coastal zone management

THE COASTAL ZONE

A Symposium

THE UNIVERSITY OF WEST FLORIDA

Co-Directors/Editors

Sneed B. Collard
Associate Professor
Faculty of Biology
The University of West Florida

Luther W. Skelton
Assistant Professor
Faculty of Political Science
The University of West Florida

June 17-18, 1977

FORWARD

This Coastal Zone Symposium was the second annual session to be sponsored by The University of West Florida to highlight and clarify the unique problems of the coastal zone. It was generously supported by the Florida Sea Grant Program, the S and H Foundation, and a U.S. Department of Higher Education Public Service Education Institutional Grant.

Directors of this Symposium wish to acknowledge significant contributions made by the Symposium Planning Committee, and its Chairman, Dr. Ralph K. Birdwhistell. We also thank our many colleagues throughout the country whose invaluable assistance made this effort possible. Finally, we appreciate support of the students and fellows of the Coastal Zone Management Emphasis in the Masters of Public Administration Program of The University of West Florida.

The symposium and this document were supported and financed by:

The United States Department of Health, Education and Welfare, Public Service Education Institutional Grant Program

The Florida Sea Grant Program

The S and H Foundation, Sponsored by the Sperry and Hutchinson Company

Printed at THE UNIVERSITY OF WEST FLORIDA
Pensacola, Florida
1977

TABLE OF CONTENTS

INTRODUCTION

This Symposium had two primary foci: Coastal Biology and Coastal Planning. These categories were further divided into (1) coastal environment and environmental quality within the biology focus and (2) coastal zone planning and the management of coastal resources within the planning focus. These four divisions became the topical sections for the Symposium.

Two simultaneous discussions were held June 17 on opening afternoon and two the following morning of June 18. Symposium attendees thus had an opportunity to select areas of interest. Extracts of most of the papers, prepared in accordance with a pre-distributed program, are presented in this publication.

The first evening plenary lecture, delivered by Dr. Robert Rudd, University of Denver, covered remote sensing and its use in the Coastal Zone. The second lecture, delivered by Dr. John Teal of the Woods Hole Oceanographic Institution, considered the dynamics and significances of salt marshes to the coastal zone.

In the final afternoon, the Symposium was divided into four panel discussion groups to consider a series of previously distributed questions concerning problems in the Coastal Zone. Two groups considered the same list of questions and their response to these questions is synopsized in this publication. The mission of the panels was to highlight the problems, define research requirements, delineate legislative options, and describe alternative futures in the Coastal Zone.

PROGRAM AGENDA

Friday, June 17, 1977

8:00 - 12:00	Registration Sheraton Inn Pensacola, Florida
1:00 - 1:30	Introduction/Welcome Arthur Doerr Vice President for Academic Affairs The University of West Florida
1:30 - 5:00	Presentations: Sections I and II
	Section I The Coastal Environment Moderator: James Jones, Director Mississippi-Alabama Sea Grant Consortium
1:30 - 2:15	The Terrestrial Environment Robert Shealy, Pensacola Junior College
2:25 - 3:10	The Wetlands Environment Daniel Holliman, Birmingham Southern University
3:20 - 4:05	The Estuarine Environment Robert Livingston, Florida State University
4:15 - 5:00	The Marine Environment Thomas Hopkins, University of Alabama, Tuscaloosa
	Section II Coastal Zone Planning Moderator: Andrew Dzurik Florida State University
1:30 - 2:15	The Utility of Coastal Zone Planning Robert Nix, Florida Department of Environmental Regulation
2:25 - 3:10	The Role of Marsh Establishment Projects in Management Richard Hall, University of West Florida
3:30 - 4:05	Public Access to the Coastal Zone Andrew Dzurik, Florida State University

4:15 - 5:00	Local Government's Role in Coastal Planning Benjamin Withers, Planning Consultant, Tampa, Florida
5:00 - 6:00	Social Hour
6:00 - 7:00	Dinner
8:30 - 9:30	Plenary Lecture: "Remote Sensing--Its Use in the Coastal Zone." Robert Rudd, University of Denver

Saturday, June 18, 1977

8:30 - 12:00	Presentations: Sections III and IV
	Section III Environmental Quality Moderator: Thomas Duke, Director Environmental Protection Agency Laboratory Sabine Island Gulf Breeze, Florida
8:30 - 9:15	Noise Pollution Jesse Havard, University of West Florida
9:25 - 10:10	Water Pollution Winston Menzel, Florida State University
10:20 - 11:05	Industrial Pollution Roy Herndon, Florida Resources and Environmental Analysis Center
11:15 - 12:00	Domestic Pollution Billy Tennant, Escambia County Health Department Pensacola, Florida
	Section IV Management of Coastal Resources Moderator: Henry Dean Bureau of Land and Water Management State of Florida
8:30 - 9:15	Energetics of Coastal Resource Utilization Kenneth Prest, Environmental Licensing, Inc.

9:25 - 10:10	The Coastal Zone and the Quality of Resource Use Luther W. Skelton, University of West Florida
10:20 - 11:05	The Citizen's Role in Coastal Zone Planning Shirley Taylor, Florida State University
11:15 - 12:00	Coastal Zone Management, Major Issues in the State Henry Dean, Bureau of Land and Water Management
12:30 - 1:30	Lunch
1:45 - 5:00	Panel Discussions
5:00 - 6:00	Social Hour
6:00 - 7:30	Dinner
8:30 - 9:30	Plenary Lecture: "The Salt Marsh--Its Function." John Teal, Woods Hole Oceanographic Institution

SECTION I

THE COASTAL ENVIRONMENT

Presentation Extracts

This section of the Symposium was moderated by James Jones, Director of the Mississippi-Alabama Sea Grant Consortium. The papers presented in this section were generally devoted to a description of the overlapping and interrelated environments which make up the coastal zone.

THE COASTAL ZONE TERRESTRIAL ENVIRONMENT

Robert M. Shealy
Department of Biology
Pensacola Junior College

The terrestrial environment is the hub of the coastal zone. It determines the qualities (sedimentary, trophic, and hydrologic) of the estuarine systems directly and definitely. Often in our considerations, we overlook the intricacies of interaction among systems. For example, we stringently regulate oyster harvesting to oysters over three inches long, but allow destruction of entire beds through faulty drainage plans.

Estuaries are regarded by most as the single most valuable element of the coastal zone. Their famed productivity, based upon intimate land-freshwater-marine interactions, is severely threatened (terminated in many cases) by terrestrial human activities, such as shore development, agriculture, forestry, and urbanization in general.

Some terrestrial systems are clearly important to the integrity of estuarine systems in a variety of ways. The scarcest, most crucial, most delicate, and most threatened is the system of barrier islands. These islands actually form estuaries (regions of shallow, stable water of intermediate salinity and high nutrient availability). They offer protection (barriers) to inland areas against both storms and normal shoreline stresses. They support unique biotic communities and are of tremendous recreational value.

A barrier island, such as Santa Rosa Island, must be understood and treated as a system. The components are rightly linked, more than those found in most other systems.

Although the origins of barrier islands may be in doubt, they are clearly maintained by onshore and longshore drift. The U.S. Army Corps of Engineers estimates a typical drift of over a million cubic yards of sand past a single point per year.

Wind is the key factor in island dynamics, ruthlessly dictating the physical, chemical, and biological qualities onshore. This occurs through wave activity and salt spray, as well as drift and blown sand movement. Environmental stresses (salt spray and wind velocity) diminish inland from the shore, allowing less tolerant vegetation to marginally survive. Dunes of various size and composition also offer protection, with harshness (salt spray) being about four times as great on the face of the dune as on the lee side.

Categorization of dunes is still doubtful, and probably should vary locally, but generally dunes may be classified as "active" or "stabilized." Active, or primary dunes support herbaceous (mostly grasses) vegetation, which is most tolerant to, and often dependent upon, inundation by shifting sand and salt spray. Such dunes may extend across a narrow or severely disrupted island, and are essentially transitory.

Stabilized dunes are rarely found within a hundred meters of the shoreline and are often over ten meters high. The most securely stabilized dunes have an internal framework of shrubby hardwoods, resistant to drought and decay. It is improbable that stabilized dunes evolve from active dunes. Rather, they may be allowed by them, as hardwoods colonize the protected lee side of active dunes. The permanence (and therefore value) of dunes lies in how they are formed. The notorious "Bulldozer" dunes of Cape Hatteras, heaps of sand with a fragile mantle

of vegetation, lasted less than thirty years, while naturally stabilized dunes are known to be hundreds of years old.

Behind and between stabilized dunes a variety of vegetational types may be found. On Santa Rosa Island, the live oak-magnolia hammock is a rare but interesting type. It houses and protects a wide variety of wildlife and offers a reliable reseeding source for the entire island system. Its value as a refuge during particularly severe periods (hurricanes) may be crucial to the survival of many valuable or endemic vertebrates.

An outstanding function of the stabilized dunes of barrier islands is the protection of sound-side tidal marshes. Such salt marshes are recognized as a chief source of estuarine productivity, but are clearly endangered by dune destabilization and development generally. Many of the most important effects of barrier island "development" are probably still unknown, to sadly be discovered after the fact.

For information on barrier islands, preservation activities and studies, write Barrier Island Workshop, Suite 300, 1717 Massachusetts Avenue, N. W., Washington, D. C. 20036, telephone (202) 797-4311.

THE COASTAL WETLAND ENVIRONMENT

Daniel Holliman
Birmingham Southern University

This presentation summarizes my field experience in Alabama Coastal Wetlands. Reference is made to the extent of Alabama coastal marshes and the problems encountered in their characterization. Emphasis is placed on the productivity of Clapper Rail marshes. Total acreage of coastal wetlands and vegetative patterns are described. Avian population dynamics are discussed, and notes are given concerning endangered and threatened birds and mammals; particularly in the immediate area of the Alabama-Florida coastland. The status of the Reddish Egret, Mottled Duck, Black Rail, Alabama Gulf Beach Mouse, Perdido Bay Beach Mouse, and Marsh Rabbit are briefly outlined. The effects of human disturbance on Black Skimmer, Least Tern, and heron-egret colonies are discussed with reference to Cat Island in Portersville Bay.

RECOMMENDATIONS

The following recommendations are offered in the belief that a concerted effort among the contiguous Gulf States can be beneficial. Any plans resulting from this Symposium enabling cooperation between the states would ensure sensible long-range management of our resources.

Classification of Coastal Wetlands

An attempt should be made to work toward a uniform qualitative description of coastal wetlands, thus making it possible to determine better their ecological sensitivity on a wide-range basis. Floral signatures should be refined. More seasonal ground truth data are needed to increase the value of remotely sensed imagery.

Preservation of Coastal Wetlands

Ecologically sensitive areas should be identified in terms of endangered and threatened organisms, and in terms of their productivity. These areas should be inventoried and monitored periodically on a seasonal basis.

Endangered and Threatened Organisms

The status of endangered and threatened populations should be monitored seasonally. This is particularly needed for those populations with extensive ranges. Interstate symposia for endangered organisms should be planned on a yearly basis with their proceedings published.

Oil Spills

Contingency plans should be formulated for critical areas. These critical areas should include all Spartina marshes, areas of breeding bird colonies and wintering bird concentrations. These critical areas should be monitored seasonally to determine shifts in populations. This should involve setting up training centers and facilities where personnel and resources can be shared. Emphasis should be placed on determining methods for lessening the harm to Spartina marshes, for dispersing birds, for oiled bird collection and for oiled bird care.

Portions of this paper summarize results of a research project funded by The Accelerated Research Program for Migratory Shore and Upland Game Birds, U. S. Fish and Wildlife Service, Contract No. 14-16-0008-793.

ESTUARINE AND COASTAL RESEARCH IN APALACHEE BAY AND APALACHICOLA BAY

Robert J. Livingston
Associate Professor
Department of Biological Science
Florida State University

Excellent opportunities in estuarine and coastal systems combine research, teaching, and public service. Because of the difficulties of field and laboratory operations, however, it is often necessary to organize a team to carry out certain research goals. For our needs, we developed a program to perform integrated research associated with offshore areas. Workers are organized into three basic groups: (1) laboratory/analytical; to perform laboratory experiments and carry out analyses of physico-chemical parameters; (2) field; to carry on long-term (8 year) collections of data in the subject bay systems; (3) statistical/computer; to develop quantitative analytical techniques to handle extensive data files. The third area, developed as a central feature of this effort, expanded the scope and duration of the various projects. Two bay systems (Apalachee Bay, Apalachicola Bay) are being analyzed via continuous field operations, while the laboratory experiments complement and explain the field data. Thus, laboratory problems derived from field data provide valuable feedback for understanding the impact of pollutants on coastal systems. These data are then applied to economic, social, legal, administrative, and educational areas.

For six years, we continuously monitored various physicochemical parameters (salinity, temperature, dissolved oxygen, etc.) and biological functions (benthic plants and infauna, epibenthic fishes, and invertebrates, etc.) on a series of permanent stations in the respective offshore systems (Fig. 1). Because of

extreme seasonal and annual variation, statistical verification of such data was difficult; thus an effort was made to develop a data base of sufficient scope and duration to facilitate the development of preditive models. This integrated laboratory-field project sought to determine possible effects of pesticides (DDT, DDE, dieldrin, mirex) and other forms of pollution on bay ecosystems, simulated marsh habitats, and the behavior and embryological development of specific estuarine organisms. Special emphasis was placed on quantitative ecological sampling of bay systems (Apalachee Bay, Apalachicola Bay), computerized analytical techniques of handling extensive collections of multidisciplinary data, and the development of quantitative laboratory experiments on specific behavioral (avoidance reactions, activity rhythms, etc.) functions and morpho-physiological (developmental) functions.

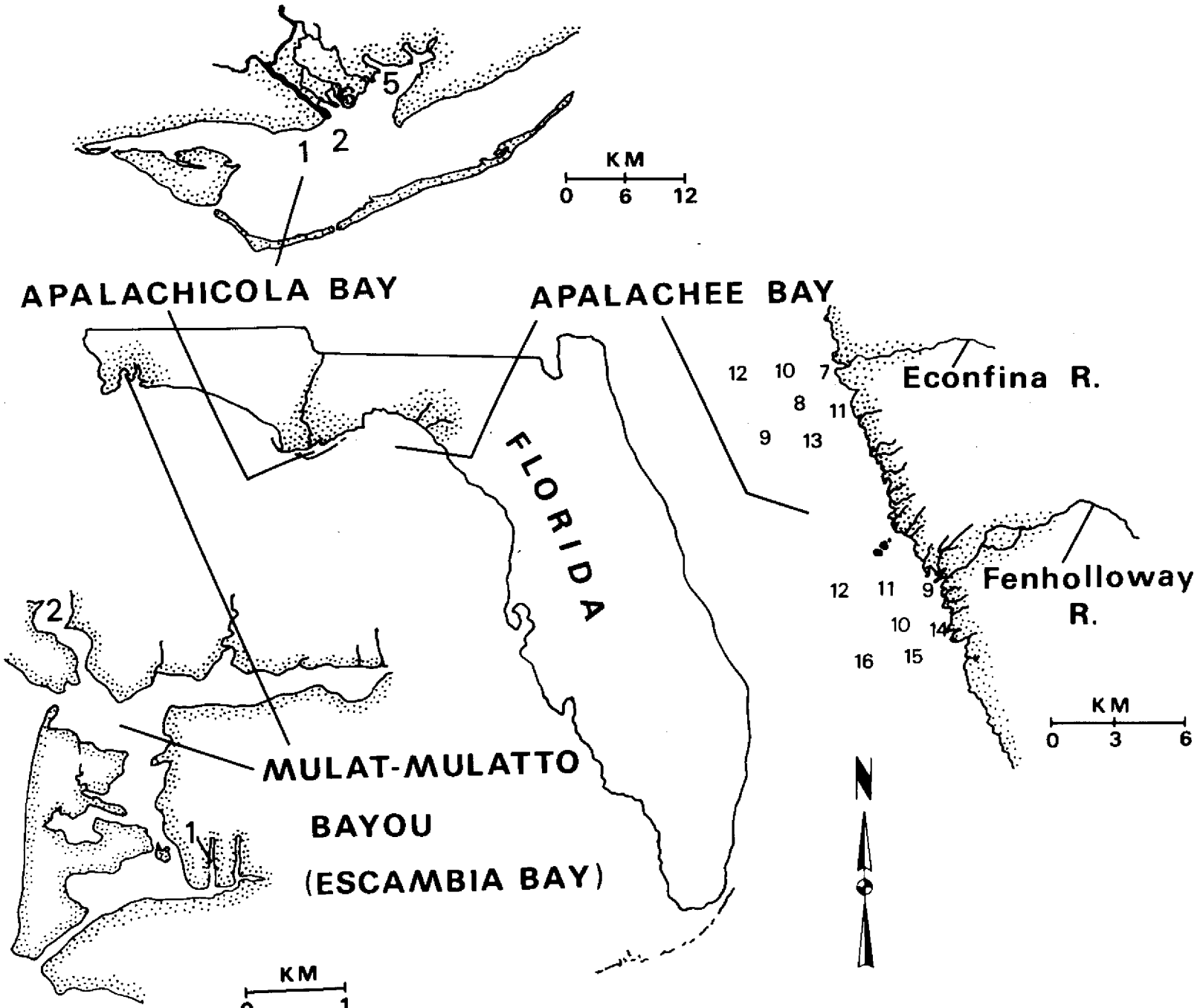
The Apalachee Bay program has paralleled the Apalachicola effort. After ecological effects of pulp mill effluents were investigated for two and one-half years (1971-73), a three-year follow-up study (1974-77) was made to determine rate of recovery of water and sediment quality, benthic macrophytes, invertebrates, and fishes. This included quantitative and semi-quantitative sampling of the above parameters, computerized statistical handling of the data base, and development of hypotheses regarding community relationships (species diversity, dominance. energy flow, coorelations of major parameters, multi-variate analysis of species assemblages, and gradient analysis of habitat alterations due to stress parameters such as pulp mill effluents and major physio-chemical changes. This field program has been coupled to a laboratory study of the avoidance behavior of various estuarine fishes exposed to low-level gradients of pulp mill effluents. Presently, we are working on a two-year (1977-79)

project to determine the trophodynamic relationships involved in this area with attention to habitat regeneration and functions related to recovery of grassbeds as a result of the pollution control initiatives of the local pulp mill industry. In addition, our team of statistical/computer analysts has developed a computer program to handle large data files. Based on this system, new methods of analyses have been developed to evaluate the impact of various parameters on coastal assemblages. These methods, focusing on effects of pollutants on various portions of such ecosystems, will be expanded to handle the development of models of these systems.

The primary thrust of this research program is to determine the responses of individual marine organisms and estuarine-coastal communities to gradients of key-forcing functions. Emphasis has been on behavioral aspects of community response (behavioral ecology) and the development of new methods and techniques for quantitative collection of aquatic organisms and analytical examination of broad, interdisciplinary data banks.

After six years of careful collection of field and laboratory data, we are analyzing and publishing this information. Together with other researchers at FSU, we will use these results to design a new study program emphasizing field experimentation, trophodynamic interactions in coastal assemblages, and long-term changes of aquatic communities. We now have enough data to begin a comprehensive time-series analysis to determine long-term trends and interactions of biotic and abiotic functions. In other words, the first phase of this research program has been completed and will serve as the basis for the development of a new program designed to answer more sophisticated questions.

Fig. 1: Areas of study in north Florida showing representative (permanent) sampling stations. The Escambia Bay operations have been terminated; studies in the Apalachee Bay and Apalachicola Bay systems are continuing.


APALACHICOLA BAY
APALACHEE BAY
FLORIDA
MULAT-MULATTO
BAYOU
(ESCAMBIA BAY)
Econfina R.
Fenholloway
R.
KM
0 6 12
KM
0 3 6
KM
0 1
N
1 2
5
2
1
12 10 7
8 11
9 13
12 11 9
10 14
16 15

SECTION II

COASTAL ZONE PLANNING

Presentation Extracts

This section of the symposium was moderated by Andrew Dzurik of Florida State University. Papers presented in this section considered a wide range of planning problems and related management possibilities.

THE UTILITY OF COASTAL ZONE PLANNING

Robert Nix
Florida Department of Environmental Regulation
State of Florida

This subject will be difficult to develop adequately in the short time available. To know the utility of coastal zone planning, it is necessary to understand the basic significance of the environmental problems we face today.

Arnold Toynbee, in the introduction to his *Study of History*, states: "A society, we may say, is confronted in the course of its life by a succession of problems which each member has to solve for itself as best it may. The presentation of each problem is a challenge to undergo an ordeal, and through this series of ordeals the members of the society progressively differentiate themselves from one another." The highly developed industrialized nations, known in modern parlance as Western Society (or Western Civilization, if you so choose), have come face to face with the greatest and most terrifying challenge ever to be presented to any known society of mankind. The gauntlet thrown down before Western man is not the challenge of man against nature, but of man against himself--not in war, but in peace. In Western Society, we perceive that the very basis of man's success, as an evolutionary form, is his ability to alter nature to suit his own peculiar needs. Now nature is beginning to react in ways that affect the lives of millions of human beings every day, and in ways that perhaps will greatly determine the ultimate fate of human civilization, if not of man himself. This problem is new for humankind only by virtue of its vast scale in modern times. It is, in fact, an old and familiar issue.

Since the architect Hippodamus first set down basic percepts of city planning for the ancient Greeks, man has sought ways to fit the relatively intense structures of their civilizations into the broader scheme of nature. Man has recognized, as Chadwicke has said, that he must learn to live within nature for he cannot live without it. Thus, a tradition of planning has been established in human civilization, at least since the time Hippocrates established a tradition of medicine. But, unlike medicine, the time for the great test of urban and regional planning did not come in history until now. Finally, we are being forced by experience to recognize that the old idea of man and nature (and more especially of man against nature) was a myth. There is only man in nature.

Through this view of human society as a part of nature, it is possible to recognize that many pressing problems can be solved by altering the ways in which human beings interact with the rest of nature, rather than by altering non-human nature itself. The environmental problems confronting mankind in consequence of the things we do to our natural surroundings are not inherent flaws in nature, but instead, result from inappropriate human adaptation to natural processes. These problems, then, should not be perceived as "environmental problems." Certainly, their solution cannot be found in regulating natural processes through legislation, nor through even more extensive alterations of natural systems as have caused the problems in the first place. It is more appropriate to change our conception of environmental problems, and to perceive them instead as human problems brought about by adaptive flaws in our social, political, institutional, intellectual, and economic systems.

Planning as a process provides society with rationally derived alternative solutions to complex problems of growth and of increasing social, institutional, structural, and technological diversity. The National Coastal Zone Management Act provides a means by which the comprehensive planning process can be applied to the significant problem of stress on the coastal resources of the United States. Because of its comprehensive approach to coastal problems, the Act provides for a process much different than traditional land use planning. Contrary to assertions from some quarters in this State, the Coastal Zone Management Plan is not a land-use plan under another name. Nor is it merely a resources management plan as many have termed it. The Coastal Zone Management Program is the first major national attempt to address a significant part of the problem of man in nature through a comprehensive planning process. As such, it can most properly be seen as a comprehensive Man-in-Nature management plan. This view gives full recognition to the fact that there are three major elements to coastal problems: human systems and the inter-relationships; other-than-human natural systems and their internal dynamics; and the relationships that exist between human and nonhuman natural systems.

All three subsystems of nature are unbelievably complex. Yet, methods are available by which we can gain some understanding of their workings. None of these analytical tools are particularly simple to understand nor easy to apply. The analytical procedures necessary to gain a very basic empirical understanding of large-scale problems associated with regional development in the coastal zone do exist. The National Coastal Zone Management Act recognizes this fact and provides for the use of these more complete rational approaches in analyzing coastal problems. Further, the Act goes on to fund the implementation of the

complex management programs that should result from comprehensive planning.

CONCLUSION

The National Coastal Zone Management Act is the first federal legislation to provide funds both for planning and for implementing the resultant plans. In this regard, it has tested the ability of the comprehensive planning process to produce useful results in the face of political systems sometimes unfriendly to the constraints of long-term planning and policy guidelines. Interestingly, the results of this test will not reveal as much about the comprehensive planning approach itself as about the ability of the political system to cope rationally with the long-term demands of nature versus the short-term demands of human economics. The crux of the matter is that human systems respond to long-term cultural change and to short-term economic changes. Neither responds to the same stimuli nor are governed by the same "laws," or same timetable as the natural processes they affect. As human systems are governed by cultural and economic processes, natural systems are governed by the forces of evolution. Yet, human systems are also subject to natural evolution required to restore nature's equilibrium through the fiercely competitive process of selection. Nature has mankind at a distinct disadvantage because, although nature may select against man as a successful evolutionary form, man cannot respond by threatening the extinction of nature. A balance between human activity and the nonhuman natural environment is necessary if human society is to survive. The true utility of coastal zone planning is that it represents the first major long-term step toward the discovery and maintenance of that balance.

THE ROLE OF MARSH ESTABLISHMENT PROJECTS IN COASTAL ZONE MANAGEMENT

Richard Hall
Coastal Zone Management
University of West Florida

Marshes and other wetlands have been destroyed continually as a result of the pressures of development. Although the significant natural values of these areas are recognized, demands threatening their further destruction still exist.

Projects to establish or create marshes may provide a means to maintain or enhance the quality of coastal resources. In addition, marsh creation can be useful in resolving social and economic conflicts. Projects can be used as tools to balance needs for preservation and restoration with demands of competing or conflicting social and economic needs.

Marsh creation has provided or may provide these opportunities:

Marsh establishment projects can be used to mitigate adverse environmental impacts of proposed activities in the coastal zone. In particular, if long-term damage to wetlands occurs as a result of an activity (such as filling), approval of the proposal could be contingent upon the creation of a marsh area.

When an activity temporarily disturbs a marsh, revegetation techniques can provide a quicker reestablishment of vegetation than would be expected to occur naturally. This may be important for erosion control, as well as restoration of marsh productivity.

Marsh establishment can provide a means to ameliorate a dredge spoil disposal problem. A marsh created on dredged material that stabilizes sediments and contributes to the productivity of marine resources could be an acceptable alternative.

Beach erosion can be controlled through the establishment of marsh vegetation.

Marsh establishment projects can be used specifically to restore or enhance areas that may benefit from the natural values for which marshes have been recognized--providing habitats for fish, shellfish, and birds; enhancing commercial and recreational fishing and aesthetic resources; improving water quality to some extent; and providing a buffer against storms.

The feasibility and desirability of creating a marsh depends upon a variety of factors. Rather than a panacea, marsh creation should be recognized as an available alternative that can be useful in approaching the State's coastal zone management objectives.

PUBLIC ACCESS TO THE COASTAL ZONE

Andrew A. Dzurik
Associate Professor
Department of Urban and Regional Planning
Florida State University

The coastal zone has been a favored place for mercantile activity throughout the history of this country, and pressures for continued development have become more intense with time. In addition, factors such as increased personal income and leisure time, have caused many people to seek out coastal areas for residence, both temporary and permanent. Still others search for beach areas for such recreational pursuits as swimming, surfing, fishing, and boating only to find access denied or severely restricted. In other words, the general public takes a back seat in the economic jungle of the coast.

The problem of limited public access to the coastal zone exists today and possibly may be exacerbated in the future by the increase of competing and conflicting uses, unless remedial action is taken. Presently 91 percent of the nation's shoreline is controlled by the private sector and 3 percent is used for national defense purposes. This leaves only 6 percent for public use. Much of this territory is unaccessible or of such poor quality that it can be considered unsuitable for recreation purposes.

Although technically all of the beach area below the mean high water line is usually under public ownership, realistically it is the upland portion which effectively controls access to, and use of, the beach.

Since the State is a sovereign power, it would seem that the authority exists for state governments to protect and enhance the public's interest in beach access and use. In the absence of committed action by many state govern-

ments, however, the public continues to be denied use of major portions of the coastal zone. Only a limited number of states (e.g., Texas, Oregon, and California) have recognized and appreciated the severity of the problem to the extent that legislative and fiscal action was taken to address the issue. At the federal level, the 1976 amendments to the "Coastal Zone Management Act" recognized the problem of beach access, but the legislation was not backed up with the necessary appropriations.

At all levels of government, it is clear that much remains to be done if the public is to enjoy increased benefits of public access to the coastal zone.

SECTION III

ENVIRONMENTAL QUALITY

Presentation Extracts

This section of the symposium was moderated by Thomas Duke, Director of the Environmental Protection Agency Laboratory on Sabine Island in Gulf Breeze, Florida. The papers in this section dealt with pollution in the coastal zone.

WATER POLLUTION IN COASTAL AREAS

Winston Menzel
Florida State University

Our ever increasing and more affluent population and the demand for more and better creature comforts are leading to an increased demand on our resources due to increased manufacturing and attendant pollution from its waste products. Our coastal areas are especially threatened because of the concentration of people and industry, and from receiving much of the inland air, land, and water pollutants.

The establishment of the U.S. Environmental Protection Agency (EPA) signals our awareness of the importance of controlling pollution. We are now an informed and alarmed public, and considerable effort as well as tax dollars are being expended to combat the problem. The final solutions, at least on a local level, are based on political decisions, but the caring public has an opportunity to participate in these decisions. Still, there are too many uncaring people and too many with strong vested interests.

I have read, heard, and discussed the possibility of zoning our coastal areas for recreation, home sites, industry, and fishing. Free passageway for navigation has long been recognized as a priority. All of these are important. Water is a continuous medium and can transport materials long distances. We are making and dumping waste materials that are long-enduring. It would be naive to suppose that dumping a pollutant many miles away would not affect fisheries. Even if fisheries are not directly affected by a dramatic fish kill, the effect may be more subtle, gradually causing stress and harm to the environment.

Water has been a convenient and economical dumping area for unwanted wastes. Dilution of the solution is implied in the standards set up by our health agencies so a food is called safe if it doesn't have more than "A CERTAIN NUMBER OF PARTS PER MILLION" of the contaminant. This principle applies to pathogenic micro-organisms, such as the standards for waters in which shellfish are grown. Some bacteria are tolerated, but a high level causes the area to be closed to the harvesting of clams, oysters, scallops, etc. In many instances, it has been shown that small quantities can be safely tolerated, but we are finding that certain chemicals and substances may cause cancer years later.

Another problem, man's alterations of the environment, may have quite unexpected and disasterous results. When I was an undergraduate student in biology, the stated goal of some planners was to control everything for our benefit. We were going to dam all the rivers and control the weather, even though it would be hard to satisfy a golfer and a drought stricken farmer at the same time. We leveed the rivers to prevent floods; we flattened the sand dunes to build beach homes. We scooped out old ugly marshes to make concrete-sided marinas. We dredged waterways to make better and more convenient passageways for our water craft. When DDT came to have widespread use after WWII, I read articles that there would be no more house flies. Many of these activities are still going on, and many others continued until a short time ago.

Progress will not stop, barring a major catastrophe. The impending demise of petroleum as a major source of energy may slow it. Already it has become more expensive to live. But we still have lots of coal, and

nuclear energy is expanding rapidly despite some loud local opposition. Both coal and nuclear energy have attendant pollution problems. With our present level of technology, solar energy, as a major source, seems to be some time in the future. Even the switch to solar energy may cause pollution problems as the technology is developed. Green plants can capture the energy of sunlight through photosynthesis, but the process is slow.

I am not advocating a return to the simple life. I like my creature comforts and wish I could afford more. Pollution control will only happen if forced upon us. The situation is still bearable and in most cases enjoyable. I have no solution to the pollution problem. I don't think I was supposed to have one--except to use every method possible, even though expensive, to eliminate and control pollution as much as possible.

HAZARDOUS WASTE IN FLORIDA

Roy C. Herndon
Florida Resources and Environmental
Analysis Center
Florida State University

The purpose of our study is to establish an information base to determine the magnitude of the hazardous waste problem in Florida, so that an adequate hazardous waste management program can be established. In the context of this study, the term "hazardous waste" specifically excludes any type of radioactive material.

A good working definition of a potentially hazardous waste is:

> any waste which requires special management provisions in waste handling (process, storage, collection, hauling, and disposal) because of its acute and/or chronic effects on the public health and welfare, to the individuals who handle it, or on the environment.

Florida has a considerable portion of its population and industry clustered in the coastal region. As a result, much of the hazardous waste generated will also be in this region. In order to understand what problems exist with regard to hazardous waste generation and disposal in the coastal regions (or in fact, anywhere) in the State, it is first necessary to have an appreciation for the magnitude of the problem. A number of different industries (e.g., electroplating, paint, chemical, pesticide, etc.) were chosen for study, and approximately 400 individual firms were interviewed for this purpose.

We found that the amount of potentially hazardous waste generated closely parallels the population for a region. The total potentially hazardous waste generated in Florida by the firms surveyed was found to be about 500,000 metric tons/year. It is important to stress, however, that the type or quality of

waste is as important as quantity. Therefore, all industries generating potentially hazardous waste must be carefully evaluated even though the quantity from one industry may differ considerably from that generated by another.

It is clear from the results of our work that Florida does have a significant amount of potentially hazardous waste. Further, it is clear from these results that both the quantity and type of wastes make it undesirable to use conventional, uncontrolled methods for their disposal.

Various alternatives for disposal are available for consideration when establishing a hazardous waste management program: surface land disposal, subsurface disposal, recycling, incineration, storage, etc. For Florida, perhaps more so than other states, the choice of several alternatives may be the best solution to the proper management of its potentially hazardous wastes.

DOMESTIC POLLUTION--COASTAL ZONE AREAS

B. G. Tennant
Environmental Health Services
Escambia County Health Department

Pollution is the accumulation of substances harmful to living things in the air, the water, and soils. Substances toxic to life and organic waste have accumulated in excessive quantities since the beginning of time. There are many forms of pollution, but the most prominent are air, water, noise, and solid waste.

I am concerned about water pollution and land contamination created by the lack of planning by government and apathy on the part of the people. I am also concerned about the political climate in attempting to solve these problems.

Planning for the optimum use of the coastal zone areas of Florida requires an understanding of the basic interrelationships between man's activities and his environment. The coastal zone areas contain a major portion of Florida's population. Here the greatest land development and pressures are felt, because the areas are most attractive to residents and tourists alike.

The concentration of people and industry in the coastal zones causes their estuaries to receive large volumes of municipal and industrial waste. These contaminants have adversely affected vast numbers of fish and shellfish, as well as numerous birds and other wildlife that are fundamentally a part of the basic food web.

What are some of the domestic pollution problems in the coastal zone areas that must be solved? They are: (1) the problem of adequate domestic and industrial sewage disposal; (2) water pollution; (3) solid waste disposal; (4) air pollution; and (5) political boundaries. These issues can create an economic strain upon the people, unless the people and government assume responsibility.

Community health depends to a great extent upon environmental factors. Adequately constructed and properly maintained public water and sewerage facilities are needed in all urban areas to protect the surface waters, and to prevent land contamination.

Prior to the 1940's, the method of providing domestic sewage disposal facilities to urban areas was accomplished by municipalities, using assessment and connection fees against benefited properties of a delineated area; operating costs were paid by taxation.

The lack of planning and the low priority placed upon this service by government since 1940 are basic causes of our current water pollution problems. Until recently, government said to the individual home owner, developer, and businessman: "We have no responsibility in this field; solve your sewage disposal problems within the confines of your own properties." In my opinion, this attitude has had a significant influence on the problems that exist today. Public water and sewage facilities are historically basic government services and should be provided by government for the health and welfare of the people. Because they are so basic to modern-day living, they should be planned and operated under the auspices of a governmental identity. They should never be used as instruments of indirect taxes or as a profit-motive business, but

should be used as instruments of service to the people, and as a means of protecting our environment.

Solid waste is the result of our "throw-away" society. It is the litter, the trash, the garbage, or the residues of the things we make, use, and throw away. Solid-waste handling in Florida is appallingly unsatisfactory and contributes significantly to water pollution and land contamination--potential human health hazards.

Floridians can see the effect of the present solid waste load everywhere--the overflowing garbage cans, the junk car graveyards, and litter by the roadside. We must understand the magnitude of the problem by analyzing the volume of "throw-aways" and make a sincere effort to conserve our resources and protect our environment. Greater initiative and agressive action on the part of government is needed.

Why are political boundaries a problem in pollution control? Air pollution, sewage disposal facilities, water pollution, and solid waste disposal lend themselves to regional approaches and are less costly if handled in such a manner. The zealous attitude of politicians for authority and control makes it most difficult to approach these problems on a regional basis. Municipal and county boundaries cannot be separated from the surrounding developed areas; therefore, the pollution problems are a municipal, county, state, and national problem. It must be a concerted and coordinated effort at all levels if the quality of the environment is to be maintained and the health of the people protected.

In order to attack adequately and correct these problems, first, we must admit that there is a problem; second, we must adequately analyze the problem. The next step is to develop plans of correction and finally implement the plan.

Without implementation, the other steps are without substance. Effective management will be expensive, but the results of apathy more so. It is obvious that one unacceptable alternative is to do nothing.

Charles Kettering, Vice-President of General Motors, once said, "I am interested in the future because I plan to spend the rest of my life there." We must therefore approach these problems with a sincere desire to solve them. The measure of our success is of great importance for the protection of the health of our people and the environment.

SECTION IV

MANAGEMENT OF COASTAL RESOURCES

Presentation Extracts

This section was moderated by Henry Dean from the Bureau of Land and Water Management, State of Florida. The papers in this section were devoted to a consideration of coastal resource utilization and management. Planning aspects were also considered, particularly with regard to citizen input.

THE ENERGETICS OF COASTAL RESOURCE UTILIZATION

Kenneth W. Prest, Jr.
The Environmental Licensing Group, Inc.

The concentration of 75 percent of the people in 25 percent of the land area of the State of Florida is prima facie testimony to the value of the coastal zone. The resources of Florida's coastal zone comprise a diverse array of stocks and processes which have been shown to be vital to both the biological and economic well-being of the people of the State. These resources, however, are being jeopardized by misuse and overuse.

This presentation develops an overview of the process of coastal resource utilization. It emphasizes that the effectiveness of the management process must be based on an understanding of the function of the biological and physical processes supporting the resources; an understanding of the requirements for interdependent coupling of man's activities with those of nature; and an exercise of the public's initiative to apply available knowledge, and to accept the responsibility for its actions.

The paper integrates the "systems" concept with the use of dynamic system models as a tool in decision-making, and it identifies the function of energy as the common denominator coupling natural systems with those of man. Emphasizing the work of H. T. Odum and associates, the paper highlights the fundamental principles of energy analysis and illustrates these by drawing on the work of W. R. Boynton, who studied the energy basis of coastal Franklin County and Apalachicola Bay, Florida.

The paper concludes that energy analysis and simulation can be powerful tools to broaden our knowledge of coastal processes and guide our efforts to

allocate and use coastal resources. To be effective, however, these techniques must be applied in an overall framework of strategies for resource utilization. The framework would be built on: (1) a systematic concept of the interrelationship of man and nature; (2) the fundamental natural laws of energy and systems; (3) a clear statement of the resource values to be cultivated and maintained; and (4) a flexible and responsive procedure for anticipating changes, evaluating contingencies, and developing adaptive structures and processes to meet these changes.

A cohesive union is required among technicians, policy makers, and administrators, to strengthen the public trust and apply the knowledge available to achieve the long-term stability and productivity Florida needs to survive.

THE QUALITY OF NATURAL RESOURCE USE

Luther W. Skelton
University of West Florida

Public attitudes toward natural resources seem to be changing. Water, air, and land can be viewed from a system perspective as great communication webs which transfer information and materials necessary for the continuation and growth of life systems. These communication webs, in turn, depend for part of their existence on how well the life systems are maintained. The life functions of natural resources are so complex and so omnipresent that description either becomes a complicated academic procedure or a simplistic restatement of the obvious. Perhaps because of this complexity and obviousness, the human community has over time evolved the view that the biosphere is neither more nor less than an inexhaustible resource to be used and bartered. This view of the biosphere has led to the uneasy co-existence of human technology on the one hand and natural systems on the other. Until recently, most policy has reflected the requirements of technological systems and ignored both the requirements of the natural systems which make up the biosphere and the relation of these systems with human technology.

Recently, a new view of natural resources has emerged. This view can be expressed as a concern for the quality of natural resource use. These measures of quality of use seem to be increasingly applied in the formulation of natural resource policy. First, to what degree does the resource use affect its future availability? Second, to what degree does the use of the resource affect the natural function of the resource in the maintenance of the biosphere? Third, to what degree does the use of the resource contribute to the survival and

quality of life of human beings both on individuals and on a community?

As difficult as these quality standards may be to quantify, the fact that they are emerging in the policy making process is extremely encouraging, particularly in the coastal zone which may be the most complex and vital of all natural resource systems.

THE CITIZEN'S ROLE IN COASTAL ZONE PLANNING

Shirley Taylor
Florida State University

The Coastal Zone Management Act (CZMA) of 1972 was a response by the Congress to the unplanned and uncontrolled development that was destroying, "...important ecological, cultural, historic, and aesthetic values in the coastal zone which are essential to the well being of all citizens," (CZMA). The Act provides States with funds to develop comprehensive programs to protect and manage their coastal areas. The Act also recognizes the importance of drawing concerned citizens into the process of developing coastal management programs, and includes specific requirements for citizen participation in its provisions.

Citizen participation is based upon the principle that without it, government may act arbitrarily. Citizens are becoming increasingly more concerned that their lives are out of their control, that plans are being developed by planners rather than by the people who ultimately will be affected by the plans. This concern is leading to more demands by citizens to be included in the process of government; Congress has reflected this nationwide interest by their provisions for citizen involvement.

The process of public participation is of real benefit to coastal planning agencies in both program development and implementation. In the first place, well-planned citizen involvement is an effective and efficient means of making sure that the public is aware of and understands the intent of the coastal mangement program.

A second reason for public involvement is the ethical principle that those likely to be affected by government policies should have a role in their formulation.

Third, the program is more likely to succeed if the public is permitted and encouraged to participate in program development and administration. Such participation forestalls opposition and enhances public confidence.

A final payoff from citizen involvement is a free watchdog service over the regulatory agency. Studies show that regulatory agencies have a strong tendency to drift under the influence of those industries which they regulate due to the financial strength and the constant pressure the industry exerts on its regulator.

What specific objectives should a citizen involvement program facilitate? Jens Sorenson, a coastal planner from Berkeley says that public involvement serves a safety-valve function, relieving pressures between competing citizen interests or between citizens and the program. The task of educating the public on the complexity and importance of physical and biological systems in coastal zones is essential to informed discussion of agency programs.

Sorenson concluded that citizen problems, values, and needs must be identified. Management that does not understand the citizen's attitudes and needs is almost sure to arouse hostilities and opposition. Generation of new ideas is one of the most useful functions of public input, while review and comment on proposed policy can alert agencies early in the planning process to likely conflict and citizen opposition.

Just how does citizen activity take place? It doesn't--without a great deal of experience and planning. Agencies labor under the handicap of being

suspect. Citizens have been manipulated and bored; their comments and views have been too regularly ignored in the past by government. Therefore, it is vital to the Coastal Zone Program that citizen confidence be established. The citizen must be helped to trust the process of participation to see that his concerns are being addressed rather than ignored.

To accomplish this confidence-building, public-interest citizen groups, such as the Sierra Club, Audubon Society, and League of Women Voters, can help in strengthening the public education-participation programs of coastal planning agencies.

The citizen's most important role is that of lobbyist, urging the legislature to adopt a Coastal Management Plan. A bill passed this year by the Florida Legislature directs that a completed management program be presented for consideration in 1978. This will be the Coastal Management test for Florida. The way is open for a workable management plan to be produced in Florida in the coming year by a local, regional, and state network in cooperative planning. Without a very strong solid citizen constituency to encourage legislators at every point, I am concerned over whether a useful Coastal Management Plan will be legislated in 1978. If there is anything more important than the development of a good management program, it is wider public involvement in this program development. Only in this way can we hope for a coastal constituency ready to lobby effectively the legislators to support it. Time is short and the day to start was yesterday!

PANEL DISCUSSIONS

The questions which the panels considered were distributed in advance by the editors, and were designed to probe very difficult issues of coastal zone management planning. Many of these issues had been addressed to some degree in presentations during the first part of the symposium. The same questions were assigned to two separate panels; this allowed some comparison with regard to panel response. Altogether there were four panel discussions underway at the same time.

The panel discussions are summarized here and we have extracted the issues and problems which seemed to be of the greatest general concern. There was a high degree of agreement among panel members on most issues. However, not every member was in agreement with all of the answers expressed in the following summary.

PANELS A AND C

QUESTION 1

What certain basic kinds of information should be on file before development permits can be processed? Should there perhaps be a checklist indicating the kinds of data available and how recently they were collected? For example, faunal surveys (date, surveyor(s), access); water chemistry (date, collector, analyses, format, access), etc.

DISCUSSION

Panel A concluded that indicators of water quality such as bio-chemical oxygen demand (BOD), dissolved oxygen (DO), turbidity, nitrates, pH, and hardness should be analyzed before projects are started. Much of this data may be on file as a matter of record, since predetermined stations are established and monitored. One panelist pointed out that data of this type could be collected as a project proceeds and should be banked in state or regional resource centers. Although environmental impact statements reflect many of these data, contents of various statements are never correlated or recorded. Several panelists indicated a need to establish the priority of a project and a means to determine the utility of newly presented data.

Panel C recognized that development projects fall into different categories of complexity, i.e., industrial, urban, residential, or small commercial projects. Their differences should be taken into account, and the environmental impact of small projects within an area should be evaluated as a whole. For example, one pier may be unobjectionable, but 100 piers may not be acceptable. Therefore, every proposed pier should be assessed from the standpoint of the compounded effect on the ecosystem.

Both panels agreed that specific data should be available for each project, because potential development areas have unique characteristics. Panel C pointed out that an attempt to devise general criteria for issuing permits treads on dangerous ground; existing evidence supports a case-by-case approach for the development of land-use plans. Panel A proposed that the objectives of projects be predefined, and that cause and effect relationships be devised to allow social, economic, and natural ecosystem analysis.

QUESTION 2

What can be done to insure that (at least) existing air, water, and terrestrial ecosystem quality will continue in the fact of current and projected population growth, tourism, and development activities in the coastal zone? Having established what can be done, who will do it? When? Who will pay for it?

DISCUSSION

Panel A noted that the maintenance of current and projected growth and the maintenance of ecosystem quality are mutually exclusive. Two panelists supported the present permit-granting system, but stressed the need for a master plan that would maintain ecosystems in their present state.

Panel C assembled a pessimistic view. If population growth is encouraged, more problems can be expected. To limit the problems, the number of people must be limited.

Panel A concluded that the best avenue for influencing decision is in the political arena since politicians eventually make decisions concerning the environment. Panel C noted that the incongruity of political and natural systems further prognosticates doom. In too many instances, the political

unit has no control over external factors that must be considered to manage an ecosystem effectively.

Panel C favored planning and management of the coastal zone at the working level of the political hierarchy. Participants observed, however, that local jurisdictions tend to focus on the potential for great economic development through the creation of jobs and employment. Therefore, checks and balances are required; statewide planning must be accompanied by local input and implementation, delegating as much authority as possible at the local level. Costs should be borne by development interests.

QUESTION 3

Should the Apalachicola Bay complex be protected from development? How should it be protected or conserved, and should it be policed?

DISCUSSION

Panel A advocated preservation of Apalachicola Bay "at any cost." Panelists supported development by a regional planning group, such as a river basin commmission, as the best means for preserving estuaring complexes.

Panel C discussed the need for the federal government to exert control over the movement of pollutants within the proposed Apalachicola sanctuary, because the territory includes property in Georgia, as well as Florida. Discussants pointed out that it was not a question of whether Apalachicola Bay would be developed, but how. It was agreed that traditional use of the bay should be preserved.

QUESTION 4

Should the types and kinds of materials transported on the intracoastal

waterway be regulated? If so, why hasn't this been done before? Who has jurisdiction? Should there also be guidelines on the types of materials acceptable to seawater ports?

DISCUSSION

Panel A cited the U.S. Interstate Commerce Commission as the regulatory authority governing the transport of hazardous wastes and cargo. Several panelists voiced concern over the need to regulate the types and condition of equipment used for transport and for loading and unloading on the intracoastal waterway.

Panel C discussed the critical need for a well-controlled marine transport system. Regulations should not be concerned primarily with the cargo itself, but with the manner in which it is carried and handled. Need was also voiced for controls over new barge construction, sanitation facilities aboard vessels, and the qualifications of marine personnel.

QUESTION 5

Should cost/benefit ratios continue to be acceptable criteria for coastal zone projects? What other criteria might be used?

DISCUSSION

Panel A supported the scientific value of cost/benefit ratios, if a dollar value is assigned to environmental quality. Panel C contended that cost/benefit analysis has been abused by developers, but had no alternative to suggest as an environmental impact tool to compete with cost/benefit analysis.

QUESTION 6

What are some of the problems involved in applying cost/benefit analysis to coastal zone projects? What criteria should be considered in deciding for or

against a given project?

DISCUSSION

Panel A's chairman observed that the greatest problem in applying cost/benefit analysis to coastal zone management lies in the difficulty in assigning a dollar value to the ecosystem before and following development. Panel C discussed the difficulty in quantifying biological and aesthetic impacts and in defining "benefit" in precise environmental terms.

QUESTION 7

What state laws and regulations now apply to coastal zone management? Are these laws and regulations integrated or do they overlap, parallel, and/or contradict each other (i.e., setback lines)? What procedures are contemplated for approval and implementation for a coastal zone management plan?

DISCUSSION

Several members of Panel A predicted that eventually the Florida Department of Environmental Regulation would become responsible for coastal zone management, and would absorb the staff of the existing Bureau of Coastal Zone Management. Need was voiced for a Coastal Zone Management Act to coordinate the present system of granting permits and certificates now administered by several agencies. Panelists noted that coastal zone management policies often do not agree with land-use management policies, thus indicating need for a common agency.

Panel B noted that most Florida environmental laws are oriented around five federal laws, including the Air Quality Act, Solid Waste Management Act, and the Drinking Water Act. Federal statutes were valued as "useful" in setting guidelines for land management in Florida.

Citing many overlaps and duplication in environmental laws at all government levels, Panel C agreed that their existence served as a useful check and balance system.

QUESTION 8

What procedures are contemplated for approval and implementation of the Coastal Zone Management Plan?

DISCUSSION

As viewed by Panel C, part of the problem of coastal zone management planning stems from the lack of a definition for "coastal zone." It is defined by the Regional Planning Commission as an inland boundary from which man's activities can impact the coastal zone extending to the territorial limits at sea. Other definitions differ, including one concept that classifies the entire state of Florida as a coastal zone.

A further problem, cited by Panel C, relates to funding. As more and more areas seek inclusion in the coastal zone, the need may arise to require territorial definitions based on available funding.

Panel C participants noted that the Regional Planning Commission is organizing workshops and other activities to inform the public of anticipated hearings on the Coastal Zone Plan. Discussants did not have a clear perception of how planning will be conducted for public hearings or how these plans would be implemented.

QUESTION 9

If the program becomes essentially regulation, will planning cease? If not, how will it be integrated into the organizational structure?

DISCUSSION

Panel C viewed the question, in part, as "a chicken-and-egg" problem. Members agreed that planning cannot cease and that all plans will require renewal, review, and update. Concepts on which regulations are based must be reformulated; no plan, whatever its objectives, can be used indefinitely.

Further, members concurred that laws and regulations are planning documents in themselves, but cannot fulfill all planning requirements. Legislation, always subject to exceptions, requires continuous interpretation on the basis of need. Planning and regulation processes should not survive as separate entities, but should be integrated in a Coastal Zone Management Plan for the State of Florida.

In summary, Panel A concluded that concerned citizens must involve politicians in activities such as this symposium. Since politicians are subject to input from planning councils, state agencies, and industry, these groups should be educated concerning the aesthetic and economic advantages of sound coastal zone management. Finally, the public itself will become involved in coastal zone management if they can be made aware of the plight of the coastal zone.

PANELS B AND D

QUESTION 1

In the proposed project areas where little or no baseline or historical data are available, should studies be required, who should fund them, and who should perform them.

DISCUSSION

Panel D felt that baseline data are necessary before any human action is taken. Baseline studies are especially important in the environmental and coastal zone areas because very little data exist. It was also felt that baseline studies should be done before a given project is undertaken, rather than during or after the project has been initiated.

The general consensus was that studies should be funded from public revenues. It was felt that private developers should not furnish baseline data because such data are likely to be biased. A development tax on completed projects was noted as a revenue source for baseline studies. State universities were suggested as appropriate agencies to perform baseline studies.

Panel B agreed that it was difficult to define and limit the question. Specific concerns were expressed over the ability to extrapolate from one system to another, the need to avoid duplication, the possibility of relying too heavily on a single, perhaps biased, analysis. Concern was also expressed over the costs of studies and their timing. Model systems were suggested as a cost-cutting method.

The high cost of collecting data was noted. It was suggested that existing studies should be consulted to avoid duplication. Study areas should be coordinated to reduce costs. Rather than seeking too much data, it might be better to

concentrate on major projects, such as water quality. This panel felt that too often studies of developers became the environmental impact statement, and more baseline data were needed to protect coastal areas from overdevelopment.

QUESTION 2

Should the Santa Rosa Island Authority (SRIA), appointed by the Escambia County Commission, continue to exercise its existing authority?

DISCUSSION

Panel D noted that historically, SRIA has been autonomous. The SRIA, not the County Commission, has been the policy-making body for development of Santa Rosa Island. It was noted that the problem is not the process by which members are appointed to SRIA, but the caliber of appointees, who usually are closely allied with business interests and have strong ties with the Chamber of Commerce. It was felt that the SRIA should have administrative, not policy making responsibility; the policy should rest with elected officials. Panel B agreed that while an appointed SRIA has virtues, it needed the veto power of the County Commission. A citizens' advisory body for SRIA was suggested.

Under the Environmentally Endangered Lands Act of 1974, land is being acquired and developed as parks because of public pressure. This is contrary to the purpose of the legislation.

If citizens are to hold their government accountable, it would seem the SRIA should be elected. However, the body was appointed so that it could remain free of local influence. There are plusses and minuses, but they equal out.

QUESTION 3

What kinds (degree of treatment) of sewage should be allowed to be discharged into Santa Rosa Sound and/or the Gulf of Mexico?

DISCUSSION

Panel D held very little discussion on this question because panelists felt that they lacked data and information on the degree of treatment of sewage discharged into the Sound or the Gulf. However, the panel noted that its failure to discuss the question should not be interpreted as a lack of concern about the problem.

Panel B noted that the water quality of the Sound has already been degraded and should be upgraded. The SRIA was cited for pushing development without adequate sewage treatment facilities. It was stated that laws indicate that all discharges should be eliminated from the Sound, but the flushing pattern is simply not known.

QUESTION 4

Should the Chamber of Commerce continue to encourage tourists and industry to visit the coastal zone?

DISCUSSION

Panel D agreed that in order to answer this question baseline data on the carrying capacity of the coastal zone areas are needed. Once it is known how many tourists can be absorbed without endangering the environment, limits could be set. The economic benefits of development and tourism are often mythical. Such benefits, even if true in economic terms, do not take into account the non-economic costs.

Panel B said that the question was not whether to encourage tourists because they would come anyway. Ecologically compatable industries should be encouraged, but for relocation purposes, the coastal zone should be considered 25-miles wide. Tourists can appreciate a coastal experience without modifying the coastal zone.

Tourists have a fast turnover rate and inflict less impact than permanent home construction.

QUESTION 5

What is wrong with the coastal zone of Northwest Florida? How can it be "right?"

DISCUSSION

The chairman of Panel D, with agreement of the panel, noted that this question was "cosmic" in nature, and that discussion of it would take too much time. Discussion was therefore deferred to the end of the panel items, but time did not permit its consideration.

Panel B felt that planning was the largest problem. Most people remain opposed to planning, which begins with the attitudes of people. Planning and zoning remain a "red flag" to most Escambia County residents living outside of the City of Pensacola. Each individual hates planning, but wants to force his neighbor to plan. Strong involvement of schools and environmental groups is needed to educate people on the issues.

QUESTION 6

What methods are available for compensating individuals for the use of their property which may be lost to them as a result of coastal zone preservation, conservation, or development?

DISCUSSION

Panel D felt that the treasury is not big enough to compensate all individuals whose lands are conserved or preserved. Only when one's land is taken, or its use prohibited to him, should the question of compensation arise. The use of tax refunds for payment was discussed, but it was decided that this method would not

be practical to implement. It was suggested that taxes should be lowered if the use of land is restricted.

Panel B felt "green belt" laws and special tax rates are needed to encourage people to keep their coastal lands in agriculture or in a natural state. States can revise their tax structures to favor undeveloped land remaining in a natural state. The preservation of wetlands should be favored by the tax structure.

QUESTION 7

What procedures have been employed to encourage the general public and interested groups to participate in coastal zone policy formation? How could these procedures be improved?

DISCUSSION

It was pointed out by Panel D that public involvement in coastal zone policy is important. However, most citizens cannot be expected to get involved because they have little or no information on the issues pertaining to Coastal Zone Management (CZM). The question, therefore, is how to educate citizens on the issues involved in CZM? One strategy suggested is to use the language of "citizens' rights." If people are told that their "rights" to beautiful beaches, clean air, safe highways, etc., are being violated, they would take more interest.

Panel B felt that too many people thought letter writing was the answer. However, often the letters go to the wrong people. Public hearings and meetings are good, but are often held during working hours which limits attendance. Meetings of this type should be held at night. Most comprehensive CZM plans are being formulated by regional planning councils. Regional residents favor their own plans to those of central governments. Educational programs conducted by clubs,

such as the Sierra Club, were suggested as a means of educating the public.

QUESTION 8

Should the Coastal Zone Management Program in Florida be essentially regulation, promotional, or both?

DISCUSSION

Panel D discussed this question only briefly because of uncertainty of its meaning. It was pointed out, however, that CZM has all three functions: regulation, education, and development.

Panel B said the question was philosophical and what was needed was a positive plan that sets out guidelines. Most coastal zone residents would probably like the area left as it is. Developers, however, feel that it should be built up, providing jobs, residences, and accomodations for tourists. There must be regulation that allows reasonable development.

QUESTION 9

What financial sources are available or are potentially available for the development and implementation of the Coastal Zone Management program in Florida?

DISCUSSION

Panel D suggested that CZM should be funded through property taxes. Coastal property should bear increased taxation. A dissenting opinion felt that this might raise legal problems. It was pointed out that all citizens should benefit from tourism. Therefore, CZM costs should be taken from general revenues.

Panel B felt that the administrating agencies should be studied to know what funding would be effective. It was suggested that adequate controls over funds must be developed.

In conclusion, it was pointed out by Panel D that many questions raised cannot be answered until adequate baseline data are acquired. The need and urgency of such data-gathering was emphasized. The panel went on record in support of the following proposition:

Many problems can be positively addressed by temporarily discouraging growth in the coastal zone until baseline data are acquired. Publically approved comprehensive plans should then be adopted and regulatory mechanisms established. Policies should be tied to real costs of human activities in the coastal zone.

CONCLUSION

Eleven major concerns emerged from the panel discussions. Most of these concerns were expressions of policy, and or planning requirements which panel members felt should be included as aspects of Coastal Zone Management in this area. These requirements are listed as follows:

--There is a need for more baseline data prior to further development in the coastal zone.

--There is a need for planning in the coastal zone in order to anticipate conflicts between development interests and environmental quality,but emphasis must be placed on the political system to develop a management policy.

--There is a need for an environmental policy for the intracoastal waterway.

--There is a need to develop a clearer definition of the coastal zone.

--There is a need for more public information concerning the sewage treatment system, the freshwater system and the solid waste system on Santa Rosa Island.

--There is a need for more information concerning the tourist carrying capacity of Santa Rosa Island.

Some other concerns of panel members were related to policy issues and/or management techniques involving the resolution of interest conflict in the coastal zone.

Panel members expressed doubt that the cost/benefit model could be adequately applied to the resolution of interest conflict in the coastal zone at the present time. This doubt is based in the difficulty of assessing the long range value or benefit of natural systems.

Panel members felt that there is a value in multiple laws relating to environmental regulations because of the checks and balances which this multiplicity creates. However, they were also concerned with the necessity of streamlining the permitting process.

Finally, the panel members believed that Santa Rosa Island Authority should have administrative but not policy making authority. That policy making authority should remain with elected officials and not be delegated to appointed officials was a clear panel preference.

We believe that the panel concerns expressed above are an indication of active public interest in the emerging coastal zone management policy of the State of Florida and the way that policy will affect the local area. All panel members seemed to realize the seriousness of the emerging policy issue, the great complexity created by the many interrelated systems which compose the coastal zone, and the value conflicts which are particularly active with regard to coastal resource management. They also were aware that these problems will not be adequately resolved without public participation in the policy-making process.