Interagency Dredged Material Steering Committee, all came out of crisis situations--situations that needed immediate solutions. The NYS Department of Environmental Conservation worked with EPA, US Army Corps, US Coast Guard, NJ Environmental Departments, private companies, and university researchers to develop these programs. Because the cost of failing to remedy these situations was enormous, successful solutions had to be developed. Other state programs have not been so successful.

#### **Data that are questionable**

The Waste Management Institute, Marine Sciences Research Center, has found that at least with regard to studying the problem of low dissolved oxygen, the data generated by the state and federally mandated pollution programs is in a difficult form to use; spotty; often collected at inappropriate times; and of questionable quality. New York and Connecticut will be making multibillion dollar decisions on sewage treatment plant upgrades based in part on this sketchy data. With regard to the National Estuary Programs, it is not clear that the best decision regarding management of a body of water will be made within a 5-year program constraint. Given the implications and costs associated with some management strategies, flexibility with regard to identifying management action is advised.

We need sound sampling, better ways of transforming data to information to aid management and we need agencies to work with local governments and research scientists to develop these strategies.

#### **Jamaica Bay—An example of inconsistent management**

Jamaica Bay, NY, has been subjected over the past 100 years to a number of management plans. These plans called for various sorts of development of Jamaica Bay. Each generation has had their own view on best uses of the Bay. Although not all plans were fully implemented, most of the physical modifications, which were substantial, were carried through. These major physical alterations, bulkheading, dredging, and filling, have had long lasting impacts on Jamaica Bay as the circulation pattern has been changed, resulting in a longer residence time and this has changed the overall health of the ecosystem. A portion of Jamaica Bay was designated as a Wildlife Refuge in 1948, yet, 19 years later a major runway for JFK Airport was built out into the Refuge. How do we ensure that management plans today are implemented and adhered to? We must make long-term commitments to managing an area and follow through with a sound management plan. This has been especially difficult in Jamaica Bay because of the overlapping jurisdictions of the many agencies that have control over various aspects of Jamaica Bay. The actual water of Jamaica Bay is under the control of the National Park Service, but, the sources of contamination and degradation are under the authority of many agencies. These agencies, who control the railroad trestle, the roads, the boat traffic, and the sewerage system, do not have maintenance of a healthy aquatic ecosystem as their highest priority

#### **Final comments**

- More emphasis on public education and communication is needed so that the public is informed and involved in environmental programs before environmental situations reach the crisis stage.
- Can economic growth and environmental protection occur simultaneously? Or with the next fiscal crisis will environmental protection be put aside? We must set our priorities so as not to compromise our environmental agenda.

#### **Integrating Two National Estuary Program Management Conferences Into the Massachusetts Coastal Zone Management Program**

*Jeffrey R. Benoit, Director, Massachusetts Coastal Management Program*

The Massachusetts Executive Office of Environmental Affairs, through its federally approved Coastal Zone Management (CZM) Program, currently administers two National Estuary Program (NEP) Management Conferences; the Buzzards Bay (Tier I), and the Massachusetts Bays (Tier III). Both Conferences utilize a general management structure similar to other participants in the NEP and include: a Policy Committee; Management Committee; Citizens Advisory Committee; Technical Advisory Committee; and a Management Plan Advisory Committee. Several differences exist, however, between these two Conferences and most others. First, the Policy Committee is composed of only two members; the Environmental Protection Agency (EPA) Region I Administrator, and the Massachusetts Secretary of Environmental Affairs. Second, the Management Committee of each Conference is chaired by either a representative of EPA (Buzzards Bay) or the Director of the Massachusetts CZM Program (Massachusetts Bays).

The close relationship between the Massachusetts coastal program and the NEP has been, and will continue to be, advantageous to both efforts. Because the CZM Program is designed as a "networking" program, it has the ability to work closely with key agencies of the Commonwealth that influence and/or regulate water quality. Incorporation of approved Comprehensive Conservation and Management Plans (CCMP) into the CZM Plan will "institutionalize" and further ensure the successful implementation and longevity of the CCMP. Also, through the federal consistency provisions of the state CZM Program, the

Commonwealth can legally impose the "enforceable policies" of the CCMP on federal actions and/or activities within the study area.

On the other hand, a CCMP has the ability to evaluate the adequacy of state water quality policies and programs, identify weaknesses in these efforts, and solicit commitments for improvements. A primary focus for this review should be state CZM programs that are in fact, often the state clearinghouse for such coastal activities. State CZM programs should welcome the opportunity to work closely with the NEP in an attempt to further the effectiveness of their own program.

Of particular interest to the Massachusetts CZM Program is the issue of program boundaries. The Buzzards Bay Conference has finalized its CCMP and the drainage basin boundary is substantially inland from the designated CZM boundary. This is similar to the situation that most coastal states will face when developing the Coastal Nonpoint Pollution Control Program pursuant to section 6217 of the federal Coastal Zone Management Reauthorization Act. Given that it may be politically and/or programmatically infeasible to expand the geographic boundary of a state CZM program, the resolution of this issue may be perceived as difficult. However, it could be very straightforward. If the NEP Conference has done its job adequately and has documented the direct link between land use within the drainage basin and marine water quality of adjacent waters, it has, in fact, demonstrated that activities within the drainage basin affect the designated coastal zone. Therefore, for purposes of federal consistency, the state does have sufficient control over federal actions and/or activities. Also, in the case of a networking CZM Program such as Massachusetts, the ability to influence the appropriate state agencies and their decisions will result in additional revision of water quality programs.

In conclusion, a close working relationship between state CZM programs and NEP Management Conferences is not only beneficial, it is imperative if the two programs are to be successful.

### **San Francisco Bay as a Case Study**

*Steven A. McAdam, Assistant Executive Director*

*San Francisco Bay Conservation and Development Commission*

San Francisco Bay Conservation and Development Commission (BCDC) administers the coastal management program for the San Francisco Bay segment of California's coastal zone, which was approved by the U.S. Department of Commerce in 1977 under the federal Coastal Zone Management Act. California also has a separate system of regulatory controls to protect the quality of the State's waters, created with the passage of the Porter-Cologne Act in 1968, that is administered by the State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards (Regional Boards).

In 1986, the San Francisco Bay-Delta Estuary was added to the United States Environmental Protection Agency's (EPA's) National Estuary Program (NEP). The SFEP is run by the Sponsoring Agency Committee (SAC), made up of the EPA, the State Board, and the San Francisco Bay and Central Valley Regional Boards, and the Management Committee (MC) which has over 40 members representing federal and state agencies, local governments, business and industry, civic and environmental organizations, and other user groups.

As the SFEP program began, some state agencies became frustrated at the SFEP's insistence upon seemingly ignoring the existing State estuary protection programs and policies which have achieved great successes. In addition, the NEP programs rely on the philosophy of "consensus" in creating its CCMPs, but because state coastal management agencies had been reeling under eight years of hostility from the federal and state administrations, there was some suspicion that the effort to reach consensus could lead to a weakening of our existing management programs, which were not adopted as a result of

consensus, but were adopted in the face of strong opposition from the regulated interests and only with good legal and planning work and strong public support. These problems could have been obviated by greater collaboration between the EPA/SFEP and BCDC staffs.

Moreover, there seems to be a general lack of "partnership" between EPA and NOAA on coastal issues, which appears to have directly contributed to Congress's requirements during the reauthorization of the Coastal Zone Management Act for the coastal non-point source pollution control program. Also, we perceive a fairly significant lack of communication between EPA Headquarters and the EPA regional offices. These problems could be minimized with greater communication and focus.

Perhaps the greatest opportunity for increasing collaboration exists between the EPA and state coastal management agencies which could help achieve both agency's goals. For example, coastal management agencies can use their land use experience and regulatory authority to provide for wetland protection, better land use management and non-point source controls over and above what the EPA and water quality agencies can effect. On the other hand, EPA's Near Coastal Waters and wetlands planning grants could help to improve state coastal management programs, particularly in terms of wetland protection and dredged material disposal. Also, the EPA should fully integrate state coastal management programs into individual NEP programs. For example, the EPA should insist that states seat both water quality and coastal management agencies on the final decision-making body of estuary projects, not only to benefit from the coastal management agencies' expertise, but also to encourage the participation of these agencies and enable them to buy into the CCMP. Of course, coastal management agencies stand to benefit from the estuary projects because they may receive political support and scientific information that would help them improve their own programs.

State coastal management and state water quality agencies, as natural allies, should try much harder to collaborate among themselves on these issues as well. They should support improvements in the laws, policies, and decision-making as a means of better protecting the resource they are charged with managing. In the future, there will be greater effort by the coastal management and water quality agencies in developing a comprehensive non-point source management strategy, because of the requirements of the reauthorized CZMA.

State and federal agencies involved in national estuary projects should break out of the bureaucratic molds to which we have become accustomed. Water quality and coastal management agencies in particular need to collaborate closely and creatively not only within the federal government and within coastal states, but also between federal and state agencies. The EPA/state coastal management agency link will be very important in the future.

### **Land Use Change and Impacts on the San Francisco Estuary: A Regional Assessment with National Policy Implications**

*Scott McCreary, Robert Twiss, Bonita Warren, Carolyn White,  
Kenneth Gardels, Susan Huse, and Dominic Roques*

*Center for Environmental Design Research, University of California, Berkeley*

The Nation's estuaries are at risk of further deterioration from land use change and intensification. These risks include direct impacts on wetland habitats and stream environments and indirect impacts from nonpoint source pollutant loading. This paper reports on the methods, findings, and policy implications of a major study, *The Effects of Land Use Change and Intensification on the San Francisco Estuary*. By using a geographic information system (GIS), future growth scenarios were played out and the impacts on wetlands, streams, and water quality were estimated on a region-wide basis.

The land use scenario developed from the General Plans of the Bay-Delta Region's twelve counties shows that the total area planned as urban use outside existing incorporated cities is 331,530 acres. This land use change and intensification associated with increased growth will continue to stress an overtaxed estuarine system. Results are expressed according to 14 receiving water segments and the associated 34 watersheds.

Direct impacts on wetlands and stream environment zones occur in every watershed containing these resources. We estimate that over 39,500 acres of wetlands may be potentially impacted. A total of 28,000 acres of stream environment are also subject to impacts of urbanization. Our analysis suggests that protection of farmed wetlands in the Delta and North Bay and the retention of biodiversity in the South Bay deserve special attention. The construction of land use scenarios for the Estuary region has presented, for the first time, an opportunity to examine the cumulative contribution of nonpoint source urban runoff to the levels of pollutants in the Bay and Delta. To date, more modest studies in smaller urban watersheds have provided only a glimpse of the overall effect that urbanization has in a region the size of the Estuary. We found that these impacts can be expected to decrease the overall water quality of the Estuary.

The existing system of land use planning delegates responsibility to local governments. However, of 111 jurisdictions within the Estuary study region, only eighteen have specific ordinances to protect streams and wetlands.

We recommend that the existing system of regulation and management be strengthened to protect, enhance, and to restore the environmental well-being of the Estuary. The results of our study suggest that improvements are needed in the goals, management strategies, and institutional arrangements now in place for the San Francisco Estuary. In particular, we urge that a specific focus on estuarine resource protection be incorporated in any new growth management legislation enacted in California.

We identify several important national policy implications arising from our study. First, we believe the potential transferability of our methodology to other estuaries should be investigated. Second, we recommend that technical workshops be convened for estuarine managers who address similar management issues. Third we recommend that EPA/OWOW and NOAA/OCRM adopt policy guidance to encourage the use of watersheds and receiving waters as the unit for analysis and planning. We also recommend that GIS-based analysis should be used to test the implications of alternative wetland definitions to inform the national policy debate.

## **State and Local Perspectives**

### **Coast and Estuary: Protection and Restoration A State Environmental Department Perspective**

*Roberta E. Weisbrod, Ph.D., Special Assistant to the Commissioner  
New York State, Department of Environmental Conservation*

It is hard not to applaud the ultimate purposes of the conference, the protection and restoration of our coasts and estuaries. However the focus should not be merely for collaboration of coastal and water quality programs, but rather toward the needs of protection and restoration, on what needs to be done, and how to do it.

Working in this way, the New York State Environmental Department is part of three successful collaborations involved in coastal protection. The three major collaborative efforts are the Bi-State Oil Spill Prevention Conference; the Floatables Action Plan; and the Dredged Material Steering Committee.

#### **Bi-State Oil Spill Prevention Conference**

After a series of major marine and estuarine oil spills in New York harbor, the Governors of New York and New Jersey established the Bi-State Oil Spill Prevention Conference, a collaboration with EPA and Coast Guard, of staff from the two state's

environmental departments and the oil companies, which developed a report setting forth the practicalities of a high standard of care. The conference went far beyond the report; the companies committed to undergo audits by independent auditors, against that standard of care, and to make the audits available to the governments (one of the Valdez principles).

#### **Floatables Action Plan**

The Floatables Action Plan and its active implementation were developed in response to the beach washups of 1988, which cost Long Island alone the loss of over \$2 billion in income. Led by EPA, the New York and New Jersey environmental departments, the Coast Guard, the Army Corps of Engineers, and the City of New York Sanitation and Environmental Departments, all work together to develop this surveillance, debris removal, and notification plan. Since the Plan has been implemented there have been very few, minor events. The benefit/cost ratio of the Floatables Action Plan is astoundingly high -- the entities contribute in total less than 1 million dollars to create an avoided loss of several billion dollars.

#### **Interagency Dredged Material Steering Committee**

The US Army Corps of Engineers has, for the past decade, chaired a forum, the Interagency Dredged Material Steering Committee, which is directed toward providing information for decision makers regarding the disposal of contaminated and uncontaminated dredged material. The Committee is composed of the state of New York and New Jersey environmental departments, the EPA, US F&W, the Port Authority, other federal and state agencies, and members of the interested public, including academics.

While the Steering Committee has been very effective in the past, bringing those who were ill-informed to full understanding of the range of environmental and economic issues, the jury is still out as to how effective they will be in the future. A critical decision making period nears and public interest in this issue rides high, the local Corps leadership has gone into retreat.

What have been the lessons learned in terms of achieving collaborative goals? Efforts succeed because a very strong need is perceived by the players, each of whom has a stake as well as a role. Collaborative efforts, when clearly needed, should be crafted to meet these goals of coastal and estuarine protection and restoration.

### **Toward Better Collaboration Between the National Estuary and Coastal Management Programs**

*Don Peterson, Chief, Planning Section, Washington State Coastal Zone Management Program*

Institutional barriers to collaboration within the state are reduced by both programs being part of the Washington State Department of Ecology. Historic coastal zone management (CZM) involvement in water quality is focused on land use and the state/local relationships developed with CZM program expertise and experience. Nonpoint coastal pollution in shellfish growing areas is targeted by watershed management programs administered by the CZM program.

Despite Puget Sound being the first approved National Estuary Program (NEP), there is little recognition of the NEP within the state. The Puget Sound Water Quality Authority (PSWQA) Plan and its resources overwhelms the limited federal funds and influence of the NEP. The PSWQA Plan and its implementation has brought significant new initiative, attention and funds to coastal issues. Through the Puget Sound Water Quality Authority Program, fledgling programs initiated by the coastal program for wetlands and shellfish have been enhanced.

Coastal boundaries of Washington's CZM program should be sufficient to meet the intent of Section 6217. The state coastal zone encompasses all of the drainage basins of the state flowing to the Open Coast and to Puget Sound and the Strait of Juan de Fuca. The inland boundary on the Columbia River is limited to the estuary and coincides with

Oregon's boundary. Approximately 28% of the state (the area west of the crest of the Cascades) is within the designated coastal zone.

States are concerned about the mechanics and the value of incorporating estuary programs into coastal programs. Questions remain about the volume of material and OCRM's ability to process program modifications, the definition of "enforceable policy" and what value the estuary program will have to CZM implementation if only enforceable policies can be used for federal consistency.

Some additional opportunities for collaboration:

- New state legislation, such as growth management in this state.
- Add a more specific water quality element to existing CZM land use authorities, such as the Shoreline Management Act.
- Link up with long-range or "vision" programs to generate interest and support for estuary and coastal issues. (This state's Environment 2010 process found nonpoint pollution to be a priority issue.)

### **Governmental Perspectives on Coastal Zone & Estuary Management Programs, Local Government Perspective**

*Jan K. Platt, Commissioner, Hillsborough County, Florida*

Each estuary has basically the same problems, only in varying degrees: water quality deterioration, reduction/alteration of living resources, lack of community awareness, increased user conflicts, lack of agency coordination and response, circulation/flushing, and hazardous/toxic contamination.

It is extremely important to the ultimate success of implementing the goals and objectives of the National Estuary Program that elected officials be on the Policy Board. Their understanding and support of the management plan is critical. If they serve on the Policy Board, then it becomes "their plan," which is essential for local funding, local ordinances and other local strategies. Also, elected officials can interact with state and federal officials as voids or needs are evidenced.

The National Estuary Program can broaden their perspective and approaches to improving their Bay, and also provide an opportunity to become aware of other federal agencies and programs that can interface and assist the local Estuary Program. It is the only window local officials have.

Coastal Zone Management Programs vary from state to state. The local governments interface with the agencies and structures above them at state and federal levels. Regional Planning Councils can serve important functions, complimenting the role of the National Estuary Program. Only through a variety of approaches, utilizing all available resources, can we accomplish our mission.

### **Responsibilities of the Local Official**

*Harold Bickings, Township Committeeman, Hopewell, New Jersey*

We all realize many of the recommendations that the CCMP will make will require legislative actions. However, here and in most other conferences, federal and state legislators' presence is noticeably absent. It would be naive to think they would attend; however, they might send an aide. Most legislators depend on their aides to advise them on some issues, be it environmental, economic, etc. I would recommend that future meetings select legislators or their designated aides for invitation to conferences as well organized as this one.

I also observed that the speakers kept their remarks in the time frame allowed. Often, speakers will become long-winded, creating frustration among organizers and audiences as well. This was not done here. The speakers made their points and supported them very well without a lot of unnecessary fluff.

One of the previous speakers said many of the problem statements are not clear. If a problem statement is not clear, how can we expect to receive the information we so desperately need. More time must be spent on the formation of problem statements so they are clear to the researchers. You only get what you ask for, so be sure to ask for what you need.

Many participants in this conference have mentioned land use planning or the lack thereof as a key factor in the pollution of our estuaries. I agree, but let's not restrict all development as a means to reduce nonpoint pollution. Good land use planning finds ways of accommodating the needs of the community and at the same time protects the environment. Total restriction is just as irresponsible as open or pro development.

As a local official, it is my responsibility to guarantee the health, safety, and welfare of those who elected me to my present position. I and most elected officials like me do not take this trust lightly. If we favor industrial development at the expense of the environment, the health of our constituents may be put in jeopardy. Conversely, if we seek to protect the environment to the point where no industry or housing is allowed, then those who live within our jurisdiction will be unable to afford to live there. The ideal answer to this dilemma is to encourage industry, which will comply to strict, yet reasonable restrictions. Hopefully, the CCMPs will assist the officials in reaching sound decisions.

More attention must be given to rural towns and municipalities. They will become the problem areas of the future. Many rural areas do not have the funding and expertise to supply services like sewer and water. The state and federal governments are preoccupied with the visible problems in the cities; consequently, the present and future needs of these rural areas are given a low priority. Let the planning process reflect the future needs of not only the cities but also the rural areas.

I commend the organizers of this workshop for a job well done and for their insight in recognizing the need to bring us together to discuss how we can collaborate in resolving our common problems. I am going to suggest to our region that a conference on a regional scale, comparable to this one, should be held.

One of the key components to a successful estuary program is the involvement of the industrial sector. Industry must be a partner in creation of the CCMP to insure their cooperation in the implementation. An adversarial relationship will cause many problems that could be avoided if industry were part of the planning process. I did not see any industrial representatives here which may be an oversight or a matter of choice. Every attempt should be made to include these people even if they continually fail to attend. Then the onus will be upon them if they do not agree with any of the CCMP.



## **WORKSHOP DISCUSSION GROUPS**

### **The Clams**

*Leader: Jeffrey R. Benoit, Massachusetts Coastal Management Program*

*Rapporteur: Sheila Semans, School of Marine Affairs, University of Washington*

### **NEP/CZM Contributions to Water Quality**

The group agreed that

- Water quality programs should address the water column, sediments, wetlands and the larger watershed.
- It is difficult to attribute water quality outcomes to specific agencies or activities

### **NEP**

Characterization reports provide a unique opportunity to assess the whole estuarine environment. These reports force a look at a bigger picture to see what's being done and what contributions are still needed.

The advent of GIS has assisted NEP's more comprehensive management objectives. NEP's focus on characterizations has consequently produced a weak implementation process.

### **CZM**

Limited by jurisdiction and funding. State programs generally need better guidance at a federal level to deal with NEP water quality issues.

### **Opportunities for Collaboration**

There is a strong need for better collaboration in the following areas:

- between NOAA and EPA
- within NOAA and EPA
- between state programs and federal agencies
- between state and local governments

There was even talk about the need for another program within NOAA, such as an estuary management program, to better coordinate agency efforts and facilitate information transfer to the regional NEP's.

### **Opportunity Areas**

6217 programs: These demand cooperation; their design essentially requires cooperation at a federal, state and local level. Joint approval of the nonpoint programs could also be required.

The NEP process could be used to help update the CMP policies, and in turn, the CZM could help focus NEP's.

### **Research**

Develop and share a priority list between various levels of government. This might be achieved through the formation of regional scientific advisory groups to serve all agencies in identifying research priorities.

There is also a need to understand the feasibility of research, that is what should realistically be expected bearing in mind financial and time constraints.

### **Federal Consistency**

NEP could "piggy-back" on CZM's consistency powers and CZM's could use this as a tool to expand their jurisdiction.

NEP develops recommendations; CZM incorporates them; and federal consistency applies.

### **Incorporation of NEP into CMP**

We need to develop better strategies to achieve this, there needs to be guidance to the programs

Federal programs should involve state's in decision-making process.

We need to develop better ways to communicate goals to local governments in an effort to better implement plans and establish national standards.

### **Next Steps**

- Develop better communication:
  - within states
  - within and among federal agencies
  - with the public and local governments
- Need more state level meetings to establish ways to incorporate NEPs and CMP and develop an implementation plan.
- Identify ways to improve CMPs, federal programs, and local involvement in the process.
- Establish research advisory committees that can get info into and out of "non-traditional" sources.
- Better link decision-makers to research issues and needs.
- Establish incentives for improvements and change regarding CZM updates , research, innovation in implementation plans, etc.
- Maintain EPA collaboration with CCMPs.
- Solve individual state implementation problems

### **Key Issues**

- A strength of NEP is its ability to look at the big picture. They essentially create a road map for the process.
- The major weakness of NEPs concerns implementation.
- There needs to be better communication on a local/regional level.
- There is a lack of internal federal agency collaboration, and a general lack of collaboration within each state.
- Planning budget and implementation funding is necessary for these areas:
  - CZM enforcement capabilities
  - Maintenance funding for management conferences
  - Local government
- There needs to be better guidance on how to incorporate CCMP into CMP.
- There needs to be a better link between EPA and state CZM, and between CZM and water quality boards.

### **The Crabs**

*Leader: Paul Cyr, County Commissioner, Pierce County, Washington*

*Rapporteur: Brice McDaniel, School of Marine Affairs, University of Washington*

### **NEP/CZM role in water and habitat quality**

- NEP has potential for improving water quality.
- CZM is primarily focused on land use.
- Both programs provide for research.
- NEP has a long-term monitoring function and a more geographical focus.
- Both programs operate within a legislative landscape of federal and state water quality mandates

### **Needs**

- an ongoing review of what water quality or habitat quality means
- a common methodology to measure water or habitat quality that is linked to ecological estuarine functions
- upgrade standards specific to marine environments (e.g., there are no marine quality standards for nutrients)
- build in a way to convey successes to the public when water quality standards are maintained in the long run rather than improved

## **Characteristics of NEP and CZM**

A distinction was made that CZM is a *program* but that NEP is a *process* for discussion and coordination.

Both CZM and NEP focus on regional solutions.

CCMPs are perceived as land use restrictions.

The perception of the group is that CZM is a top-down program and NEP is a bottom-up program. Both approaches are needed: bottom-up builds local consensus that in turn can effect political will, and top-down provides mechanisms for conflict resolution (e.g., transboundary problems).

Ties between NEP, with its water quality focus, and CZM, with its land use and economic aspects, offer a systemwide approach to estuary management.

There is great diversity in the 29 CZM programs and 17 NEP programs. What are the commonalities?

Both CZM and NEP stimulate local action and provide seed money.

Consequences follow from designating an NEP protection/preservation area:

- land use consequences
- "carrying capacity" of watershed becomes an issue
- some pollutants are population density issues and some are set-back issues
- effects on local zoning and potential compensation costs for existing platted areas
- geographic zone of influence issue (are costs and benefits equitably shared?)

## **Funding Issues**

Since no new federal money is expected, existing budgets will have to be reshuffled.

Any program or agency losing money or other resources to NEP/CZM should be included from the beginning as a partner in the process.

Because NEP is an integrator of programs, there is a new realm of potential funding (local districts, local taxes, pooled resources, foundations, etc.).

## **Recommendations for improving estuary management planning and implementation (unranked):**

- Expand participation in the process by getting more people and agencies involved (e.g., SCS).
- Let locals know about all pieces of the plan, including funding support.
- Identify roles for federal and state agencies.
- Incorporate federal and state consistency review so that agencies and programs are strengthened and coordinated.
- Maintain the option to continue management conference through implementation (or at least monitor implementation of the plan).
- Establish specific measurement standards to identify progress in implementation of the plan.
- Each NEP should develop an ongoing mechanism for reporting the status of plan implementation and make revisions as necessary to attain goals.
- The state (as opposed to CZM agency director) should insure that there are adequate controls throughout the watershed to insure water quality.
- A sharing of plans and processes by various coastal management agencies showing what works, etc.

## **The Oysters**

*Leader: Ernie Estevez, Mote Marine Laboratory, Florida*

*Rapporteur: Beth Bryant, School of Marine Affairs, University of Washington*

## **Characterizing Water Quality Contribution**

1) Problems with questions

2) Issue of collaboration on water quality is affected by two main factors:

- Definition of Water Quality. General opinion is that biological/ecosystem integrity should be the standard
  - Large variety of combinations between effective and ineffective CZM and NEP programs
- 3) Effective programs should be given the opportunity to lead, wherever they happen to occur. Emphasize site-specific strengths in collaboration—do not force integration of a weak component
  - 4) Weakness: neither program deals well with cumulative effects on an estuary of water quality degradation
  - 5) Nonpoint source pollution has multiple origins; each needs to be treated individually
  - 6) 6217 provision of CZMA: Disagreement on its utility
    - May be redundant or delaying
    - Despite geographic restriction to coastal area, could serve as a mechanism to insure collaboration.

### **Evaluating Past Interactions**

This section was not examined in detail, primarily because it was felt that there is not enough case history to evaluate collaboration in depth—too many new NEPs. Also, the group was too small to analyze past interactions in depth—not all estuaries represented.

However, the "nitrogen overlay district" at Buzzards Bay, Mass. was discussed as an example of a program in which collaboration involving water quality between Federal and local programs succeeded. Specific nutrient limiting goals were given to three local governments, backed by solid scientific research/guidance; they voluntarily changed zoning to reflect this.

### **Opportunities for Collaboration**

- 1) Between NOAA/EPA: Greater involvement in each other's program reviews.
- 2) Between CZM/NEP:
  - Use NEP committee structure to involve CZM (and vice versa)
  - Share science base
  - Fund positions that provide regional level expertise (such as staffing for storm-water planning)
- 3) Between CZM/CCMP:
  - Need to assign specific tasks to CZM program
  - Incorporate as much of a CCMP into a state's CZM program
- 4) Between CCMP/Local:
  - Strive for local government and tribal involvement with State and Federal level
  - Both CZM/NEP need to provide assistance to storm-water utility projects.

Example: establishing a revolving loan account for septic tank repair

### **Identifying Next Steps**

- 1) More basic research needed, essential to long term management. Establishment of research foundations was recommended.
- 2) Focus of Research:
  - System wide (estuary or rivershed)
  - Find indicators of ecological health
  - National lead agency for estuarine research
  - Support for funding local scholars

### **Summary and Final Comments**

Essential feature of estuarine research: some kind of political organization and institutional support at the local level.

Involve all players in the policy process at an earlier stage

Arrange for "basin-wise" planning

In some cases, solutions to a problem are straightforward; what's missing is *political will*. Build this by working at every level, especially with the public by giving them an opportunity to participate (local level).

At the national level:

- Broaden scope of NEP to include preservation. It may be necessary to take a "triage" approach in allocation of resources among estuaries
- Regarding CZM/NEP: 6217 will promote collaboration, not competition.

The idea that *consistency* and *enforceable policies* are obstacles to collaboration was rejected in favor of a view that these are highly flexible and negotiable concepts.

## **The Shrimps**

*Amy Zimpler, San Francisco Bay Estuary Program*

*Rapporteur: Scott Kathey, School of Marine Affairs, University of Washington*

### **Themes**

- Local governments are the most effective implementors.
- Agency funding should go to the lowest level of government.
- Federal-level agency efforts should serve to set goals, distribute funding, technical assistance and expertise to local authorities, allow local governments flexibility in determining how to meet the goals, and assure accountability of local plans.
- Greater collaboration is needed on a comprehensive scale in estuaries - not just between EPA and NOAA but primarily between levels of government (local, state, and federal). Local authorities need an enhanced role in planning.
- Goals, standards and solutions lack practicality for implementation at present.
- CZM/NEP collaboration will occur as a natural consequence of greater local control in estuary management and governance. It is currently impeded by high-level preoccupation with individual agency missions.
- Collaboration must occur as a "grass roots" phenomenon. It cannot be effectively imposed from above.
- Collaboration should be site and issue specific.
- Further regulation should be strongly avoided - agencies should promote and pursue non-regulatory implementation measures.

### **Past Interactions—Advantages and Problems**

- Institutional differences (culture, mission) prevent effective collaboration, particularly at the federal level.
- Collaboration works best when the focus is on a specific environmental problem and not solely on agency needs. Neither NEP nor CZM should try to meet "needs" of the other program. Instead, they should both address individual problems together.
- CZM and NEP field staff work very well together - such cooperation does not occur at the policy level.
- "Don't expect quick solutions!" Collaboration may take many years to "evolve".

### **Opportunities for Collaboration**

#### **Technology**

- Need compatible, usable, and transferable information and data.
- Need local/federal collaboration to develop functional institutional designs for implementation.

#### **Workshops**

- Federal agency efforts should provide workshops/learning sessions for local planners/implementors on specific resource topics (e.g. wetlands mitigation, sediments control, shellfish protection, septic tank improvement measures, etc.).

#### **Non-Point Source Pollution**

- Build on existing resource management programs. Don't introduce new federal plans that disrupt/derail current, working programs.
- Allow flexibility to focus on local issues and existing local conditions.

- Federal efforts should fund extensive "talent trades and loans" between NEP programs and between NEP and CZM programs.
- Federal efforts should increase transfer of "learning" and disseminate in a "useful form".

#### **Research**

- Must be relevant to management. There must be a forum for interactive dialogue between scientists and managers.
- Raw science cannot produce solutions for management problems.
- Research funds should be granted to meet locally determined research needs. Funding should be a "responsive" process - not a "prescriptive" process.
- Need specific research on governance so that technical research can be effectively utilized. Need to know why we are making good/bad decisions.

#### **Policy**

- Must have NOAA/EPA support beyond "The Plan"!
- The "fishable/swimmable" policy must be amended to include "usable" as well.
- Need to develop data management standards/technology that are compatible, consistent, and transferable between agency players.

#### **Enforceability—No Consensus**

- Allow local authorities the opportunity to devise solutions to satisfy goals—give them funds, resources, and flexibility and hold them accountable. The federal authority should only step in if local players cannot develop solutions.
- Use existing on-site authorities and don't limit their options.

## **DISCUSSION SYNTHESIS** *(Scott McCreary, Facilitator)*

The following synthesis was developed by approximately thirty workshop participants during a facilitated session near the end of the workshop. These conclusions and recommendations are based in large measure on the work of the four discussion groups.

### **Program Design and Planning**

Adopt the concept of "basin wise" and system-wide planning and management.

Use watersheds/waterbodies as the focus for planning and management.

Find creative ways to work across the disparate boundaries and jurisdictions of NEP, CZM and other resource management programs. (For example, seek ways that local government can use watershed planning even though their watershed is not coterminous with their jurisdiction.)

When carrying out the new Coastal Nonpoint Pollution Control Program, build on the strengths of existing resource management programs.

Develop the political will to resolve estuary problems.

### **Program Implementation**

Incorporate appropriate action plans of CCMP into state CZM programs and provide more specific guidance on ways to accomplish this task.

Seek ways in which action plans could contain enforceable policies when incorporated into CMPs so that federal consistency can be used in implementation. (Federal consistency powers are available to states under the CZMA only when state coastal goals are implemented with "enforceable policies"—statutes, regulations, ordinances, court opinions, etc.)

Establish secure funding for implementation of CCMP action plans through expanded funding partnerships, and through additional local sources such as local districts, new taxes, pooled resources, and foundations.

Establish a secure mechanism to monitor progress toward implementation of the CCMP. Management conferences, or a similar type of intergovernmental mechanism, should be used to oversee the CCMP.

Use the NEP process to help update and enhance CMP policies. In turn, use CZM tools to assist NEP implementation.

### **Program Evaluation**

Measure progress toward implementation of the CCMP and periodically report that progress.

Develop public educational programs that explain long term goals and progress toward implementation of CCMP's and CMP's.

Involve the staff of NEP and CZM programs in the review of each other's programs.

Establish a system of peer reviews of estuary management and coastal management programs

## **GENERAL CONCLUSIONS** *(by Marc Hershman, Workshop Coordinator)*

The workshop produced considerable interaction and information-sharing among the professionals in attendance. Discussions ranged well beyond the original questions posed and produced new perspectives. Four broad conclusions/recommendations are warranted after reviewing the reports of the discussion groups and the synthesis statement, and observing the workshop first-hand.

- Collaboration between CZM and NEP officials makes sense because of common goals, overlapping jurisdictions, and the potential for effective land use control-resource protection linkages. Discussions about coordination are well underway between the two federal program offices and collaboration has advanced within some states. Collaboration could be improved in a variety of ways such as through better integration of the elements of one program into another (where appropriate), through joint projects, and through the development and implementation of the new Coastal Nonpoint Pollution Control Program.
- However, CZM-NEP collaboration, no matter how intensive, will only deal with part of the needs for effective, "system wide", estuary management. Many important issues are simply out of the domain of one or the other of the programs. The needed collaboration must include a much wider range of public and private parties if coastal water quality within estuaries is to be properly managed. Because of the breadth of their mandates CZM and NEP might be the catalytic agencies to insure that the broader collaborative efforts occur; that an inclusive community is formed around each estuary; and that the community is nurtured and developed over time, well beyond adoption of particular plans.
- The central players in this broader community are local government and local interests. Once broad goals are established at federal and state levels, local authorities must identify and prioritize the problems particular to their area, create the political will to deal with those problems, effectively marshal the resources of higher levels of government and academia, and supplement those resources as necessary. The goal of federal and state agencies, and regional academic and research institutions, should be to provide efficient, effective, and fully coordinated services and advice to local areas. This will require better communication within and among the many resource agencies concerned with coast and estuaries.
- Research that leads to useful, management-oriented information is an important underpinning to estuarine and coastal management. That research must be multi-disciplinary and goal-oriented, and address management and governance issues as well as technical problems. An important need is for the local government, resource management and research communities to start a dialogue about information needs; a dialogue that clarifies short and long-term research goals, information presentation and delivery techniques, and ways that ongoing relationships are formed and continued.



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