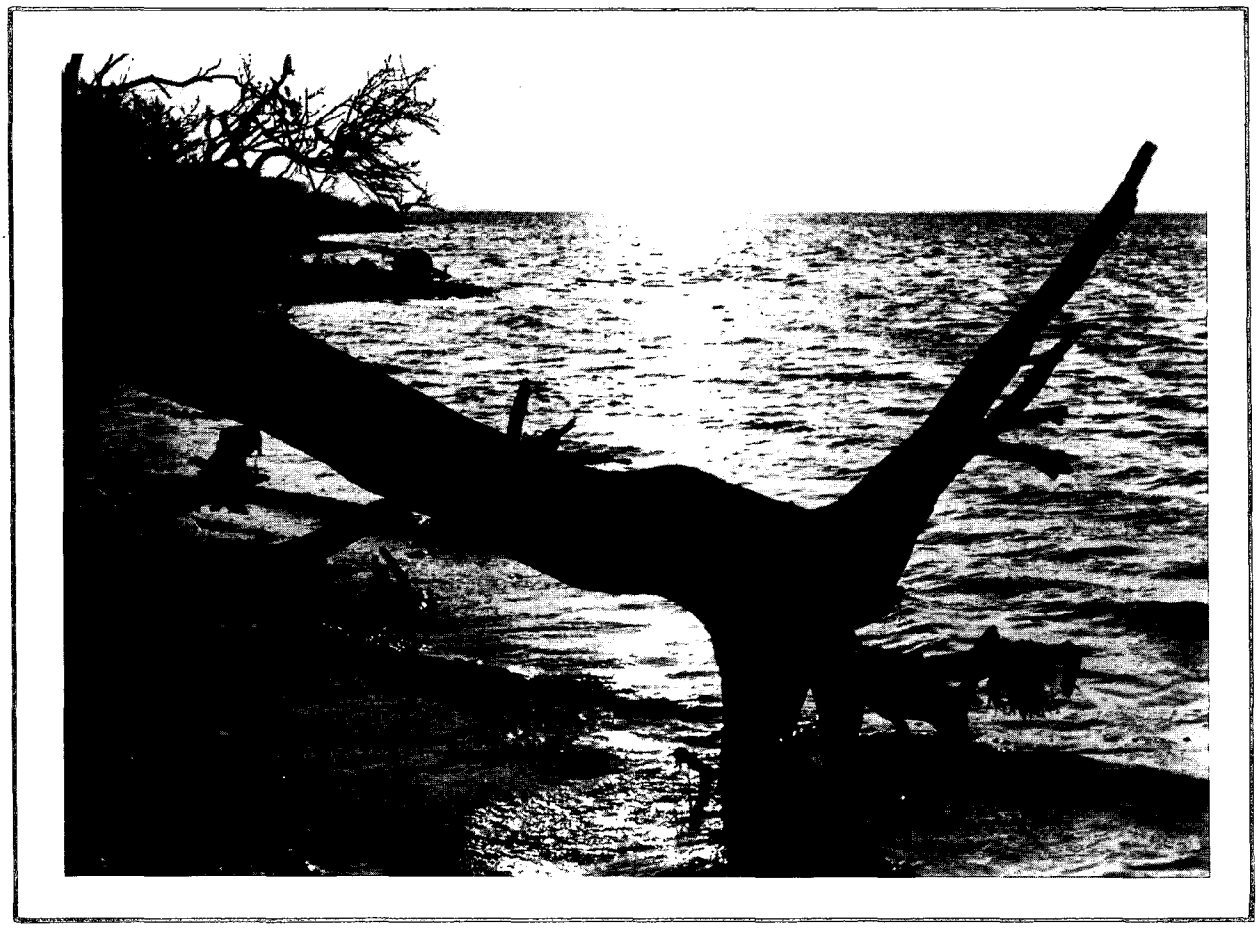

Proceedings of

The Conference on

Organizing and Managing

The Coastal Zone

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PROCEEDINGS OF

THE CONFERENCE ON ORGANIZING AND MANAGING

THE COASTAL ZONE

June 13 - 14, 1973

U.S. Naval Academy
Annapolis, Maryland

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FORWARD

The National Conference on Organizing and Managing the Coastal Zone was held on June 13-14, 1973 at the U.S. Naval Academy in Annapolis, Maryland. It was a truly intergovernmental and interagency effort, symbolizing the complex relationships that exist in and make up the nation's coastal areas.

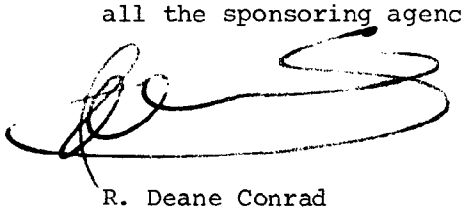
The Conference was inspired by the enactment of the Coastal Zone Management Act of 1972, a new federal law designed to aid the States and their local governments in managing the priceless yet limited resources and heritage of our vast but fragile and threatened shoreline.

The program included descriptions of exisitng and proposed Coastal Zone Management activities at the State and local levels of government as well as those being carried out by other public and private institutions. The agenda included as well a description of federal agency activities relating to coastal resources which might serve to assist State and local government efforts.

If we are to succeed in what has now become a national effort to protect our shoreline areas while providing for the wise and necessary development of coastal ports and resources, we must achieve the highest level of cooperation among the levels of government and between their agencies.

This Conference was a step in that direction. It is hoped these proceedings will serve to continue the exchange of information and cooperation experienced at the Conference.

Whatever achievements result from the Conference are due to the outstanding contributions of the participants and the cooperation of all the sponsoring agencies. We deeply appreciate their efforts.



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Wednesday, June 13, 1973

Morning

SESSION I

Intergovernmental Aspects of

Coastal Zone Management

INTRODUCTION TO MORNING SESSION

Mr. Robert W. Knecht, Coastal Zone Management Task Force,
National Oceanic and Atmospheric Administration

I'd like to welcome you to our Coastal Zone Management Conference. I'm Bob Knecht, the Director of the NOAA Coastal Zone Management Task Force. It is my pleasure to begin the program by introducing Thomas Suddath, the Secretary-Treasurer of the Coastal States Organization, who will introduce our host.

INTRODUCTION OF VICE-ADMIRAL WILLIAM MACK

Captain Thomas Suddath (U.S.N., Ret.), Secretary-Treasurer,
Coastal States Organization

It is my pleasure to introduce Vice Admiral William Mack, the Superintendent of the Naval Academy. Vice-Admiral Mack graduated from the Naval Academy in 1937. He and I have been friends and sailors on destroyers for years and years. Admiral Mack has had distinguished duty at sea, and in Washington at the Bureau of Naval Personnel, Department of Defense, in the Office of Chief of Naval Operations. His last tour of duty, before assuming this very responsible position as Superintendent at the Naval Academy, was as Commander of the Seventh Fleet, Yankee Station, Gulf of Tonkin. Vice-Admiral Mack, our gracious host.

WELCOME

Vice-Admiral William Mack, Superintendent of the U.S. Naval Academy

Good morning, ladies and gentlemen. It is a pleasure to be associated with a positive aspect of coastal conservation after spending a year tearing up about 1,000 miles of coastline of Viet Nam.

I had a chance to look at your agenda, and the Act of Congress which you are studying and hope to implement; to me it is certainly a very complicated process, and one which I'm sure will take all of your time, effort, and energy here. So I'm going to be very brief and give you all the time you can to work on this very worthy project.

I hope you will have a chance to see what we at the Naval Academy are doing to beautify our little section of coastline here; it is a beautiful campus now. The building behind you as you sit will be finished in a little over a year; it will be Rickover Hall. It will have in it laboratories and areas for the studies of science, which will contribute to what you are doing. We do have here, as you know, several majors and courses which contribute to studies which approach what you are doing, and we are extremely sympathetic with the organizational problems you have and the problems you will have in the future.

Again, on behalf of all of us here, we welcome you and your endeavors, and we hope that you have time between your seminars and lectures to wander about the Naval Academy a little bit to see it for what it is. Of course, right now most of the Midshipmen are absent, but I think you'll get a good idea what the physical plan is all about in the time that you have to do the looking around. We'll try to do the best we can to have good weather for you, starting about now and going through tomorrow. After tomorrow night you're on your own, weatherwise.

Thank you so much for coming and joining us, and we hope you have a very pleasant and productive Conference. Our welcome mat is out to you. Good luck.

SETTING THE PERSPECTIVE

Mr. Robert W. Knecht

We are very pleased with the attendance at the Conference. The advance registration indicated that people would be present from each of the coastal States, including the Great Lakes and the territories, with the exception of one State, Indiana, and one territory, Guam. Otherwise all 34 coastal States and territories are represented at the Conference. We are, of course, pleased with this kind of turnout. Obviously, the Conference is timely; we hope it can be worthwhile as well.

Just a few words of background about how the Conference originated. The idea first developed during an Executive Committee Meeting of the Coastal States Organization last November. It was proposed that the National Oceanic and Atmospheric Administration (NOAA) hold such a Conference jointly with the Coastal States Organization. Later the idea expanded to include the Council of State Governments, and their sponsorship and support has been very important. Finally, it has evolved into a Conference with multiple sponsorship and with financial support from the Department of the Interior, the Department of Commerce, the National Science Foundation, the Department of Agriculture, and the Environmental Protection Agency. We're pleased with that broad base of interest and support.

What I would like to do briefly in this initial part of the perspective-setting is to touch upon the goals of the Conference as we on the Conference Steering Committee visualized them and to discuss the mechanics of the meeting designed to reach those goals.

As we see it, the principle purpose of the Conference is to use the coastal zone management program as a case study, if you will, of a new set of

intergovernmental and private/public relationships which are a part of a new and still evolving land and water use ethic. It is not our intent to focus simply on the coastal zone management part of the problem per se, but to use it as an example of the movement, the thrust, into a different way of viewing land and water use and the related intergovernmental and private/public relationships in this country today.

The coastal zone management problem, it seems to me, is an appropriate one to use in this case study for a couple of reasons. First, the Federal legislation with regard to coastal zone management has actually passed and is on the books, so it's no longer conjecture as to the shape and the content of the legislation -- it exists. But perhaps more importantly, the need for rational coastal zone planning and management programs, I think, is clearly apparent. The land and water use problems of the coastal zone are the most pressing and the most well-perceived problems that exist in the land use area. The most urgent problems are in the coastal zone, as well as having the legislation there to begin to move forward.

It could be asked whether this Conference is premature or not. In fact, as most of you know, there has yet to be appropriated grant funding assistance to States under this new Federal program. And with no grant money in hand, what can be done? We feel that the Conference is timely for a couple of reasons. First, the prospect of grant funding to States in Fiscal Year 1974, that begins July 1, we think is quite good. I'll come back to that point in a minute. And secondly, even if grant money was further delayed, a number of States have indicated a desire, and, in fact, are moving forward to develop coastal zone management programs consistent with the Federal Act, in order to avail themselves of the advantages that accrue to a State if it has a Federally approved

coastal zone management program consistent with the Act. And lastly, much of the philosophy and the approach embodied in the Coastal Zone Management Act, as passed last October, is also carried over in the pending land use legislation. Hence it's useful to look at the Coastal Zone Management Act and how this program is evolving as a forerunner of the land use legislation and the national land use programs it will create.

I think here I would like to insert just a few words on the Coastal Zone Management Act, in case there are some of you who may not have kept up with the details, so that we all start with a common base of information.

The Act was passed in October 1972 -- the Coastal Zone Management Act of 1972. It is a Federal program to encourage the States to develop a rational coastal zone management program. The Federal Act has two kinds of incentives built in -- financial incentive is authorized through a grants program -- but the more important incentive might well be the fact that States, if they take the time and trouble to develop management programs consistent with Federal guidelines, will have additional leverage with regard to Federal activities that might affect their coastal zone, those Federal activities having to be consistent with the approved State management program.

There are really four key aspects to the coastal zone management legislation as I see it. First, it is voluntary -- there are no sanctions involved. There are only carrots -- there's no stick, so to speak. Second, it speaks to "process" and not "substance". It sets up Federal requirements with regard to the processes that have to be addressed in a State's management program, but it does not try to second-guess the State with regard to specific land and water use decisions. Third, it is primarily a coastal waters management program, and refers only to the shorelands to the extent that the use of the shorelands affects the coastal

waters. Fourth, it recognizes the importance of both economic development as well as conservation-oriented uses. So it's a balanced approach to management, and not solely an environmental measure.

The responsibility to administer this program went to the Department of Commerce, and was subsequently handed to the National Oceanic and Atmospheric Administration, and on to our task force, the NOAA Coastal Zone Management Task Force, which I head. We've been planning for the implementation of the Act since we set up the Task Force in November, several weeks after the passage of the legislation.

A word or two on progress to date. We first developed the Federal guidelines for Section 305 of the Act, which is the Section which authorizes grants to States to begin the planning process that will lead to Federally approvable management programs. Those guidelines have been in development over the last three or four months and they are due to be published in the Federal Register today (June 13). Reprints of that publication will be available this afternoon here at the Conference.

We begin work next month on the second set of guidelines which we feel are needed. These will be the guidelines which will describe the process by which the Federal Government will receive and approve State management programs under the terms of the Act. These guidelines will discuss the criteria, evaluation steps, the kind of Federal review including the way other agencies will be brought into the process.

Just a word or two on the funding situation before I go on. I mentioned that I felt confident that one way or another there will be grant assistance available to States in FY 1974 -- that is, beginning July 1. The exact timing

and the exact route by which this funding is to become available is, unfortunately, not yet clear. The Administration's position is that it is appropriate to wait until the land use legislation has passed the Congress and is, in effect, on the books before granting funds to States under the Coastal Zone Management Program, because of the close relationshi of these two programs.

With regard to the status of the land use bill, many of you are aware that the Senate side of the Congress has been debating a Senate bill, S. 268, Jackson's bill, and that it has been reported out of the Committee, with certain amendments attached which would have the effect of allowing two separate but coordinated programs. Of course, no one knows what the House side will do, or the Administration if such a measure comes to the President in that form. In any event, if this approach does prevail, then funding would be available in parallel with the land use funding, which is called for in FY-74. If this approach does not prevail, and the land use legislation is held up in the Congress for one reason or another, then the Administration might well decide to go ahead and request funding for the Coastal Zone program as the only existing land use program at that time.

Finally, one other development that I think is related indirectly to the prospect of funding has to do with the fact that there has been concern in the Administration that if the two programs developed totally independently in two different departments of the Federal Government, this might cause problems of coordination. However, we have heard unofficially -- newspaper reports and other reports this week -- that the President's latest plan for the creation of

a Department of Natural Resources, or Department of Energy and Natural Resources, might well be announced before this Conference is over -- within the next 48 hours. If that plan fares better in the Congress than the earlier plans, it could be one more step toward setting aside concerns of operating programs out of two different departments. Under all the proposals for a Federal DNR, the part of the Department of the Interior that would house the land use program and NOAA would be under the same roof, in the new Department.

So much for that. I would now like to turn briefly to the structure of the Conference, and some of the arrangements. We have attempted to structure the Conference to speak to the major aspects of the coastal zone management problem as we see it. The first of these is the intergovernmental aspect, the respective roles of local government and State government in coastal zone management. Is there a national interest in the coastal zone? What is it, how is it defined, and administratively, how do we ensure that it is met in the aggregate of 30 State coastal zone management programs? These are problems of fundamental importance. There are those who say that the most crucial aspect in coastal zone management or land use management is the change in the nature of traditional intergovernmental relationships. The first Session, to begin as soon as I conclude, will be chaired by Senator James, who is the President of the Maryland State Senate, and who has been very active in this field.

The second Session, this afternoon, will be devoted to a discussion of three of the important processes in the coastal zone management planning and program effort. This Session will be chaired by Dick Gardner, Deputy Director

of our Task Force within NOAA. Some of the major uses of the coastal zone will be reviewed in Session III tomorrow morning, chaired by Philip Johnson, Director of the Division of Environmental Systems and Resources, which is one of the four major components of the RANN Program -- Research Applied to National Needs -- in NSF. In Session III, we have asked representatives of each of the coastal zone to indicate the kinds of information that they feel that State and local coastal zone managers ought to have as they develop plans to manage their coastal zone. In Session IV, having heard something of the process of the processes of coastal zone management and of the data requirements and informational requirements of the principle uses, we've asked Shelley Mark of Hawaii to sum up the States' view of their needs for information and assistance that might be available from the Federal Government. We want to hear what the States have to say with regard to their view of their needs. And finally, we have representatives of seven Federal agencies that represent the sponsoring organizations, to indicate the kinds of assistance that can be provided -- the mechanics, what can be done, what can't be done, where the resource limitations might be, etc. Session IV will be chaired by Lance Marston, who heads up the Department of the Interior's Office of Land Use and Water Planning, the office that is gearing up to handle the Land Use Program at the Federal level.

In the packets that were handed to you at the Registration Desk, we have tried to provide a good base of technical information to begin our discussions. The packet, in case you haven't had a chance to look at it, contains the program and a list of advance registrants. It has a copy of the Coastal Zone Management Act passed last October; a copy of the final version of the Senate Committee's

version of the Land Use Bill (that's Senate Bill 268) is there; a summary of legislation passed at the Federal level or introduced at the Federal level over the last two sessions of Congress that speak to the question of coastal and marine-related problems; a blue book, 1/4" thick or so, which sums up our view of where coastal States now stand with regard to their individual coastal zone management programs. I hope you will find this sum-summary useful -- we tried to make it as concise as possible -- about a page-and-a-half per coastal State, reviewing the status in each State, as viewed by our office. Each State has reviewed the brief, so they should be free of error, although they may be incomplete, in some cases, for lack of space and because of our effort to be concise. We would be happy for any additional comments you might have on this report.

The bulk of the material in the packet was provided by the seven Federal agencies that are part of the sponsorship of the Conference. The material indicates how each agency perceives its coastal zone mission and its ability to support efforts at the State level in the coastal zone planning and management area. The information is somewhat diverse, and in various forms, but we hope you find that useful. I would urge that you try to look at it, to prepare for Session IV tomorrow, in case you have questions about any of the information that can be provided by the Federal agencies. Session IV is the time to get questions answered, to get amplification on areas that are important to you, or are unclear.

I would like to call your attention to the document which describes a possible new Federal publication that has been under discussion. We would be bringing together, in a more organized fashion, the technical assistance available from the Federal government for coastal zone managers. We would index

the guide in such a way as to highlight the important problems that States face as they gear up to do the coastal zone planning and management task: the definition of the coastal zone; the question of the types of land and water use controls to use, and so on. We would like your reactions as to whether or not this is a useful enterprise or recommended changes in the format.

We know that there is a lot of information and experience that individual States have acquired that could usefully be shared with other States. What we would like to do is to invite our State participants who might have brought sample publications with them to display them on a table we have set up for this purpose in the lobby in the Registration area.

Most of you may have picked up a blue cover document, the Coastal Zone Management Institute Questionnaire. It has a blue cover and contains a list of questions. This is an effort to try to get a better feel for how States view their needs for guidance under the terms of the new Coastal Zone Management Act. Our office has entered into a contract with a group called the Coastal Zone Management Institute, to provide some resource documents that we will make available to States as they interpret our guidelines and the Act, and attempt to respond to the Federal legislation. The purpose of the questionnaire is to give the Coastal Zone Management Institute a feeling for what your priority problems are and what your needs are with regard to technical information. The kind of information they are going to be assembling will be based primarily on what certain States are already doing in coastal zone management. For example, on the problem of defining the coastal zone, they will bring together all the various experience that has

developed in the coastal States regarding the problem -- the pros and cons of tidal definitions, vegetation definitions, definition based on political subdivision lines, etc. We would appreciate your quidance by filling out the questionnaire and leaving it in the place designated, also in the Registration area.

At this point, I would like to turn the program over to Deane Conrad, Special Assistant at the Council of State Governments, who has worked with us on the Conference from the beginning, to introduce our first session Chairman.

INTRODUCTION OF SENATOR WILLIAM JAMES

Mr. R. Deane Conrad, Special Assistant,
Council of State Governments

While the Superintendent of the Naval Academy was welcoming us here to this august assemblage, I recollected with some degree of horror that I forgot to shine my shoes this morning. I hope they didn't notice that. Before I stroll about the campus as he suggested, I think I'll rectify that problem.

This first Session of the Annapolis Conference on Organizing and Managing the Coastal Zone is most aptly entitled, "Intergovernmental Aspects of Coastal Zone Management." I think the subject exemplifies the intergovernmental character of our system of government. I need remind no one here that the Constitution invested the Federal level of government with enumerated powers, limited powers, while the States, the custodians of all residual powers, those powers which bear most directly with individual powers - power of the police, power to zone, limit use of property. By the way, I feel in very safe water discussing the Constitution, with Senator Ervin preoccupied with other matters in Washington at the moment. No Constitutional lawyers were allowed in this meeting, only sea lawyers; and I number myself among them.

There is a delicate balancing of optimal freedom and choice for the individual against the interest of the commonweal that is the grandeur of the Federal system. The Council of State Governments, which I serve, is dedicated by its charter to maintain and enhance that balance. Nowhere is that of greater moment than in the coastal area, which is the subject we'll be discussing here today.

If the Council of State Governments, playing its role, succeeds in its balancing mission, I submit that the presence of all of you here today is one measure of achievement that will be largely through the work of outstanding men,

leaders such as he who will be presiding over this morning's session. Not only is he the President of the Maryland Senate, a leader in his own State, but he's served all the States, and therefore the Nation and the Federal system of government, through his leadership within the Council of State Governments. In the States we have some 7,563 State legislators. I promise you that they are no more docile than the 535 residing in Washington who make our lives at times a little more interesting than we'd care to have them. Even attempting to lead such a crew is a heroic deed; our Chairman has done this with distinction. I'm quite proud to introduce Senator William James.

DEFINING THE NATIONAL INTEREST IN THE COASTAL ZONE

Dr. J. Herbert Hollomon
Director, Center for Policy Alternatives,
Massachusetts Institute of Technology

Good morning. I should like first to discuss with you what I believe to be the fundamental origins of the problems that are associated with land and coastal zone use, to describe what I think to be a major change in the nature of the problems that face the country with respect to its future both economic and social growth, and how they reflect themselves into what I consider to be the dilemma that faces the problem of the management of the coastal zone and the management of land. In particular, I should like to describe briefly the characteristics that I think generate the interest, both political, economic, and social, in the problems associated with the use of land and the coastal zone resource.

Basically, we have come to a position in our country where our natural resources, whether they be fuels, minerals, or land, or if they be the atmosphere itself, are no longer freely abundant, and they cannot be used without serious consideration of future consequence. We are in a situation where it is self-evident that the basic assumptions, both economic and political, which led to the substantial growth of the economy and wealth of our country have now to be modified in order to deal with the growing shortages and the growing conflict between the uses of natural resources.

You already heard this morning that it is very likely there will be an Administration proposal for the management of the energy and natural resources of the United States. In essence, this political act recognizes the fact that there is inherent in the problem of resource use a significant national interest. By national interest, I mean an interest which stands above, transcends, if you will, the conflicting local interests, or the conflicting private interests.

The mere fact that one would propose in this country a coordination and an oversight of the use of the natural and mineral resources is in fact the recognition that somehow or another local interests, the private sector, the willingness to allow private transactions to determine consequences, is no longer generally acceptable.

Yesterday in Boston the voltage was decreased in the power sector delivery of electric power by 6 1/2 volts, not as a result of the shortage of electric power in Massachusetts, but as the result of a shortage of electric power in New York City and in New Jersey. The system of delivering power in the northeastern part of the United States is now not only interconnected and shared, but it is also interconnected and shared with the power generation network of the southeastern part of Canada. The point I should like to make is that the industrial/economic sector of the U.S. economy is deeply interconnected. The characteristics of the society which we now live in are these - the state of our industrial and economic development is:

1. Highly concentrated
2. Deeply interconnected

What happens with respect to the sale of agricultural products to the Soviet Union substantially affects the prices of feed stocks for cattle, which substantially affects the prices of beef at the consumer market, all of which is reflected in what everyone in the United States has to do in order to provide what they consider to be an adequate diet. By 1980-1985, it is estimated variously that we will have to import on the order of $10-$30 billion worth of fuel stocks for the continuation of even a modest growth of the use of energy in the United States. We either import that fuel or we suffer substantial increases in energy costs, which will affect all the products we buy, and the way in which we live. The estimate that such large imports are necessary not only affects the price of fuel, it makes us dependent upon foreign fuel resources;

it affects the relative value of the dollar, in the sense that we may not be able to export sufficiently in order to carry forth the necessary transport payments to pay for the fuel; and it clearly will affect, for example, such simple-minded things as to whether or not I have to pay more for a vacation in Europe, or in Asia, or even for that matter in South America or the Caribbean. The value of the dollar, the net balance of payments, depends in part upon practices which affect the conservation of energy, the delivery of fuel, and the cost of energy to every region of the United States. We are:

1. A highly interconnected industrial society;
2. Extraordinarily rich - we are the richest country of the world, and that mere richness allows a freedom of choice of the individual, for example, for such matters as second homes and recreation sites, which is really not possible in any except one or two other countries in the world;
3. We have exploited most of the higher grade natural resources of our society. We are now beginning to recognize either that we will have to import high-grade minerals; or that we will have to recycle secondary sources; or that we will have to search for minerals in places which were in the past much more costly; or we will have to conserve the general natural resources by less use, or more conservative use.

Furthermore, we continue to grow as a society. While the birth rate is now changed to be only slightly above the replacement rate, the present distribution of people of various ages indicates that our population will continue to grow, and grow substantially, for at least the next 30 years. And still, all of these factors require, for example, that when land, air, water, sea or mineral

resources are used, that the consequence of the use of those resources flows more broadly than to the individual buyer, the individual seller, or to the private interest.

We have depended mostly in our country - not entirely, but mostly - for market-place decisions and local restrictions of resource use to set the national interest. We in fact believed, although not entirely, that what was good for General Motors was in fact generally good for the United States. What we really believed was the collective market decisions would appropriately allocate the sources. What we now are beginning to recognize is that the appropriations at the market place, the transactions at the market place, while, in many cases, making it possible to make local decisions outside of a planning process, that there are indirect effects which are not taken into account in the market decisions - for example, pollution effects, atmospheric and water pollution effects - because they are not included in the calculus of the transfer payment, or that there are long-range effects on the society which the economists would say that the social return on investment is different from the private return on investment.

I'll put in in another way. The viewpoint of a society, whether it be a State or the Federal Government, is of longer range and of longer consideration than would be the viewpoint of a private individual or a private corporation making transactions at the market place.

The passage of the Environmental Protection Act, the considerations for the control of pollution from automobiles, the Traffic Safety Act, the present considerations for new programs for leading to the technical development of conservation processes for minerals, the demand of the public for products which will last longer and require less service, the Coastal Zone Act, are in my view all examples of the fundamental change in character of the economic, industrial and social decision-making process that will be required in this country for its immediate and long-range future.

The issue is the following: How does one limit the private use of the resource in such a way as to appropriately balance his loss of value with the more collective values that derive from the use of the vehicle, and the adverse consequences that derive therefrom? On the one hand, the consequences are collective; i.e., flowing to the region that is Los Angeles, which has a collective negative consequence of the pollution. On the other hand, the private benefit is individualized. What the economist would say is that we should learn how to internalize; that is, to make in the process of buying the car as much of the external costs as are possible, so that the market place would in fact include, in its calculus of transfer payments, the appropriate consideration of the external social costs. But even that requires a decision as to how valuable we think cleaner air is, and how we set the level of the internalized external cost.

The point I'm trying to make in this complicated analogy is that the problem resolved is equivalent to the simplistic problem of the tragedy of the commons, a story which was written up apocryphally in Science Magazine six or seven years ago. In northern Scotland, the general rule is that sheepherders can use the common grazing ground freely. Since there were a number of sheepherders in this community, each of them saw to his private benefit that it would be beneficial to increase the size of thier sheep herds in order to exploit more of the common grazing ground. Each of the individual sheepherders acted in a way to increase the size of his herd, and the consequence was the destruction of the common grazing ground. The essential problem that we face is how do we prevent the exploitation of our land, or our coastal zone resources, by individual transactions which of and by themselves may be beneficial to those between whom the transaction has taken place, and preserve the common grazing ground - in this case, the common coastal resource.

It seems to me that that is the essential problem. Furthermore, we're not very skilled in this problem. We haven't had, until relatively recently - three or four decades - substantial reason to be concerned with collective consequence,

except in a few instances, because our land, our coastal resources, our mineral resources, and our atmosphere were so abundant. Secondly, it was only during the last 30 years that the major migration of people to the cities - the largest migration, by the way, in the history of the world, and predominantly to cities along the coast - took place. Between 1945 and 1965, 22 million people left rural America and went to the cities of the United States. They were the displaced workers due to the great agricultural revolution that was taking place during that time, and most of those people migrated to cities and urban areas which were located near the seacoasts and near the Great Lakes. The great growth of concentration in the cities has been taking place for a very long time in our history, but has accelerated during the last 30 years or so.

I pose to you as I believe it is reasonable to be posed that the coastal zone legislation in any future land use legislation develop a process by which the decisions with respect to private transactions can be modified, controlled, and have introduced into them the general problem of the social, regional, Statewide, and national consequences. The set of the coastal zone legislation has already been pointed out to you; the primary decision process flowing from the Federal Government flows to the States, and obviously the primary decision process in the States will have to flow to local constituencies. The primary consequences of any act having to do with the use of land is its immediate surrounding consequence. Secondly, it affects the resources of the State itself or of the region. Thirdly, it affects the general national interests.

I should like to say a few words about the national interests. There are several. One has to do with the general consideration that we've had in this country for a very long time, and that is that we have never established boundaries between States that prohibit the flow of people, monetary values, or goods. As a consequence, one of the substantial characteristics of the United States, though we've had a Republic, is that the development of a region and

the opportunities for personal development largely depend upon our ability to move. The use of recreational resources, of land resources and water resources, is clearly not only for the local benefit of those who happen to reside in that place.

Secondly, it is frequent that when one local region acts to modify the use of land or of resources, the consequences flow to adjacent regions. It's very clear, for example, that the establishment of a new refinery may have environmental consequences downwind, which downwind consequences flow to a region other than that one which allows the placement of the refinery at a fixed place. So that there are, in the first instance, reasons to believe that the general recreational land and water use is in some sense preserved for the public generally, wherever that public lives; and secondly there are indirect secondary consequences of decisions having to do with the use of land and water that flows to local regions surrounding the place that makes the decision.

But there are even greater national interests. I'll refer to several. As I have already indicated, this entire country will likely depend in a major and significant way on the import of fuels from outside the United States. It will largely require deep water ports. The placement of deep water ports in a particular region of the country obviously depends in part upon local decisions having to do with the local consequences of deep water ports to the use of land and water resources to that local region. The supply of fuel to the nation as a whole is affected. The price of fuel will be determined by the degree to which the transportation costs are affected by the particular location of the ports and the degree of access and the restrictions placed on the use of the port. I've already indicated that the location of power plants along the coastal waters, or off the coasts, will be a consideration in not only the supply of power to the local region, but since in most of the regions of the United States

the power complex is now interconnecting, the power supply to adjacent regions and the cost of power for industrial/economic development will be affected, and therefore the national interest comes into play.

There are more subtle aspects of the national interests. This has to do, for example, with, I think, some mistakes in arithmetic.

Frequently an industrial operation, for example, is encouraged to locate in a particular region. The particular region views the cost and benefits of that location in terms of what it will do to the welfare of its local citizens without considering what will happen elsewhere as a consequence of the displacements which occur due to the change in industrial location, or the change in recreational or other uses of land or water in a particular region.

The economy of the United States is interconnected, and more frequently than not when making calculations on economic costs and benefits of location of plant, the use of land for particular resource purposes such as the development of housing, little consideration is given to the external costs of the displacements which occur elsewhere as a result of those economic considerations. It seems to me that in any management of resources it is incumbent upon those who manage and who establish the process that not only shall considerations be given to the local effects and externalities, but information must be provided as to the consequence to the country generally as a result of the decision, in order to change, modify, or control the use of natural resources. It is not just the regions of the country that are strip mining that are affected by strip mining practices and the control of the land, but the cost of coal to the whole country is affected by either restrictions to or insistence or allowing strip mining to take place without reclamation. The land, the coastal zone, and the decisions that have to be made are clearly mostly local. They must be made in context, however, with the consequence to the State, to the region, and to the indirect consequences that flow to the nation generally. The private use will involve

such matters as agricultural use, fishing use, recreational use and the like. The public matters affect such things as wildlife, historical position, protection of the land; and the environmental consequences will not only mean the environmental consequences to the air and water pollution, but to the environmental consequence which I would consider mostly overlooked, which is the general economic well-being of the region and of the country itself.

The recent Rockefeller Report, it seems to me, states the issue in an explicit way - that we have believed that the use of land in the past, the ownership of land, and the land itself, allowed certain social use of that land, to be determined by its ownership. The Rockefeller Panel essentially says that the use of the land, and of the coastal zone, flows from the society, and therefore establishes the decision conflict: How much of the use of the land and the coastal resource flows from its ownership; who should own; how much should be kept in the public ownership; and how much of the use of the land and the coastal zone and the lands of the coastal zone flow from the society itself?

I should like to make a few comments on things that are in the general economic interest not generally considered and taken into account. These have to do with such indirect effects as freight rates; depreciation processes; allowances for tax rebates; special consideration for tax forgiveness; and in fact the entire matter of the processes of property taxes and how those property taxes either encourage or discourage maintenance of recreational lands or encourage or discourage the improvement of the lands. Clearly what is needed is first the development of the State capability to provide a decision-making process.

The second thing which seems to me to be clear is to establish a mechanism by which the conflicts between the decisions of the States with respect to the coastal zone are at least brought into view.

The third is to generate a mechanism largely yet untried and not very well developed, by which local political bodies and State bodies are caused to take into account as best they know how what the impact of their decisions are at distances far from their own localities, and which calculate either qualitatively or quantitatively what the consequences are to the national, economic, and social welfare.

We seek, it seems to me, a way of deciding such that the decisions can be arrived at in an orderly way by a due process; but which ensure that the values which I hold as a citizen of the United States, of a State, of a local region, and a private citizen, are all taken into account, and the conflict fairly resolved. The process of managing natural resources, the managing of the environment or controlling its use, is a process by which conflicting interests are clearly of necessity introduced; and the management plan must include ways to resolve the conflict with the least possible control from the center.

Thank you very much.

LOCAL GOVERNMENT INVOLVEMENT IN THE COASTAL ZONE

Mr. Arthur Mendonsa, City Manager, Savannah, Georgia

This is a unique experience, speaking to a darkened audience. There may be certain advantages to this. As was pointed out, my background is both planning and city management. I must confess that I did not plan very well for this trip to Annapolis. I have a son who will be a Senior at the Academy next year; he came home Saturday and I came up here Tuesday.

I feel like I'm in the presence of the enemy here, because most of you are State government, and I think that I am the sole local government voice represented at this meeting.

I want to talk about some of the concerns that local government has about the Coastal Zone Management Act, and certainly we will agree that, as a start - maybe I should say the good news first - there is a problem. As the Act has pointed out, the coastal zones are rich in a variety of natural, commercial, recreational, industrial, and aesthetic resources of immediate and potential value to the present and future well-being of the nation. But the enjoyment and benefits obtained from these resources are being jeopardized by haphazard land use development; by indiscriminate dumping of solid and liquid waste into the coastal streams and marshes; and by uncontrolled land filling of the marsh areas; as well as by other indignities. And certainly each level of government, including local government, is concerned about the problems; each regulation controls activities within the coastal area. Unfortunately, however, no one level has overall control of the problem, and as a consequence, the management of the use and development of the resources within the coastal areas is fragmented and uncoordinated, and certainly very often ineffective.

We can all agree that this situation cannot continue; and, in an effort to deal with the problem on a more rational basis, Congress has enacted the Coastal Zone Management Act. Through this Act, Congress is offering financial induce-

ments to the States, accruing mechanisms through which the fragmented management of the coastal areas within their jurisdictions can be eliminated.

Although under the provisions of the Act the States are responsible for developing and administering coastal zone management programs, they may, if they wish, delegate responsibility for developing and administering a management program to a local or a regional agency. However, as we understand the Act, this delegation will not relieve them of the responsibility for ensuring that the program is conducted properly. Certainly we in local government cannot fault the Act for assigning the States responsibility for conducting and administering coastal zone management programs. The coastal zone of the State, as it does in our State, may extend through the jurisdictions of several local governments, and in some cases is a boundary with another State. This, as I said, is true in our State. Moreover, the resources of the coastal zones are clearly of more than local benefit and concern; and given these conditions, we can agree that it is essential that a unit of government with more than local interest has ultimate responsibility for the coastal zone management programs. We agree also that the States are the logical choice.

Having conceded this, we at the local government level are nevertheless concerned about this arrangement. Our first concern is that the Act is permissive rather than mandatory; States have the option of coming under the Act or staying out. To induce States to develop management programs, the Act authorizes grants to pay up to two-thirds of the cost of developing such programs, and two-thirds of the cost of administering these programs. If a State does not choose to come under the provisions of the Act, and this is what concerns us, the Act offers no financial inducements to local governments in a coastal area to develop a program of coastal zone management. In consequence, if a State does not choose to develop a program, then insofar as the Act is concerned, that ends the matter.

Local governments wishing to do something about the problems collectively or individually in a coastal area must do so at their own expense.

To us, at least, this feature of the Act is inconsistent with the finding of Congress that it is the national policy to preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone for this and succeeding generations. It is also inconsistent with another finding of Congress, which states that it is the national policy to encourage the participation of the public, of Federal, State, and special interests here at local governments, and of regional agencies in the development of coastal zone national programs. But as the Act is written, it encourages local governments to participate only if their States participate, and even then their participation is at the option of the State.

A second concern on the part of local governments who have been actively engaged in land use planning and control for many years is the lack of experience on the part of States in land use planning and controls. Now there are a few States which do have State land use planning programs; however, most do not, and historically as you all know, responsibility for land use planning and control has been delegated by the States to local governments. Certainly most of the law and the legal precedents in land use planning have been generated by local government activities. In addition, advances which have been made in developing more effective tools and methods for land use planning have occurred at the local level, rather than at the State level. But these are facts which are all but ignored by the Act.

I think local governments have reason for concern about the lack of experience in land use planning at the State level. Lacking any real expertise in the field, and having no real knowledge of the local impacts of various land use programs, States, under their coastal zone management programs, can burden local

communities with needless costs; can greatly increase the cost of development activities; and can impose costly and time-consuming delays in development within the coastal areas.

A third concern is the possible impact of the State-imposed coastal zone management programs on the economies of local communities. State-imposed programs can remove property from the tax rolls, and impose standards so restrictive that economical building development is prevented or discouraged, and in other ways can impact on the economies of local communities. Provisions are not in the Act, but certainly they are needed, which will assure that local communities will be compensated in the case of detrimental economic impacts as a result of these programs.

A fourth concern is the meaning of some of the terms that are used in the Act; and our greatest concern is the phrase in the definition of coastal zone, which reads as follows:

> *"The zone extends inland from the shoreline only to the extent necessary to control shorelines, the use of which have a direct and significant impact on the coastal waters."*

This description is general enough to permit States to encompass entire counties, including the cities within those counties, within the boundaries of their coastal zones. If the coastal zone is so defined, then local governments included in the zone may very well find their own land planning and development controls supplanted by State land planning and development controls. To prevent this, the Federal guidelines should establish criteria for defining exactly what constitutes direct and significant impact on coastal waters. I'm sure that this will not be an easy assignment, but certainly, from the standpoint of local government, is a necessary assignment.

A related concern is the absence of guidelines for distinguishing between those things within the coastal areas which are matters of State and national

interest, and those which are of purely local interest. Certainly guidance is needed in this area. Without it, very serious conflicts can arise. Those matters which are related to State and national interests certainly should be subject to State and Federal review; but those matters of purely local interest should be left in the hands of local government, where such matters can be handled by people familiar with local conditions and needs. A program that is directed to planning, developing, and enhancing resources in the coastal zones which are of more than local benefit is one thing; but a program that uses this worthy objective as an excuse to control all aspects of development in a local community, whether or not this development has more than local impact, is something else. Certainly this is something that must not happen.

A further concern relates to the meaning of the term "full participation." Under this Act, a State's management plan must be developed with the opportunity "for full participation" by local governments. But we suspect that the "full participation" will mean an opportunity to be heard at a public hearing - certainly this is the traditional device for obtaining participation. But participation by means of a public hearing does not ensure local governments will be able to influence the policies and procedures established for the coastal zone management programs which will affect them. Unless there is a mechanism to ensure local governments the power to influence policies and procedures, they can be denied full participation in the development of their State's coastal zone management program, and, in this situation, full participation becomes an iffy concept.

A fifth area of concern is the duplication of effort which can result under the provisions of the Act. Local governments have the procedures, the administrative staff, and the expertise to develop and administer a coastal zone management program. Under these circumstances, the State should proceed cautiously in duplicating this capability. Rather than duplicate it, States should establish

standards and guidelines for developing and administering a coastal zone management program, and then let the local governments develop and carry out these programs.

A sixth area of concern is over the cost which can be imposed on local governments by States' coastal zone management program. State governments are not always concerned about the cost impacts of their actions on local communities. Too often they have imposed standards or requirements which burden local communities with additional operating costs. Unfortunately, all too often they fail to provide financial assistance to help defray these costs. A coastal zone management program which places costs on local governments without providing financial assistance and support will be especially burdensome, because these costs in many instances will be added to secure a State or a national benefit. Certainly equity dictates that in such instances all of those benefitting should share in this cost.

The concerns which I have listed from the standpoint of local government are very real. Past experience has taught us to be on our guard when States decide to step into an area which has previously been a local responsibility. More often than not, local governments are hard pressed to identify the benefits which result from this arrangement, and instead they found that the arrangement burdens them with additional cost and poses procedures which cause lengthy and inconvenient delays in carrying out local programs. Certainly this does not have to happen under the coastal zone management program; to ensure that it does not, we propose that the States stay out of the day-to-day business of planning and administering their coastal zone management programs, and instead turn this responsibility over to local governments. However, to make certain that the programs are consistent with both State and national policies and objectives, we propose that the States monitor the development and adminis-

tration of the programs within their jurisdiction. Moreover, to provide the necessary guidance to local governments in developing and managing a State's coastal zone program, each State should establish guidelines covering the following items:

1. The goals and objectives to which the program should be directed, and these goals should be spelled out in more specific terms than is the usual case.
2. The contents that should be included in the program which is developed.
3. The criteria for measuring or evaluating the impact of shoreline development on coastal waters.
4. The criteria by which those matters of State and national interest can be determined or identified.
5. The performance standards. This is essential, and those of you who are in planning and have been in planning know that over the years we have attempted to try to identify performance standards for land use development - I might add, without too much success. But nevertheless, we need to have performance standards established for land use development within the coastal areas.
6. The quality standards to be achieved and maintained for the ecological and environmental systems, and resource systems if you will, within the coastal areas.

   In addition, States should establish a mechanism for hearing and acting on appeals from the actions of local government a sound responsibility for managing a State's program.

   To ensure that there will be an opportunity for full participation by local governments, and the development of

> the policies and guidelines for the States' coastal zone management program, we will also propose that each State establish an advisory board on coastal zone management, and we recommend that this board be composed of representatives from local governments in the coastal areas in the State, representatives from a State's environmental and resource agencies, and representatives from private groups and industries, and citizens interested in coastal zone management. This board, however, should contain a sufficient number of representatives from local government, to ensure that they will be listened to and heard in the deliberation.

Permitting local governments to be responsible for the day-to-day planning and administration of a State's coastal zone management program can be justified on a number of grounds. First of all, the majority of the decisions relating to the use and development of the coastal zones will relate to matters of purely local concern. Certainly these are decisions which should be made at the local level. Under the structure which we proposed, the local governments will decide initially on all matters relating to the use and development of the coastal zones, even those which have State-wide or nation-wide impacts. This arrangement would certainly eliminate the need for establishing administrative systems at the State level which duplicate existing local government administrative systems.

Second, policies and standards determined by a higher level of government with implementation by lower level of government are becoming increasingly popular at both the Federal and State level. There is good reason for this; in most instances the government which is closest to the problem to which the programs are directed is more familiar with the details of the problem, and thus better able to draft workable programs than those who are removed from the problem.

Third, the closer the administrative unit is to the matters of concern, the more convenient it is for those who are subject to the administrative regulations in any program, whether it be the coastal zone management program, or something else; it is important to administer the program in a way that will not increase development costs unnecessarily and will not introduce time-consuming and inefficient, bureaucratic procedures.

I think we can sum up the feeling that we sometimes have in local government, in the relationships to State governments, in the little story about the hippopotamus that fell in love with the butterfly. The hippopotamus was very much concerned about this problem, and he started looking for someone who could help him deal with it, and he finally went to the wise old owl.

The wise old owl considered the problem a minute and said, "It's very simple; all you have to do is turn into a butterfly."

The hippopotamus ran off very happy, until suddenly the light dawned. He went back to see the owl, and he said, "How do I turn into a butterfly?"

And the owl thought for a minute, and he said, "Now listen, Herman, I make policy, I don't execute it."

Sometimes local government is like the hippopotamus, and the State is that wise old owl.

Thank you very much.

THE STATE ROLE IN COASTAL ZONE MANAGEMENT

Mr. James M. Dolliver, Assistant to the Governor
State of Washington

I want to thank at the outset those who arranged this Conference for bringing us to Annapolis. This is really the first time I've been here, and perhaps the first time for most of you. I must say, Senator, you have a gorgeous city here; last night I came into town, as perhaps some of you did, and wandered around. Among the other sights, including the historical buildings, there were a number of gentlemen, including myself, necktied and coated, with a rather hot look on their face. I welcome all of you to the Conference - I suspect that's who you were. The mode of dress doesn't seem to be quite that formal around here, in my observation.

I am going to be both parochial and political in my comments today; I apologize for neither one of these. Parochial, because I am well aware that once you get 20 miles east of Spokane, there is no such thing as Washington State, there's only Washington D.C. But I suspect that parochialism is not ill-founded, because I think the State of Washington has done an outstanding job in this matter of coastal zone protection. Furthermore, we have those two great leaders of the United States Senate, Warren Magnuson, who was the author of the Federal Coastal Zone Act, and Henry Jackson, the Chairman of the Senate Interior Committee, who is the author of the hopefully soon-to-be-passed Land Use Management Act; so I think parochialism is not out of line.

Political, because it seems to me that politics is the heart of what you can or can't do in this matter of coastal zone management; and until we talk about the politics of it and what can and can't be done, and what has been done, and what maybe will get done and how it's going to happen, we're really not coming to grips with the problem.

Mr. Knecht, in his opening observations, talked about setting the perspective. I would like, and it's a little tough to fight hippopotami and butterflies, but I'm going to take a chance at it anyway, to talk that kind of thing. I'm going to try to talk about how really things are not, perhaps, how we would wish they should be. To do that I would use by way of an illustration a story regarding an individual whom some of you may have heard of, at least those of you from the southeastern United States, one Claude R. Kirk, Jr. We in the State of Washington recall him fondly as the first Republican Governor of the State of Florida since Reconstruction. We are also mindful, given his record, that he may be the last Republican Governor of that State before the Second Coming.

In any event, the story I've heard was told by the then-Lieutenant Governor of the State, Bob Claude, so I assume it's a true story. It concerns the time a number of years ago when he and his friend were going to college. It was their last year, and as usually is the case, those of you who have been in that estate can recall, you try to find other things to do rather than an excessively heavy academic schedule. Claude was no exception to the rule, and looked around through the catalog. Finally he came upon an ideal course; it was a course given by one man for 40 years with but one examination and but a single question asked on the examination. It was a course in Religion, and the question was: "Describe the Journeys of the Apostle Paul." The fraternity files were replete with information on this subject; in case of dire emergency one could go to the original source references and find out about it, so they signed up.

Things proceeded along, and Claude and his friend did not show up in class; they did whatever one does in the final semester with nothing much else to do, lollygagged around. Finally, the day of reckoning came; and they marched in, sat down, opened their blue books, pen and pencil poised in hand. Down the center aisle tottered the Professor, turned to the blackboard, raised chalk in hand, and wrote across the blackboard not "Describe the Journeys of the Apostle

Paul," but rather, "Give a critical analysis of the Sermon on the Mount." A substantial silence reigned in the class. The friend, as he tells the story, simply put down his name, rank, and serial number, waited a few moments so he could be at least partly graceful, handed in his book, and stopped to pick up Kirk on the way out. Kirk was furiously writing away. He came back in about 20 minutes, and he was still writing away as if his life depended on it. Three hours later, in order to close the thing down, they had to take the book away from him and get him out of there.

Several days later the grades were posted. They went to the bulletin board, and coming down the list, Kirk's friend - F, Incomplete. They came down a little further, Claude R. Kirk, Jr. - A+.

The friend turned to Claude and said, "My goodness," or words to that effect, "How did you manage to get an A+ in that course? You had hardly heard of the Sermon on the Mount, much less give a critical analysis of it."

And Kirk said, "Well, it was very easy. I simply did it like this. I wrote in my book, 'Let those who will, criticize the works of Our Lord. As for myself, I prefer to write about the Journeys of the Apostle Paul.'"

This is one of the continuing problems in human existence; and it has certainly been a problem, I suspect, in this whole difficult matter of seacoast management, shoreline protection, coastal zone - I'll probably use all three of these terms interchangeably. I think it might be appropriate, and I warn you I'm going to be talking much about the State of Washington, because I'm familiar with it. Not that I think it is a model for the rest of the country, but because I think the issues which we had to face and confront, many of which are now behind us, may be useful to some of you in what you have to do.

Briefly, let me just tell you how we got there. Some of you have heard me go into this extensively in previous meetings, so I'll be very brief on that.

We got there partially because we wanted to, partially because we were forced into it. In 1967, the Legislature of the State (Washington) passed an Act which took all of the coastline between mean high and mean low tide from Cape Disappointment (that's on the Columbia River) to Cape Platter, in the northwest corner of the State. They took it out of the jurisdiction of the Department of Natural Resources, which is primarily an agency which is exploiting resources, and I use the word "exploiting" in the best sense of the term, and turned this over to the State Parks Department - in other words, turned it from economic use, or "exploitative" use, into recreational use. That was done in 1967, and this has worked fairly well. The only problem we really have is the insistence on the part of some people that the beaches (and they're wide, sandy, and long) ought to be superhighways for cars rather than for people to walk up and down. That issue is still causing some dissension, but aside from that, it's worked fairly well in using it as a recreational area.

In 1969, legislation was prepared for introduction into the 1970 Special Session of the Washington State Legislature for a comprehensive Seacoast Management Act. Nobody thought that it was going to get anywhere; but it seemed at the time like a pretty good idea, both by the Governor, and a number of legislators and private citizens. Nothing would have happened, in my judgement, perhaps even up to now, except for an action taken on December 4, 1969, by the Supreme Court of the State of Washington, in what has got to be considered not only a landmark case in the State of Washington, but I suspect a landmark case in the United States in the whole matter of coastal zone usage. It was the case of Wilbur vs. Gallagher, in which the State of Washington decided, in its infinite wisdom, by a six to three vote, that any water - whether it was tidal water or whether it was simply water on the surface - a navigable body of water belonged to the people of the State of Washington. The impact of this was that any kind

of construction of any sort on tidal estuaries, on tidal waters, would simply be brought to a screeching halt. At that time there was no device, and the Supreme Court said that the Legislature could think up some device for public use or private use of these properties, but up to that time there was no device for doing it, so everything did come to a halt. It became quite apparent, both to the Legislature and to the citizenry at large - it took a little longer for the business community to figure this out, but eventually they did - that some kind of legislation in the area of seacoast management or coastal zone protection simply had to be passed, not only to protect this for recreational, ecological, or wilderness purposes, but more importantly, to allow any kind of exploitation at all. For in the Wilbur vs. Gallagher decision, as I say, everything came to a halt; nobody was giving any title insurance any more. And so something had to be done.

The matter came up in the 1970 session. All sorts of fun happened then. A bill got through the House twice, got to the Senate and got killed. In 1970, the Washington Environmental Council proposed an initiative - we are one of the States that has the initiative process - for the 1971 session of the Legislature. The 1971 session, feeling that the initiative was not quite the way they wanted to go, passed their own Seacoast Management Act, which in 1972 went to the people, and it was decided in 1972 that Initiative 43-B, the Act passed by the Legislature, was the one which the people preferred. It had, however, gone into effect in June 1971; so for about 2 years the State of Washington has had a comprehensive Seacoast Management Act.

What are the issues? It seems to me that there are four, as far as State and local relationships are concerned. Mr. Mendonsa may be somewhat surprised in my remarks, but I find very little in what he said that we in the State of Washington would disagree with. As a matter of fact, it sounded very much as

if you could have written some of the provisions that went into our Seacoast Management Act. We really don't quarrel too much with the kind of local participation about which he talked. But it seems to me the four issues are:

1. Who is going to do it?
2. What are they going to do?
3. How are they going to do it?
4. Where - and by where I mean when you get done with the process - where does it go from there? Who has any further decision-making authority?

As far as the "who" is concerned, we had the quarrel and the struggle, if you will, in the State of Washington as to whether it ought to be entirely under the jurisdiction of the State, which was the proposal of the private group which proposed the initiative; or whether there ought to be a shared responsibility, which was the proposal of those who had the responsibility for getting the Act through the Legislature. I think it would be instructive for me to read the provision from the Washington Seacoast Management Act, which I think spells out better than I could tell you exactly what this relationship is intended to be and how the Legislature felt the two jurisdictions ought to work together. In referring to the Act, it says:

> *"This Chapter establishes a cooperative program of shoreline management between local government and the State. Local government shall have the primary responsibility for initiating and administering the regulatory program of this Chapter. The department shall act primarily in a supportive and review capacity, with primary emphasis on ensuring compliance with the policy and provisions of this Chapter."*

That simply lays out the general policy. The rest of the Act goes into some details to implement it. It seems to me that there are some real and substantial reasons why local government ought to have this kind of involvement. In the first place, it represents a resource. Many times we at the State level have some harsh things to say about local government; but it's usually when we're trying to get

something, and we use them as a whipping boy. The fact of the matter is that it has been my experience that much of the available resource to get things done in any State jurisdiction lies at the local level; and it was the feeling of the Legislature and of the Governor that we would be foolish simply to cast this resource aside and say, no, we're going to do everything in-house, at the State level. Secondly, they were to be part of a process - I will not quote the late protean President of the United States, Lyndon Johnson, in full, but you'll recall the story that he'd rather have them inside the tent than outside the tent; and we'd rather have them inside than outside the tent too. We would like to have local government part of the process. It was the feeling of the Legislature and of the Governor that it was foolish to totally exclude them from the process, because all you're doing is buying trouble. At some point in time they're going to get you, and you might just as well have them involved in it, so that in their part of it they're just as guilty as you are, and when it's finally done, it represents a joint process.

Another side issue in this matter of local participation was who ought to do it at the local level. Those who proposed the initiative had a certain amount of rhetoric about local participation, but it was all on the basis of volunteer ad hoc groups that ought to be involved in the planning process with the State. We said no, that it shouldn't be ad hoc citizen groups, which are sort of iffy things to begin with, but ought to be the official units of government, the elected officials, be they at the city level, the county level, or the regional level. And that was the decision that was made - that we ought to be dealing with elected officials, people who are elected at the local level, rather than simply setting up some ad hoc bodies which would serve in a somewhat advisory capacity. So that was the decision which was made - that local government ought to be part of the action; and as a matter of fact, as you observe from my reading from the section of the Act, they are not only part of the action, they are an extremely important part.

Secondly, the decision had to be made as to what you were going to include in it. Washington is a coastal State that has Puget Sound; we have a wide collection of estuaries, seacoasts, large rivers, large lakes. I suppose we are a case history in our State of the various kinds of coastal or water locations that you can have. It not only became a question of what, in the sense of what you're going to include and who's going to have the say as to who does the decision making, but how much - how much of the water of the State do you include in it? We came across a very interesting device, one which I think might well be a model for other States. We have two kinds of shorelines which are protected in Washington. One is simply shorelines generally. This is described as all the water areas and all the wetlands. The wetlands is a term of ours which generally means estuaries, marshes, etc., and that anything 200 feet back from the line of high water, which gives us a buffer zone of 200 feet back from the water, either on salt water or fresh water. Secondly, the shorelines in the State include any stream which has over 20 cubic feet per second flow, and any lake which is over 20 acres. It's quite comprehensive.

However, it was the feeling of many people that there were certain segments of the shorelines of the State of Washington, and I'm sure this is true in every other jurisdiction, that required some kind of special treatment, that were a little beyond the ordinary, and as a matter of fact would be considered as shorelines of State-wide significance. The Act makes quite clear that the shorelines of State-wide significance are generally going to be those which are not subject to economic exploitation. It doesn't come right out and say it in quite those terms, but the meaning of the Statute is quite clear. There are sections of the shorelines in the State of Washington that get special treatment. I can describe them briefly for you, the entire salt water seacoast up to the mouth of Puget Sound; all salt waters of the State beyond the line of extreme low tide; all of Wood Canal; and a number of very prominent estuaries from the north to the south

in the Puget Sound area; plus all large streams and all lakes of over 1,000 acres. These are the shorelines of State-wide significance, and the State has a much more important part to play in the determining process as to what use shall be made of these particular areas than it does with the shorelines themselves. The totality of these shorelines, both shorelines and shorelines of State-wide significance, are known as the shorelines of the State.

That's the next problem we have - how do you administer all this; what's the process that you go through; how do you issue the permits to allow people to do something on these particular shorelines of a State? I think, in many ways, that the most important part of the Seacoast Management Act, or the Shoreline Protection Act of 1971, is the process which it sets up, first, to determine what the land use plan shall be for these particular bodies of water and the adjacent lands, and secondly, what the system shall be for the issuance of permits to various individuals or persons, corporations, for the use or exploitation of these lands.

Let me just go through this process, because I think it will show better than any other method as to how the local jurisdictions are involved in the process; and I repeat again, the process, it seems to me, is the important characteristic of this Act.

The first thing that was required was for the Department of Ecology, which, in a sense, is an umbrella agency in our State in environmental affairs, to issue their guidelines. This was done as of June of last year. This is what it looks like. These are guidelines which have been proposed by the State, and which have been adopted. In the Statute, it makes quite clear that this propose and adoption process is a give-and-take, a negotiating process if you will. It took them a year to do it; and it took this length of time because of the restrictions built into the Statute requiring an input from the local communities;

requiring the State government to respond to it; requiring a final hearing; and then finally authorizing the adoption. I cannot emphasize enough my belief that this kind of a process in setting up guidelines in dealing with local governments is absolutely imperative. Because now that it has been done, I think by and large the local units of government accept willingly the guidelines as they have been proposed and as they have been put into effect by the State of Washington. But I am quite confident that this would not have been the case if this rather complex process had not been initiated by the Legislature so that the local communities felt that they had an imput all the way along in this first movement in our shoreline management.

Secondly, the ball bounces back into the local community. Local communities are required to have a full inventory of all of the shorelines in their areas, both the shorelines themselves and shorelines of State-wide significance. Then they are required to come up with a so-called master program - that is a term of ours, it really means a comprehensive land use plan. Just to go aside into politics for a minute, in our State some people think zoning is still a Communist plot. Land use, at least at that time, was not quite in the good odor it is now, so the term "master program" was decided upon. It's a little high-flown, but it seemed to get the job done, and you might, if you have political problems, grab onto that particular term. Don't let them find out that we've done it. But "master program" is what it is - it's really a comprehensive land use plan which is required, and in the Statute there are set out a number of criteria for the development of these master programs. I won't bore you by going through them, but they are quite comprehensive, they are quite specific; some of them are not really mandatory. The phrase, "to the extent feasible," is used; but all of them, it seems to me, are things which any local government which has any sense at all is going to adopt in coming up with its management program.

The third point is what do you do when you get the "master programs"? Everything goes back to the State at that point. Again, we have the distinction between the shorelines themselves and the shorelines of State-wide significance. The Department of Ecology is required to adopt the individual "master programs" as they come in; and they can come in either from county governments or from local units of government, cities, or from regional units of government. One of the things that I think is important in our Act is that we have the provision allowing the Director of the Department to form regional units to take care of particular problems.

As an example, Lake Washington lies immediately to the east of the city of Seattle. It's a large lake about 20 miles long; it has 11 jurisdictions surrounding it. It would be folly to have all 11 jurisdictions try to come up with comprehensive master programs; and so we have, and it was just announced a few days ago, a regional agency, which will come up with a regional program for Lake Washington. Of course, Lake Washington, because of its size - over 1,000 acres - is shoreline of State-wide significance.

When the master programs come in, they are subject to further public hearings; and the public hearings must be in the county or in the local jurisdiction where the property is located. Another important thing - don't have everything in the State capital or in the largest city. Go out in the field where the people are. It may be a little tougher, but in the long run it's going to be much more productive in finally getting the job done.

The Department of Ecology has an absolute option to override and substitute its own judgement in the cases of shorelines of State-wide significance. The State will prevail in these areas of State public interests. So far as these ordinary shorelines are concerned, the Statute, I must say, is a little vague. There are some who say the State still has an overriding influence. More prop-

erly, I think, it is able to negotiate with local units of government until a meeting of the minds is finally arrived at.

It is the requirement of the Statute that the Department and local governments must encourage public participation to the greatest feasible extent. In our State, half of the counties have some kind of citizens' group, running anywhere from 25 to 50 people, who are involved in the planning process; about 35 to 40 of the cities in the State have similar citizens' groups that are working with them in planning a master program.

Another provision which is of importance, and I would suggest that perhaps the State is somewhat ahead of the Federal Government at this point, is that we are providing money to open units of government - surprisingly enough, you in the local units of government might say - to get the job done. Some of this is State money; much of it is HUD money coming under 701 grants. We made a decision two years ago that the next HUD grants coming through to our departments would be going to the Department of Ecology for distribution to local units of government. We have found this is essential; if you don't find out ways to give them planning money, they're simply not going to get the job done. As it stands, every county in the State, with the exception of one, a somewhat benighted county in the southeastern corner of the State, has determined that they will construct their own master programs. But I would guess that probably half of them wouldn't have been able to do it without some kind of funding coming in from the State of Washington.

How long does this whole process take? If we took everything out to the end point, we would get it done about the 15th of June 1974; that's a 3-year program - we started about the 15th of June 1971, out to the 15th of June 1974. When we have the whole package done, a "State Master Seacoast Land Use Planning Program" will be in effect.

How do you implement it? What do you do? The important thing, of course, is how do you allow people to do something out on these pieces of property now that you've got the bill into effect, now that you have the master programs in effect? In the first place, we put some limitations on it. We said that the only people who need to get permits are those who are involved in a "substantial development." Now, again, I won't bore you with what a "substantial development" means; I would have to say the threshold is fairly low, however, as between "un-substantial" and "substantial" development. The effort was made by the Legislature to see to it that individual home owners generally could escape this threshold and wouldn't have to be brought under it. But for that exemption, the threshold is fairly low, and most projects are going to have to have some kind of a permit. Between now and the final adoption of the master programs, all permits are issued locally. There are no State permits; everything is issued locally. They are issued locally, they are administered locally, and they are enforced locally. Between now and the middle of June of next year, the guidelines for the issuing of permits have got to be consistent with the language of the Statute; they have to be consistent with the State guidelines; they have to be consistent with any ideas anyone might have as to what the master program might be. Subsequent to that date, of course, all permits must be consistent with the master program.

Finally, in this particular area, there is a provision in the Statute for a constant monitoring, updating, and bringing the master programs so they are current with present conditions.

Finally, who enforces it? What happens when you've got a disagreement? I suppose that all of the issues that business and industry were nervous about - the matter of enforcement or the matter of where the clout lies - was the one they were most concerned with. Who was going to make the initial decision? Obviously this whole thing will go into the courts at some time, but who's going

to make the initial decision as to the validity of the permit? The State of Washington stands on the same basis as any other citizen as far as the permits are concerned. They are all issued by local government; we stand in no position of priority. The State comes in like any other citizen if it wishes to object to the issuance of a permit. That's the first thing.

Secondly, any person, I repeat any person - there is no definition as to whether you have to be a party of interest at least in the Statute, and so far there has been no interpretation of that phrase - but any person may challenge the issuance of a permit; they may challenge the granting of it, the denying of it, the rescinding of it; at any point up and down the line anybody can go in and raise a challenge.

Where does it go? It goes to something called a Shorelines Hearing Board. Let me discourse on that a minute, because this is something that also aroused a great deal of controversy in our State. The standard procedure when you have an administering agency is for it to be prosecutor, judge, and jury all at the same time, then to have the whole thing somehow get into the courts. We in the State of Washington, and perhaps other States run into this same kind of problem, the State Supreme Court has quite clearly said that this kind of procedure is no longer going to be valid, and that some kind of quasi-judicial or quasi-administrative board outside of the administering agency had to be involved in making the first decision. You could not have the decision made by the administrative agency itself and then immediately go to court, or you were going to encounter rather grave constitutional problems.

Partially to allay that, and partially because of the politics of the situation, we did set up something called the Shorelines Hearing Board. Again, it involves a substantial degree of both State and local participation. Three members were appointed by the Governor of the State; no restrictions except no

more than two can be of any one political party. The Association of Washington Cities and the Association of Washington County Commissioners each has one member, and this can be a movable member on the Board; and finally the Commissioner of Public Lands, who is, as I indicated a moment ago, the head of the agency which is the chief exploitative agency in the field of land use, he or his designee sits as a member on this Board. It requires a two-thirds decision to have anything happen; you've got to have four members going one way or the other for anything to happen on the Shorelines Hearing Board. I think the jury is still out as to how effective this is going to be; we've had a number of appeals go to the Shorelines Board. I think, by and large, the experience has been satisfactory. I emphasize again that the body which makes the original decision is local government; secondly, anybody can bring an appeal; thirdly, the Department of Ecology or the Attorney General is entitled to extraordinary appeal; and finally, local government can appeal for any order of any kind made by the State under its guidelines or anything else that the State proposes to do.

Finally in this area, there are both civil and criminal penalties. Again, these were a point of considerable argument. The criminal penalties are not severe, but the feeling was they ought to be in there, and there are misdemeanor penalties in the Statute. There are also substantial civil penalties which show up in the Statute.

That's a quick run-through of what we have in our State. I don't by any means suggest that it is potentially the best in the country; but I think it provides a model for what can be done, provides a model for what is being done, and I think it provides a particularly good model for showing how this very difficult problem of State and local relationships in a political context can be worked out. We've had two years of experience; and I would say by all standards that things worked exceptionally well.

I was asked by Bob Knecht to make a couple of comments on how someone from the State level viewed the Federal role. I think there are four items that I would discuss, very briefly, and not necessarily in order of precedence.

First, I think the Federal Government is always a great source to get some money. Just as the States in our case have given money to local units of government, so I think it's important that the Federal Government provide some funds, particularly for planning, perhaps to a lesser extent for management. We in our State at least aren't nearly as keen as the Statute appears to be in the need of funds for managing the program. This is not waving any banner of States' rights; it just simply is a matter of priorities. It doesn't seem to me that the States need all that money to run their programs. I'm inclined to think that we need money to plan them; but frankly I'm a little concerned about the money to manage.

Secondly, technical assistance. Again, in our State/local experience, we have found that this is one of the things that local governments want more than anything else, to have some technical assistance from the State level. One thing that it seems to me might be considered by NOAA and those who are managing the Coastal Zone Act is the need in some States, and I use the States of Oregon and Washington particularly, to provide for inter-State cooperation. We have it in our local Statute - providing for local government cooperation - on the West Coast, at least. The Columbia River Estuary and Basin is probably the only place where you really need some inter-State cooperation, and it seems to me devices ought to be worked out by Federal officials to allow for cooperative methods in these two States, and perhaps certainly in other States along the Great Lakes and other waterways in the Eastern Gulf States.

Thirdly, I would not object to Federal guidelines. We think State guidelines are important, and I think the importance of Federal guidelines in this area has the same kind of importance it has in the field of air pollution and water pollu-

tion. In our State, which has high standards, we don't want to be knocked down in air pollution and water pollution by some other State that has lower standards because there are no guidelines. I think there is some importance that there be some broad Federal guidelines so that everybody is operating from the same base level. Some may want to be better than others; but I think it is important that there are some guidelines which are nationwide, so that nobody can take a particular economic advantage over the other.

Finally, in the matter of permits, as I indicated, the entire permitting authority in Washington has gone to local government. Maybe we're taking a chance; I don't think so. I think it's going to work out. I would hope the Federal Government would continue to have the same confidence in the ability of State governments to do a good job in the permit granting that we in our State have with local governments. I think it would be tragic if the kind of fight that went on with the Water Pollution Control Act of 1972 vis-a-vis the permit-granting authority of the States managed to work its way into the permit-granting authority either on land use management or on coastal zone management. It's to my way of thinking an opportunity for the Federal Government, and I think the Act as it stands now is a good one, to show the kind of sensitivity toward the role of the States in this area as at least in Washington, and I would presume in other States, the State has shown toward the viability of local units of government.

I'll close with another story. You've now had, Mr. Chairman, the Feds, the States, and the locals up here in front of you. I'm not sure that our observations are all that different; but it does point up the problems that each one of us has in perceptions of common factual matters. A story that to me illustrates this more clearly than any other is one which I've told many times, but I think is worth telling again. It was told originally by a small group of

individuals in the United States, highly skilled at sort of the more abstract issues of social philosophy and perhaps even theology. You're acquainted with them, I'm confident, because they appear in daily newspapers under the guise and credit line of "Peanuts."

Several years ago there was this scene: A little hill, and lying flat on their backs gazing heavenward were Lucy, Linus, and Charlie Brown; and the conversation proceeded somewhat along these lines: Lucy said, "You know, if you look at the clouds you can see all sorts of interesting things. Tell me, Linus, what do you see in the clouds?"

Whereupon Linus promptly answered, "Well, that cloud over there looks like a map of British Honduras in the Caribbean; and over there I think I see the profile of the famous sculptor and portrait painter, Thomas Eakins; and out there it looks like the stoning of St. Stephen; and yes, off to the East I think I see the Apostle Paul."

"Well," Lucy said, "That's very fine, Linus. Tell me, Charlie Brown, what do you see in the clouds?"

Whereupon, after what I am confident was a rather inordinate pause, he said, "Well, I was going to say I saw a horsie and a duckie, but I've changed my mind."

Senator James: I have certainly enjoyed these presentations. I would like to inquire whether any member here would like to submit a question to our last speaker, Mr. Dolliver?

> *Question: As I understand it, when the initiative went before the Legislature, the Executive Branch and the Legislature itself had apprehension about the flak that might come from the industrial sector. I understand now that you've been in business for two years that the industrial sector is giving you no trouble at all. Would you comment on that?*

Answer: Well, maybe "no trouble at all" is a little broad; but you learn to live with things after a while, and I think the key problems that the industrialists - and we had an opportunity to talk with a good many of them during the summer of 1970 - the chief problems they had were sort of the problems I've listed in my general remarks: the problem of local as against State control; the problem of what the process was, particularly the appeals process. I think it's a fair comment that industrialists probably are less apprehensive now than they were. Now there are some potentialities which I might mention on this, and I neglected to mention a moment ago in my remarks, which I think have us heading, if not towards a collision course, at least towards some ticklish situations. Any reading, in my judgement, of the Act says quite clearly that the Department of Ecology has the authority, because of its power beyond the line of extreme low tide, to become the agency which is going to determine the location of any superports in Puget Sound. Somebody earlier in the day mentioned the superport problem. The Department of Ecology is going to have a hand in that, and one of these days - I'm not sure that this is generally understood by some of the business and commercial interests in the State - they're going to find out about it, and I think there may be some tense moments. But I think by and large the appeals process has worked fairly well. There are some tensions with the highway people; they were trying to build another bridge across Lake Washington, and the highway men are a little mad, but I think that'll be worked out. It's more the Federal Courts than the State of Washington that's involved in it. Generally, I think the system has worked well.

Question: Has there been a measurable impact on property values or property taxes?

Answer: I would say not. Our property values are going up like everyone else's, because of the scarcity of land. People are moving out to recreational areas.

I think it's more due to that than to this particular Act. As far as taxes are concerned, again, I think it's not so much due to the Act as simply due to the fact that recreational land is scarce. I think one of the things we had in our State that perhaps some of the Eastern States may not have, was some time, It's kind of a race in our State between the rape of the land and the prevention of the rape, quite literally. Hopefully, we're going to get there first. We had enough time to do it, so I think the impact of seacoast management upon coastal land values has really been minimal.

> *Question: You spoke about the participation of local units of government in preparing the master programs. But before that, you said that in preparing the guidelines, they had heavy involvement from the local units at all levels. How did you attain that involvement in the preparation of the guidelines?*

Answer: Much of it was simply notification, going through local units. The State had the initial responsibility for preparing the draft guidelines, which it accepted, which it did. At that point in time, the guidelines all had to go out to the local units of government. They had 60 days to come in with a response, and many of them did respond. At that point in time the Department had 120 days in which they reviewed it and either accepted it or rejected it. Next, they had to have public hearings on it, within another 60-day period. They had to have public hearings in Olympia; and in Spokane, notice had to be published in the paper; and finally, after the hearings, the Department had another 90 days in which they could meditate on it. It's my understanding, and I do not work in the Department of Ecology, that the input from local units of government was good. The citizen interest was high as I mentioned; about half the counties have citizens' committees working. About 40 cities have citizens' committees. Public notice, plus requirements of exchange, plus requirements on the location of hearings were things that are mandated in the Statute to get this.

Question: Two questions, one to you, Mr. Dolliver, the other to Mr. Mendonsa: The first one, what is the relationship of the permitting system to the Federal agencies? The second question to Mr. Mendonsa, is one brought on by your description of a separate regional group for Lake Washington. It deals with the existing and one-time looked-after State or multi-county regional planning group. Are they duplicative, or do we see a decline in the influence or even the existence in those multi-county regional agencies currently?

Answer from Mr. Dolliver: On the first question, I suppose the impact this Statute is going to have on various Federal agencies, we think it does. Now whether they will chose to be amenable to it is another matter. In our opinion, just as in any other kind of environmental quality program, we're inclined to think that Federal agencies which have shoreline property ought to be amenable to it. I would have to say, just kind of reviewing in my mind the agencies which are on the Coast, not many of them. Remember that the Naval Shipyard would be the primary one. I would have to say in all honesty that I don't know how that is going to work out, but it would be our opinion that they should be amenable to the local process. I would also have to say, given the importance of these installations in the local community, that I have nothing but confidence that in the master plans as they finally come up, that no one is going to suggest that there be no Naval Shipyard in Bremerton. Quite the contrary, that would be one of the permitted uses.

Insofar as a conflict between other planning groups and this one, I'm not sure that I'm competent to give you more than just a rather vague answer. I don't think so; but I couldn't do better than that for you. We've had a number on Lake Washington itself; we've had a number of planning groups. For example, we have Seattle Metro, which is essentially sewage control, which, beginning in 1957, really did clean up the Lake. This is another program that we had. It seems to me that there is not necessarily a conflict between the broad general planning grants on the one hand and the specific planning grant,

the kind of thing we're talking about here. Now maybe Mr. Mendonsa has some other comments to make on a possible conflict; but it's my impression that we're not in conflict, but in cooperation.

Answer from Mr. Mendonsa: I'd only make this comment, and I can only speak from Georgia's experience. Our regional commitments are not organized under the "one-man, one-vote" system. That's the best way I can describe it. I think that in something as important as this, the large metropolitan community such as Savannah, we have to be an agency in which they would have a voice in proportion to the population they serve. There could be a serious conflict.

REMARKS AT END OF FIRST MORNING SESSION
Mr. Robert W. Knecht

Unfortunatelv, the time has come where we, I think, have to call a close to the morning; but some of these same issues will be discussed this afternoon, when we discuss the process, and the questions should then be raised, as appropriate.

I'd like to thank Senator James very much for coming and presiding this morning, and to our speakers for a very interesting series of presentations.

LUNCHEON ADDRESS - WEDNESDAY, JUNE 13, 1973

Mr. Howard Pollock, Deputy Administrator,
National Oceanic and Atmospheric Administration

First I'd like to say, ladies and gentlemen, that I'm just delighted to be here; I'm really sorry that I can't be here for the entire meeting. I was very much impressed with the quality of the program this morning, with the great number of you who have attended. It's a real thrill for me, as I know it is for Bob and for his staff, for many of you, to see a meeting of this nature go on and be as successful in its inception as this one promises to be.

It's a real thrill, also, to see so many old and good friends and acquaintances here - I guess it's really difficult even to begin to put a satisfactory salutation on this talk. Herb Hollomon had to leave, I understand, because he had other commitments; but he's a really great guy, formerly from the Department of Commerce, and is now up at the Massachusetts Institute of Technology. I understand Bill Hargis is here, although I haven't had a chance to see him. Bill, as you know, is the Director of the Virginia Institute of Marine Science. I understand you're going to have the pleasure of speaking with him this afternoon. My good friend John Gottschalk, of the International Association of Game, Fish, and Conservation Commission, was formerly one of our strong hands at NOAA. And of course, Bob Knecht, who is heading up our very important coastal zone effort at NOAA, and many, many more from across the country.

I guess I should open up by saying that I feel very much at home here. It's a special pleasure to welcome many of you State officials here. A number of my good friends I've run into from time to time, and I'm more than delighted to be here to share with you some of our approaches to coastal zone management.

As an Alaskan, I've been very close to many of the problems of the coastal zone, both generally, and with respect to the particular problems that we have

in our State of Alaska. As you doubtless know, Alaska has the longest shoreline of any of the States - 34,000 miles or so, on both the Pacific and Arctic Oceans, and on the Bering Sea. It's the longest shoreline of any of the States in the Union. The longest shoreline, incidentally, on the Great Lakes is that of the State of Michigan, whose 1,660 miles fronts on every one of the Great Lakes except Ontario. New York is the only State with the unique situation of having both a salt water and a fresh water coast, with the Atlantic on one side and Lake Ontario on the other. Florida's 1,350-mile coastline looks out over both the Atlantic and the Gulf of Mexico. And some of you are here from Hawaii, the only State completely surrounded by salt water, though of course some of our territories share this characteristic also.

Incidentally, I would like to make a special note of those of you who have come from so far to attend this conference. As near as I can guesstimate, we're covering something between 7-8,000 miles in spread, and I think that's pretty wonderful for the coastal zone. We've got people all the way from American Samoa, from Hawaii on the one side, Alaska in the north, all the way over to the Virgin Islands. I understand someone from Puerto Rico was supposed to be here. Anyway, welcome. We're really happy and proud to see you.

In my remarks, I'd like to touch briefly on what I visualize to be three aspects of the coastal zone: Its nature, some of its important characteristics, and then what these characteristics really mean with respect to developing and managing the coast. I think perhaps the most significant aspect of the coastal zone is that, in fact, it is a boundary or interface between two vastly different entities - the land and the sea. As such, it has the typical properties of an interface - it is a region of transition, it is a region of contrast, of conflict, between different natural resources or forces. It is a dynamic and changeable, sometimes very turbulent area, depending upon how well the balance of forces in

Nature is maintained, and also dependent upon the degrees of pressure that are put upon that interface.

It's typical of an interface that there is often a delicate equilibrium which has to be maintained, and oftentimes is maintained for quite a long period of time. And then suddenly it can be overturned as a result of extraordinary outside forces, whereupon a new equilibrium seeks to become established. Interfaces are often highly productive areas, owing to the interactions across the boundaries.

In effect, we might look upon the coastal zone as being subjected to a kind of dual wave action, if you please, with the surf rolling in from the seaward side and successive waves of population coming to the sea from the landward side. The erosive effects of human activity, I think you all readily understand, can be every bit as real as the effects of the great waves of the sea. Conversely, if guided carefully, it is my belief that the human effects can be as beneficial as are the actions of the waves of the sea in depositing the right kinds of sediment, if you please, to fill the beaches and provide a rhythm by which the total organism can live and thrive and survive. The very rubric "coastal zone" limits and defines the subject to the land and the water as they meet along a single line. Most of the uses of the coastal zone require close proximity to that line, of course.

It's also the nature of the coastal zone that some uses are compatible with others, while some uses may really indeed require exclusivity. Recreational uses rely on the restless beauty of the sea and the shore, expanses of sand and of relatively unperturbed water for swimming or fishing or boating, or like recreational activities.

On the other hand, commercial and industrial activities, these kinds of uses, depend upon the coastal zone for heavy transport, for water as a coolant, and

hopefully to a decreasing extent, for a means to transport waste. The fisheries, on the other hand, depend upon the coastal zone as a very fertile source for their harvest, from the interactions of the upland fresh water with the salt water of the sea and the estuaries. Of course there are competing uses, and oftentimes real paradoxes which stem from natural forces which are sometimes not too apparent. I think in the Great Lakes we have a situation where this takes place. We have the situation where sometimes the high water levels mean, on the one hand, more electric power or even a greater load capacity for the shipping activities, and, on the other hand, we have the problem then in the same area of the increased erosion and property damage which affects individuals and municipalities and industry. I find this in a number of areas. When we were working a few years ago in weather modification, we found that if we tried to get some slow generators in one area we created problems for others. When we tried to disperse snow, the skiers got angry with us, and other people were very happy.

I think that we have the same kind of situation in the coastal zone. No matter what we really try to do, we're going to run into conflicting forces of industry, of recreation, of people in business, people who want one kind of thing, people who want another. I guess we're really talking about a very dynamic area; and there are very many dynamic aspects of the coastal zone, stemming from its nature as the interface I talked about before between the restless ocean and the relatively stable land. It's right in this area which we can talk about now, which we are talking about, which we're concerned about really where we find the opportunities provided as well as the conflicts. I frequently like to talk, when someone talks about one situation, of turning the pancake over and looking at the other side; and I've never yet ever seen a pancake that looked identically the same on both sides. So one of the jobs that we have to do is to

look at both sides of the pancake. Then we will see the conflicts as well as the opportunities and try to resolve them.

I think that a given stretch of coast, in one measure, can't provide us with succor on the one hand and serve as a sewer for us on the other. We know that we've got a problem; we've got to resolve properly this kind of thing. As the conflicts grow, increased management of the coastal zone and its resources becomes more and more important and necessary.

What, then, are the characteristics of the U.S. coastal zone that we're meeting about? I've already alluded briefly to some of them, to the diverse nature of the coast. The United States is very generously endowed with an exceptionally long coastline as nations go; and it can be thought of in three categories or parts. We have some roughly 88,000 miles of continental marine shoreline; something like 5,200 miles of fresh water shoreline on the Great Lakes; and about 2,100 miles of island shoreline, including Hawaii and all of our territories.

I guess the point I'm trying to make is that the coastlines that we have are in a constant state of flux; but the time scale of changes is markedly different from place to place. As a result, we can't get one uniform plan or rule that's going to apply everywhere and work well. As you know very well, the shoreline is eroding on a scale of inches per millennia along the rocky coast of Maine. You just don't see a lot of change. Elsewhere - for example, along the Jersey shores and parts of our Gulf States - the area is of much softer stuff, and erosion is swifter, apparent sometimes even from month to month. On the North Carolina Outer Banks, the shoreline is advancing rather than retreating, except that, as you very well know, a major natural phenomenon such as hurricanes can wipe out overnight a sandbar that might have been in construction by Nature over the centuries. Conversely, sometimes those major natural

phenomena can construct sandbars in the process of destroying the ones that took so long to be made. So whether on a time scale of millennia or minutes, the coast is in a state of flux.

The most important characteristic of the coast, then, is change. Whether it be in the position of the beach, or the size or health of a particular fishery, natural forces are changing the coast continually. Man-made change, of course, is taking place, and man-made change - sometimes most unfortunately - with an indifference to the amount of degradation that takes place. Sometimes the dumping activities will wipe out shellfisheries; and I guess the really terrible part about it is that oftentimes people don't even realize the kind of damage they are doing. Other times, man does realize it, burdens himself with the worry, but doesn't make the change. So man may find that the changes that he's made will cause a certain characteristic which may in fact destroy the very thing he's trying to protect. For example - and many of us know this from a first-hand experience - the coastal development in many places has carved canals and has in fact filled in creative solid land out of wetland so the homeowners who want to be on the water can have their fishing boats, their piers, their facilities for the boats to tie up right at the dock. They have built these little canals and what they have done in effect is destroy the estuary, so that too late came the discovery, in many cases, that in doing the very thing that the man was trying to protect and resolve, he actually destroyed the spawning area of the fish that he wanted to have around and be able to catch, and the areas that he wanted preserved for natural wildlife.

Incidentally, some seven out of the ten most valuable commercial fisheries species spend all or part of their lives in the estuarian waters - the coastal zone, if you please. At least 80% of the other commercially important species spend at least some portion of their lives in the estuaries. Hence, if man is

to be at one with his coastal environment, I think the answer is relatively simple - he's got to learn to live with Nature. If he builds an expensive, permanent structure too close to the beach, it's pretty obvious that he's asking for trouble, and he's asking for far more expense. If he tries to stabilize a beach that Nature is determined to change, he's bound to fail.

I've mentioned some of the natural characteristics of the coastal zone, and some of the ways that man impinges upon it, but I should also like to mantion the man-made or social characteristics of the coastal zone. I guess the principle item in this respect, the one from which all others flow, is the great population wave that presses down upon the coastline from the interior - the land wave that I alluded to earlier.

It's interesting, from an historical prospect, to note that this represents a reverse of the historical trend in this country when the early descendants of the first settlers that we had pushed steadily inland away from the oceans, from the coastal settlements, to develop new frontiers within the interior. However, once the bulk of the nation had settled and every prairie and hillside had a farm or a village, the call of commerce or later, the call of recreation, began to draw people back to the sea. In the last quarter of a century, within the lifetimes of each and every one of us here, pressures on shoreline space have increased dramatically. This pattern isn't going to stop; it's going to continue. The pressures will continue to grow. The general shift of population from rural areas to the cities, I think, in great measure has contributed to this pattern.

Incidentally, the nation's seven largest metropolitan areas are on the seacoast or the Great Lakes. In the early 19th Century, the State of Maine saw its streams and its rivers being used to transport waste material out to the sea, filling them with what we now have come to term pollution. Well, the times have

really changed. You know, if you look back at history, in those days, the pragmatic businessman took a different view of the matter than the people are taking today. Thank goodness they have changed. If we look back just a few years ago, in 1865, Governor Samuel Coney of Maine said in a speech:

> *"The mires and manufactuaries upon our rivers and streams, though they have banished the former denizens of these waters, furnish a compensation immeasurable as compared with all of the fish that have ever floated in their bosom."*

A century later, in 1967, an anguished Maine waterman cried out at a conference on pollution at the Bay, out of pure frustration:

> *"We've lost a million dollars worth of scallops, we've lost our recreation, we've lost everything due to pollution. Why, for God's sake, can't we clean up this mess? When I go out to the end of my wharf and I look over and see chicken feathers and I see entrails go by, I damn you up and down, and I say why, why, why?"*

This is characteristic of some of the uses of the coastal zone, as I've pointed out - that they exclude other uses. Difficult decisions have to be made. If planning bodies don't make them, then de facto action by individuals certainly will ensue. All of which brings us up to the third item on my agenda today; and that is, what does all this say about how we, as a nation, go about developing and managing our coastal zone - not just for today, but for tomorrow, for the future?

To start with, it says that the very diversity of our coastal areas means that planning and programs will have to differ from State to State, from region to region. In some areas, patterns of development or of non-development if you please, are already well established. In other areas, there is a transition. In still others, there is great uncertainty, because local people don't know which way to go. It's pretty obvious that in many areas there is conflict or potential conflict.

The several States are different not only in coastal geology, but also in their social organization, their economic bases, and their needs and their aspi-

rations. I think we are rich in this diversity; it is not a problem. I think it's something we can use as an asset. What I am saying to you, my good friends, is that development and management is going to be primarily a job for the States not for the Federal Government. The Stratton Commission said that this is the way it ought to be; we happen to very much agree. The Stratton Commission said that this is the way we ought to travel, and since that time, legislation has made a national policy of this. I think the facts dictate that it's the only sensible approach there is.

Do we need some Federal guidelines? Yes, indeed we do. I believe that the Federal guidelines have to be broad and they have to be flexible. Why? To permit the differing States to have their different approaches. It's our intention that these guidelines be evolved in this manner; and the range of values and of potential uses means that a wide variety of different interests need to be heard from and brought into the public deliberations and the decision-making process. The dynamic nature of both the coastland and the population means that much better information needs to be gathered on the processes that contribute to this dynamism, and on the directions that it's likely to take.

How then do you, or do we, begin to grapple with the difficult decisions that will have to be made concerning the coastal zone? It seems to me that there are at least five steps to this:

1. <u>You have to know what you've got</u>. You can't manage something that you don't understand and of which you have not determined the parameters. This means an inventory of the resources, an analysis of your zone in terms of present uses, of present resources, present legislation, etc. Where are we now?
2. <u>You have to evaluate your various options</u>, which may mean making educated guesses at one stage or another as to the various needs,

and seeking ways to meet or to ameliorate them. These options ought to be defined in terms of environmental, economic, and social costs and benefits.

3. Against this factual background, you should give people the opportunity to express their needs and their desires. We don't have all the wisdom that's needed in the coastal zone concept in this room; and we'll never be able to put it in one room. We need to hear from the public. We need public hearings and reports and publicity. Whatever funds are appropriate for your particular locality should be utilized. Citizen groups and commercial interests and community organizations - all of them - ought to be afforded the opportunity to participate in the process.

4. An expression of public policy by the appropriate governmental body. By and large, I don't mean the Federal Government when I'm saying this. I mean that this is going to mean action by the State Legislatures and by the Governors, by the Commissioners or Secretaries of the appropriate State Departments to provide the legal and the administrative underpinnings.

5. Your State must develop a management program to achieve the goals that have been developed to implement the decisions that have been made. Most of you have, at least, begun this process, and some States are already well along in their planning for rational management of the coastal zone. The experience of these States, I think, would perhaps be of assistance to the rest of the States that are not yet so far advanced, both in the procedures undertaken to formulate these plans, and in the results - incidentally, both positive and negative - the different aspects of their plans are achieving.

As I see it from the Federal level, I never think of myself as a Federal bureaucrat, because I know I'm not going to stay in that kind of job the rest of my life. I happen to be, in the sense that we're talking about the coastal zone, a very strong State's Righter; and I hope I always will be. I think that our job is to help you with the process; and I think that's the basic reason for this Conference.

I think the bulk of the work is going to lie with you. We want to do everything we can to help you. We want to give you every kind of information we can. We want to give you the broad formulation within which you can work to comply with the Federal statutes and standards. The rest of it is going to be with you; and I'm going to close now by saying "good luck." It's really great to be here with you, and God love you and keep you.

Wednesday, June 13, 1973

Afternoon

SESSION II

Coastal Zone Management Process

INTRODUCTION TO AFTERNOON SESSION

Mr. Richard Gardner, Administrative Assistant
Coastal Zone Management Task Force
National Oceanic and Atmospheric Administration

There are three major groupings of activities in developing a coastal zone management program. These are, first of all, inventory and classification; that is, an inventory and classification of the physical characteristics, both natural and man-made, in the coastal area. The second deals with those places and activities within the coastal area which demand special treatment on a priority basis because of the inherent nature of those characteristics, or because of the conflicts and pressures upon the use of coastal resources. Third, a description of the means by which States may go about resolving the conflicts, and providing a policy framework for future use decisions.

With this in mind, we've chosen to divide up the afternoon into three sessions - the three sessions you see on your program. Each of these sessions will have a principle presentation, followed by a discussion by two panelists whom we have asked to react in light of their own personal experience. We want to be informal, however, and it is our hope that the speakers and the panelists will speak provocatively, to the point, where the conferees assembled here will be active participants. If you disagree with what's being said, or you feel you have something to add, an amendment to make, please speak up, loud and clear. I hope that in this way the major issues and the various elements in developing a coastal zone management program can be surfaced.

INVENTORY AND CLASSIFICATION OF THE PHYSICAL CHARACTERISTICS

Dr. William J. Hargis, Jr.
Virginia Institute of Marine Science

It's a pleasure to be here and see so many of the people who have been involved in putting the phrase "coastal zone" into the common-day jargon. You hear the phrase so much, you wonder whether it really means that much; whether the people using it are really convinced, or just giving lip service to a passing fad. Unless we receive some Federal support pretty soon, it might take on some of the attributes of a passing fad. No, that's not really true. And I can't say that I'm not well-paid, either, Mr. Chairman. The Commonwealth of Virginia has done very well by me, and I have to say that, because some of the strongest supporters of the coastal zone activities in Virginia are in the audience, though it's the honest truth. Now that's provocative. Not many States to date have formulated - legislated - specific, explicit, inclusive coastal zone legislation, but most of them have been involved in different aspects of coastal zone management for some time.

Therefore, coastal zone management is not a new thing for the States. I hesitate to add to the blizzard of words and paper that have been generated around the coastal zone, but I think we have made progress, and hopefully this conference will add to that. I do hope devoutly, however, that in the very near future we'll be able to replace words, meetings, and papers with solid and well-supported national action. The States very much need Federal assistance.

My charge for this afternoon has been to develop the thesis of the need, and evaluation of the need for inventorying and classifying the various aspects of the coastal zone, specifically the physical aspects. That's a typical charge, because being primarily a biologist, I can speak with great authority on the physical aspects. I'm supposed to devote some attention to the development of

an assessment of the kinds of information that a State coastal zone manager should cover as he approaches the problem of classifying the physical aspects of his coastal zone. I will also discuss what is needed in order to comply with the guidelines you have before you, and the different problems confronting coastal zone managers in the United States.

In looking over the coastal zone and making an inventory of the problems we face, I find a considerable number of a common generic nature. Some of the problems are quite common, no matter where you are. Therefore, it is not necessary to consider too much that aspect. Hawaii will have to contend with the same kinds of problems that Virginia does, that the Virgin Islands does, but they will be different only in detail and timing.

Therefore, what I want to do is to use the central Atlantic area, Virginia, as an example of some of these things I believe coastal zone managers will have to deal with. I also want to dwell specifically upon the role that I think research and development has in coastal zone management - coastal zone laboratories, if you will. There is no doubt that inventorying and classification is a major activity and needs to be performed, and that different States will develop mechanisms to accomplish decision making, on the one hand, and the gathering and assessment of technical information on the other. There is always considerable semantic argument over which is the most suitable.

I tend to feel that the science and technological aspect of the program should provide a one-stop service to the coastal zone manager. That is, the technicians, the scientists, should gather the information, the data about the environment, should assess it, should provide recommendations for decisions to the managers. The only thing that's really important is that all of the steps that are necessary in gathering data, in evaluating data, and developing recommendations be available in the system. It doesn't make any difference whether the managers do this job in their own agancies or the scientists and technicians

do it in their agency. In Virginia, I prefer to think that we at VIMS, which is the coastal zone laboratory in Virginia, both by law and by Executive decree, will be able to provide one-stop service to the managers.

Part of this service that is required is to develop an inventory of the environments, the resources, the uses, the users, the problems and progress that has taken place in the coastal zone management program or in the coastal zone. I conceive that the interaction between management and science, the overall program, as a sort of dynamic thing, a dynamic organization. It is my feeling that the organization is more important than the development of a model, though the development of models has to be undertaken in order to develop plans for organization. There apparently are those who feel that if we develop an understanding of the political situation, the social situation, and of the natural situation - economics - that you can develop a large model, put it in a computer, and punch buttons. You don't have to worry, therefore, with details once you've achieved that happy nirvana. I don't think it will occur, to tell you the truth; and I think the most important thing that I can get across, if indeed it needs to be gotten across, is that organization is the most important thing. It doesn't really matter what form the organization has, as long as all the components are there and working together. Within the organization there has to be management components on the one hand, and technical advisory service components on the other; and there has to be a dynamic interaction between the two. The managers have to assist in the development of the research, engineering service programs, and the scientists and technicians have to assist the managers in development of their plans and in day-to-day decisions - within limits.

Research and development in this sense is in a service or advisory role, and I do not conceive of the coastal zone management program as a vehicle for developing more and bigger science, but as a vehicle for developing more relevant

science and technical service activity. There should be other vehicles for developing basic research activities. Coastal zone management is not one of them, though a considerable amount of basic research needs to be done. A series of papers developed over the last couple of years concerned my philosophy of the roles of management and of research and development in the coastal zone program, and they are available to you.

Another aspect that is most important in the system that I have not yet mentioned, is the need for effective evaluation of data, analysis of the data, about the environment, about uses and resources, and more specifically communications - communications of clear recommendations in timely fashion to the managers. I want to address that phase a little bit later; that is, the role of communications, the need for communications.

At the Institute, we have attempted to modify a system used by military operations for some time - the War Room approach to analysis and prognosis of problems. We call it MERRMS - the "Marine Environment Resource and Research Management System." The role of inventory and classification in coastal zone management seems to be difficult to sell. At least, it is difficult to sustain; and it's difficult to understand why we're having such a tough time, because any businessman knows that unless you have a total and living inventory of the resources that you have to sell, or to manage, you can't do a very good job of managing. In order to inventory, you must have some classification scheme; and it is difficult to understand why it is so difficult to sell this idea to State funding agencies, to Federal funding agencies - the need for continuous inventory and classification. You can get money to start, but sometimes it's darn difficult after the first two or three years to get money to continue. There may be some reasons for this.

In the first place, the area we're dealing with is very large, very dynamic, and very complex. Howard Pollock made that very clear, and repeated numerous

other statements as to the dynamic nature and the complexity of the coastal zone, the environments, the political system, the social system, and the economic demand. Therefore, in order to get a good grasp of inventory and classification, it takes tremendous effort; and not many programs are willing to put forth that effort.

In the Chesapeake Bay there has been considerable activity in studying problems relating to the management of the resources and environments of the system. There must be a 10-foot shelf of studies by now; and yet we have not to date gotten the problem of inventory classification under control. There must have been $10 million expended in this activity thus far. Part of it was due to the inherent magnitude of the task; part of it is due to the fragmented nature of the approach, and the fact that we haven't been able to develop a sustained effort and keep it going. I can give you some examples of the complexity of the coastal zone of the Chesapeake Bay by citing my own State, Virginia. We have 33 counties; we have upwards of 10 cities, which in Virginia are equivalent to counties in their governmental responsibilities. Most of the people in Virginia live in the coastal zone; most of the industry is there. We have over 5,000 statute miles of shoreline. Howard Pollock's measurements were obtained in a different way than ours; we measure our shoreline by the statute mile, because that's the way it's sold. When you buy shoreline, you buy it by the running foot, and so you have to know what you have in detail.

I've already indicated that you have a politically complex area - 33 counties, somewhere around 10 cities, numerous towns, river basins, then the interstate nature presents problems in various kinds of regulatory commissions that have been established. We've got a complex area politically. Each one of these entities needs advice; each county needs detailed advice as to the nature of its shoreline, the resources available to it, the environments that are there

that need to be dealt with, and the problems that are there. To develop a detailed inventory of 33 counties is a massive job. We've been working now for several years on a county-by-county basis, and we have only about 3 complete, but it's still necessary. They need help. They need detailed information. I believe, therefore, it has been difficult to get financial support because of the magnitude of the job, to get adequate programs started; and it has certainly been difficult to keep it going once you get it started. Inventorying is a kind of an unglamorous activity. As a matter of fact, that's one reason why many scientists and technicians don't like it; it's one reason why many of them have been dragged, kicking and screaming, into the system - after the funds have dried up elsewhere.

Many institutions and scientists do not like inventory and classification - and I don't blame them. On the other hand, it is a necessary thing. There is one other aspect, and that is that often the long-term activities, like inventory and classification, which have to go along, year after year, have to be updated frequently in order to be useful, give way under the pressure of time, or under the pressures of the moment, agencies of pressure, like Hurricane Agnes, fire-fighting, fish kills, and that sort of thing.

It's easy to shunt inventory and classification aside to respond to these pressures, but we must appreciate the need for inventory and classification, and getting the program under way, and must persist. One of the things that you have to have to be an advisor to a State, to a locality, to a national government, is persistence. Quite frequently, even with clear reason for accepting a recommendation, it will not be done. They will try everything else and then come back and ask what it was you said. So you must be persistent.

I want to indicate again that in order to be useful in coastal zone management, your inventory has to be dynamic, detailed, comprehensive, and recent.

All the media have to be used - media for gathering data, for storage of data, for analyzing data, for developing recommendations - the media must be used in order for our work to be of use to the managers. Your classifications must be meaningful, useful, and recent. You can't expect to develop a classification in the early stages of your efforts, like classifications of wetlands - numerical evaluation systems, high wetland, low wetland, fresh water marsh, that sort of thing - which will persist, because these things frequently need revision. You frequently find that you started out with the wrong classification, or that your classification is no longer useful. And again, your communications with the managers have to be continuous, you have to interact effectively with them. The managers have to appreciate what you're doing, what your problems are; and they have to be willing to use your recommendations. If they are not, then all the recommendations you can make won't be of any value. There has to be close rapport between the advisory group, the classifying and inventorying group, the technical group, and the managers. Among the managers, of course, at the State level, are included the Legislature, the General Assemblies, the Executive Offices - the Governor - and then the regular Executive Offices below him, the Attorney General, the judicial system. These people all contribute to the development of management programs to decision making. You have to be prepared to interact with all of them.

One of the problems in being an advisor is that sometimes you have to reckon with the fact that your advice won't be taken. Advisors who interfere are sometimes not very well treated.

The inventory and classification have to cover these things:

1. Environments - types of environments, habitats, etc.
2. Resources - that is, exploitable resources - minerals, water, water characteristics, fishery resources, natural phenomena that are

related to these environments and resources, capabilities and requirements. The physiological tolerance limits of organisms, for example, would be considered a necessary thing to inventory. I'm sure that the people who are going to speak about the biological resources will include that.

3. You have to include uses, actual and potential uses, in your classification. You have to have an evaluation of the inclusion of the public desires and actions that relate to the environment and resources of the private desires and actions. Inventory individual property owners; they are players in the game.
4. The inventory and classification have to be useful in the establishment of baselines, baseline studies, criteria, standards, and guidelines. They have to be useful in siting, site engineering - ecological engineering, if you will - and in the development of operational plans for your industrial plant, for example, because not only does construction and the nature of construction of a plant, an industry, affect resources and environments, but the method of operation affects them too.
5. Your inventory has to be up to date in its inclusion of use allocations; that is, whether or not a shoreline has been dedicated to one use, and to the quite specific nature of the uses, even sometimes on a foot-by-foot basis. Many of the permits that are sought in our system in Virginia cover 50 feet of the shoreline. It's a relatively small area, but each one has to be attended to.
6. The introduction of man. By the way, I view land use as merely an adjunct of coastal zone - I'm biased; but I think it's going to be a mistake politically to tie coastal zone management, which is "hot," to land use, which may not yet be "hot." Therefore, I recommend that

we develop clear-cut coastal zone management programs, including land use, wherever it's necessary. It's a good starting point; people are ready to buy it. It's a good leverage point. Unfortunately, most land use planners are not marine-oriented; and what we need to do is to train some marine-oriented land use planners. There's no question in my mind that land use planning is a necessity; and I am not denying or denigrating land use planners. But this is a marine game - at least the one I'm selling is. I can take a series of water quality criter wetland activities, wetland permit systems, shoreline permit systems - and manage the land. It can work the other way around. But it is a multiple activity. Therefore, I recommend less emphasis on land use, and more emphasis on coastal zone to you. I see some of my colleagues falling into the trap, considering themselves land use planners.

Okay, is that provocative enough? After you have gotten all this material in your inventory, and you have classified it, there is one aspect that is necessary, and it's repetitious. You have to get the information which you have gathered together - salinity, temperature, oxygen, water withdrawals, flows, and all that sort of thing. You have to bring the experts together with the information. You have to be able to interact semi-analyzed, semi-digested, digested data, and historical records. You have to be able to analyze what is known in relation to the problem. This is much like a doctor-patient relationship; you have a problem, you go to see the doctor. If he can't handle it with a quick visit, then he sends you to a specialist. Or, if the problem is pretty vague, he may call a whole bunch of them in and they look you over and prescribe. Okay, that's the kind of a game we're playing.

It is important, therefore, to be able to bring the data together, the experts who can make the judgements together, in order to make the diagnosis, in

order to make the recommendations which then have to go in a timely and effective fashion to the decision makers. That should be an important part, an integrated part, of everyone's program.

Question: I imagine you can achieve land use control by controlling the use of the water. Have you ever written that up in a palatable form?

Answer: It's difficult to develop anything in a true palatable form. The answer is no. I guess it's been said from time to time by me, as well as other people, that it is possible to develop various strategies of management and use various tactics. It's been said before - I have said it before, but not in a detailed way.

Question: How do you see the management alternatives to involve the technical, physical, general biological science?

Answer: I actually see the physical, chemical and geological sciences, the technicians, involved in helping to narrow the possibilities of choices. I think it is not enough - now this is one reason why I think we have to be careful, however - we have to be careful not to presume the prerogatives, not of the legislative, of the executive agencies. But on the other hand, it is clear that frequently they want guidance in limiting possibilities, and you should give it to them. I don't conceive of the role of the scientist and technician as being merely data gatherers and presenters of data without evaluation and without recommendation. What I do see is an activity in which, after we have done the diagnosis, you make your recommendations, acknowledge the limitations. For example, if you have not considered the political factors (and usually that's not our role, usually we're happy to stay away from it, because that's something that the legislators do much better), or some of the sociological phenomena which other agencies do (stenographic, State planning of community affairs can

be other people). On the other hand, it is not enough to lay out unevaluated information without clear recommendations. I conceive of the role as making recommendations, acknowledging limitations, but at the same time giving priorities based upon the limitations.

> *Question: Let me extend for a moment your discussion about land use planning, as separate from coastal zone management. I don't really see how you can divorce the two, for two reasons. From a practicable prime ecological point of view, I don't see how you can possibly separate watershed studies and coastal zone management. And secondly, somewhere along the line in the sequence of events that will take place, the National Environmental Policy Act, or the State equivalents, will come into play. I don't know when. Now if indeed the Section 102c Environmental Impact Statement is supposed to be the main document, if you divorce coastal zone management from land use, then it seems to me you are foreclosing on important alternatives that should be considered for industry, commerce, and the rest of these.*

Answer: I agree, and I should not imply that I think you ought to divorce them. I did attempt to indicate that I think they're separable along certain lines for emphasis. You do have to make some separation somewhere. You can't organize government into one massive governmental system, which will cover all of the different phenomena that the government would possess. What I'm saying is that I believe it's possible to develop a coastal zone management program which has certain characteristics of its own, which involves land use on the one hand and water use on the other hand. But I believe that as long as you do have to have these separations, the best method is to develop a coastal zone management program in a compatible way with your upland management program. I think land use has to be involved; and it's merely a separation of convenience, and not a reality. But what I'm trying to do, in my own papal way, is to sway the system away from too great an involvement with land use, which I think is going to take some time to come along. I think there are enough separate and unique characteristics, or at least unusual characteristics of the coastal zone, to allow emphasis on the coastal zone much like the National Legislation Act provided with the adjustments between Senator Jackson and Senator Hollings and

the different groups. I would like to see it develop along those lines. I think we can move coastal zone management along and be ready and interface with land use as it comes along too. There is some argument on that.

Question: This may be very elementary, but do you envision that each one of these inventories would be similar to each State?

Answer: No, that's not an essential part of the system. I believe that the classification scheme has to suit the management system that is developed. I do believe, however, that as things come along, there will be a certain commonality of classification schemes throughout the country.

PANEL DISCUSSION

Mr. Bruce Johnson, Coordinator, Florida Coastal Coordinating Council
Mr. Harold Bissell, Consultant, Jones & Stokes Assoc., Inc.
and
Dr. Hargis

Mr. Johnson: First of all, let me comment about his organizational statement. He said the organization is more important probably than creating laws or gathering the data. I agree with him on that; but I would like to point out that Bill is in an ideal situation there. He wears so many hats that he can put on his VIMS Director hat and go talk to the Governor of Virginia and work out the State problems; then he can put on his academic hat and go up and have lunch with Bob Abel (Director, Sea Grant Program, NOAA) and walk off with a big grant; and he's got simplified all these problems that the rest of us have, because he gets so many paychecks and does such a good job in so many places. So I'm very envious, considering the problems I have, of his centralized situation in the State structure.

I don't agree wholeheartedly with Bill on the question on land use. I think it's taking the easy way out to just separate it as land and water. I think if coastal management really turns into something, we're going to have to develop some amphibious people; and I think Sea Grant can help them in training people. I think they can be programmed to come out with the background you'd like to have. These people do exist; we've got a handful of them in Florida. Of course, I only had a handful of positions to fill, so it wasn't too big a problem. But they do exist; sometimes it's an accident in their background that they switch from one field to another. But I really do think we've got to develop a capability of dealing with these interrelated problems.

I'll mention one just as an example: how the coastal zones influence the adjacent land which is a hurricane flood zone. That's a marine-oriented problem that impinges upon the land; and I think very definitely that marine scientists should be involved in land use planning reactions to that problem. That's just

one example, but it's really an intricate series of problems; and I think we've got to bite the bullet and take them both on at the same time.

Bill, I wanted to ask you: organizationally speaking, you've mentioned interfacing with the State managers, you identified a number - the Attorney General, the legislative people, probably the State Planner. Is there one identified person that you interface with primarily all of the time, and the others part of the time?

Dr. Hargis: No. First of all, Virginia has always been a very frugal State - very careful. They do double duty. The second thing is that there are a number of State agencies that are involved, as in most States, as in Florida, that are involved in the management resources and the environments of the coastal zone. Under the law, VIMS is empowered, obliged, to work with all of them. I don't see that in Virginia there will ever be a situation where we deal with only one agency in this. You have to separate sometime, and I don't believe that reorganization is going to pull everything together, or reduce the numbers of units involved anyhow - the Health Department, for example, the Water Control Board. So we deal with all of them, and that's part of the job. There are people who regularly attend the various hearings, meetings from our shop in Water Control Board and Marine Resources Commission. Perhaps the biggest factor in terms of marine resources themselves in Virginia is the Virginia Marine Resources Commission.

Mr. Johnson: Let me ask you one more fast question, and then I'll turn it to Hal. Along this same line, we heard from Mr. Mendonsa this morning, and the more you get into coastal management, the more you realize how important it is to interface with these people in the local communities and the counties. When you develop certain scientific facts that are derived from your inventory, do you leave it to the State apparatus to filter that down to the locals, or do you

interface directly with the local people and explain the significance, etc., and work with their planners? How do you handle that problem?

Dr. Hargis: We do work with the local governmental entities where time and personnel permit. Specifically the Wetlands Act, which was passed in Virginia in 1972 and is a major segment of the developing coastal zone program, calls for the Institute to provide consulting services to the local wetlands boards, which are essentially established by a county. So we have several people who work with the local wetlands boards.

Mr. Bissell: I have a couple of comments that will relate to some of my earlier problems in California. I think they are real problems. One of the things - we talk about taking an inventory; the problem always comes up, as you've indicated as to what area is included in which you take this inventory. The issue of the inventory, whether it's to be just in the planning area, or whether it's to be in a management area, etc., we can't get away from it. The biggest problem we've found here in getting information is if you start from scratch it's not too bad. But if you start by accumulating data from other sources, such as from State agencies, counties, districts, Federals, whatever, none of this data has ever been gathered on the basis of any of the current concepts of what the coastal zone is; and you're left up the creek. I would like to really make a strong recommendation that it's not too late at any time to start this, that any entity in the process of accumulating data should devise some sort of a key, a symbol, a code of some kind, that could key it back to the coastal zone authority in terms of its definition of the coastal zone. I would go so far as to suggest that the U.S. Bureau of Census might even be approached on this basis, instead of doing it on the present census tracks, etc., to actually get a coastal zone census that would correspond with a commonly accepted definition, Federal, State, or even vary with the State as to the area in which information is needed. That

brings me a little bit into a comment on your statement about land use as it relates to coastal zone management.

I partially agree with you on this; but I do feel that, on the basis of my own experience, all the problems in the coastal zone had to do with land use, in terms of priority. Things are so much overshadowed - any biological problems, etc., were so much overshadowed by land use problems that literally support for some of these other studies couldn't be obtained. I would say that in terms of priorities, the land use must be approached first; and if in terms of policy land use is looked at in terms of its dependency upon coastal zone resources, I think they can be merged together very nicely. I'd like to stress that again that, on the long term, I contend that land uses which are dependent on the coastal zone should get the priority, and on that basis could very well set the pace.

Dr. Hargis: I would like to stress this again. Land use is important, and I would view that an essential part in any comprehensive coastal zone management program should be some control over land use. As a matter of fact, it is a significant part. On the other hand, what I would like to see is a mixture of water use, land use, resource use, all used together. My assessment at the present time is that it's going to be easier because of the pressures in most coastal States, to sell coastal zone legislation with land use involved, and provisions for compatibility with a total land use development later, than it is going to be to sell total land use. Many States are willing to reckon with the fact, and the people are willing to reckon with the fact that the coastal zone is in trouble, but they are not yet ready to go to a total land use concept for the whole States. This has been true in Maryland, I think, recently, and in the early negotiations in Virginia, and at the national level, in fact. Coastal zone passed last year - land use didn't pass last year. We don't know what's going to happen this year. Coastal zone is obviously more publicly self-selling at the present time.

Mr. Gardner: Are there any other questions that were held from before that you would like to address to Dr. Hargis, or to any of the panelists?

Question from the Audience: Dr. Hargis, do you all use any computer program?

Answer from Dr. Hargis: Yes we do. The MERRMS Program uses a mixture of techniques, and we are hoping to be able to put it on line with a 370 115 Information System, so we can get real time data, real time analysis, from the computer, as well as the other media that we use. MERRMS is a concept that we have developed at the Institute, an information management system, a diagnosis system, which as I say integrates semi-digested and digested data. We've been making environmental impact statements for a long time. I've found on analysis that we use - and we have a lot of holes in the data that we're using - but we use quite frequently less than 40% of the information that's available. The problem is to get it together in a useful form. That's the function of an information system like MERRMS. MERRMS was supported by Rand, and hopefully will continue to be supported by Rand. MERRMS, as I said, is the Marine Environment Resource and Research Management System, a data handling system, an analysis system. An important element, in addition to the data, the ability to handle the data in various stages, is the ability to bring experts - a multi-disciplinary team of diagnosticians - together to confront the data and the problem and to make recommendations. We're not ready to eliminate experts from the system.

IDENTIFICATION OF PRIORITIES, CONCERNS, AND CONFLICTS

Mr. Joseph Bodovitz, Executive Director
California Coastal Conservation Commission

I do have a speech I wrote for this occasion, but I wrote it in San Francisco, where the temperature was 60°, and it is too hot here to read it. So I will only refer to it from time to time. The thing I will try to stress is that what we are involved in is not a known technical project - it is something new and exciting.

I was somewhat overwhelmed by the Scriptural references this morning; so what I did over the coffee break was think that it might be a good idea to write down Ten Commandments for coastal zone planning. Unfortunately, I couldn't think of ten; but I did get to seven, and I'll read them in a moment.

Let me mention a bit about the California Coastal Zone Conservation Commission. This was created by an initiative measure on the ballot last November in California. Much of what I'm going to be talking about has to do with the effects of people on the coastal zone; and I think it's worth pointing out that after three years of debate in the State Legislature, in which there was strong interest in coastal zone legislation, and in which even the weakest bills were bottled up in committees, a group of environmentally-oriented people got the thousands of signatures that were necessary to put an initiative measure on the ballot; and at the election, it was passed by something like 55% in favor, to 45% against. I'll go into a little bit of detail in a few minutes about why that was passed and what it meant.

The result of the initiative was to set up six regional coastline commissions, each having jurisdiction over one or more counties, and a single Statewide commission. The commissions are temporary; they expire in 1976 after submitting their recommendations to the Legislature in that year. They have two

primary responsibilities - planning and permit control. This, I think, is a subject not particularly touched on otherwise today. Under the California Coastal Zone Initiative, anyone who wishes to develop - and "develop" is pretty broadly defined - in a permit area that includes the State's 3-mile jurisdiction at sea, and also the thousand-yard strip of land inland, must obtain a permit from the commission. The decisions of the regional commissions may be appealed to the State Commission; and let me assure you this is a lively project. It's so lively, in fact, that I have to go back home tonight and get ready for a meeting next week.

Let me dwell for a second, however, on the permit aspect of the thing. It seems to me that one very effective way to insure effective planning for the coastal zone - and I recognize this may not be applicable everywhere - is some kind of regulatory mechanism. For several reasons: One, obviously, is it keeps the terrain from being radically changed before the plan can be completed; and this is no small matter. The second point that I would like to stress is that the varied controversies over issues in the coastal zone help make the planning not an ivory tower exercise. But the very people who must pass upon permit decisions quickly become aware of the issues in the coastal zone, and the decisions they must make on permit applications. There are some very detailed criteria for granting or denying permits under the law. However, the mere process of the public hearings and the controversy on the permit matters, I think, is enormously important to the effectiveness and success of the planning.

Finally, just one more point. There are, in all, some 84 people on the different regional and State commissions; and about half of these are chosen from local government. Therefore, in California, at least, some of the controversy that was discussed this morning has been resolved by having elected officials sitting in county governments sit on the commissions set up under State statutes. I'll be glad to explain that in more detail if anybody is interested.

About half the members are locally elected city councilmen and county supervisors, and the other half are public representatives appointed one-third by the Governor, one-third by the State Senate Rules Committee, and one-third by the Speaker of the State Assembly.

The regional commissions have two primary responsibilities: to plan for the future of the California coastal zone, and to regulate development during the planning period by a permit system, so that piecemeal development can be controlled. The permit area includes the three miles at sea to a line a thousand yards inland from the line of mean high tide. Within this area, all development requires a permit from the appropriate regional commission and a permit decision can be appealed to the State commission. Ordinarily, a majority vote of a commission is needed to issue a permit, but a two-thirds vote is required for developments that would dredge or fill marshes or bays; would reduce the size of a beach or other public recreational area; restrict public access to the ocean; significantly impair the view of the water from the nearest State highway; would harm the water quality; or would adversely affect open water or agricultural areas. Some sort of regulatory mechanism is necessary to keep the terrain from being changed, and this permit aspect is a very effective way to insure coastal zone planning.

Let me just take a couple of minutes now with some thoughts about planning for the coastal zone. The first of my Commandments - I was asked to be provocative, and I think there's a thin line between being provocative and just plain nasty, so some of these may be more in the second category than in the first, but I'll leave that for you to decide - my first Commandment would be: Thou Shalt Not Use Jargon Words Like "Interface," (let's talk in English) Nor Waste Our Time by Arguing About Whether the Land or the Water is the Most Important Part of the Coastal Zone - which is roughly like arguing whether men or women are more important. I think they're both there; the problem is the impact of the land on the

water and vice versa; and I really doubt that we're going to get anywhere spending our time trying to decide which comes first.

My second Commandment, which is really, I think, directed to all of us: Thou Shalt Not Make Coastal Zone Planning into Another HUD 701 Program. For those of you who do not know what the HUD 701 Program is, that's generally known as "The Planning Consultant's Welfare." When I first got into coastal zone planning, I remember there was great concern that Federal efforts in the coastal zone field would become a wet NASA, whatever that was. I think there's much more danger of it turning into a soggy 701. A corollary of this is, and this is without benefit of having read the guidelines: Thou Shalt Not Prescribe So Much Paperwork and Rigidity That It Takes $10,000 in Staff Time to Apply for a $5,000 Grant. I assume the guidelines do not do that.

My third tentative Commandment is: Thou Shalt Be Reasonably Skeptical of Experts, and Not Afraid to Use Thy Common Sense and Make Decisions. Let me give you three examples, very briefly.

I think the issue of superports is going to affect all of us in coastal zone planning for a long time. All of you know what a superport is, I gather. That's a place where you park a big tanker one inch outside the limits of State jurisdiction.

The second area in which we're all going to have trouble making up our minds is the energy situation. To give you just one example, last week in the daily newspapers that I read, there was a large ad in which the president of a large oil company said it was too bad that environmental restrictions on oil exploration would have to go because of the energy crisis. On the front page of the same paper was a report of a number of State officials asking the Justice Department to investigate the energy crisis on the grounds it was collusion among the large oil companies to drive out the independents. I guess it's which expert on which page of the paper you believe.

A third area, I think, where expertise is going to be a problem in coastal zone planning - at least in the near future - is the relative degree of safety of atomic power plants. I guess this is provocative; at least in that area you can find lots of experts who think that they're safe, but nobody's exactly sure what to do with the atomic waste, and some other experts who think they're not safe, particularly if they're too close to an earthquake fault. So there are going to be some really difficult decisions to make in these areas.

A fourth Commandment is: Thou Shalt Not Bamboozle the Public, Nor Hide Thy Plans Behind a Legal Requirement That the Public Does Not Have to See Them Until the Public Hearing at the End of the Process. Much of what has been wrong, it seems to me, with 701 and other kinds of land use planning and water use planning recently is that they tend to be done by experts on the assumption that the issues are so complicated the public won't understand them, and can't understand them. What happens is, the experts retreat to the modern-day equivalent of an ivory tower, spend a couple of years doing whatever experts do in ivory towers, and at the end release their product. The end product is generally a thousand-page summary, accompanied by a stack this high of back-up supplementary material. What happens next is the public hearing; and the first ten people at the public hearing say they need more time because it's such a large and complicated report; and the next ten people say they've already peeked inside and they can't stand it, and they don't like it. Then the back-up material becomes the reference material upon which the next planning effort begins.

Actually, this is somewhere between nastiness and provocativeness. But I think it's also largely true. And therefore, I strongly urge that those of us who are involved in coastal zone planning try a couple of different tacks, and I'll explain those in a moment.

My next Commandment would be: Thou Shalt Recognize That the Only Thing Certain in Coastal Zone Planning is Change. I think that's really going to be

at the heart of the matter. I recognize the need to inventory what's there now; I recognize the need to have as many facts and as much research as we can. But I also think it's important to recognize we're shooting at a moving target. If I were to try to guess why so many people in California voted for the Coastal Zone initiative - and I don't pretend to any psychiatric or psychological knowledge or analysis - I would say beyond question, it was the rapidity of change in the coastal zone. And I would further say that if I were to recommend any couple of books that people involved in coastal zone planning ought to read, one of them would very definitely be Future Shock. If any of you haven't read Future Shock, the point of it is the stresses, the disorientations that affect, because of the rapidity of change in our society. As I say, it applied to the coastal zone, at least in California; and I don't begin to know why all the 4.3 million people who voted for this measure voted for it; but that's a lot of people who were concerned about the coastal zone.

Again, I think the major element is change. All up and down our State, there are places where you used to be able to go to the water's edge and have a picnic, even if it was on somebody's property and not public. Now there's a motel there. Or a road that you used to be able to take, not very many years ago. Now you can't see the water from that road. In many parts of Southern California, the change has been in the density of development. There were areas near the coastline where people with modest incomes lived in relatively dense areas of one and two-story houses. All of a sudden, for reasons that I don't think anybody can exactly figure out, a land boom resulted; builders bought the properties, tore down the houses, and began putting up high-rise condominiums. It's not only that the density of the area was changed without any provision for additional traffic or transportation, thus very definitely increasing the feeling of crowd; but also the social effect of that kind of a change. In these areas that I'm describing,

the ordinary guy could buy a flat or a house and live in close proximity to the beach, but what's happened is, people of that sort have really been forced to move; and their properties have been bought up. You just have an entirely different economic class of people. I'm not saying better or worse; I'm not posing any moral judgements, but I am saying that the whole character of neighborhoods, residential areas, in the coastal zone has changed rapidly. I think it's this kind of disorientation and shock that is extremely upsetting to people. Not only did the people of California vote for the Proposition 20 business, but in almost every election held in the coastal community since Proposition 20 passed, where coastal development has been an issue, environmental slates have won almost unanimously. I think it's dangerous for anybody involved in this to think that somehow the concern of people for these very valuable areas is a fluke, or that it will simply disappear if everybody just sticks his head under the sand for a bit longer.

A second book I would suggest on this same general subject, and as you can tell, I think it's an extremely important thing, is a book called The Quiet Revolution in Land Use Control. Some of you, I assume, already know it. This is a book written by two Chicago lawyers, Fred Bosselman and David Callies, for the Council on Environmental Quality in the President's office. The authors state that they chose the word "revolution" advisedly. It's their contention that there is in this country now a quiet revolution in land use control, that there is rapid change, rapid development, in almost all the States, particularly coastal States, of ways to regulate important, significant - whatever the word is - natural areas. They point out that one of the big struggles - and I don't think that this has been alluded to today, but it's an extremely important one - is the rights of private owners versus the rights of the public. Somebody did mention the Rockefeller Report this morning, which touches on the same thing.

The history of land and private ownership of land in this country really has been that land is a commodity. People own it, can develop it, can use it to make money, and that only minimal restrictions of public need, public safety, public health, or whatever, will restrict the development of private property. The environmentalists, in the last ten years - I think since the word ecology became known - have, I think, begun impressing upon us that land is not only a commodity to be bought, sold, and developed, but an extremely valuable resource in which there appears even in private ownership a strong degree of public interest. The authors of The Quiet Revolution in Land Use Control point out the problems we're going to have if we use either extreme, that the private use and private development of land is an extremely important thing, an extremely valuable part of our system of government, and not something to be discounted lightly. Neither, on the other hand, are the public interests in land and land development to be discarded lightly. We've got some very difficult decisions, I think, ahead of us.

Another point is this. It's going to be very difficult, as I think some of the other speakers have mentioned, for people primarily trained in the marine environment to get used to problems on land, and vice versa. I think the need here is for people who can understand the relationship of both; and I just don't know where you get people of that background. I think the need is less for specialists now than for people with some kind of more comprehensive approach. The University of California, for example, has started a program in which there are joint degrees in urban planning and law, because there are such obvious relationships between those two fields, and a need for people to understand both.

Along this line, Dr. William Nurenburg, of the Scripps Institution of Oceanography in California, was quoted in an article I was reading on the plane coming here last night as saying that what we're really going to find we wind up with in

this kind of a plan is something we might as well get used to calling 5-year plans. What we're really going to do is try to figure out what we can do in the next 5 years, and what we're going to have to leave for 5 years after that, and constantly adjust. This is a changing process. We're looking for certainty because I think that's the way all of us are geared; and it just isn't going to be there.

I think the frustrations we're going to face are enormous. I think that for the most part we're going to find ourselves trying to figure out which decisions minimize the risk of irretrievable commitments of coastal resources, which is kind of a flossy way of saying in cases where we really don't know, and can't know all the consequences, but where decisions have to be made. I think we're going to be casting about for ways to cut our losses, so to speak, to do the thing that is the most easily correctible if we make a mistake, but will give us the most options for the future.

I think the premium, in short, is going to be in trying to find ways that do not foreclose the choices for the future. It's a very difficult business, and again I don't know where anybody gets training in this kind of planning and thinking, but I think it's kind of an intellectual or mental discipline here. I think one of the things that makes this area so much fun and so lively is that there isn't a book to follow; there isn't anybody's pattern that you can adapt to your own needs. I'd be the last person in the world to say that what works in one place ought to be taken completely and tried somewhere else. As I say, I think the thing that's so exciting and challenging about this is that this is an area in which we have an opportunity to benefit by the mistakes of other kinds of planning programs, and use some ingenuity and inventiveness in what we're doing with regard to the coastal zone.

My final Commandment would be this: Thou Shalt Recognize That Successful Land and Water Use Planning (and I emphasize "successful," because this is much

too hard work to be done just as a drill or an exercise) Is (in my estimation) About 10% Inspiration and 90% Education. I think any effort in coastal zone planning that does not involve as much of the public, interest groups, everybody, as possible, is going to have difficulty succeeding. I would go so far as to say any kind of planning for a major area where there are controversies and difficult decisions to be made is doomed to failure if the public does not get involved until a formal public hearing at the end of the process. Some of you may know of examples where that kind of planning has been successful. By "successful," I really mean something that is popularly accepted and it results in decisions being made on the basis of the plan. As I said, there may be examples where the ordinary kinds of planning have succeeded; but I don't know of any in my own State, and I would be skeptical of many anywhere else.

Therefore, I think that the approach of shutting the public out until the end of the process is really doomed to failure. I think it's very important that planners be able to communicate with the public, and explain to the people what's being done. I don't think there's really anything to be gained by hiding unpleasant facts from people. I think the public wants to know what's going on, wants to know areas in which the experts disagree. I think it's very hard for experts to confess their lack of knowledge in certain areas. I guess all of us here are experts to some extent in some area or we probably wouldn't be here. It's really painfully difficult when the world is looking up to you as a great authority on such-and-such, to have to say you don't know, or that your best guess is so-and-so. Parenthetically, I also believe that it's extremely wrong to use research needs as a basis for avoiding decisions. As somebody pointed out this morning, the decisions get made on the basis of worse information than you might be able to provide.

It seems to me that the job here is to explain to the public what the issues are in coastal zone planning, one issue at a time - which I'll explain in a moment - try to explain to people what we know about the issue and what we don't know, and then make the best judgement we can at that point in time, recognizing that change is probably going to indicate we'll have to review that standard at a later time. This was the approach that we followed in the planning for San Francisco Bay that began in 1965. We figured out in that case about 25 different what we call elements - which isn't a great word, but it's what we used - and they ranged from the environmental values of marshlands to the needs of ports, to recreation, to aesthetics. I think the list of topics is pretty obvious, or the general headings, anyhow. And in each case, what we tried to do was present a report in simple language explaining what the situation was, what the issues were, and then recommend two kinds of things:

1. findings that people could reasonably reach on the basis of the information that was available;
2. policies that would guide the future.

I'll give you an easy example. In the findings on marshlands, it was discovered that the marshlands were not only vital, but that the marshlands around San Francisco Bay were essential to maintaining the Bay as a productive habitat for fish and wildlife, and that much of the urban marshland had been destroyed by past drilling and diking, and that if the remaining amounts weren't protected, there was going to be severe damage to the Bay as a habitat for fish and wildlife. The policies, then, that resulted from that study were that marshlands around the Bay should not be filled or diked off in the future, except for those very few purposes that might provide overwhelming public benefits. The second policy was that all proposals to fill marshland or dike marshland, even for purposes providing important public benefits, should be carefully reviewed and evaluated to make sure that the amount of filling allowed is the very minimum necessary.

Now you may say those are generalities, and that those things really don't get you very far. But I would say that they are an enormous step forward if there is no coherent set of policies that is any more specific than that. I would say further that that kind of finding and policy allows continual refinement as you have more and more knowledge.

I mentioned this "one-element-at-a-time" business, and how a planning approach was first to take the general resource areas - fish and wildlife, importance of marshlands, etc. - one set at a time. The result here is a comprehensive plan, but not one that everyone has to digest all at once. The result of a year-and-a-half or two years of this kind of a process is that everyone works at one area, tries to reach some decisions, and then goes on to the next. You might say this really is tunnel vision; and the important thing here is that everything hangs together. If you deal with the subjects one at a time, the result will be kind of myopia. I don't think it needs to work that way. Moreover, at the end of the process, you obviously have an opportunity to go back and look at the tentative decisions you've made and refine them. But I think the point here of getting as much exposure to ideas over a period of time as short as possible is extremely important. You'll find the press, the news media, extremely helpful in publicizing the things you're trying to talk about; and I think again in terms that almost everybody can understand.

What I'm saying, in short, is that there's a great problem of semantics in just what planning for the coastal zone means. Many people who have been involved in planning would disagree. I suspect if we took a poll in this room right now and asked everybody to write down what he thinks planning for the coastal zone is, we'd be lucky if we got any two answers that were exactly the same. Everybody, even in this room, would have somewhat varying ideas of what it involves. What I'm suggesting, however, is that the first thing planning for the coastal zone means is some decisions based on what we now know, that can lead to purchases

of property, new laws if new laws are needed at whatever levels of government. What I've really been calling this, in short, is the need for a constitution for the coastal zone.

PANEL DISCUSSION
Mr. David R. Keifer, Director, Delaware State Planning Office
Senator Aaron "Babe" Schwartz, Texas State Senate
and
Mr. Bodovitz

Senator Schwartz: As a legislator, and probably the only one who is on this program, I would address myself to the audience and to everybody concerned, as to whether or not we ought to get on with the business of legislating and plan at the same time. I'm afraid that I think you've readily admitted that the California Proposition 20 is a copout, because the Legislature had sub-committeed most of the important legislation in your State. I would say to you that we brought with us today a compilation of the Texas Legislative Program - it will be available in some small quantity - that you might want to look at. The reason I brought it is to show that you can do this. Texas is as reactionary a State as exists in the Union today. I've been in politics ever since I was 20 years old, and I will guarantee you that statement is true.

We have, however, the most enlightened land commissioner in the whole United States. He is elected on a State-wide basis; and he's here today. With his cooperation, and with an education program to the Legislature, much has been done. I'm simply going to read this. I don't intend to fillibuster, really. We passed two bills last session that really take over the management and control of submerged lands in our State, and give us the right to do what Proposition 20 is telling California to plan for for the next three years. I will read you the language, and you can compare it to Proposition 20:

> *Policy: "The surface estate in the coastal public lands of this State constitutes an important and valuable asset dedicated to the permanent school fund and to all the people of Texas. It is the declared policy of this State that such estate be managed pursuant to the following policies:*
>
> *(a) The natural resources of the surface estate in coastal public lands shall be preserved. Such resources shall*

be construed to include the natural aesthetic values of those areas and the value of such areas in their natural state for the protection and nurture of all types of marine life and wildlife.

(b) Uses which the public at large may enjoy and in which they may participate shall take priority over those uses which are limited to fewer individuals.

(c) The public interest in navigation in the intracoastal waters shall be protected.

(d) Unauthorized use of coastal public lands shall be prevented.

I'll skip one.

(f) For the purposes of this Act, the surface estate and coastal public land shall not be alienated, except by the granting of leaseholds and lessor interests therein, and by exchange of coastal public lands for littoral property, as provided herein."

Mr. Bodovitz, I guess as a response to what you've said, why wouldn't it be better for a group as intelligent as this to simply begin to educate the Legislature as to the public necessity to take the bull by the horns and to grasp the public lands and protect them from the developers, so that the developers will quit selling something that doesn't belong to them?

Mr. Bodovitz: A very good question. I'd respond in a couple of ways. One is - although I didn't point this out, and it's a big subject - the submerged and tideland areas in California are subject to controls in other ways, and there are systems of water quality regulation, etc. Let me back up even one step further. This is what I meant when I said a few minutes ago that I think it's dangerous for any of us to try to prescribe one formula for everybody. I think in most aspects each State is in a somewhat different place; I think the trouble, if it is trouble, in California, is that the history of environmental protection and regulation has gone on over a number of years, but it's never been put together. That is, we have separate air pollution controls and water

pollution controls, etc. So we have agencies doing very good work in limited areas; and therefore, the kind of legislation that you're suggesting for California involves a great deal of comprehensive restructuring of government. And that's the hardest kind of thing to sell, so I would agree with you. If the situation is such that some legislation will really deal with the problem, then by all means I think that's the way to go. The Proposition 20 Initiative that was put on the ballot was essentially the same bill that was pending in the Legislature: that is, the approach the environmentalists wanted to take was that rather than have a controversy over each aspect of the resulting plan, it would be better to set up a commission, a planning body, to take a limited period of time to prepare a comprehensive plan for the coastal zone that would be the basis of legislation.

To summarize, therefore, what I'm saying: if you can skip that step, great. But the State of California has 1100 miles of coastline; it's extremely diverse; the pressures of population growth, all kinds of development, are just enormous. I think the consensus would be in the State that it's just impossible right now to find the agreement necessary to pass legislation that would deal adequately with all these problems.

My last point on this, and I didn't really stress this enough, is that Proposition 20 commissions are temporary; they have a limited time period in which to do the kind of planning I've been talking about; and the limited nature is a very good discipline because hard decisions tend to get put off if you can take another year to do it. It's interesting that the year 1976 is going to be the year in which these matters are debated in the Legislature. The Proposition 20 commissions didn't solve the problems of the coastal zone; it seems to me that they set up a mechanism by which decisions and consensus can be arrived at. Interestingly enough, 1976 is going to be the year of decision for the coastline

in California, and that obviously is the 200th anniversary of the country, in which I think a lot of other aspects of American life are going to be looked at. So I think it's really going to be an interesting approach, and I think an interesting year of decision.

Mr. Keifer: I'd just like to make a few comments in light of our experience in Delaware and our Coastal Zone Act. Our Act was adopted approximately two years ago, and resulted from the work of an ad hoc committee appointed by the Governor. That committee proposed a comprehensive package of legislation, including wetlands and substantial State government control of land development. However, we didn't have the pressure that California had for total land development control; we were faced really with problems with superport and on-shore petrochemical developments resulting from the superport. The result was that the Coastal Zone Act really just speaks to industry and superports and all the references to residential, commercial, and other developments were dropped. On your Commandments - amen, except for the unfortunate situation that HUD 701 is really the only resource we've had so far to get money to do whatever coastal zone planning we've been able to do.

Senator Schwartz: I'd like to jump in on another matter here. I might back up and say we had to grab hold of the britches first of some legislation as far back as 1959, and protect those from the developers before we could grab hold of our own submerged lands. The next step is the difficult step, and that is to grab hold of some regulation of private land, of the literal owner. Now we've gone in the back door in that regard, and I'd like some response about that. We believe that, in our regulation of the submerged land, and in our regulation of what you can do on a public beach, and the definition of a public beach, that we can prevent folks from adversely using the land in any way that would be contrary to the best ultimate coastal zone management goals for the submerged areas, and the

waters, and for whatever else abuts the water. We can do that because they've got to come by the General Land Office. They may be able to build anything they want on the private land, but they've got to come by the General Land Office for the permit to get to the water. In other words, our waters are sort of flat and sandy, and they've got to dig a canal to get into a subdivision. They've got to get permission for that canal from the General Land Office; so in turn we're going to regulate in some sense what they do.

I also want to throw this out to the audience. I don't trust local government at all - period. The local governments that I've been concerned with as a State Senator all belong to the local Chamber of Commerce, which belongs to the biggest local industry. And that is unequivocally - see, I don't work for anybody, and I'm just an elected public official. They've spent all the money they're ever going to get together to beat me and haven't done it yet; but they haven't given up. But I will tell you that if you let a city councilman decide the fate of the coastal zone, you may as well go out there and pave it now.

My only other experience is that county commissioner's court is a little worse sometimes and a little better sometimes; but by and large, the average is bad. In the last session of the Legislature, I had to pass a law to prohibit the city in which I live and in which I was born from giving permits to people to excavate sand from the public beaches for sale. Now just figure that one out. The city of Corpus Christi tried to obtain from our General Land Office one of my prime natural areas in that city, because a developer has a development plan for it. I tagged the bill in the last 48 hours of the session and killed it.

I simply say that developers don't have nearly as much influence in our Legislature, I don't think, as they do at the local level. So therefore, I think the State regulation is a little safer.

Mr. Keifer: In our experience, actually, I think the only reason we got the Coastal Zone Act passed in Delaware was the way particularly the county governments were acting in their land development plans with regard to industry and the coastal zone. One oil company had achieved the rezoning for an oil refinery in one of the most valuable wildlife marshes; and that was really the prime impetus, in addition to deep water ports, in getting the Coastal Zone Act passed.

Senator Schwartz: Again, I want to repeat, and if anybody here disagrees, I'd like them to do so, that to get around the business of legislation, as Delaware has done, and as I hope Texas has begun, I don't think we've done the ultimate. I would say that except for California and a limited number of other States, there's a hell of a lot more to be done in legislating than there is in planning. I'd say legislate first and plan later. You can spend your time much more effectively educating Senators and Representatives than you can the public at public hearings; because the public hearings are the developers. The people don't show up at public hearings; you know that. The special interests show up at public hearings. I've never been to a public hearing where the special interests didn't show up in numbers tenfold as great as people. You've got to look for the people, and most of those folks agree with you in the first place. Is there anybody here who disagrees with me?

Comment from the Audience: Every conference I go to, sooner or later a legislator gets up and says, "you've got to educate them." What you're not facing, in my judgement, are the problems associated with most people who work for the State governments or local governments - they're tied to the Executive Branch. It's a difficult proposition to walk across that aisle sometimes when the man you work for, or the organization you work for, is not tied to the Legislative Branch. Now it seems to me that the Legislature then should appropriate money for itself to get educated.

Reply from Senator Schwartz: I think while you're working for the Executive Branch you ought to slip around and make speeches to people about educating the Legislature to do that. There's a lobbying function inherent in your position, and I'm just begging you to go about your business instead of spending too much time planning for something that may not occur, or that may be too late unless you get the Legislature to do something about it while you're alive. I would also say to you that I agree with Mr. Hargis this morning - who didn't say it quite this way, he said it better - but if you can separate land use planning from coastal zone management, let me tell you that is good. The Texas Farm Bureau shot me down in flames along with our land commissioner - and I'm still burning - over a bill which would have just given us a kind of a land resource committee. That was a nice way to say we were going to try to plan for land use planning. The Farm Bureau found out that it was land use planning, because the word was inadvertently used in the bill. I'll never make that mistake again, and neither will the land commissioner.

I'm third in seniority in the Senate; I've been there too long. I've got a great number of friends on that committee. There were eight persons present on a nine-man committee; seven of them voted against me, and the Chairman didn't vote. The Texas Farm Bureau was there - the public was represented at that hearing. Just to give you that example, and that's why I say that if there is anybody who disagrees with that, I'd be glad to argue with them. You might separate these functions if you want to legislate about the coastal zone; then you must grab hold of the things you can grab hold of, and legislate about them now. The things the public is ready to accept must be legislated about now - the free public beach access, the beaches themselves, the access to the beaches, the submerged areas, the marshlands, the things that they can understand or be made to understand - and then all of the aesthetics can be planned for and protected in the

same way in the overall. I don't know how to accomplish that, except to tell you to turn out to be better lobbyists.

Comment from the Audience: Your comment about land use planning versus coastal zone management and the earlier discussions on the same topic leave me a little bit disturbed, not so much in what you're saying, but perhaps the terminology that's developed here, suggesting that land use planning is something different from some of the problems in coastal zone management. Because whether you're dealing with the resources on the coast or the resources inland, you are in effect going through the same process, whether we're talking about land and water use or resource land on the coast or resources inland.

Reply from Senator Schwartz: The difference is the hysteria that sets up in people who own land and the farm Bureaus and the special interests who represent those people to the Legislature. They've got a tremendous constituency that understands that somebody's trying to tell them what to do with their land; and they don't really believe that anybody has that right, and perhaps nobody has that right without compensation. But on the other hand, everybody that I've talked to - even in the Legislature, if they believe in that inherent property right - believes that the public beaches, for instance, that the lands abutting the beaches, that the bays, that the places where they fish and recreate, and that the marshes that provide the lifestream in the ecology to that coastal area, does belong to the people. That is something that everybody has been persuaded about, and they do not frame that in their own mentality and in their own prejudice as being land use planning. If it can be termed coastal zone management, as it is, and treated differently, then we can plan the use of that land and that water without incurring the prejudice of the people who are indeed the landowners and who fear zoning of rural land - which is what the issue is in Texas.

Comment from the Audience: I've heard that some time down the road, though, you can bring it together. In Oregon, we've just been successful in drawing the Land Use Commission State-wide. In 1971, we set up our Coastal Zone Conservation Commission. We did that first, yes. We came back to the 1973 session and it passed, and the two of them will come together. If you're going to keep them separate, it may be you have to take them separately, but bring them together at some time, because you are just building in unnecessary problems between two State agencies that are unnecessary, when in reality you should just come up with just one.

Reply from Senator Schwartz: Let me hasten to add that I introduced all three bills. The ones the environmentalists endorsed, I couldn't even get a committee hearing on. The one that I got a committee hearing on, that I thought was going to breeze through, got shot down in flames, as I've told you. The things that passed are the Coastal Zone Management Bill, and the bill controlling the use of lands by navigation district. Texas had a bill since 1931 that permitted navigation districts to buy submerged land for $1 an acre. One little navigation district bought 47,000 acres of land under that $1 an acre unequivocal right to purchase submerged lands. The maximum use would be about 3,000 for that navigation district; but ultimately they were going to resell it for development to somebody. Another navigation district had purchased a whole coastline of Galveston Bay on one side. We've stopped that. The Legislature understood that. Now here's the shocker. Both of those bills passed on what we call the consent calendar in the Senate and in the House. Local and uncontested bills - they passed a bill changing the squirrel season. It can be done because legislators understand the value of that particular commodity. You all are underestimating your product. I think that, in spite of the California experience (because California is 100% Chamber of Commerce) we're not ever going to be as smart as Delaware; we're just not going to be able to regulate refining and pipelines and

things like that in Texas, because we've let it go too far. I wish we could do what Delaware did.

Mr. Keifer: In terms of public support, when the Coastal Zone Act was up for debate in the General Assembly, we had popular support that just swamped the Chamber of Commerce interests and the development interests. I think it was probably the only reason we got it through. The oil companies, shippers, etc., lobbyied against any kind of control, both in the study stages and the legislative stage, but the cities and groups, and not just the usual environmental groups, but all kinds - League of Women Voters and all these folks - just turned out en masse, and conducted a tremendous lobby and campaign that finally got the thing through.

There is legislation up right now, both wetlands legislation and legislation on another coastal zone act that would bring other land uses under it. That, to date, hasn't received the support that the initial legislation did; which gets you back to the fact that you solve the problems in priority order. It doesn't really matter what you call them; but you see a problem and you take it on; and then when the next problem is really perceived, then you get action on it and you get legislation on it.

Senator Schwartz: I think in this discussion, as we're talking about identification of priorities, that's exactly right. That's really what everybody is shooting at. I just have this feeling that I always have when I'm with people who are too intelligent, and who are not elected public officials - they go together - that the intelligence quotient is so high that they underestimate the product they have to sell. They think it's only saleable to folks who are as smart as they are. That's not true. Joe Bodovitz sold it to me; Paul Burka, my lawyer, has written all this stuff. We created a Council on Coastal and Marine-Related Affairs in the State that has as its member one of the members here - Dr. John

Calhoun, Vice-President for Academic Affairs, Texas A&M University, our Sea Grant facility; people like that. I'm simply saying to you that this is a saleable commodity.

> *Question from the Audience: Mr. Keifer, what effect has the second report had on the legislation opinion in Delaware - you mentioned that there are two pieces of legislation now pending.*

Answer from Mr. Keifer: There's one bill pending that's a standard wetlands bill. It was part of the original package two years ago. It didn't pass then; it's up for consideration now, and just may pass this session. The original early draft of what is now the Coastal Zone Act included all land uses. In order to get it passed, the only support that existed was opposition to superports, opposition to refineries and related sorts of things. Control of other land uses went out of the Act, and the Act that passed controlled only industry. There is a bill out now that's a parallel to the existing Coastal Zone Act that would control commercial, residential, etc., large-scale developments, which is primarily focused on the Atlantic Beach resort areas. There were problems there; but there doesn't seem to be the real support for that legislation that there was for the initial legislation; in large part, I believe, because there isn't a general perception of the problem in the resort areas yet. California has problems now; the real problem in Delaware is probably two or three years down the road in terms of land development pressures. And I think that's one of the reasons that the support isn't there for this parallel Coastal Zone Management Act.

> *Question from the Audience: Well then, if the DECA Report on deep water facilities had no influence at all on future legislation or legislative decisions, or executive decisions, why do it? Why did Delaware go ahead and spend the money to have the Report done if they weren't going to be using the results of that to finally determine what their attitudes towards the placement of facilities were going to be? You're telling me that the legislation pending now is legislation that you had and is now coming back again? It's my understanding that the Report was done to try to get a handle on the effects that deep water ports facilities would have.*

Answer from Mr. Keifer: We've done several reports on the effects of deep water port facilities. The results of some of those reports is that deep water port facilities are prohibited, and that prohibition and the control of heavy industry is not up for debate at this point in time. The Coastal Zone Act is passed.

Question from the Audience: Senator, can you see any differences in the alteration patterns?

Answer from Senator Schwartz: We have no effect yet on the Coastal Zone Management Act or the Submerged Lands Act, whichever it might be referred to, and the Navigation District Act, because we just passed them. The Legislature adjourned June 1. I think they're both probably 90-day bills, meaning they will be effective September 1; but they're going to have very wide and very important effects. I think, number one, the School Land Board of Texas will very strictly regulate the submerged land uses; and the law just almost prohibits any except the public use, and at least the public benefit. Also, environmental impact statements are required on several things.

I'd like to just touch on one other thing. We did fail in one bill that the land commissioner suggested; and I compliment Florida on this, and I think this is something again that's saleable, if you'll go out and sell it. That is, the Florida constitutional amendment for $240 million to acquire critical areas and recreational areas. $40 million of it, I think, is recreational, and $200 million is critical area acquisition. We offered that bill in the Legislature, and Texas just wasn't in the mood for another constitutional amendment, because we're going to have a constitutional convention in 1974, beginning in January. I would hope that we could pass a bond issue, a constitutional amendment for $20, $30, $40, $50 million worth of critical area acquisition, and just buy up everything that we don't already exercise authority over. I think that's really our next 200-year anniversary, if we're talking about 200 years from now. It's my judgement that there will be nothing left, even under the strictest kind of

regulation, because of political pressures, unless, in fact, many of the States go ahead and acquire as much of the areas that they don't now own as are available at 1975 prices. That's about as early as we could get it done.

Mr. Bodovitz: Could I just comment briefly on that. I'd like to make clear, as I hope it's obvious to you, that I think we're really all saying the same thing here. I'm saying that the planning that I've been talking about is the means of selling, as the Senator's discussing. If people don't need to be sold, then you don't have to sell them. As some of these things are more complicated, the planning approach is the means by which you can do the selling. I'd like to comment on another point. It seems to me that while most of the audience would probably agree with the Senator's statements about local government, I have a theory that this may be an area that's changing faster than any of us know. I think that when you look at why things happen at different levels of government, it has a lot to do with taxation and a lot of complicated things that take a little time to look at. I think all of us maybe now tend to think of the Federal Government as an enlightened source of ideas, funds, etc., because of people like Bob Knecht and the coastal zone program. I would also remind everybody that it wasn't too many years ago that everybody in this kind of business hated the Army Corps of Engineers. Now the people in the Army Corps of Engineers make better environmental statements than the Secretaries of the Interior - things really change before your very eyes. I suspect if more and more responsibilities such as education and welfare are shifted to State and Federal governments through reallocations of responsibilities, there may be a whole change in local government. In our State now, there are a number of cities and counties that consider themselves far more environmentally concerned than the State and Federal governments, and they want to be left alone. They see the State and Federal government not as their saviour, but as their enemies at the moment. If you have somebody like Senator Schwartz

with power in your State Legislature, you're in good shape. If you don't you may want to look at other levels of government where you can accomplish some of these things.

Mr. Keifer: I'd like to make one comment on the Senator's suggestion about land acquisition and appropriations for it. Since about 1964, through our State Capital Improvements Program, we had a viable land acquisition program, with monies appropriated every year by the Department of Natural Resources to buy wetlands, in addition to parklands. Since the passage of the Coastal Zone Act, and the imminent passage of the wetland legislation, we now can't get appropriations to buy land, because the legislators are saying, "You've got all these other devices, we can save the taxpayer's money."

Senator Schwartz: They may be self-defeating unless you move fast enough for the Legislature not to figure out what it's doing. Let me comment to you about strong legislators. I think the way to achieve strength in the Legislature is to pick some freshman members and stay with them for a long time; they'll get strong if they have strong support. I think really that's the best educational process in the Texas Legislature for our new members coming along. Like you say, it's changing our local government scene in some places. I don't see that change, but in the last election in Galveston - I must say this for my little island that I was born on - we did throw out the last bunch of rascals. They had issued a permit for gas well drilling for three wells within the city limits, which is three miles out into the Gulf of Mexico. They issued three permits for a mile-and-a-half off-shore gas wells. When the Department of the Interior suggested a minimum of three miles on gas and five miles on oil, we had put on our ballot a proposition to create a sanctuary around our island against oil and gas drilling outside the three-mile limit, and it passed. The people did pass it, in the same process eliminating a couple of the council members who had failed to heed the advice of

the public requesting that in the first place. Those wells could have been drilled, incidentally, as slant drilling - it could have occurred from the island off-shore without placing any wells out in front of the Galveston Beach shore. Local government is just not enlightened; but the people are enlightened. At election time local officials may change, but the permits are already there.

MECHANISM AND STRUCTURE FOR COASTAL LAND AND WATER USE CONTROLS

Mr. Daniel W. Varin, Chief,
Rhode Island Statewide Planning Program

The State Planning Office in Rhode Island, the agency that I work with, has been studying the issues of mechanism and structure for land and water use control for more than four years now. This has been a very intensive effort for most of this time. During this period, a Coastal Resources Management Council was created through legislation, and a State Land Use Plan was prepared. We took the Senator from Texas' advice; we passed the legislation creating the management agency for the coastal area, and then attacked the planning problem. About three weeks ago, the Coastal Resources Management Council adopted the first piece of the coastal resources plan, a plan covering all the barrier beaches in the State. Essentially, it places a moratorium on further construction on barrier beaches.

Despite all this intensive effort by several people on our staff, I am going to resist the temptation to tell you all the valuable things that we learned through this process, because if I did that, the meeting would be over in about five minutes. To keep from leaving you with all that time on your hands, I've decided to mix together what we learned with some notions about where we have to go in the immediate future. Unfortunately, the first tells very little about the second. But from either standpoint, there's no doubt that the 34 coastal States face very serious problems as they organize, or reorganize, to manage their coastal zones. Although the specific difficulties will vary from State to State, reflecting local situations, at least three can be identified as common problems, central to the entire issue at hand.

First, these States are entering a new field, with little or no relevant experience in comparable areas for guidance. The State's concern with the kinds of regulation necessary to manage coastal resources has been limited almost en-

tirely to adopting enabling legislation turning this function over to their local governments. At that, most States avoided giving even this delegation any thought, by simply enacting some version of the standard Zoning Enabling Act published by one of the organizations hosting this conference: The U.S. Department of Commerce. This was when Herbert Hoover was Secretary of Commerce, in 1921.

Second, the forms of State government, in far too many cases, do not present an organizational framework which readily accepts new functions. Local governments and other critics often charge that State governments were designed to be both unresponsive and irresponsible. One need not entirely agree with these diatribes to recognize that most State governments were organized to govern a society which expected much less from all governments than it does today. Nor is it necessary to join those who advocate the most simplistic, or "local home rule," approaches to government, to realize that the State governments, as organizations, are normally slow, often clumsy, and occasionally unworkable. They are encrusted by State-local functional and financial relationships which have grown in piecemeal fashion over the past six decades. The imposition of any new activity on this framework is bound to be traumatic.

Third, the States are not really being confronted with the single issue of coastal zone management. If they act as though they were, they are bound to create new organizations which cause more problems than they solve.

The issue is much more complex than devising mechanisms and structures for <u>coastal</u> land and water use controls, as difficult as that task is in itself. The real challenge is to create mechanisms and structures for planning and regulation of the State's total land area, for management of the quality of <u>all</u> of its water bodies, and for control of its coastal lands and waters.

Dealing with the issues of mechanism and structure on this broader basis multiplies the problems inherent in devising an organization and a method of

carrying out any single governmental function many times, but it is essential that these issues be addressed in comprehensive terms. Continuation of the traditional functional approach in which each of these subjects is considered as a separate activity is, in my view, a guarantee of failure.

Federal legislation which was enacted in these fields in 1972, and the national land use policy bills now under consideration, aggravate the problems of creating State organizations which can operate effectively. In addition to the Coastal Zone Management Act, I would add the Water Quality Act amendments of 1972 as a co-villain. Although the Coastal Zone Management Act and the Water Quality Management Act amendments of 1972 contain provisions which speak of coordination, they present many obstacles to the degree of integration of these matters which must be achieved.

These Acts certainly contain positive and beneficial aspects. They perceive problems and stimulate activity in areas which have long been neglected. They recognize that State governments must take a leadership role if these areas are to be dealt with effectively. They make expanded research possible on topics in which there are still many unknowns. They will even fund the kind of inventory work mentioned here today. The Water Quality Act amendments recognize, for the first time in Federal legislation, that land use largely determines water quality, and that efforts to deal with pollution must utilize this relationship. This of course has always been known by everyone, except the Environmental Protection Agency, which is just now learning this fundamental truth, and the Corps of Engineers and the Water Resources Council, which will probably never learn it. Both Acts also provide a means of extending financial assistance to the States, although no real money has yet been seen.

At the same time, these Acts present many obstacles to proper organization and effective action. They designate different Federal agencies to administer

these functions, dividing, rather than uniting, parts of what must be a unified program. They encourage parallel forms of organization at the State level, furthering the confusion which surrounds State efforts to create adequate policy and regulatory mechanisms.

Even the chronology of Federal legislation and resulting actions has been illogical. A State which responded to these as though they should be taken at face value would, by now, find itself in several very peculiar positions. It would be operating from the principle that the State was some sort of functional and political subdivision of its own coastline. It would be attempting to abate water pollution with woefully insufficient authority over, or even knowledge of, the patterns of land utilization which cause pollution. The balkanized organizations created to carry out these programs would be unwieldy in themselves. They would be unable to operate on a unified basis, and they would be institutionalized obstacles to future efforts to restructure these functions in a rational and effective way. I agree with the suggestion made earlier that if these things have to start out being undertaken separately, they must be combined later; but I think starting them out separately is perhaps the biggest obstacle to later combining them.

Since national land use policy legislation has not yet been enacted, and, in the case of the House of Representatives, is still being drafted, an opportunity to rationalize this situation is yet available.

A National Land Use Policy Act certainly can recognize that management of coastal resources and water quality, as well as some of our more traditional problems such as transportation and housing, must be treated as integral parts of an undivided whole. It can utilize land use policy as a unifying force and as a means of overcoming both long-established fractionalization, and the more recent abberations.

Some reorientation of past efforts in land use legislation is necessary if this is to be accomplished. Certainly the obsession with "critical areas" which characterized earlier bills will have to be moderated if we are to stop concentrating on parts, with the resulting inadequate consideration for the whole.

But the challenge to the States is essentially the same with or without a National Land Use Policy Act, or with a good Act or a poor one. Mechanisms must be invented and organizations must be structured which enable the States to deal with a broad and expanding range of programs related to their lands and waters. The approaches taken must emphasize fundamentals rather than symptoms. They must be able to incorporate new program components as these emerge without detracting from a unifying core.

The problems which the States will encounter as they attempt to devise ways to meet this challenge generally fall into two broad categories. First, the mechanisms of control must be selected. Second, the appropriate type of organization to operate these mechanisms, and the proper place in the governmental structure for that organization must be determined.

The three different mechanisms listed in Section 306c of the Coastal Zone Management Act of 1972 essentially cover the range of choices available. That is, the States may establish criteria and standards for local implementation, under State review and enforcement procedures; they may operate through administrative review of local plans, projects, and regulations for consistency with State management programs; or they may engage in direct regulation.

The Coastal Zone Management Act, like other Federal legislation, does not deal with organizational issues. The choices available, however, are limited to perhaps four basic types, with variations on each: A departmental form, including subdivisions of a department; a council or commission, an authority with some degree of independence of other governmental operations, or some type of inter-

agency group. The location of this organization within the structure of government is virtually unconstrained. Each State government can probably identify several places within its own structure with some logic for placement of any of the types of management agencies available.

The decisions which a State will make in responding to these two issues depend on a vast array of factors which reflect the history and traditions of each State, the way it is organized to perform other functions, the size of this activity compared with other activities already a part of the structure, and many other, predominantly localized, concerns. But there are some common issues and problems which can at least be identified.

There is no particularly rational order for either listing these concerns, or for applying them in the decision-making process. They have an unfortunate way of influencing the selection of both a management mechanism and a form of organization to administer the mechanism. The choices made in either area tend to limit the options available in the other. Their relative importance changes rapidly with time. About three days is as long as one lasts in our effort to get a coastal bill passed.

Although no enumeration of these factors can hope to be complete, some of the more important should at least be noted here.

Certainly the issue of Executive responsibility versus broad participation is basic. Many States are reorganizing to give their Governors more control through the appointive process. This is the only way that a Chief Executive can be held responsible for the performance of the operating departments. But matters such as coastal resources, water quality, and land use also seem to require the participation of many diverse interests and specialities. These cannot be represented in a single department head. So these kinds of functions are often assigned to a board, commission, or council, which ostensibly represents

the more important interests concerned. For information, Rhode Island's 17-member Coastal Resources Management Council includes members of the General Assembly, two State department heads, and members selected from local governmental agencies and the public.

The members of these agencies are typically appointed for staggered terms which are longer than those of the elected official who appoints them, giving them some independence. This is the case in the Rhode Island agency. Some agencies also have a high degree of financial independence. The "authority" form of organization, which connotes a maximum degree of freedom from the "political" process, has fallen into some disfavor recently; however, the desire to build more and more diverse interests into the management process has led to more frequent use of councils and commissions for activities with much less pervasive scope than those we are talking about here.

Questions of local home rule versus recognition of area-wide concerns are at least equally difficult. The authority to regulate the use of land and water areas has long been delegated to local governments by all but one or two States. Local governments resist any redirection of this power back to the State, even when they are not making use of it themselves. Those local units which are involved in zoning, subdivision regulation, and other methods of regulating development generally do a good job of reflecting extremely localized interests, while ignoring area-wide impacts of their actions and omissions. Formulation of methods for local governments, special districts, and other units to participate in land and water management programs, while at the same time introducing extra-local considerations, will probably be the most difficult organizational questions to resolve. I would agree with those prior speakers who were reasonably unanimous in feeling that that leadership role had to be lodged at the State level.

Governmental finances are a closely related problem. Local units across the country continue to rely on property taxation as their major source of revenue. External regulation which restricts exploitation of water bodies for tax-paying economic development, or which encourages new industry to locate in some communities and to avoid others, will be resisted by almost every community which needs more money for education, police and fire protection, or any other activity.

Formulating procedures for meaningful public participation in land use policy, water quality management, and coastal zone regulation is still a fourth significant problem area. The current and pending legislation in all these fields mandates public participation, but avoids describing how to do it. This is not so much a recognition of varying situations at the State level as a simple acknowledgement of the fact that no one really knows how to do it.

It is, in many ways, the key problem. I have seen it done very well on a short-term basis; and I've never seen it managed successfully on a continuing basis.

As resource management procedures become more technically sophisticated, and they must, citizens will become more disenchanted with their ability to influence decisions. Most of those who are not independently wealthy will feel that they do not have adequate time to even find out and keep up with what is going on. At the same time, legislative bodies, in many cases, are beginning to look askance at many public participation activities, feeling that their own role as representatives of the public is being undercut.

Achieving coordination between the State, local, interstate, and Federal levels in areas as complex as management of land and water areas will require an equal amount of ingenuity. Part of this problem relates to the fact that coordination between levels of interest must focus on specifics, not on general-

ities, but part of the problem is just plain mechanical. That is, finding enough time to bring all the parties concerned in any subject together at sufficiently frequent intervals, while still leaving some time for substantive work.

Recent and prospective changes in methods of providing Federal financial assistance to States and local governments introduce further complications. The uncertainties surrounding shifts from categorical grants to general or special revenue-sharing act as a brake on many actions, and particularly on innovative moves in all of the programs related to water and land. In some cases, regional organizations and local governments are reducing their capabilities to deal with these topics, while the States and Federal agencies are demanding more attention to the same matters. An approach which combines more deadlines with less money can hardly result in any real progress.

Revised financing procedures also reduce the effectiveness of many of the management and coordinating procedures which have been painfully developed over recent years. The Office of Management and Budget Circular A-95, Section 106 of the National Historic Preservation Act, standardized family and business relocation procedures, and Section 102 (2-c) of the National Environmental Policy Act have been used very imaginatively, in some areas, to expand participation in the decision-making process as it affects both land and water resources. These requirements have provided a means to force consideration of area-wide concerns in many situations. Replacement of categorical grants with revenue-sharing leaves a vacuum in this area which will not be easily filled.

This rather dreary litany certainly does not amount to a prescription for selecting mechanisms and creating organizations for management of land and water resources, but some principles do emerge from an examination of these problems which should be considered as each State makes its own decisions in these matters.

First, a unified approach to State land use policy, water quality management, and the coastal zone is essential at the State level. This does not necessarily require that the entire activity be concentrated in a single organization, but basic policy direction, at a minimum, must be centralized. There are no techniques of coordination that will overcome the defects of attempting to manage land and water resources through functional decentralization. I am sympathetic with the view expressed earlier that everything can't be handled in the same organization; it has to be sub-divided some way.

Second, separate the planning, operating, and regulatory functions. The planning component should be able to concentrate on policy issues and framework planning, unburdened by day-to-day operating problems. Operating agencies should be specialists, concentrating on carrying out the programs for which they are responsible. The regulatory agency should be free to enforce necessary regulations, unconstrained by any prior involvement in their formulation or pride of parenthood in resource management programs.

Third, the specific mechanisms for managing land and water areas must be carefully fitted to the situation as it exists in each State. Direct regulation of land use, for example, is necessary and workable in Vermont, where only about one-third of over 302 incorporated municipalities have adopted permanent local land use controls. In Rhode Island, the reverse is true: of 39 cities and towns, 37 have zoning ordinances and the other 2 have subdivision regulations. In this situation, State regulation must be somewhat indirect. The appropriate role for the State here might be to establish standards for development and to oversee their implementation.

Fourth, meaningful relationships between State resources management organizations and other key participants must be built into the structure when it is established. Effective management programs must be operated at the State level, but

they must be conducted in active cooperation with local governments, special districts, interstate organizations, Federal agencies, and the public. All of these contacts are too important to be left to good will or to chance. They must be formally structured and avidly pursued.

Beyond these and a few other fundamentals, each State must design the control measures and organization which best suit its own needs and limitations. I fully expect that, when the dust finally settles, none of these will look or act very much like any of the others.

Mr. Gardner: I was sitting here thinking that of the last three speakers, two of them were from the two smallest geographical States, and the other was from Texas. I wonder if there is really a different way of looking at this relationship between land use planning and coastal zone planning, based upon the size of the State and the relationship of the length of coastline to the area of the State. I'd like to pose that question to you, Dan.

Answer from Mr. Varin: I doubt if the basic viewpoints are really that much different. I'd like to have a few more legislators like Senator Schwartz around when I'm trying to sell the idea that the State has some responsibilities in overriding local decisions; but I think most of the differences are short-term, very localized considerations, and that size is not really a determining factor. The problems are essentially the same - State governments, despite the wide variation in size, tend to be organized similarly, and certainly a State like Rhode Island, with 424 miles of coastline and just over 1,000 square miles of land area, ought to take as much interest in its coastal area as any others. Yet we find a lot of difficulties in even getting recognition of the problem.

PANEL DISCUSSION

Dr. James Timmerman, Director, Marine Resources Division,
South Carolina Wildlife Resources Department
Mr. William D. Marks, Chief, Water Development Division,
Michigan Department of Natural Resources
and
Mr. Varin

Dr. Timmerman: I'll tell you, the Senator from Texas being on the panel is a real tough act to follow. The only thing I have to say is that I sure do like those Southern politicians here. I think it would be good if we had some of them revolving around Washington today. This and all the others have been most interesting sessions.

Speaking of the talk that Daniel has given, I disagree on a couple of issues; one of which is that I feel the States have some experience in land use management. They might not know exactly what they are doing; but they do have some experience, and I think perhaps now they are reaching the stage of doing more comprehensive and innovative planning in that area.

Another thing is that I would disagree somewhat with the philosophy that if coastal zone management is not tied in to land use, it is doomed to fail. I certainly agree that the coastal zone management and land use management must be very closely coordinated. In South Carolina, much of the land use problems are also coastal problems; and I'd hate to see the management of the coastal areas tied up and diluted in a program which may or may not empha ze this fragile coastal area. In many cases, coastal zone management requires a different type, and often more intensive-type data than that of land use, since it is such a critical area; and as a result, some of the expertise that is more closely involved with coastal activities is often a different group than what you would have in the overall responsibility for land use. I'll have to agree with Bill Hargis somewhat in his statement that we need first to have a good coastal zone manage-

ment program, because we can see the light there a little bit better than we can in a total land use. We have to - in the State of South Carolina, at least - first learn to crawl and then to walk and run; and we're just barely crawling now.

I will just call to your attention the report that came out on June 7, 1973, on the Land Use Policy and Planning Assistance Act, in which the Senate in their rationale tends to follow somewhat closely that of Bill Hargis. What I'm saying is that I disagree somewhat in the philosophy, and I have a couple of questions a little later on; but I want to pass the mike over to Bill (Marks).

Mr. Marks: I'm the one you've all been waiting for today, I guess - the last one on the program. To give you the perspective, what's usually prefaced "and the Great Lakes" on most of the legislation, particularly the coastal management in all the earlier bills, somebody would stick in "and the Great Lakes." I must apologize for not being able to tell you the length of Michigan's coast, but nobody's ever made it yet from one end to the other.

I think one of the problems that I sense here today, and through many of these kinds of meetings, is a frustration at least on my part, of trying to put the goals of coastal management together into a package that the public perceives is where we want to go. At least in our State, we've assembled enough of the regulatory mechanisms that we can regulate most uses of the coast; but it's the obviously high-priority uses, like off-shore dredging, that have been under the State authority for many years.

To get into more intensive management is a very difficult problem - to decide how we're going to achieve the goals of coastal management, and actually what these goals are. I certainly agree that land has been treated as a commodity in the U.S. for many years; but it's a commodity that's very inherent in our whole governmental structure. Many of the people who came to the U.S. originally came in order to acquire land as a commodity, and the problem of tampering with land rights is a very difficult question. Once the initial priorities are taken

care of in coastal management, then the next stage is extremely difficult; and that's about the point where we are.

I think I must agree with the majority of people here today that we'd better try to do it in coastal management before we try it in land management. We have some coastal management legislation on the books now, and quite an interest in land regulation; but again the problem of deciding on what society's goals are for land management is going to be exceedingly more complicated than it is on deciding on what our goals on coastal management are; and I don't see that we yet have developed a good mechanism to do that.

Mr. Timmerman: I have a question to ask - I think many people generally agree to the importance of public participation in coastal zone management. Do you see it, or do you have an effective public participation purpose within a land use program; and if so, how do you go about it?

Mr. Varin: There was a very effective degree of public participation achieved in the preparation of the management plan for barrier beaches; but it was very compressed in time. I believe that it essentially took place over 5 or 6 weeks; and that can be done in a compressed period of time, but not necessarily done in the same ways when you're extending something over a long period of time as you're involved with any considerations of State land use planning on the broader basis. I think that everything that's been said about the public hearing method, and that it is a really ineffective stab at public participation has certainly been borne out by my own experience; and in State land use planning we've tried a few other techniques. We are trying regional meetings; we're trying small area meetings; we're trying to get at the public through special interest groups - as bad as that is, it's one way to find the public. We're making what use we can of the news media. I don't really believe that all of these added together are really good enough. I'd be glad to have someone tell me of all the better ways, because there have got to be some.

Question from the Audience: Given the fact that there may not be an argument with trying to put everything together in a very rational sense, do you think in the land use legislation, or coastal management, if we abandon things such as critical areas, that there's enough perception of need on the part of the public to be able to pass legislation? If we abandon the things that they seem to more clearly recognize, what chance do you think there is to accomplish an overall program?

Answer from Mr. Varin: I guess what you have to do is do what you can get away with. Certainly the way to focus public interest is to point to the serious problems, the visible problems. I don't think that those problems are necessarily confined to the coastal area; but I know that they exist there. We have a Coastal Zone Management Agency in existence; it's been in operation for over two years. It's operating a permit system, because it has the assistance of the Coastal Resources Center of the University of Rhode Island. It's developing a planning base, and we haven't made anywhere near that progress in land use planning generally. Perhaps the Water Quality Act amendments are a way of levering into that situation. I certainly can't fault the view that you have to take a practical approach and get what you can because that's just exactly what we did.

Question from the Audience: When you were talking about the planning and operating functions: Do you think it's absolutely necessary to separate the planning and operating functions?

Answer from Mr. Varin: Yes, I do. Because when you conduct these two functions in the same place with the same people, the day-to-day routine problems, putting out the fires, taking care of the person who walks into the office when you open in the morning, absorbs more and more of your time; and you spend less and less of it on policy and basic planning issues. You try to do both of these, and one or the other is bound to win out, I think, and virtually eliminate the other; and I think in practically every case it's going to be the operating functions as opposed to the policy and planning functions.

Question from the Audience: You don't think that there is a possibility here to have a type of communication problem or gap between the operating

and planning aspect? I know that in many cases where you have support personnel such as the marine scientist, biologist, or whatever, that if it's completely separated you may have somewhat of a communication gap and people are going out in different directions.

Answer from Mr. Varin: Yes, I think that is bound to occur. Unfortunately, it depends mostly on the good will of the people involved to keep it from becoming any more serious a problem than that. I think having the gap, though, is better than losing one of the two functions.

Mr. Marks: Our experience, however, is that if the planning has been divorced from the day-to-day operations, the planners then haven't developed the clientele, for instance, in the Legislature, where the operating people will have to deal every day, so that the operating agencies have had a lot better success in getting their programs through the Legislature than a centralized planning agency that never deals on day-to-day problems. It's that communication with the Legislature that's so vital; and our planners just don't get it if they're not involved in the day-to-day operations.

Mr. Varin: I know that happens in many cases - it's almost a built-in characteristic of the local planning board which has operated under the philosophy that it ought to be divorced from government entirely. I think the only way you can avoid that is to develop this communications between the Executive and the Legislature, develop the communications between the planning agency and the Executive, and work through that channel.

Comment from the Audience: If I understand your presentation correctly, you're getting down a geographical separation and also the functional categories like water pollution. For a State like Rhode Island, a very small one, there may be room for both.

Reply from Mr. Varin: Rhode Island is the smallest State that I've ever worked in. But the bigger ones that I've worked in - I've never worked in the largest -

tended to operate pretty much the same way. There is at least one technique the we stumbled into by dumb luck in writing the Coastal Resources Management Bill, which perhaps illustrates a way to divide and yet keep pieces in proper relation to each other. This technique is going to cause us endless trouble with the Federal Act, but thus far it seems to be working pretty well. We define the coastal area - the legislation does not use the word "zone" anywhere, it's a bad word - we wrote a coastal zone bill without using the word "zone." It defines the coastal area and the jurisdiction of the Coastal Resources Management Council in several different ways. It defines it for study purposes; it defines it for operating purposes; it defines it for permit-granting purposes. It basically focuses for regulatory permit-granting purposes on that area which starts at the mean high water mark and extends as far out as the State's jurisdiction - which is also in dispute - but that's what the Act says. The Council's jurisdiction over land is defined not by geography, not by a line on the ground, but in terms of a list of uses which are important in managing coastal resources no matter where they're located. We can only give them jurisdiction over those uses within the State. We have examples of where the same uses are located on a stream which flows into our coastal zone, but located outside the State, and causes the same kind of problems. But that method of functional definition, combined with the geographical definition, I think, will give us many problems in the future, except for complying with the Coastal Zone Act of 1972.

> *Question from the Audience: Would you express some sentiments about the State-wide land use controls in Rhode Island, partially because of the existence of pretty broad local land use programs? I'd like your observations on why your neighboring State of Connecticut, which has basically the same problem with a great deal of highly organized local planning, has not been similarly deterred from developing a State-wide land use planning program.*

Answer from Mr. Varin: I don't think there's any real difference; and I think our planning processes, as far as State land use planning and regulations are

concerned, are pretty close together. Each State issues its proposed land use plan in the same month, for example. So there isn't a great deal of difference. I'm not really pessimistic about the ability of the State to get into this Act. I think it's going to be a very difficult job; but one that can be done as it becomes more and more apparent that there are things which local governments are good at, and things that they're poor at. Some of the things that they are poor at become the State's responsibility as a result.

> *Question from the Audience: Is it only Newport that was able to open up their coastline to at least a permit to the public? Is that a county activity there, or is that something the State has been able to do?*

Answer from Mr. Varin: I assume you're referring to the cliff walk? That is just an ancient rite of passage which is better established in Newport than anywhere else because there is a physical pathway existing. The State constitution can be interpreted as saying that right of passage over the waterfront applies to the entire State. The State legislation is pretty clear on the fact that local jurisdiction and property ownership is limited to the mean high water mark; and that which is below that is available to the public; but there's also some ground for claiming that the public has right of passage over shorefront areas above the high water mark, based on a charter provision in the Charter of 1642, I guess it was, pertaining to the right of fisheries, which was transferred to the State's present constitution in the mid-1800's. The State has also inherited about 150 rights-of-way to the shore, most of which were originally deeded to give farmers access to the shoreline so they could collect seaweed for use as fertilizer. Farmers don't use seaweed for fertilizer any more, and we don't have very many farmers left; but the rights-of-way are still there, and we are figuring out ways of using those to give access to the shore for other purposes. At the same time, the adjoining landowners, the people who live next to these rights-

of-way, are trying to figure out ways to fence them off and make them look like private property. So it's a continuing struggle.

Comment from the Audience: Newport is to be congratulated, because I'm a 12-year resident of this State (Maryland), and the visitors are lucky to be on the Academy grounds and be able to see the water. However, the high-rises are now shading the beaches at about 2:00 p.m.

Reply from Mr. Varin: I think we probably have the same problem with shade when we start to acquire some high-rises, but the issue was really settled in court many years ago - I can't even tell you the approximate time - when the owners of some of the mansions along the cliff walk attempted to fence it - to block it with fences - and some people defeated that move in court. It has been brought up again within the past 10 years and decided again the same way. So it seems to be pretty firmly established.

Thursday, June 14, 1973

Morning

SESSION III

Uses of the Coastal Zone

OPENING REMARKS

Dr. Philip Johnson, Division Director, ESR/RANN Program,
National Science Foundation

Welcome to Session III. I think we're all quite excited about yesterday's program. We've all been to meetings where it wasn't quite so clear that our organizing committee had done as good a job as they have with this one. At least I'm enjoying it very much; and I hope that the pleasant day we're having this morning won't distract you from our sessions.

There are a couple of comments I'd like to make. First of all, I'd like to hold the introductions to a minimum. I was introduced in Chicago some months ago, and after the man had finished reading my resume, some guy down here in the front row said, "How can he ever hold a job, he's been in all these places so many times." I'm not going to expose our speakers to that problem.

We began our sessions yesterday with the session devoted to intergovernmental problems, and particularly thinking about response to the national legislation. In the afternoon, our session attempted to deal with the issue of processes in the coastal zone. It reminds me of three points I'd like to very briefly bring up to set the stage for this discussion of uses of the coastal zone.

The first concern I have is very evident in all kinds of environmental problems. And it is that the boundaries of environmental sectors and those of political jurisdictions do not satisfactorily coincide. We saw this thing coming to the surface quite graphically in our thoughts and discussions about the intergovernmental city vs. State vs. national level. In point of fact, the management of common property resources presents in the coastal zone all the land, the water, the air, and the residuals management issues. And the issue of boundaries of the coastal zone is in itself a legal issue; but in structuring management plans, we would contend having this issue of political boundaries vs. reasonable environmental boundaries to deal with.

My second concern is with the fascination in meeting the charge of the Act; namely to make a plan. My concern is that the plan become our focus and therefore a substitute for action; and in our interest to take action, that that may unfortunately become a substitute for sufficient information as a basis for the action. One of the reasons that the words "plan" and "planning" in this country run into some difficulty is that we've seen all-too-many plans which were not a basis for action, and we've seen perfectly sound plans we could not implement.

As Mr. Bodovitz from California brought to our attention yesterday, we are dealing with change detection in the coastal zone, and he pointed out that to do meaningful plans and meaningful action, the coastal zone will require on our part both inspiration and dedication, presumably with the broad spectrum totality of users concerned with the coastal zone. I would like to add to that that any plan must also be evaluated; and if we are not willing to read into this our own quality control, read into that process of meeting this Act an evaluation system, we will not succeed.

Further, I would add another point - that I am quite convinced that as we attempt to plan coastal zone management, more and more of the gaps in information, more and more of the problems, will thereby be defined. Therefore, it seems to me we must be content with integrating that plan. If indeed we implement a plan, if indeed we follow Mr. Schwartz's model out in Texas that we'd better get on with the action that's amenable to the public today, then I think it follows that not only must we have an evaluation in that process, but we must be prepared to implement the plan and improve it as we go.

The third point that comes to my mind in thinking about yesterday's discussion - I think it's perfectly clear that as we watch the melodrama unfolding on the TV, we all have various thoughts; but if there's a lesson to be learned that's applicable to coastal zone management, I think it ought to be, among

others, that we certainly live in a participatory democracy. We do not, fortunately, live in a regulated democracy - although some may be discovering that to their sorrow. Therefore, this issue of planning and concocting Statewide management plans - I think we cannot afford to get lost in whether the lead or the control or the responsibility is vested at any particular level of the political machinery. It's quite clear that as taxpayers we're also citizens of local, regional, State, and national jurisdictions; we want to participate in each of those, we pay taxes in each of those. Therefore, we must come up with a process that is participatory and which recognizes these other concerns.

Today, then, as we begin to discuss uses of the coastal zone, our first session before the coffee break is committed to conservation and the living resources associated with the coastal zone.

CONSERVATION AND LIVING RESOURCES

Dr. John Clark, Senior Associate, Conservation Foundation

Good morning. I would like to clarify my identity in one way, and explain that I am both an ecologist and an environmentalist. The two are different. An ecologist is a student and, usually, an environmentalist is an advocate of environmental protection. I will speak from both standpoints this morning.

I will try to provide a background of understanding the kind of information needed for coastal zone management activities around the shores of this country, and put this in some kind of national perspective. Many things will not apply in one State but will in another. The conservation of living resources in the coastal zone requires the preservation of the physical habitat, the entire life support systems in which the chain of events flows unbroken from the flood plain to the wetlands, bays, and into the ocean. The keeping of these complex ecosystems intact and functioning will require extensive efforts on the part of each of the coastal States. This raises the question: As a nation, are we committed to the protection of these ecosystems as a fundamental basis of land use management?

The answer might be found in the stated purposes of management legislation that has already been passed. We found that four principal kinds of coastal land use laws have been passed, dealing with comprehensive management, wetlands protection, dredge and fill regulations, and siting of industry. We reviewed the policy and management criteria of these laws and found that among eighteen States with significant Acts, the environmental purposes of the legislation were as follows: protection of ecosystems, 15 States; protection of wildlife and fisheries, 13 States; conservation of soil, 9 States; enhancement of aesthetics, 6 States; and protection of water resources, 5 States.

Other major purposes of coastal zone management laws were: control of development, 12 States; promotion of commerce, 9 States; protection of life and property, 8 States; development of resources, 7 States; and provision for public access, 5 States. Clearly, environmental protection has been a major purpose of existing legislation. Three conclusions can emerge:

1. This trend will probably continue and the comprehensive land management plans implemented in the future will be founded upon ecological principles;
2. It will be essential to minimize adverse environmental impacts in coastal development activities;
3. Coastal zone managers will have to hire a lot of ecologists.

There are several major tasks facing ecologists and environmental scientists in the development of coastal zone management plans. Following the most popular approaches to land use planning, at least five major aspects will have to be included. The first is identification of resources. Ecologists will have to assist in identifying the important living resources. They will have to describe the habitats and life support systems in a way useful to planners and legislators. They will draw skepticism when they give high value to tidal flats, swamplands, marshes, and sandbars.

The second is inventory and evaluation. The ecological scientist will have to do more than identify the resources. He will have to evaluate their worth, bit by bit. He will also be needed to evaluate the State and national interest in local resources elements. For instance, he would know that the Hudson River thirty to forty miles above New York City is the spawning and nursery area for striped bass that provide a high proportion of the migratory stock of fish along the Middle Atlantic and southern New England coasts. He would also know that the

Georgia marshes export productive nutrients out into the Atlantic Ocean and help nourish sea life 30 to 40 miles offshore. He would know that the kelp beds off the California coast serve as an important link in the lives of many coastal fish. He would also know that even the smallest rivers of the Pacific Northwest contribute to the supply of salmon that are fished in the bays and sounds along the hundreds of miles of ocean coast.

Third, designation of critical areas. The ecological scientist will assist in defining critical environmental concern areas - those that should be completely protected and set aside through purchase, zoning, etc. Only he will be able to give an informed opinion as to which parts of the ecosystem are of superior importance. He would undoubtedly designate marshes, dunes, mangrove swamps, breeding areas, migration routes, certain beaches and cliffs, and other very important areas. Where the shore has a steep or moderate slope, it may be desirable and practical to designate the whole flood plain to the 100 year flood height as an area of critical concern. Scientific proof will have to be well established to justify setting aside critical areas, especially where private rights and property are seriously reduced.

The fourth aspect is the designation of conservation areas. In many States, areas that are highly important to the protection of the coastal aquatic ecosystem will be established as conservation areas wherein limited development will be permitted on a carefully controlled basis, so as to protect the quality of the environment. Conservation areas would generally include all the immediate watershed, where surface or channelled flows bring pollutants into the estuaries and shallow coastal waters, and where the ground water is in direct contact with estuarine or coastal waters and allowing the pollutants to leach into coastal waters, for example, or for the salt water to penetrate into the fresh water table. Here the ecological data will have to be exceptionally strong, because

there will be selective permit issuance and rights of use which would be restricted. Impact analysis - in this pursuit, the ecological scientist will find his toughest challenge. Assessing the environmental impact of a great variety of projects under an endless variety of natural conditions will be a particularly difficult assignment.

Since environmental protection is a major part of coastal zone management, the effectiveness of management activities will depend upon the quality of environmental data. Environmental impacts will have to be understood in the largest ecological context. From the ecological viewpoint, the coastal zone can be divided into four subzones as follows:

1. Upland
2. Flood zone
3. Inner-tidal
4. Sub-tidal

It will be necessary to use a somewhat more detailed breakdown for much of the Atlantic and Gulf coasts where the land forms of the coast are more complex. The following are the basic units:

1. Upland
2. Flood zone
3. High wetlands
4. Low wetlands
5. Tidal flats
6. Submerged bottoms, grass and shellfish beds
7. Estuarine waters
8. Coastal waters

Even more definition will be needed for certain detailed aspects of planning and ecological research. In general, the immediate edge, the intertidal area, is the most productive part. To achieve its major purposes, coastal zone management

will have to be planned so as to protect full ecosystems, not just bits and pieces. To keep these ecosystems intact and functioning, the following four aspects must be appreciated, studied, analyzed and balanced for ecosystem preservation: habitat quantity, habitat suitability, energy resources, energy flow.

To take a very simplified example of a marsh-estuarine system which is shown to be healthy and in balance with the marsh supplying basic nutrients to the system, the following greatly simplified guidelines might be set forth:

1. Habitat quantity. The acreage of the estuary should not be reduced by filling it at the edges or by dumping spoil over any of the submerged grass beds.
2. Habitat suitability. The water quality should not be lowered by any new adverse pollution load nor should the bottom become covered with any deleterious sediments.
3. Energy resources. The nutrient supply from marshes to the estuary should not be reduced by filling or removing any part of the productive grass areas.
4. Energy flow. The flow of energy should not be reduced by choking off circulation diverting the supply of fresh water or cutting off tributary streams to the marshes.

To insure that the consequences of any action for which a development permit is requested, the ecologists will have to define the major elements of a complex events cycle occurring in the estuary in order to predict any significant environmental impacts of the proposed action. The event cycle shows that some human need results in an enterprise and that the enterprise consists of specific projects. The projects are accomplished through a variety of activities and these lead to certain environmental disturbances. These disturbances trigger off a reaction series of ecological effects which lead to a certain recognizable environmental

impact which in turn affect the human condition in an adverse or beneficial manner. A key aspect in coastal zone management will be the search for suitable alternative project designs and development activities that will minimize the environmental impacts. In this there is another role for the ecologist which will have him working closely with engineers, planners, economists, government officials and so forth. This is a strange and unaccustomed role for him; that is, engaging in the arena where social decisions are made, or negotiated compromise rather than scientific precision is the rule of the day. This change is already causing confusion in the ecology business.

Before NEPA, ecologists were the unwelcome gadfly of developers - now they are becoming part of the project planning team.

COASTAL ZONE MANAGEMENT AS IT RELATES TO LIVING RESOURCES

Dr. Lyle S. St. Amant, Director,
Louisiana Wildlife and Fisheries Commission

I think I would like to make a few brief remarks before getting into this. I noticed that in the papers yesterday, most of us did not identify the kind of coastal zone we are talking about, and this causes one of the problems we run into when we get into a discussion of coastal zone management. One of the first things we should do is describe what we are talking about so we know what types of plans would fit. I don't mean where the zone starts or stops. I mean the differences that occur between a coastal zone where the land comes up to the sea, where the intertidal zone is narrow and people move right up to the system, and you find an urban area developing in the coastal zone, and where the area is flat, shallow, actually hostile to most people, and many parts of it not easily accessible.

There's an area like that some thirty or forty miles wide and extending about three hundred miles across Louisiana that's open to public access; but people go into it for a real purpose, not just for a boat ride or swimming or skiing. It doesn't lend itself to that; but it is highly productive of mineral, oil, and gas - and fishing. But it is very unstable. If the biological assessment is accurate, it is the key to the entire fish production of the Northern Gulf.

There are a good many areas like this on the southern Atlantic coast, Florida, the Everglades, and they represent a type of coastal zone quite different from some of the things we have heard. I think that in order to understand the differences, we should look at these areas as they are. In managing a coastal zone of this type, you almost have to turn to the resource productivity as a major key to its health.

The first thing that was noted in the matter of environmental degradation occurred in such areas as wet dredging, salt water intrusion, fresh water intrusion, degraded water quality and the like, reduced natural resource production

or living resource production. It was first noted in the commercial fisheries; and it would be noted there more rapidly than in the recreational fisheries, because they have some statistical evidence of production. This is not a recent thing; it was noted in Louisiana as early as 1954. It was brought up in the Organization of Coastal States, and it was debated; and we even have a Committee on Estuarine Technology. This has been an active Committee for more than 15 years; so it's not anything new. It's only recently that certain catastrophic accidents, particularly associated with oil production, have caused the development of a high environmental interest.

In order to get involved in one of these types of zones, I think we should look at some of the things that characterize them, and how they may be different from other areas. First, they are generally very highly productive; but they are unstable, and they are subject to very rapid change, both in topography and hydrography. One of the key things that you must determine about such zones is the seasonal hydrographic environmental variations within such areas as a cycle. Because they do cycle to the extent that it makes it very difficult to determine any gradual change in the area that might be degrading or detrimental. For example, in Louisiana this year, we have perhaps 40% of the entire coastal area subjected to flood waters. Salinity ranges have dropped to zero. This is a natural phenomena; it doesn't happen very often. It's the first time it's happened since 1950. But it is, and it does represent one extreme. This would probably overshadow any type of activity that might occur in the coast; and if you don't understand the extreme, it's not going to be very easy to determine whether or not you're really affecting the coast with certain changes.

Another thing about these types of coasts is that they generally support a high percentage of the off-shore fisheries. In the Gulf estuaries, we know that about 90% of the fish are dependent upon these zones as nursery grounds and areas

where the young are protected and grow. The energy transfer in these areas that has been brought out by John (Clark) is tremendous. In Louisiana alone, for example, we produced 1.2 billion pounds of commercial fish year before last. This does not include an untold amount that is caught from recreational fishing; it does not include perhaps 500 million pounds of fish caught incidental to shrimp trawling and thrown overboard into the system. If you add it up, you come pretty close to 2 billion pounds of living protein - most of it which develops and grows in about a 200-day period from mid-March until mid-November.

To understand this takes years; and it takes some pretty fancy footwork with respect to ecology, zoology, and botany; and we need and will always need a high level of this type of investigation. Unfortunately, such areas are easily affected by man's activities in the zone itself; but they can also be drastically affected by man's activities far away from the zone. Here is the real question: How are you going to manage the coastal zone when somebody 150 or 200 miles up the river decides through his watershed project, land management project, or whatever you want to call it, to cut your water off? These systems cannot exist without the historic movement of water through them on the same basis as they evolved. You can't tamper with the water coming into the system any amount and expect the system to exist. A prime example is Toledo Bend Dam on the Sabine River between Texas and Louisiana, which was constructed by the two States. For the area in question, it is a major improvement in economic development; but it played havoc with Sabine Lake and with the shrimp fishing in Sabine Lake. This may be a good trade-off; but it wasn't taken into consideration when the particular project was developed. This is the type of thing that can happen far away from the zone, and some way or other needs to be connected into coastal zone management, or we can lose some of these more dynamic areas.

It might interest you to know that in the South Atlantic and Gulf areas, you get about 78% of the total annual catch of shellfish and crustacea in this

country. I don't have the figures on the fisheries for any particular region to go with it; but it's obvious that managing this type of area is going to be much more complex, and it's not going to lend itself to urbanized planning or urban planning or zoning in the amount that might be used in more stable coastlines. It's going to require high levels of ecological studies and ongoing studies in order to make decisions.

Some of the more important factors that need to be considered in such estuaries involve the annual flows of fresh waters into the system; the size and characteristics of the productive zones; the maintenance of natural drainage patterns when dredging and channeling occur; prevention of salt water and fresh water intrusion. But even more important is change in the rates of water cycling. This has been something that is not easily measured but causes the most damage, because it is the extremes of change that affect the animals and plants, and not the mean. All too frequently, when you've got a straight channel through a system that had a meandering system, you end up with a mean salinity about the same across any given point. But if you study the day-to-day fluctuation of the cycle, you'll find that it swings from almost fresh to almost salt; and you in effect convert the area which is normally not de-watered, and put it into an area similar to some of the coastal areas that have two tides a day, where you run salt water up to the land and back. When you do this, your productivity drops. It's only the business of keeping water on the marshlands that makes for this productivity.

Man's activity within these estuarine areas will require significant dredging and filling, because most of them are very shallow. This can drastically disrupt and degrade production; so management of any such area will require considerable amounts of information on the dynamics of such areas in relation to the living resource productivity, and the effects both initially and accumulatively of man's

actions. It is only with detailed information along these lines that significant management procedures can be developed.

Going into a little more detail - first, when you set up a manual planning of this type of thing, you're going to run into one or two types of things. You're going to have an area that's relatively clean and virgin and undisturbed, and one which has already been disturbed by man. The one that is undisturbed, or still in its natural state, will be much easier to manage and plan for, because simply if you learn the dynamics of it, if you have the authority and the backbone to make the decisions, you can design a system that will protect it. If your governments will back you up, you can protect the thing. On the other hand, there are many areas, like Louisiana, which were poorly controlled. The multiple use went on long before some of us even tried to spell environment or ecology. They've been producing oil in Louisiana since 1927, and offshore since 1937. We have 25,000 oil wells operating on this coast. We must have an untold 1,000 miles of pipeline. Some of them, particularly the gathering lines, nobody knows where they are. They are not mapped. Yet, while the place has been degraded aesthetically - it has been damaged physically - this should also point out that you cannot simply mark this off as a decrease in production. We have no real evidence that with all this damage right now, the production of the area has decreased significantly, with the exception of some of the animals, particularly the oyster.

So you're going to have real problems when you get into an area that's already degraded. For example, in an old oil field, long in existence, there is going to be no real way to get in there and change it or make new regulations. The best you can hope for in this system is to keep it down to a minimum. The next thing you want to try to do is develop the authority and the system and the funding to take care of it when it's depleted; because when these areas

become depleted is when you are really going to have the problems in management. If there is no more money coming out of the system, it will be left there to rust and rot, and really cause problems. Somewhere along the line, this type of thing, the cost of this, needs to be integrated into the actual production and the income from these fields. Some of the worst polluted areas in the country are the old oil fields, where they are pumping 800, 1000, 2000 barrels of salt water brine to get one barrel of oil. When you try to get them to clean it up, what happens? They don't make any money. If you try to shut them down, you can't do this, because they are hiring all the local people, and you would put everybody out of work. If you think it's easy to manage this type of thing, try it some time.

Another thing - we say we don't need the oil. This is ridiculous. Whether or not we have a real or a fake energy shortage, I won't get into. But this country lives off of energy, and lives off of oil. I don't care how beautiful a coastline you have; if somebody comes up and proves that there's a billion barrels of oil under it, you're likely to end up with oil wells. And if you don't believe it, you come to Louisiana. The Federal Government wants to live off of it; the State government wants to live off of it; and the private landowners want to live off of it. And you think it's an insignificant thing? The State and Federal Government have been fighting for 20 years in the courts to find out where the line goes to see who is going to get the most oil. And I'm not talking about half a mile; I'm talking about inches. This is how much money we're talking about. So you're not going to manage people very easily when the dollars are there for them to pick up - they're going to want to get them.

When you get into high multiple-use coast and mineral-producing areas which co-exist with high living resource productivity, you're going to run into economic problems, and you need careful economic evaluation, because there is going

to be a strong thrust to use the short-term economic gain. You need some real economic muscle here to prove that the long-term value of these areas can probably be more significant than a short-term gain. This does not mean that you're not going to exploit the depletable resources, but it does mean that you're going to make them pay a price to do it in order to protect your renewable systems. If you don't, we could lose the whole works.

I think the toughest thing to deal with in managing - and I have attempted to manage this coast for 25-30 years - is the little activities, the things that are innocuous and appear to be of little consequence. A man comes in and he wants to put a dock in; he wants to put in some bulkheading; or he wants to put in a single oil well. This involves 1 1/2 - 2 acres of dredging. It's in a marsh where you have millions of acres of the same kind of marsh out here, so how can you very well prove that this one acre, or two, or five acres is really going to degrade the whole system and ruin it permanently? You can't. If you get into a system of managing or public hearings or any other logical system of upgrading the land's economy and well-being, you're going to lose. What happens is you end up by cutting a little bit of your finger off every day, and you finally end up with the whole works gone.

Somewhere in this management program, we have to look at the accumulative effects of multiple small breakdowns in this system. They have to be analyzed properly, in time to give us enough lead time to make changes.

Yesterday we had several arguments going on about whether this type of work should be done by one agency, or two or three, etc. I have some feelings on this too, so I might as well put my foot in my mouth and go with it. I think that I would like to see at least three separate approaches to it, for two or three reasons:

1. The type of research that is needed, the type of thinking;

2. Money, budgeting and manpower available in the system;

3. Existing systems that are already operating.

In planning for one of these unstable marshes, we do need plans, and some very good ones. They should involve such things as studies of the dynamics of discrete drainage systems within the basin. For example, Louisiana has six separate drainage systems; each one should be handled separately. We should know a lot about the normal hydrographic situation and water flow information. We should have something in the way of vegetation and bottom-type maps, so that we know what we had before we started. We need some good information on the nature and location of living resource productivity. In other words, what types of ecosystems or ecological zones within this system produce what, and how much, and how do they work? What is the general dynamics of this? We need some information on the existence in density and location and effects of industrial and mineral production throughout the area, and how it is affecting the natural drainage system. We need good information on the economic base, the economic needs, and the sociological relationships between the uses or the users in the area. And if possible we need a listing or an establishment of priorities, of safe use and needs in the area to be managed, including recommendations for zoning and other types of controlled utilization of the coastal zone.

This type of work could be done on a contractual basis, or by universities or research units, or by a State Planning Board. But these people will generally have to go out to get the technical information in one of these unstable zones. They are going to have to get the ecological information to build up their plans. I suspect they are either going to have to contract it or hire the personnel. It's going to be costly either way; but since the plan itself probably will need to be upgraded, most of the work will occur over a short period of time, and it may be contracted out.

By contrast, the actual management of these areas, on a day-to-day basis, is going to require ongoing data decision making. You have to know from one day to the next what is happening in the areas; you have to have somebody with technical qualifications, whom you can call and say, "I need this information now, we have to make a decision today or tomorrow." We need continuing environmental measurements of the water, and all the other systems involved in this area. In this group, what you have to do is establish the normal annual variations of productivity of the important indexed species. If you don't know what the normal variations are in productivity, then anybody can come in and say, "I had a drop-off last year." The kind of thing I'm talking about when we had the Chevron fire blow-out and the Shell fire blow-out. If we had happened to have a poor shrimp year that year - and believe me the shrimp cycle can vary as much as 30% - we would have been in one long-term legal battle trying to prove whether or not it was the oil that killed the shrimp. Not many people around could even have come up with an answer.

We were lucky; we happened to have the highest shrimp production on record; so nobody could come out and say the oil wiped out the shrimp. This is the kind of thing you have to be prepared to answer when you get into this. Otherwise, you may end up in considerable problems. In order to know that, you have to know what's out there each season and each year. Determination of the ecosystem dynamics and seasonal variations in environmental parameters which control living resource production - this is mandatory, at least to the key species. You need measurements of natural extremes in environmental cycling, such as I mentioned about the river flooding and what have you. Because without this, you have no way of knowing what happens under the extreme, and whether it's normal or not. You need a considerable amount of information on dredging, silting, local accidental pollutions, chronic pollution. But more importantly, you need something

on the recovery rates of these things. I haven't ever seen an area, except ones you dug up and filled up or completely stacked up and took out of the system that didn't recover. If it's silted over, or it's momentarily polluted, if you have a fish kill or something, it generally goes through a succession and returns somewhere near normal. We need to know something about these rates, because this will enter into whether or not you're going to attempt to use the area.

Of real importance is the indirect effects of activities. We've found that water cycling changes rates in volume in indirect silting far away from the activities - causes much more problem than the things that happen in the cycle. The kinds of things that really get you are in an area like this they may put a spoil bank that's temporary across the mouth of an inlet or a natural flow. This in turn reduces the velocities two or three miles away. In the type of coast we deal with, the turbidities are very high from wind action. If you get turbidity from wind action, you slow down the velocity, you drop your silt load here, yonder, and the other place. It's normal silting, it has nothing to do with the activity. You can kill whole oyster beds in this manner. If you don't have some idea how this operates, you can really get in trouble.

I think all of this type of work needs to be done on a daily basis; and the best people to do it are in an agency in the State, whoever has authority over the water bottoms and the water. In Louisiana, it happens to be the Wildlife and Fisheries Commission by statutory authority. It might be some other agency; but it's only the agency that has to deal with this on a daily basis and has the personnel, manpower, and equipment to get the job done. If you try to hire it to get it done somewhere else, it just won't get done. Not at the rate that it needs to be done, and not with the speed at which it needs to be done.

Finally, I think, we need a considerable amount of data-gathering and objective thinking and research that deals with the research and analysis of accumulative effects of multiple actions in a system. This is something that a think-tank or university might do. We need somebody to say when to cut off; we need enough lead time to say to the oil industry, or any other industry, "Look, you're approaching a point of degradation here where you have got to slow down; you can only go so much farther, you'd better begin to change your systems; you'd better look at how you're going to shut it down." I think it's the only way we can do this; I think this is the kind of thing to be in a new area. If you wanted to drill for oil on the East Coast, which has never been drilled, you could set up a system in your leasing program which controls the amount of activity with an ongoing ecological study with it. After a certain length of time, you could have an evaluation and extend it or cut if off. But you have to write this into your leasing system and into your regulations before you go into it.

I think you need information concerning action outside of the coastal zone - what's upstream water use and management doing to you; what are the pollution levels; what's the water quality from your river system; what are the land use patterns upstream doing to your coastal zone? This needs some work; and it can be best done, I think, at the university level, or some system like this. We need some very important predictions, predictive economic studies, with respect to short-term vs. long-term effects, socio-economic problems, and the like; and the long-term research needed on chronic effects and accumulative effects of pollution, such as oil and other chemicals. There is much work needed here, particularly in the sub-lethal category. We don't really know what's happening in this area.

I have a lot more I could talk about; but I think this is a good time to stop. If there are any questions, I'll be happy to try to answer them.

Question: It seems to me in most discussions we talk primarily about technical studies of the coastal zone areas. What are the opportunities for enhancement, and equally important, what are the possibilities of managing the research to enhance the production?

Answer: We have some areas that I think you can get enhancement. For example, we have some ideas in Louisiana about introduction of fresh waters to these zones. We know that historically man has harnessed the river; and production of a zone is really based on an annual flood-cycle type of thing. There is no way to go back and take the levees away and allow the flooding. What we have proposed is a system introducing fresh water into these areas on a controlled basis. We believe that in certain areas we can get the extreme productivity or multiple productivity in areas that have been degraded. Our problem here is water quality. We can get the river water, we can get the money to open the river, but the bacteria load in the river is so high that we can't use it in shellfish areas. So it is a problem.

Another thing that can be done is probably where you do have projects that must be made, a good ecological study of them, an engineering study, could give some benefits. This is going to make the project more costly, and when you get involved in it, you're going to have to start from the beginning to try to make the maximum benefit out of the particular activity, but basically you find that the marine system is probably better left alone.

In other words, it gives you a high level of production activity as it is; and one of the simplest things to do is keep it in gear as long as possible. This is in contrast to what you want to do in land management. For this reason, I like to keep them separate, because land management uphill and upstream really means you want to control environmental change. You're telling the man where to put an urban area, where to put a farm, where to put an industry, but the land will not support man without this type of controlled environmental change. The

water will give you its maximum production without it. So upstream, water is a commodity; you use it for irrigation; you use it for industry; for sewage dilution; and a small amount for recreation if you can get your hands on it. When you get into the coast, water is the thing you're dealing with; you want it to remain like it is - I think this is probably why we get disturbed when we try to separate coastal zone management and land use planning.

USES OF COASTAL ZONE
COMMERCIAL USES - PORTS AND SHIPPING
Mr. Joseph L. Stanton, Maryland Port Administrator

Much as I appreciate this opportunity to participate in this Conference on Organizing and Managing the Coastal Zone, I hasten to state that I do not have the temerity to hold myself out as the spokesman for ports and shipping of the United States. Seaports of the United States are numerous and while all of them serve the basic function of providing a transfer point between land and ocean transportation, these seaports differ widely in significant aspects. The physical characteristics of the seaports of the United States reflect the geography of our country. The volume of waterborne trade, the variety of commodities handled, the services provided and the types of port operations may be substantially different from port to port. Nor is there any uniformity in port administration and development. There are no uniform federal policies nor regulations governing U.S. ports. Seaports may be municipally owned and controlled; they may be enterprises of a county government in which a port may be located. In some States, as in Maryland, ports are administered and developed by the State. Several ports are bi-State organizations operating with the approval of the Federal Government. There is little uniformity in port financing throughout the country. Port planning and development are independently carried out by the local agencies. Coordination of seaport programs is nonexistent.

With this background, you will appreciate the difficulty in presenting sound documented data applicable to all ports throughout our country. Necessarily, therefore, my remarks must be somewhat parochial.

This is not to say that the ports of the United States do not have common denominators. This they do, and to a surprising extent. Practically all U.S. ports are closely allied to our private business enterprise system. Our ports

are highly competitive, each working individually to garner the largest possible share of ocean commerce to its own gateway. Among port executives, this competitive factor is a matter for thoughtful concern. That U.S. ports compete among themselves for cargoes moving in world commerce is frequently greeted as a surprising phenomena by port colleagues abroad. True, there is competition between ports outside of the United States, but this competition is usually between ports located in different countries. I know of very few instances abroad where unrestricted competition exists between ports in the same nation.

It is interesting to note that interport competition in the United Kingdom was the subject of an exhaustive study a few years ago, and one of the interesting and significant findings was that such competition among British ports was not in the common interest. It was held that the duplication of costly port facilities without regard to national need constituted an unwarranted dissipation of financial resources. Today major port development projects in Britain require the approval of a national board charged with determining the overall port needs of the country.

The impracticality of such sweeping measures in the United States at this time may be obvious to all of you, but there is little question in my mind that the advantages of our highly competitive port situation in the United States is considerably leavened by the duplication of costly waterfront facilities at ports in close proximity to each other.

As a Maryland port executive, my area of chief concern is necessarily limited to the objectives set forth in the statement of intent and the legislation establishing the Maryland Port Administration. These objectives can be stated in simple terms: To protect and enhance the waterborne commerce of the ports of Maryland. To carry out this mandate, it is obvious that we would concentrate on the Port of Baltimore, where the bulk of such commerce is centered.

Here, I believe, I should digress for a moment to define our meaning of the word "port." The Port of Baltimore, in our terminology, is a major complex for the interchange of freight between waterborne and land carriers, and it is also an industrial/commercial community, dependent upon water as well as land transportation for its viability.

Recognizing the great importance of the port to a wide variety of private enterprises, the question naturally arises as to the justification for a State to establish and maintain a costly port administration when the monetary benefits flow largely to private businesses. The answer in the case of the State of Maryland is found in the recent history of the Port of Baltimore. Until 1956, the Port of Baltimore was largely controlled by the four railroads serving the port. To a major extent, the railroads established the rates and practices of the port; they constructed the piers, furnished the equipment and solicited the business for the port. But as the fortunes of the railroads of the East declined, port development at Baltimore suffered. Competing ports to the north and south had established public port agencies to foster and protect their seaports. The railroads, with limited capital resources, were unable to compete with these public agencies, and Baltimore's importance as a major seaport declined.

The Maryland Legislature, responding to the urging of concerned citizens, established a State-wide port agency, with adequate financing and powers to carry out wide programs of port development and promotion. Motivating this highly unusual action of the Maryland Legislature was the generally accepted statement that the port was important to the economy of the State. How important was not known until a highly professional, in-depth study was carried out by the Business Administration Department of the University of Maryland in 1967-68. Based on statistical data available for the calendar year of 1966, this study demonstrated that:

1. The complex known as the Port of Baltimore had a total impact on the economy of the State of Maryland in excess of $1.4 billion annually, or approximately 15% of the gross State product;
2. That a total of 150,000 citizens of Maryland were employed in jobs related to port activities;
3. That $40 million of local and State taxes were generated annually from port operations.

Parenthetically, it might be pointed out that the intensive development and promotion program carried out in behalf of the Port of Baltimore has resulted in substantial cargo gains over the 1966 totals used in the University of Maryland's study. Therefore, it is safe to conclude that the economic impact of the Port on this State's economy is substantially greater than the $1.4 billion registered in 1966.

The study further revealed that each ton of general cargo moving through the Port of Baltimore left approximately $30 in the local economy while bulk cargo passing through the port had an economic impact of $5 per ton. However, bulk cargoes received and processed at Baltimore was worth $24 a ton.

The concern of interested citizens over the destinies of the Port of Baltimore and the action of the Legislature in establishing a strong port agency appear to be amply justified in view of the impact of port business on the overall economy of Maryland. Further, the strong competition among U.S. seaports for this lucrative flow of cargo can be appreciated when the financial stakes are weighed.

In a small State such as Maryland, the port complex just described must rank as our principal economic asset. To protect the economy of the State and the well-being of the citizens, a constant program of modernization, new construction, and trade development must be carried out if a significant segment of our economy is to be maintained. The period of port neglect preceding 1956 is still fresh in

many minds. More than $100 million of public funds has been expended in the past 15 years to overcome that neglect, and some $200 million more is projected for further development of the port during the next decade. Baltimore is a growing port. Each year the number of shippers utilizing the port is increasing. Important new cargo gains are being registered. The huge investment of the State is paying off, and Baltimore's favorable geographical location as a major port most economically serving a vast area of the inland East and Midwest is being realized. The Baltimore port program has gained substantial impetus and the well-being of our citizens clearly indicates that this impetus must be maintained.

Does this imply that port development should go forward without regard to the other very valid concerns of thoughtful citizens over the utilization of Chesapeake Bay as an important source of fin and shellfish, and for recreational uses? Are the aesthetic values of the Bay to be destroyed in the name of commercial progress? In essence, is port development to be carried out without concern for the ecology of one of the great water areas of the nation?

The Maryland Port Administration responds with a definite "no" to each of these questions. Developers, as our agency is, are not despoilers. We believe that we are realists. Our planning and programs are designed for the betterment of our fellow citizens. In view of the economic impact of this port on our economy, our reasoning and our guiding policies must be somewhat pragmatic; but the futility of port development that would despoil the Bay is as obvious to us as to the most ardent conservationist. A bustling port abutting on a dead sea is no more appealing to us than a pristine bay surrounded by poverty-stricken citizens who cannot afford to enjoy its beauties.

Thoughtful citizens must agree that neither alternative is inevitable. Planned and controlled development in a small area of the Bay can go hand-and-hand with an enhancement of the Chesapeake as a recreational center and an important source of shell and fin fish.

At this point, I believe it is important to consider the coastal zone area of concern to the agency I represent. The Port of Baltimore is an inland port.

Its geographical location permits the deepest natural inland penetration by ocean shipping into the eastern United States. This inland location results in the shortest rail and highway haul to the heavy industrial centers of the inland East and Midwest, as well as to the great agricultural areas west of the Allegheny Mountains. This shorter distance is reflected in lower costs for American goods and crops moving in international trade, thus assisting American manufacturers and farmers to compete in the world markets.

How important that ability to compete is becomes obvious when one reflects on the precarious status of the U.S. balance of trade, the weakening of our currency on the international money market, and resultant domestic inflation. The need for a strong, positive international trade position for our country is critical if an acceptable level of economic prosperity is to be maintained in the United States. A modern, efficient port industry is a key factor in achieving and maintaining a balanced posture for America in the international trade market.

The development program of the Maryland Port Administration is keyed to achieving what we believe to be its rightful position in the port industry of this country. We believe our planning is realistic, progressive, and in keeping with the needs of our State and the nation. At this point in time, however, we are experiencing increasing difficulties in obtaining Federal permits for essential new construction in the Port of Baltimore.

It is not my intention at this time to recite the growing list of obstacles that we are encountering in our effort to carry out a carefully devised master plan of port development.

Reminding you again that Maryland is a small State, and that our financial resources are limited, we have nevertheless been assured of adequate funding to

carry out our program. It is obvious that this cannot be realized unless a cooperative attitude is exhibited by Federal agencies now restricting our work. Without belaboring the point, it may be useful to illustrate what we consider unduly restrictive measures to the furtherance of our port program. Recently we found ourselves in the embarrassing position of having virtually completed a $23 million expansion of our terminal for containerships, only to find that the necessary approval for the disposal of dredged material in connection with this project was being held up. Utilization of this costly project was delayed nearly a year in an unproductive state, at a substantial financial loss to the Maryland public. How the necessary spoil disposal permit was finally obtained I will not reveal at this time, but I can assure you that it had little relation to sound planning of our coastal zone.

Recently, we have been called upon to provide a master plan of development of the Port of Baltimore in connection with a permit application for construction of a new terminal on land purchased from the Federal Government for the stated intention of just such construction. The master plan has been submitted, but the necessary permits are still being withheld at this date. We are disturbed by the fact that competitive ports of the North Atlantic range, and generally throughout the country, are not being required to provide such extensive planning in connection with their terminal construction programs. We view this as placing the Port of Baltimore at a competitive disadvantage, and I remind you again that the seaport industry of the United States is highly competitive. Further, we find it most difficult to reconcile the withholding of Federal permits with the policy announced by Dr. John L. Hazard, Assistant Secretary for Policy, Planning and International Affairs, U.S. Department of Transportation, who, speaking on behalf of President Nixon, called upon the port areas to expand their facilities to meet the tremendously expanding trade of the United States.

We recognize that sound port planning is essential to the orderly development of our coastal zones, and such planning has long received priority attention at the Port of Baltimore. In fact, the Maryland Port Administration has been repeatedly cited for the soundness and progressiveness of its overall port program. This important work is headed by Dr. Walter C. Boyer, Deputy Maryland Port Administrator for Engineering and Operations, who is widely recognized as an outstanding authority in this field.

In your consideration of the "Uses of the Coastal Zone," careful attention should be given to the projected growth of international trade. The planning of the Maryland Port Administration is carefully keyed into the most reliable projections that we have been able to obtain on expected future growth of world commerce. The real impetus of foreign trade expansion began about 1949, and there has been virtually no interruption since that date. This dramatic growth of world trade relates to both dry goods and petroleum. The 15-year period from 1950 to 1965 is illustrative of the increase in the exchange of goods among the nations of the world. Total world seaborne trade in 1950 was 525 million metric tons. By 1965, this trade had increased to 1640 million metric tons; and this increasing flow is continuing today, with no indication of abatement.

While much of this increase in world seaborne trade can be attributed to exploding world population, it must also be related to technological advances in all parts of the world. In 1950 the estimated world population was 2 billion, 520 million people. Relating this to the international movement of dry cargo, .12 tons of goods were shipped for each person. By 1967, the world population was estimated at 3 billion, 420 million people; and the cargo moved per person had increased to .24. Referring to the 1967 data of .24 tons of cargo moved per person, it will be noted that this was far below the American average of just over one ton per person per year. Clearly, if the standards of living of the

developing countries approach the American level, and the growth of world population continues, the demand on international shipping will continue to grow at an exceedingly high rate, with resultant demands for port expansion to accommodate this growth.

Referring to the United States alone, we find that our foreign trade in 1955, both dry and liquid, totaled 242 million tons. By 1967, this volume had increased to 416 million tons. Faced with depleting natural resources within the boundaries of the United States, it is logical to assume continued growth of international trade.

The Port of Baltimore, situated in the North Atlantic range, ranks as one of the world's great centers of international commerce. In 1971, the port handled over 24.8 million tons of export-import cargo, or 13.1% of all the foreign tonnage loaded and unloaded at the major American ports. Our most careful studies of future trends of commodities handled and world conditions indicate substantial growth for the Port of Baltimore in future years. Directly related to that growth is further port development. An important future project must be mentioned at this point:

Increasing the depths of the main shipping channels from Baltimore harbor to the open ocean at the Capes from the existing 42 feet to 50 feet, as authorized by the United States Congress. The impact of a project of this type on coastal zone planning deserves most careful consideration.

Again referring to the competitive aspect of the American port industry, it should be noted that the Port of Baltimore is currently expending over one-half million dollars per year in soliciting commerce throughout the world. A network of trade development offices has been established at key points in the United States, in the United Kingdom, continental Europe, and in Japan. A new trade development office will begin operation in Hong Kong on July 1, 1973. This cargo

solicitation relates directly to the physical development of the port and ties in with the overall objective of improving the economy of the State of Maryland.

In projecting future growth for the Port of Baltimore, consideration has been given to past trends and to the most responsible projections available. The population of the United States, presently about 210 million, is expected to increase to a minimum of 270 million by the year 2000, and conceivably as high as 330 million. Related to Baltimore's maritime commerce, this would provide the impetus for at least a 30% increase in maritime traffic over the next 27 years. However, energy demands are increasing at such a rate as to make the projected increase considerably larger. Overall, United States trade is expected to increase 100% between 1970 and the year 2000. Our more conservative estimate is that Baltimore's trade will increase on the order of about 80%. We see general cargo increasing at a rate of about 50% through the end of this century. This trend is consistent with our experience over the past 15 years. We believe that this goal can be realistically achieved if the necessary modern port facilities can be provided in reasonable consistency with demand. At this stage, we are naturally concerned about the difficulties we are encountering in obtaining cooperation from Federal permit-issuing agencies; but in view of the compelling overall reasons for port expansion, we believe that realistic planning of coastal zone usage will give full weight to the international trade picture.

We believe that it is important that the physical relationship of the Port of Baltimore to the overall Bay be weighed carefully in future planning. The Port of Baltimore provides a shoreline perimeter of 41.5 miles, encompassing a water surface area of 18 square miles. It is the unanimous agreement of Maryland officials that the highest order of use for this shoreline within the confines of the Patapsco River is for port development.

Since the Chesapeake Bay has a perimeter of 4600 miles (3400 miles, incidentally, in Maryland) and comprises 2200 square miles of surface area in the Bay proper, the designation of 41 miles of perimeter as the State's maritime workshop is exceedingly modest.

In concluding these brief remarks, it is desired to emphasize that the Maryland Port Administration, the State agency responsible for major development in the Port of Baltimore, is eager and willing to cooperate fully with all regulatory agencies in bringing about orderly development of Chesapeake Bay, in keeping with the best interests of the public.

Question: Is as much attention being given to increasing efficiency of existing operations as to the capacity of unloading as there is to the expansion of facilities?

Answer: Yes. I would say that probably that is the focal point of a great deal of our attention now, because of changes in the handling of cargoes, both liquid and solid. I think techniques have improved vastly. Facilities that were considered quite sufficient fifteen years ago are completely outdated.

Question: How are the ports on the upper East Coast handling their waste disposal problems?

Answer: That has received attention in the Maryland Legislature, and is also a matter of concern to the U.S. Coast Guard. There are strict regulations against any pumping of bilges or discharge of waste water within the confines of the Bay. Further, the Maryland Port Administration that I head is very much interested in this, because one of the responsibilities is the cleaning up of our port, and I think that responsibility, along with development and promotion of a port, belongs in the same agency. I feel that we have probably the best knowledge of the shipping in the Bay; we know the offenders. We have now good laboratory techniques to identify an offender who pumps oil into the Bay. We can identify the ship from the oil we see, and we follow through with prosecution. This is the State authority that is doing this.

Question: I think there is a total disregard for this particular environmental concern by the ships which come out of the Houston Ship Channel through Galveston Bay. I think they wait to get into Galveston Bay to pump their bilge. I think the Coast Guard is as lax in its enforcement as an agency in government can be and still survive. Do you get cooperation from the Coast Guard in that regard, or do you have your own enforcement, too?

Answer: We enforce through the United States courts; it's a Federal offense to dump bilge water in the Bay. We depend mostly on the United States Coast Guard for detection, although we do have our own people on the Bay, our work force, constantly watching for oil spills or the dumping of debris. The U.S. Coast Guard does an overfly over all the areas of the port and Bay and radioes back information. When we receive the information that there is an oil slick, we immediately dispatch a surface craft to the area. We have strategically located around the port styrofoam booms. We can find the oil slick; we then have what we think is the most modern craft of its type to go in and clean up that oil before it can disperse throughout the Bay waters or the harbor waters. Currently we are doubling that equipment and putting it on a 7-day week. In the past, my budget just permitted 5 days of operation; but the Legislature has granted additional money so that this could be a 7-day-a-week operation. And of course, when an oil slick has been detected and the clean-up process itself begins, we continue it around the clock until it's cleaned up.

Question: How do you handle regular sewage at the dock? Does it ever flood directly into the channel?

Answer: At this time, there are no uniform restrictions on the sewage originating on ships. This is very serious, but there is, as you probably know, a Federal rule coming out now to the effect that they all must install holding tanks. All the new ships now have holding tanks. I'm glad you brought that up, because it's not only the commercial ship that is the offender here. If you happen to be in Maryland over the weekend, you've probably noted that there were some 50,000

pleasure boats on the Bay last weekend. Now 50,000 pleasure boats, with possibly 4 persons per boat, is a 200,000 population there. I know of very few pleasure boats, even the most elaborate, that provide any kind of holding tank for the sewage and waste originating on those boats. This is a source of pollution that certainly ought to be looked at.

> *Question: Are your dockside connections connected to the city sewer line, or do you flush directly into the Bay, as we do in the city of Galveston?*

Answer: I'm happy to tell you that from the time we went in, every facility we have built goes directly into the city sewer system; and also the old facilities that we took over, we immediately hooked up. Further, we issue permits for construction, and we will not permit any construction that does not provide completely satisfactory sanitation facilities.

Dr. Johnson: In our consideration of research in the Chesapeake Bay area, one of our concerns was knowing what the priority of problems might be. We conducted some surveys and some analyses with responsible officials in both Virginia and Maryland and the Federal agencies. It's quite clear, however you try and calibrate the arithmetic, that, at least in this analysis, the sewage disposal problem around the Bay is the single most important problem of the Bay as a whole. This pleasure craft business is certainly a contributing factor.

Mr. Stanton: All of your modern planning among port executives calls for control of the disposal of sewage by ships. I believe your people will tell you that the Coast Guard is now in the process of enacting rules prohibiting the dumping of sewage from ships in any waters. They will all have to have holding tanks. I do think it's important, however, that the agency that has the commercial interest of ships operating in its area should also have the responsibility of cleaning up, because this gives you a very definite motive to see that the ships operate in a clean and sanitary manner. I know that when we're spending a very substantial

amount of money on craft and crews to clean up the harbor, our interest is, let's say, a little sharper in seeing that the ships obey the laws.

Dr. Johnson: This is a clear and important problem in a great many places, and some of you who relate directly to port administration may wish to pursue this with Mr. Stanton and benefit from his experience. It's my understanding that the Navy has given some consideration to removing those old battleship hulks from Pearl Harbor. After this many years, it's not at all obvious that removing those wrecks would be a benefit to the environment or the reverse, since those are now stabilized habitats.

Question: How are dredge spoils disposed of and sited, and are there other port authorities on Chesapeake Bay?

Answer: At this time, the disposal of spoils, dredge materials, is the most crucial and the most perplexing problem faced by the Port of Baltimore and by Maryland interests. The only other port district of significance would probably be down at Hampton Roads, which is outside the State of Maryland, and I cannot speak for that. We have proposed, and the Legislature here in Maryland has agreed, and authorized a sum of money for the construction of a large oil disposal area in the area just north of Baltimore, just outside Baltimore Harbor, for the receipt of spoils. This would create a large island. It's our contention that this island would be a very useful public place for parks, picnicking, boats, etc. It would provide a receptacle for dredge material for at least 20 years. Despite the fact that this seems to have obvious advantages, a confined area that would not permit spoils to be dissipated throughout the waters of the Bay, that it would have the benefit of constructing land that we think would be recreationally useful, we have received all types of opposition on that. The Legislature authorized this spoil disposal area in 1969 - we still do not have it. And as a result, many of our big projects, major projects of great need, are being held up

because it cannot find a place to dispose of the dredge material. There's been a general edict against our disposing of it in the deep areas of the Bay as we've done for over 100 years; and as a result we cannot get rid of it.

Question: Why not try land disposal?

Answer: There, too, you run into problems. If this material being dredged is obnoxious, they don't want it on shore either. The other fact is a very pragmatic one, and that is that the constant disposing of spoil on shore can run from 10 to 20 times as much as it can in the water. Economically, you simply cannot afford to do it. The cost of a project just goes through the roof and you have to set it aside. The thing is not economically viable. So today, our biggest problem is the disposal of spoil material. Our ultimate solution is the creation of this large dike in this declined area. But here again, there are ecological objections. You have aesthetic objections to the creation of such an island in the Bay, and others I would say that are simply done by the product objectives.

PLANNING FOR THE COASTAL ZONE WITH CONSIDERATION FOR THE SITING REQUIREMENTS OF ELECTRIC UTILITIES

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1. COASTAL ZONE MANAGEMENT AND POWER PLANT SITING

Many coastal States have either passed and implemented or are drafting power plant siting legislation. The State bodies created to administer the siting legislation, in most cases, are directed to seek a balance between the mandate to minimize the environmental impact of proposed facilities and the need to provide adequate and reliable power at reasonable cost. Several laws now on the books provide for a one-stop site approval mechanism, following full opportunity for public participation and review by concerned governmental agencies. While specific permits under clean air and clean water laws may still be required in many jurisdictions, it is believed that the achievement of a "one-stop" siting mechanism at the State level is in the best interest of all parties. The existence of such a mechanism should simplify the "meshing" of future coastal zone management programs with the planning process of the utilities and the regulatory activities of State siting agencies.

In passing the Coastal Zone Management Act of 1972, the Congress gave explicit recognition to the need for power plant siting. This is reflected in Section 306 of the Act, the Committee Report on the House bill, and the Conference Report on the Senate bill which eventually became the Act.

Thus to qualify for administration as well as for development grants, a State must demonstrate to the satisfaction of the Secretary of Commerce that the management program will be consistent with specific requirements of Section 306, including the provision for

> *"adequate consideration of the national interest involved in the siting of facilities necessary to meet requirements which are other than local in nature"*

This provision of Section 306 of the Act found its genesis in the committee Report No. 92-1049, accompanying House Bill H.R. 14146. On page 18, it sets forth the requirement:

> *"(8) that the program takes into consideration the national interest involved in the siting of facilities, such as power plants and transportation facilities, which may be necessary to meet requirements other than local in nature,"* (Emphasis added)

In addition, there is the following wording:

> *"...To the extent that a State program does not recognize these overall national interests, as well as the specific national interest in the generation and distribution of electric energy, adequate transportation facilities, and other public services, or is construed as conflicting with any applicable statute, the Secretary may not approve the State program until it is amended to recognize those Federal rights, powers, and interests."* (Emphasis added)

Conference Report No. 92-1544, which accompanied Senate Bill S.3507, which became the Act, contained the following language on page 14 with respect to the same requirement:

> *"...In addition, the Conferees accepted the two additional items required by the House in State management programs, the first as to adequate consideration for the national interests involved in the siting of facilities representing regional or national requirements, and the second relating to inclusion of procedures whereby specific areas may be set aside for certain listed purposes. In each case endorsing the rationale for those inclusions as contained in House Report 92-1049."* (Emphasis added)

2. COASTAL ZONE MANAGEMENT AND STATE LAND USE PLANNING

Under proposed Federal land use policy legislation, each State will be required to develop comprehensive land use plans with particular emphasis on areas of critical environmental importance and facilities of regional or State-wide significance. Coastal zone management and State-wide land use planning will have to be carefully dove-tailed from the outset, in order to allow the utili-

ties to introduce their future land requirements into the public planning process with adequate allowance for facility expansion lead times.

I note in this connection I read a newsheet called "Land Use Planning Reports," which comes out of Washington, and refers to developing legislative process. In it I find quoted the Director of the Interior's Office of Land Use and Water Planning, Mr. Marston - who is here - who stressed that separate coastal zone management and land use planning programs operating under different sets of guidelines and regulations, under different laws and different Federal departments "would create a nightmarish situation." I can only endorse this statement from the utility industry's point of view. Furthermore, I am concerned over the fact that the Environmental Protection Agency, in carrying out its mandate to control complex sources of air emissions is, in my humble opinion, rapidly moving to the land use planning business itself, with its own rules and regulations, so as to throw a third level of land use planning in the way of those who must do the functional planning on their own.

In my emphasizing the adequate allowance for facility expansion lead times, I would like to point out to future coastal zone managers that they should give early recognition to power plant sites that are in the inventories of utilities as they are reported, depending on what their jurisdictions are, and their ten-year forecast to State agencies, and their forecast in their reports as part of the reliability counsels to the Federal Power Commission. These inventories must be reported in the various jurisdictions in various ways. They represent the inventories that the utilities have, and they should be given early recognition, even though all of these sites inventory may never be used for technological or environmental reasons. But it's important to give recognition to them, because under the guidelines of NEPA, as implemented by either the Federal Power Commission or the Atomic Energy Commission, as you know, the utilities are required in great

detail to submit evaluations about tentative sites when they propose a specific site for a license or a permit or a siting organization. So it's extremely important that these alternatives be recognized in the inventory and in the process of management planning by the coastal zone managers, because otherwise the applicant, the utility working under one set of guidelines, will have a problem justifying that this inventory of sites is in another agency's management plan.

3. IMPORTANCE OF COASTAL ZONE TO MEET FUTURE SITING REQUIREMENTS

The Coastal Zone Act of 1972 and its implementation are of considerable importance to the electric utility industry for a number of reasons. It is a fact of life that many identified power plant sites that are capable of meeting system, technical, logistic, and environmental requirements are located in coastal zones, on estuaries, and on the Great Lakes. If a utility is precluded from using a coastal site, alternative options are inland sites, where the availability of cooling water can be a serious problem, land use and otherwise. Furthermore, certain inland locations will give rise to the need for extended transmission corridors from the site to the load centers, which in many coastal States are to be found in or near the coastal zone.

The Coastal Zone Act emphasizes that it is national policy to encourage cooperation among State and regional agencies, including the creation of agreements, procedures, and joint action, particularly regarding environmental problems. I should like to recognize that in our geographical area, namely southern New England, there is now a regional planning process surrounding a coastal zone going on. This is, namely, the Long Island Sound Study of the New England River Basins Commission, in which that Commission, with its Federal and State participants, is trying to isolate both the environmental problem areas and the future uses of the coastal zone as best it can; and it seems to me that in many ways in our area, because of the Long Island Sound Study - a 3-year study well under way -

future coastal zone managers are going to have to dove-tail their work with that of the River Basins Commission. As utility planning is less and less capable of being limited to the territory of a single State, it is essential for coastal zone management planning bodies to be regionally coordinated as well. The electric utility industry is becoming increasingly involved in regional planning through regional power pools, and in coordination of planning on an even larger geographical basis through the nine electric reliability councils, which cover the whole country. It is to be hoped that coastal zone planners will make it a practice to invite representatives of the utilities and their regional groupings to discuss regional power planning procedures and processes.

4. CONCLUSIONS

In conclusion, the Coastal Zone Management Act of 1972, and the way it will be implemented, are of great importance to the electric utility industry. It is essential for future coastal zone managers to acquaint themselves with the industry's long-term planning tools and with the technological alternatives that are available for decision-making purposes, and of their environmental implications within and beyond the coastal zone.

Finally, recognition should be given to the regulatory mechanisms within which the utility industry now operates, and to the essentiality of working towards reducing the regulatory lag, so that site planning and agency review can be performed under less stringent time constraints than prevail today, and thus give all parties concerned an opportunity to make a meaningful contribution to the planning process.

Question: What would you think about consolidating land use and coastal zone planning in the Department of Commerce?

Answer: I'm probably not the fellow to comment on that, since I'm not in government myself at this time. I am concerned, since both programs are really programs

to funnel grants and to provide directives to the States. I am more concerned as to how these separate programs at the Federal level are finally carried out at the State level. Of course, I immediately then proceed from my own problems in my own area, and at this point, I don't have the national overview. I'm satisfied that these separately funded and separately directed programs at the national level are reasonably well and centrally implemented at the State level, whether it is in the land use planning agency at the State level, or the coastal zone management agency at the State level, or if the two are combined. If the body that carries these out works closely with us in terms of our values, then really I have no problem. I think my concern is that the States see the problem of separate funding at the Federal level and do something about it.

Dr. Johnson: Do I understand your concern to be the effectiveness and the number of administrators that your utility industry would have to relate to, rather than the label they may carry?

Answer: We are constantly trying to see to it that we work with capable people, but with fewer people.

> *Question: A number of States now have a power plant siting act. I wonder if you could address, from the utilities viewpoint, which of these are most effective in addressing the regulatory problems?*

Answer: I'm probably not the best person to comment on this, because I am not up to date on all of the States' power plant siting acts that have been passed or implemented in the last two or three years. The process is moving so fast, so many new laws are being passed, that I'm just not up to date. I know, for example, that in Florida they passed a law recently; but unfortunately I haven't even seen the law myself, so you'd have to ask someone who knows more. We have the laws in a number of States that have been in effect long enough that you can begin to see how they work. In most cases since State power plant sitings are so recent, you really have to say that the experience is not as yet in to be able to say what the problems with them are, etc.

Mr. Knecht: A brief comment on the earlier question - not with regard to Commerce taking over both programs, I think I'll leave that - but the question about whether or not anything done at the Federal level will cause States to fragment their response and develop separate administrative structures that would not be helpful to the total process. The guidelines that we distributed yesterday, which are now available for the first phase of the coastal zone management program, speak to this question and provide guidance to the States with regard to their organizational response. I would urge you and all the other industry people to look at these guidelines. If they are inadequate in that respect, please comment and make suggestions. They have been drafted, though, to be as flexible as possible to encourage States to take a comprehensive approach to the problem, and recognize all of its aspects. We want to try and achieve that.

Dr. Johnson: We have been considering commercial uses in the coastal zone; and we have taken up the issue of shipping and port administration; and we have heard from the considerations that the utility industry poses. We have one more question before we go then to Mr. Fraser and a consideration of second-home development and other kinds of commercial recreation development.

> *Question: I was interested in the compatibility of the time frames that are being used in planning groups. Specifically, I refer to planning and the general reluctance on the part of the State agencies to really do any comprehensive planning beyond certain political terms of office. How do you see the resolution of these problems?*

Answer: I will now give you a personal view, rather than an intuitive view, because the answer doesn't lend itself to any industry's response, at least in my view, anyway. I feel that it's terribly urgent for the States to accelerate the inventory and resource and land use planning process, and to include within that all the facilities of critical importance, regional importance; because until such time as the public agencies which either are our regulators or are

those who must professionally comment to our regulators on the kind of planning proposals that we submit, you aren't going to have an equivalent in the quality and thoroughness of the evaluation of the land use planning proposals and their environmental implications. I would like to add to that one terribly important point, from our point of view. In proposing new facilities in our industry, we must document needs. There are many things that go into needs. One thing in need is the growth, to pose the projected growth, in this time frame of 10 years. And as Mr. Bill Reilly of the Land Use Task Force of the Rockefeller Brothers Fund said just a few weeks ago in presenting the Use of the Land Report, there is a "new mood" in the country - a "new mood" towards slowing things down. If he's right, then that "new mood," that concern - if there is a concern - has to be expressed in terms of publicly provided growth guidelines. I noticed just the other day that the Governor of Illinois is about to approve a population projection for the State of Illinois that is going to be a guideline for all State agencies in justifying their projects. At the present time, we make a forecast of population which is going to be one of the many ingredients in forecasting demand for power, and everybody comes down on our head as to why we made the assumptions we did. We would like the responsible public officials to make forecasts of the rate of growth for all purposes - highway planning, housing planning, utility planning - so we can all agree on the demand ingredient that is needed, and then proceed to the more important question of how to meet the demands with environmentally compatible facilities.

COMMERCIAL USES OF THE COASTAL ZONE:
PORTS, SHIPPING, POWER, AND LAND DEVELOPMENT

Mr. Charles Fraser, President, Sea Pines Plantation,
Hilton Head, South Carolina

It's been very pleasant listening to the multiplicity of views being expressed on coastal zone management. I've begun to turn down all requests that I give a speech at a symposium being held at XYZ College on a one-day session on "How Do We Use Our Land In America, and How Do We Handle All Our Land Use Problems," because I'm sure that each of us here can expand on each one of the presentations that have been made, and make it into a 3-week session.

What information is really needed to develop a rational and comprehensive plan for the human settlements in the coastal zone? What are the policy issues involved in these human settlements? What are the proper goals of government agencies in regard to the human settlements? This month's Smithsonian Institute Magazine provides the startling statistic to me that 50% of our population is now concentrated in the coastal counties of the Atlantic, the Gulf, the Pacific, and the Great Lakes. All of us are aware of the enormous natural pollution that this concentration of population has brought about; and many of us are concerned with the visual pollution - the billboards, hamburger stands, the junkyards, and hundreds of other items that pollute the shoreline. Some of us are offended by a cabin; others by a tent; others by a motor home; others by a mansion; and others by a high rise. Take your pick as to what is pollution. Take your pick as to what is bad growth. The fact of the matter is that when Americans take their vacations, 70% of them, more or less, head for these same coastal areas.

It is not population growth, it is not a shorter work week, but increased income of the middle class American that has crowded our shorelines. Those of you who are familiar with the statistics of the change in the population mix by income class in each of the last three censuses, after adjustment for inflation,

are startled by the figures. For example, the last fifteen years alone, the market group to whom the Sea Pines Plantation at Hilton Head Island was directed has literally increased in number, after adjustment for inflation, 10 times. What is crowding the shoreline? I've only seen pictures of Coney Island, at which in a space no bigger than this on the beach there would be at least this many people, and yet today at Sea Pines Plantation there would not be this many people in four miles of shoreline, and there would be those who would consider it crowded.

The United States Government owns some 20 miles of beach front along the Georgia coastal islands, and I doubt that an audience as large as this of private individual vacationers will visit all of those 20 miles during their entire summer; and a proposal that this many people go camp on the beach at one of the places might set off great waves of worry. What is our tolerance level of crowds? We can stop the growth along the coast by various methods. We could set up control points around the Washington metropolitan area, establish machine gun points, let the Mafia raffle off permits to leave town. Once a decade you can go to the High Sierras; once a year you can go to the Maryland shore; once a month you can go to a local lake. That won't work very well. We can add to our public parks; but most public parks today are generated visits from their immediate area, because we are increasingly opposing motor homes, commercial campgrounds, and certainly motels in our public recreational areas.

That word "public" is a tricky one. We seem frequently to think "public" areas are those places owned by a government agency where large numbers of people go; and "private" areas are those places not owned by a government agency where a very few people go. And this is correct in certain instances. For example, once more using the Georgia coast. (I sometimes dare not talk about South Carolina, because when I do, I get angry letters from people who think Myrtle

Beach is beautiful; and they point out that I am a Parks Commissioner for South Carolina, and have been a Parks Recreation and Tourism Commissioner for South Carolina, and when I say nasty things about any South Carolina development, I'm not doing my duty wearing my "tourism" hat.) So I'll use the Georgia coast. All of our companies' communities are outside of the Georgia coast - in Florida, just below the Georgia coast, or South Carolina, just above it, and we're in North Carolina planning a tent compound 11 miles across the border. The Saint Catherines Island, a magnificent island, Sapelo Island, a magnificent island - miles and miles of beaches. Probably 10 people crowd them up; and probably 100 different people enjoy Saint Catherines in a year's time. Jekyll Island is enjoyed probably by 5,000 different people every week; and yet when it is suggested in Georgia that another island go to the Georgia Parks Department, there are loud screams that no, we don't want another Jekyll, all crowded up with people.

There was an interesting dialogue that John Mac Phee wrote down when he was writing a profile on David Brower and myself and a couple of other people in The New Yorker, at which the instant reaction of David Brower, the former Executive Director of the Sierra Club, to the 20 miles of shoreline of Cumberland Island, was that you could take 10% of that 20-mile long island and put a settlement, a human settlement, for 20,000 people in 10% of it, and those 20,000 would earn the right to privacy by how far down the beach from that 20-mile settlement they were willing to walk. A person who wanted true privacy of three or four acres for themselves could walk 12 miles and get it; a person who didn't want much privacy could walk half a mile and share an area with a large number of other people. An interesting concept. But it was horrifying to one of the participants, who regards one person per mile along that shore as a dangerous thing.

So I predict that when the National Park Service begins to propose plans for public use of Cumberland Island, long sought as a national seashore area, there

will be enormous pressures not to let many people use it. Let them go "somewhere else" - where is the "somewhere else"? At this moment in time, the safety valve for the pressures of the population desiring the seacoast vacation is, in fact, the uncontrolled, raw, boiling, and often ugly privately owned public beaches. At the public beach of Myrtle Beach, every inch of which is privately owned, there are today more people spending the night than are spending the night in our national parks. The National Park Service is only given funds by Congress to hire 13,000 year-round employees. Disney World alone employs more than that. Congress, in its wisdom, gives the National Park Service 35¢ a day per person to look after our national parks and to provide a free interpretive experience of our great wildlife and our great natural resources. I guess the Fish and Wildlife Service maybe gets 1¢ a day per visitor.

Literally, we've got a weird problem, at which the public property (Blackbeard Island, off the Georgia coast; Warsaw Island, off the Georgia coast; Cumberland Island, off the Georgia coast) are ultra-private. You are not permitted to go there, except under very special and highly regulated conditions, so that in fact the number of people who go is a tiny fraction. The number of people who want to go are measured in the millions. We restrict at our companies' places; Sea Pines Plantation has most of its shoreline restricted to 2-story buildings. You can't put many people within a qaurter of a mile of the shore in 2-story buildings. I have enormous antagonism to anything above 6 stories - this is where I blow my cool. A great dilemma here is that in setting up our regulations for the coast, in setting up our restrictions and what do we ask for, you can ask for those things that will give you excellent reasons to be a secret anti-public visitor person. There will hardly be a regulatory agency established by any State that will not have several staffers who think that one person on a beach is too many, unless it's him and his girlfriend camping out. And he will find every possible reason to say no, or to ask for more and more studies.

What is involved in some of these studies? I had some very interesting dialogue and discussions over an 18-month period with the consulting firm of Wallace, McCogg, Roberts and Todd, who are doing the planning study for six miles of Florida shoreline, a project of our company. I think that particular study is going to wind up with enough honor awards and certificates of excellence to pay for the walls of the Wallace-McCogg firm - they seem to get a new one every two weeks. We watch in some wry amusement, because the human planning and the human studies never got done. We studied the life of the snakes, the frogs, the very important erosion problems up and down the coast; we studied all manner of archeological sites; we studied drainage and soils; we studied wind currents, and on and on and on - the stacks are beautiful. The maps explaining that take some day-and-a-half to go through, and most people are left in a daze, but we never got around to really asking the question how many of the American people who want to go to the shore for the next 20 years should this place be designed for? Should this be designed for 5,000 a mile; 1,000 a mile; 50 a mile; 50,000 a mile - what is the responsible role of a private user or a State agency in allocating vacation time along the shore?

If we don't permit growth in response to economic demands, then we force the pricing mechanism to say to many, "You can't come," or the most sophisticated reservation-makers to make their reservations two years in advance. If we let any jackass that wants to take a natural community of 2-story houses such as exist on many of our coastline areas which have water systems and sewage systems and road systems designed for low density, and let him come in with a blockbuster and put in a 25-story condominium that produces more cars, more sewage, and more water by a 5-fold multiple than the entire community's prior development over a 40-year period, you create real problems. You do, indeed, however, help absorb the number of people who want to go to the coast.

These are the real issues, in addition to the scientific, biological, botanical, and geological issues. So I would suggest that in framing your approach to use of the land behind the shore, that you ask such questions as, "How many residents, in terms of number, is that section of shoreline being planned for on a year-round basis?" "How many transients are expected to spend the night there in the peak in that area - 5, 10, 50 years ahead?" "What are the collateral recreational facilities to which land will be allocated as proposed allocation - tennis, marinas, parks, green spaces, bank areas?" "What is the measurement of the infrastructure - the sewers, the restaurants, the water, the roads?"

If you establish that the role of the larger group is to deal with the question of density of areas, and leave to the local administration the question as to whether or not the buildings will be red or white, 6-story or 2-story, whether motor homes will be permitted or not; they all use the same highway, the same sewer, put the same load on the public facilities; but is appropriate and it is proper that the issue of how many people and what sort of seasonality is an area being planned for. Because otherwise it is impossible for public agencies and others to do that planning. You have to plan for traffic; you have to plan for water; you have to plan for sewage; you have to plan for public services of a wide area.

So it is utterly essential that those questions, as well as the questions of botany, geology, limnology, be asked. It is very dangerous, also, to project from simple past statistical curves, because they blow through the roof. I know of one area that over a 10-year cycle grew at a rate of 7%; the next 5 years it grew at a rate of 50%; the next year it grew at a rate of 80%. This sort of curve line just defies all prior calculations. We are attempting to develop a computer simulation which will take into account the total pulsing through our communities of an additional hundred families coming in as vacationers. What is the pulse of

that hundred families as it richochets through hospitals, restaurants, roads, recreational facilities, trash collection, maids, the policeman down the street?

It's simple with us, because we're dealing with a narrow, finite environment that we can control more or less; but once you hit the broader areas, where you are trying to deal with a whole city, or a whole county, where there are 10,000 different conflicting private interests - some of those private interests being your neighboring government agency - each one ready to sandbag you at every opportunity, and often the private sector is guilty of ignorance and desire for financial greed. The government sector is guilty of ignorance and desire for power and authority.

The concentration of power brings simplicity - if you put all of the authority to make all of the decisions in one State agency for all land use and coastal use in your State, it would be a very simple thing. The man in charge could make the decisions; he would be very pleased with the power which it gave him; he would speak of the public good; he would speak of the need to respect the public welfare; he would know what was good for the State. The Ports Commission can go soak its head; he knows we don't need that - the environmentalists can go soak their heads, they're just a bunch of noisy long-hairs; the Parks guy is just a bureaucrat; and this one central man could act with genius, with brilliance, with understanding. We've seen the end result of that type of structure in the past; the history of the human race is loaded with the effects of that type of structure - power corrupts, and absolute power does certain things.

We don't even need to mention some of the more recent events of our nation to pause to reflect on the concentration of power in the hands of honest - in the sense that they don't take bribes - public spirited people - in the sense that they think they're carrying out the will of God. Popes have done it; Cardinals have done it; staffers have done it in black Cadillacs. It is one of the most excruciatingly difficult problems that we'll have to face as a nation.

I would suggest, though, that the simple solution of the Persian tyrant in chopping off hands and heads, the simple solution of breaking in an office, the simple solution of the instant mass moratorium (because you've suddenly realized that all of the Government agencies have not done their job for the past 10 years, and things are out of control, and you'll exercise executive, administrative and legislative power to say to the people that you represent: "stop doing everything that you're doing, and go in an icebox for 3 years while we try to sort things out; stop building the power plants; stop building the ports; stop building the schools; stop building the vacation parks.") - that the "instant moratorium" solution, while it has the surface plausibility of responding to a clear and apparent national security danger, is perhaps in the same level of abuse of power for honorable intent in the interest of our nation that one can think of. It's an immensely tough task; it should be approached with all of the wheels cranking for the next 5 years, pulling together all the facts, making the regulations. But don't seek a simple instant solution, either through an instant moratorium, or instant ecology, or instant ports, or instant power.

Question: You drew a contrast between two islands along the Georgia coast, Jekyll Island, which apparently is used very heavily, and Saint Catherines Island, which apparently is used very sparsely. From what I can gather from the description, they're both public beaches?

Answer: Warsaw Island is a publicly owned beach; Blackbeard Island is a publicly owned beach; Jekyll Island is a publicly owned beach. Saint Catherines Island is privately owned, and not open to the public any more than the Federal Government's Warsaw, Blackbeard, Cumberland, are open to the public. They are all, in effect, and for all pragmatic purposes, closed to the public. Warsaw Island had been designated on the city/county planning maps of Chatham County for 20 years as a hoped-for acquisition for a country beach park. It had been owned for 100 years by a private family who did not want it to be a public park; but their taxes

were rising. So they sold it to the National Conservancy for $1 million, who conveyed it to the Fish and Wildlife Service, the Division of Sport Fisheries and Wildlife, who agreed to keep guards there to protect this estate from intrusion for the next 40 years. So it is a very interesting private estate, protected by Sport Fisheries, and the county didn't get its part. Many people think this is absolutely great; because the forests there are beautiful, and the citizens of Savannah and Chatham County are pretty crummy people anyway - we don't want to let them in. You can tell where my biases are in that situation, but it was a legitimate issue of public policy. Is this a county park, a State park for 10,000 people on Saturday afternoon in the summer, or is it a Sport Fisheries estate arrangement?

> *Question: Do you have any suggestions as to how you might compromise this situation of getting a reasonable amount of public use without causing any environmental detraction?*

Answer: People destroy the environmental attraction for some other people, even if they don't touch the environment. All of our studies show if the ecologists are doing their job, that the wet beach covered by the daily tide is one of the most undestroyable elements. The human body does not destroy that beach. And yet 100 people in one patch of beach sends many people into orbit. If you suggested to Sport Fisheries that 1,000 people should be permitted on the beach - not on the sand dunes, on the wet beach - every Saturday afternoon, I'll bet you would get a whole series of arguments as to why it can't be done, why it shouldn't be done. My own feeling is that in each coastal area we should designate areas for continuing wildlife; designate areas for intensive public park development in our national seashore concept; designate other areas for controlled private development whose densities are regulated.

RECREATION IN THE COASTAL ZONE - PART I

Mr. Roland C. Clement, Vice President, National Audubon Society

Mr. Chairman, ladies and gentlemen.

My talk, which I hope you'll read later, makes an attempt to show that it was possible to be rational in planning our use of the coastal zone. I feel so defensive about that possibility after this morning that I'm going to truncate the whole thing and let you look at it later. Because at my age, it's much more important to reclaim old friends like John Gottschalk than to make new ones. So John and I have agreed to split the last 15 minutes - I'll take 7 1/2.

I think perhaps the crux of my 50 years of experience is that unless you are extremely careful, the "givens" you accept will screw you every time. This is the hell of being a planner, because other people determine the "givens" for you. Even so, I am considered an optimist in the environmental movement, because I continue believing that if we work at it we can perhaps solve some of these problems by bringing them together.

To give you one illustration of that possibility which is applicable here, I want to tell you very quickly about what's happened to the wildlife conservation movement in the last 50 years, or even a bit more; because you may remember - and this, by the way, has to do with the commodity buyers - that distorts all of our thinking whether in the coastal zone or elsewhere when it comes to the utilization of natural environments.

In colonial America, wildlife was valued because it provided food and clothing; and then when we learned to substitute for natural products through commercial production, we valued wildlife for the recreation or the sport it provided; and we measured this in manhours of recreation provided or extracted from the resource. This was still the case when I was in college some 30 years ago or so. But at the North American Wildlife Conference which was held in Washington last

March, there came about a tremendous dividing line in philosophical outlook, and it was fascinating that the two points of view were juxtaposed. A North American Wildlife Policy, or Game Policy, was brought up to date by one group; and in another room the same afternoon, a whole different group of young sociologists analyzed what was really happening to the country, and they showed that even the sportsman today is interested in multiple satisfactions when he goes outdoors.

And now, therefore, we're moving from the commodity buyers of counting man-hours of recreation to counting or trying to measure the quality of the recreational opportunity we're providing. I'm optimistic, because at long last the economists are catching up with some of these problems; and I want to introduce you to a book published by Johns Hopkins University Press - a book called Natural Environments - Studies in Theoretical and Applied Analysis. This is where you need to look for the new look in analyzing the significance of natural environments from the viewpoint of contributing to the quality of life of the public. One of the theses of this book is that the values of natural amenities involved in the natural environment - whether it's the coastal zone or something else - these values are growing, because these resources are becoming scarce, and because the well-being of the majority of the people is increasing. So that as income increases, we value amenities more than ordinary production. That means, therefore, that we must reserve the scarce resources if we're going to make the best investment for the long run. This was mentioned this morning, that the big problem is to try to get the public, both individually and socially, to accept the long-run point of view in looking at these investments that we're making every time we plan and commit something.

The other side of the coin is that if you have any faith at all in technology, technology will make every present application obsolete in a very short

while. And since, therefore, the natural amenities are growing in value, and technology makes obsolete the commercial and land use commitments we're making at the present time, we have, therefore, the responsibility - if we're going to be rational - to reserve as much as possible of the present-day environmental natural amenities for the future. This is because they will provide satisfaction longer than any other commitment you can make, and because the satisfactions they will provide will grow in time.

So at the present time, let me sum up by suggesting that the conflicts over the use of land, more particularly in the coastal zone, are functions of incompetence, relative to the optimal use that we ought to be able to make. Of course, this incompetence is the result of the general ignorance of the values inherent in the coastal zone; a function of social inequities in our system; income disparities, for example, that make a lot of people squat where they shouldn't be, either for their own long-term benefit or for the social benefits involved.

So these are the things that we have to cope with. It's a big job; I think we may be able to do it if we get together and struggle like hell. But most of the things you've been talking about are impossible unless at the same time - without declaring a 5-year moratorium, if you please - unless at the same time we struggle to develop a master plan which will agree that we have reached saturation in many respects in this country, population-wise, growth-wise, and in other ways, and develop a plan that we can then adapt to. Because in the absence of a master plan, if we continue growing from below, it will disrupt everything; and we will simply be spinning our wheels and everything will be sacrificed bit by bit. This is the result of 50 years of thinking, ladies and gentlemen. Now, I turn you over to John Gottschalk.

RECREATION IN THE COASTAL ZONE - PART II

Mr. John S. Gottschalk, Executive Vice President,
International Association of Game, Fish, and Conservation Commissioners

You know, it's bad enough to be the last speaker on the program; but you really have a terrible handicap when you follow both Charlie Fraser and Roland Clement. Roland has the facility of pulling together all of his years of experience and speaking in such a manner that it's a very easy thing to distill all these ideas and get them out in a few words. I might try to do the same thing if it were not for the fact that the preceding speaker, Charlie Fraser, made some remarks that almost completely discombobulated me. I was the Director of the Bureau of Sport Fisheries and Wildlife when we accepted the gift of Warsaw Island. It tempts me greatly to spend the rest of my time explaining or justifying what we did.

So the only point I think I have to make in reference to this question of the present management of Warsaw Island - I would make this comment, that Charlie had one thing wrong. He said we were going to lock it up, in effect, and not try to use it. The fact is that we had a plan for low-density utilization. We were going to encourage people to come out there. We had plans for a ferry system that would get several hundred people out there every day during the week, and several thousand, hopefully, on the weekends. But Charlie was also right that there was another "given" involved, and that was the ability of the Bureau of Sport Fisheries and Wildlife to get the appropriations to carry out the job. I don't know what the dollar expenditure per capita of visitor to the national wildlife

refuges is today, but when I was the Director several years ago, it was somewhat less than 10¢ per person.

We didn't have very many facilities; we didn't have very many people looking after them; and I think we were only taking care of about 15-16 million people a year on the wildlife refuges for recreational purposes. Which in my estimation was a small fraction of those who could have been brought out to the wildlife refuges and given a worthwhile recreational experience - which would have helped them to understand man's relationship to the natural world, and in great measure succeeded in achieving the ultimate objective of the wildlife refuge system. Which is not necessarily to say wildlife for its own intrinsic value, which is in my opinion a very valid objective by itself, but to utilize the refuge system to enrich the lives of American citizens.

Any discussion of recreation plunges us immediately into a shadowy world of pre- and misconceptions, questions with assumed answers, questions with no answers, and a general feeling that while recreation is an indisputable fact of life, it somehow ranks several levels of importance below the economic, social, and psychic stimuli that motivate and power human activities. It is the purpose of this paper to review recreation as a factor of prime importance in coastal zone management, to suggest some considerations essential to effective coastal-use planning, and to urge recognition of the dependence of coastal zone utilization upon a sound ecological basis.

The rapid growth in man's use and enjoyment of the coastal zone is now so well known that it need scarcely be re-emphasized. Always important as a source of seafoods and transportation, the use of the lands' edges has grown with man's increasing affluence and mobility. As an indication of the magnitude of the use for recreation, one has only to project one's vision a few miles to the eastward, where the State of Maryland is building its second Chesapeake Bay bridge. When

we first came to Washington 22 years ago, the Bay could be crossed only by ferry, and the Eastern Shore was a little-known haven for watermen, vacationing diplomats, sundry other gentry, and increasing numbers of beach addicts. Ferry waits of ten hours or more were common on summer weekends. Two decades later, in spite of the bridge and four-lane roads, we still have traffic and "bridge jams" every weekend. Even with crossing capacity expanded from two to five lanes, one suspects that in another five to ten years the same problems of congestion will exist.

The kinds of recreational uses to which man puts the continent's coasts are well known. Sunbathing, picnicking, sight-seeing, fishing, boating, and nature study comprise the list. Entertainment facilities built to satisfy the demands of the resort patron may become an end in themselves. On a recent rainy weekend, the newspapers reported as much activity at Maryland's Ocean City as would have been expected had typical beach weather been forecast. Presumably, the night life and "high" life are now significant attractions in themselves for the entertainment or diversion-seeking visitor.

This phenomenon raises the first crop of unanswered questions: To what extent do people have a real dependence upon the seaside for recreation? What tolerance do recreationists have for use density? Is it possible to substitute the artificiality of the neon strip for an unspoiled beach? If so, why not put such facilities somewhere other than on the immediate edge of the water?

Social workers and sociologists since early in the industrial revolution have recognized that the more man becomes the victim of job monotony and economic regimentation, the greater will be the social need for relaxing and satisfying physical and psychological recreation. Accepting these conclusions seems reasonable, but what relevance do they necessarily have to coastal zone problems? The National Estuary Study completed in response to P.L. 90-454, identified the factors

which make the ocean's edge a unique feature and attraction to so many people. The conclusion was that the estuarine portions of the coastal zone do indeed have special attractions to many people. There is no single common denominator, however, save possibly the vastness of the ocean and its adjacent marshes and bays. The enormity of these great expanses seems somehow to appeal to man's need for a time and a place for an expansion of the human spirit. Closed in as the urban resident is for so much of his existence by the physical limitations of his four walls of tenement or shop, and by the psychic limits of the teeming city, the appeal of the "wide open spaces" of the seashore is not difficult to understand.

At the conservation education center of Sir Peter Scott's Wildfowl Trust in England, a sign proclaims that the self-destruction of the human species will result from its three greatest dangers: world-wide pollution, overpopulation, and boredom. The seashore with its manifold diversions, is an antidote for boredom. That it is not necessarily a permanent remedy for all people will be immediately evident when one observes the frenetic way in which so many seem to be trying to force life's little everyday pleasures out of an experience at the shore. There is something incongruous, if not actually ironic, in the sight of a beach "home," a ten-by-ten-foot square of sand among thousands of others, in which the family has merely transformed its weekend pleasures from the urban to the beach environment.

Despite the reality of what we see, the actual extent of public recreational use and occupation of the coastal zone is not yet well known. General surveys provide indices of participation in various kinds of recreation, and others help define the significance of shore-based recreation in local situations.

As an example of the first, the Bureau of Sport Fisheries and Wildlife has conducted a sampling survey of hunter and angler participation and expenditures

each five years since 1955. The results of this series of surveys, shown in Table I, indicate a very substantial growth in numbers of marine anglers, and even more significant increase in the sums they expend.

These data have been widely used to support the need of the recreational angler and his dependent industry for government programs of conservation and protection of coastal ecosystems. Unfortunately, the survey is based on the premise that expenditures constitute a realistic measure of worth. While it may be accepted in the absence of better measures, the premise is not necessarily true. But the question of worth, as distinct from priced values, is a most difficult determination, and is seldom attempted. In this field, economics is still in a highly theoretical stage, particularly where public resources, e.g., an estuarine ecosystem, need to be accurately evaluated. The explosive growth of public concern over environmental deterioration has placed a high premium on the development of acceptable concepts and techniques for dealing with these problems.

TABLE I

Anglers and Their Expenditures 1955-1970, in 1000's[1]

Year	No. of Participants	Percent Increase	Expenditures	Percent Increase
1955	4,557	-	$ 488,939	-
1960	6,292	+38	626,191	+29
1965	8,305	+32	799,656	+29
1970	9,460	+14	1,244,705	+55

The recreational participation survey conducted by the Bureau of Outdoor Recreation is but one of a number of surveys of outdoor recreation done by that agency. Table II shows the results of the 1970 survey, ranking the popularity of various categories of outdoor recreation among participants 12 years of age and older.

[1]1970 National Survey of Fishing and Hunting, Res. Publ. 95 Bureau of Sport Fisheries and Wildlife.

TABLE II

Outdoor Recreation Participation, 1970[1]

Activity	No. of Participants (Thousands)	Percent of Population
Picnicking	73,843	48
Swimming	67,746	44
Playing outdoor games, sports	51,547	33
Attending sports events, concerts	53,956	35
Walking for pleasure	46,410	30
Fishing	44,089	28
Boating	37,596	24
Bicycling	28,837	19
Camping	30,885	20
Nature walks	26,906	17
Hunting	19,814	13
Horseback riding	13,484	9
Bird watching	6,813	4
Wildlife, bird photography	4,519	3
Other reported activities	9,778	6
No participation	38,823	25

Any national survey is of primary value in developing broad program and policy guidelines, rather than serving as a detailed planning or management aid. From the standpoint of the State or local public administrator, it is somewhat academic that there were "X" numbers of striped-bass fishermen, or bicyclists, or belly dancer connoisseurs, for that matter, in the United States. His problem is how to equate competing demands for a shrinking resource on a local basis. Usually he is convinced, if not overwhelmed, by the assumed and projected economic benefits of the consumptive uses of the land, whether it be coastal zone or suburban farmland. We have found in the fishery business that the cost of acquiring just the statistics of local recreational fishing on a nation-wide basis, without counting the cost of the conceptual economic research, has made the collection of raw statistics impossible.

[1]From Table A, The 1970 Survey of Outdoor Recreation Activities, Preliminary Report, Bureau of Outdoor Recreation, Department of the Interior, 1970.

Consequently, over the years, we have obtained relatively little data useful in or applicable to local situations. We seem to be in much the same fix for other similar statistics.

That is not to say that none exists; but unfortunately, it is scattered, and has not been pulled together in a way that makes it generally available to people who have to operate in the realm of the local planner. For example, little more than a decade ago, Destin, Florida, was just a pleasant village on the Gulf of Mexico. Now it is a sport fishing port close to the major currents which bring marlins and sailfish in toward shore, and 65 percent of the total net income is derived from the charter boat fishing industry. A study, now several years old, reported that the population varies from about 2,500 people in winter to 15,000 people during the four summer months. The fleet of vessels for hire for offshore angling has a Coast Guard approved capacity of 1,735 people per day, and revenue from passenger loads was more than $2.6 million in 1968 - more than double the 1964 income. More recently, Bill Hart, under a contract with the Coastal Plains Development Commission, has studied the economic significance of recreational fishing in the vicinity of Morehead City, North Carolina. Two years ago, the National Marine Fisheries Service completed an economic analysis of the so-called "wet fish" fishery of San Pedro area. While not recreation-oriented, it provides a perspective useful in total resource evaluation. The Sea Grant program has proliferated a variety of studies relating to several uses of the coastal zone, and the Coast Guard has published the results of at least one detailed regional survey of boating. Several State fisheries departments have conducted surveys of different fisheries, and the National Marine Fisheries Service regularly collects, compiles, and publishes statistics on the U.S. commercial fish catch. Although their data are summarized by State and region, and totalled for the country as a whole, some information may be secured on a local basis for the more important ports.

It would be presumptuous to suggest that these few illustrations accurately reflect the total informational reservoir dealing with recreation in the coastal zone. There are doubtless surveys of other recreational uses, from sunbathing to bird watching, available for individual beaches, parks, wildlife refuges, and the like. However, in no case that we know of has this information, or its sources of availability, been brought together in a systematic manner that makes it readily accessible to the local planner.

Thus, we have the second crop of questions: What are the characteristics and dimensions of the recreational uses of the coastal zone by local, State, and regional categories? What techniques exist for the planner or the zoning official to relate recreational needs to other alternative uses of the public resources constituting the coastal zone? What techniques are available for comparing market place prices with common property resources not so priced?

The absence of information vital to realistic comparisons of the value of the various components and potential uses of the coastal zone has produced serious problems. These may exist in the office of the zoning administration or local planner. Frequently they move quickly into the public arena and become the basis for intense struggles over what use shall prevail.

It is easy to understand how the industrial and economic life of the nation early focused on our bays and estuaries as essential parts of the nation's transportation system, both for goods and pollutants. As in so many other endeavors of man, conflicts in this area did not become problems until sheer size foretold that other uses might be jeopardized. An example, of course, is the port facilities now being planned to accommodate the monster tankers of the latter part of this decade. To avoid the problems suggested by these mammoth transports, it appears that serious consideration is being given to offshore unloading facilities. Thus, conflicts with other uses on shore would be avoided or minimized, although others may be created.

Many other current uses are alleged to have no such relatively available alternatives. It is generally folly to erect a summer resort on the coastal plain

at some distance from the beach or bay. Certainly the characteristics of development of both permanent and limited residency at any point on the extensive coastline of the United States are ample evidence of the profit of proximity to the seashore. Residential developments grade in price downward in proportion to distance from the beach.

In concentrating on the littoral edge of the sea or estuary, developments of the type we normally envision - homes, resorts, and a variety of industrial activities, run headlong into and conflict directly with the requirements of most coastal zone recreation. "Development" reduces the capacity of the coastal zone to support recreation. Total development leads only to one end: total destruction. That statement may be subject to reservations, but they are reservations of degree, not absolute effect. One squatter's cabin perched on a hummock in a marsh destroys the productive capacity of the piece of wetland it sets on. Alone in a marsh of any great magnitude, the single intrusion would have no easily measurable effect; but thousands destroy a marsh and those parts of the ecosystem associated with it.

Our "development" of the coastal zone has long since gone beyond the point where we are concerned about isolated instances. We are looking at wholesale invasion! We have extended ourselves into the coastal zone in a geometric progression. In so doing, whole chunks of the coastal zone have been and are being occupied by dwellings, roads, parking lots, factories, dumping grounds, offices, or whatever. The barely-treated effluent and trash of mobs of humanity reared in a "throw-it-away" society foul the water and litter the beaches. The nauseous odor of raw or lightly-treated sewage now drifts with the breezes over famous beaches from Waikiki to Coney Island. "Red tides," a sure indication of deadly pollution, kill fish and clams, undermine the economy of fishery-dependent communities, and depress tourist business. Tawdry buildings and blatant billboards mar the roads and streets in many a resort area.

To recapitulate: dredging, filling, and pollution reduce or destroy the estuarine ecosystems. The attractions of the natural wildlife, from ospreys to bluefish to horseshoe crabs are diminished or destroyed. Pollution fouls water and air with its stinking toxins. The landscape is defiled. These impacts on the coastal zone are categorically catastrophic. In short, in all but a handful of carefully "developed" areas, the impacts of gross development run counter to the needs of outdoor recreation.

It is the fact that more and more people have come to understand this debilitating effect of "development" that has brought us to the point where rational management of these areas has become a matter of high national policy. It also explains why we are here at this meeting, exploring the problems involved in establishing an acceptable management rationale. If we were discussing converting a forest to a cornfield, we might lament the disappearance of the native vegetation. We would not, however, be facing the irreparable loss of the soil's ability to regrow the forest. By contrast, when an estuary is dredged or filled, its innate productivity is destroyed, usually forever. There is thus a fundamental difference between the terrestrial and aquatic biospheres which has escaped the understanding of many people.

If it appears that these remarks are excessively biased in favor of protection of the environment, be assured that "conservationists" are not opposed to the enjoyment of the seashore or the cautious use of the coastal zone. It is just that we do not believe in, indeed we reject, the concept that everyone has to dwell on the water's edge. We believe it is much more logical and practical, and economical in the long run, to keep "development" away from the beaches, the tidal marshes, and the estuaries. To do so would open vast areas of the coastal zone for public recreation. The service developments - homes, resorts, shopping centers - can be placed inland at any distance necessary to protect the natural

environment. This does not mean that trails, bath houses, and similar facilities - even parking lots in areas where mass transit is not feasible - could not be built. Within limits, these developments can be non-destructive. Careful planning of their location and size in relation to natural features such as forest, dune, and tide could give them attributes of a positive nature.

To many of us the alternative of taking immediate and drastic steps to curb the unwise exploitation of the coastal zone is society's only legitimate option. Any other course will eventually lead us to the point where, in the manner of mankind throughout history, we will have destroyed that which we love. It need not happen, but it will without an understanding that we cannot accomodate all of man's relentless demands for the use of the coastal zone without irreparable harm. At his Center on the River Severn, Peter Scott has hung another sign, this one over a mirror. It says, "You are looking at the most dangerous and destructive animal the world has ever known."

This entire discussion points to the two most critical needs in coastal zone management. One is the need to fill the voids in our information, knowledge, and understanding of many facets of actual and potential coastal zone usage. Management may be defined as a system for attaining identified goals through a series of conscious decisions based on facts. Our storehouse of facts on human recreation is far from full. We need to expand our understanding of man's dependence on various kinds and amounts of outdoor recreation; we need to measure the extent of the contribution to this dependence of the various present and potential uses of the coastal zone. Such measurement must be predicated on an economic evaluation technology that reflects the worth of public non-market place resources.

The second is that while we wait for these facts, and the understanding that they will bring, as well as a will-o-the-wisp Federal program to finance their acquisition, we should apply a moratorium on further significant development in

the coastal zone. Several States have already come to this conclusion - Washington, California, and Delaware come immediately to mind. Most such developments, from the economist's viewpoint, are liabilities in the long run. It is beyond comprehension that we permit and even encourage construction on storm-prone beaches only to have them "bailed out" by Federal disaster funds after the storm has struck. It would be far more sensible to take the same money in the beginning and acquire title or use rights to these ephemeral areas in the name of the public.

In doing so, we have not thrown away our options. We have left them open for the future. We need to do our absolute best to build a protective system that will keep intact, for future use and enjoyment, the priceless assets of the coastal zone.

REMARKS AT END OF SECOND MORNING SESSION

Dr. Philip Johnson

I think it's clear that our speakers have addressed a number of kinds of uses in the coastal zone; they reinforced the view that we live in a pluralistic society; that those different perceived needs are both individual and in some cases institutionalized; and it's clear that the impact of those uses, or the combinations of those uses, are in every sense of the word intensity-dependent. And that is part of the dilemma we have in dealing with planning or management documents.

Thursday, June 14, 1973

Afternoon

SESSION IV

Needs and Resources

INTRODUCTION TO AFTERNOON SESSION

Mr. Lance Marston, Director, Office of Land Use and Water Planning,
Department of the Interior

An important point I'd like to make is that in my judgement the kind of high technology control that we hear about today, that's being used and is being funded excessively to come to grips with our environmental problem, is only a temporary answer. I think most of you would realize that the long-term needs are going to depend clearly upon better coastal zone and land use siting decisions. The difficulty we have, though, is that many of the institutions that are concerned with planning and regulating our land use have such a strong growth ethic, motivated by the need to grow, grow, grow, at any cost, which simply is not acceptable any longer. It seems to me that we're going to have to find ways of weaving this environmental ethic not only into our personal value system, but into the institutional mechanisms we have, and into the planning tools and the control and allocating tools that we have come to accept as the best way to go.

The environmental strategy, in my judgement, that we're going to have to adopt is going to depend largely upon much better land use and coastal zone management practices. We're going to have to have these, particularly if we are genuine in our need to develop an urban and rural growth approach, a national environmental strategy; if we're going to come to grips with some very basic problems that we have in energy - and we heard the very fine and comprehensive discussions this morning about some of the problems we have in our power plant sitings. But to get this environmental strategy that's built on something that's long-term, that's really going to satisfy the needs, to establish a better sound or comprehensive urban and rural growth strategy, and to really get on top of some of the fundamental energy questions, is going to require basic reforms in the way we plan and manage our natural resources.

I think it's noteworthy that this recognition has come in any number of different ways at the State level. We have only to look at the enormous progress that's been made over the past few years in many States that have adopted coastal zone management legislation, power plant siting legislation, mined area protection legislation, and land use legislation. We have any number of people here today who have pioneered in the efforts to get their States to begin to bite the bullet, if you will. I see Phil Savage sitting back there, and his State is doing some pioneering work in the coastal zone management program - Maine is doing some exciting work in the land use field. Kes Cannon, in the back of the room, from Oregon - they're doing an awful lot of innovative, creative work, under the capable leadership of their Governor, Governor McCall, whom we all know about.

I could go on and on and recite the number of actions that have been taken at the State level. And one has to be comforted by the fact that at long last the Federal Government is beginning to awaken and recognize that it has a major responsibility in this area too. We have only to look at the recently-passed Coastal Zone Management Program, which provides some more systematic, uniform approaches to how we address the problems of planning and regulating uses of our coastal zone. We have only to look at the number of proposed land use initiatives - the National Land Use Policy and Planning Assistance Act, which we are hopeful will see the light of day in this session of Congress - the power plant siting legislation, the mined area protection legislation, and any number of other proposals that deal with the planning and allocation of our natural resources.

Bob Knecht and I have a number of things in common, one of which is we don't have any money. Bob enjoys the unique position of having a program; at least he's got legislation. We don't even have that yet. But there's another thing that we have in common, and that's the recognition that we are dealing with very unconventional kinds of programs. We're dealing with programs that the Federal

Government basically has had very little experience with. We're dealing with programs that provide an enormously unique opportunity to the Federal Government to begin to do some things in support not of its own view of what this country ought to look like, but your view of what your State and what your local communities ought to look like. All of this legislation sets up the State and local governments as the principle implementing agent. The challenge to Bob and me and a number of other people in this room who are from the Federal Government - Norm Berg from the Department of Agriculture, Bob Paul from HUD, and other people - recognize that indeed if these programs are to be successful, the Federal Government has got to find better ways to deploy its resources - its enormous resources.

We have, as we look at this legislation and we look at this whole environmental thrust, we look at new Federalism, with the States being called upon to do more and more things - an enormous crisis and transition as I see it. The Federal Government has got all the resources, but it's divesting itself of its past role. The States now find themselves and the local governments with all the problems, all the responsibilities, but a disproportionately small share of the resources. The challenge to all of us here in the Federal Government is to find ways in which we can deploy those unique resources that we have - and we do indeed have a tremendous national resource in our Department - the Department of the Interior, Agriculture, and other Departments have similar resources. We've got to find better ways to organize and deploy these resources to be useful to you, and helpful to you.

That, of course, is one of the purposes of this important milestone conference, and the purpose of this afternoon's session - to begin to look at the question of what is the nature and extent of the technical and management needs and requirements in trying to implement coastal zone and land use programs. Once we have determined what these needs are, these requirements are, both from

a social, an economic, and a physical point of view - in other words, what are the land carrying, environmental carrying requirements, technical needs, that you have to properly assess the environment and land uses so that you can meet the requirements of this national legislation - we have to ask ourselves what is the most timely and cost-effective way to get the job done. Which is another way, I suppose, of saying what is the division of labor between what the local government ought to do, what the State government ought to do, and what the Federal Government ought to do.

In other words, as an example, the Federal Government has done an awful lot of pioneering work in the use of remote sensing. We now have an ERTZ satellite program which has provided an enormously effective way of monitoring land uses. It's provided us with a very cost-effective and timely device for assessing how we can better use our resources. Obviously, a State couldn't expect to marshall the resources needed to launch an ERTZ-A, or an ERTZ-1. Obviously a State and local government couldn't together develop the capabilities or justify the expense of sending up a Skylab, for example. The Federal Government can do this, and the Federal Government should do this, but then you go down to the next layer in the remote sensing. Should the Federal Government, for example, conduct the kind of low altitude surveillance that's needed for natural resource and land planning and coastal zone delineation work? In our judgement, the answer is probably not.

Industry would see itself as having an appropriate role here. The State governments should be charged with using funds that the Federal Government provides to engage industry and the academic community in assisting in this kind of role; but for the Federal Government to intrude in this sort of thing, it seems to me, is totally inappropriate in this day and age when we are trying to return the responsibilities and the resources to the States so that they can indeed address the problems which they have, which are unique in many cases from one State to the next.

The final question that I think we ought to be asking ourselves is how do we organize and deploy the resources so that indeed they are responsive to your needs? This afternoon, we are very fortunate to have a gentleman who is from a State that has pioneered in the coastal zone and land use business - Hawaii. We are indeed fortunate to have a gentleman who has set a high water mark, I think, and has done some important pioneering work, state of the art kind of work, in implementing State-wide land use legislation.

HOW DO STATES VIEW THEIR NEEDS?

Dr. Shelley Mark, Director
Hawaii Department of Planning and Economic Development.

Whoever arranged this panel perhaps may not have been an economist. I noted on the panel that there's one person talking about the needs and at least seven talking about the resources. Those of you who are indoctrinated in traditional economics always look the other way, that there were unlimited needs, and that the resources were extremely scarce. Nevertheless, with true Hawaiian hospitality, I will promise to leave some of these resources for some of the other States.

Governor John Burns of Hawaii has made the observation that there's no spot in our island State more than 29 miles away from the sea, as the mynah bird flies. Indeed, every part of the State of Hawaii is a coastal zone. For almost no physical development occurs in Hawaii which does not affect or is not affected by our shoreline and ocean resources. Most urban development lies on the coastal plains very near the shorelines, or on slopes which are drained by streams which flow into the sea. The quality of Hawaii's coastal resources, its beaches, seacliffs, and surf, has been a key factor in the State's development as a prime tourist destination area. Tourism is one of the major industries supporting the economy of the Islands. With this obvious interdependence of economic prosperity and environmental quality, Hawaii has worked long and hard for protection and enhancement of its total environment, with emphasis on coastal areas.

Because of the State's small size, threats to Hawaii's environment in general, and its coastal resources in particular, have been recognized and met in forthright fashion. Efforts in this area have included the nation's first State general plan, issued in 1961, and revised in 1967, and currently in the process of revision again. Both of these plans included approaches and recommendations for the development and protection of Hawaii's coastal resources. In 1963, the State

merged its planning and economic development functions into one department. In 1964, this department conducted a major study, directed specifically at Hawaii's shoreline resources. This study was a major factor in later legislative decisions to include all shoreline areas of the State in the conservation district under Hawaii's State Land Use Law, and to enact a new Shoreline Setback Law. A Shoreline Setback Law mandated a State Land Use Commission to establish setbacks along the State's shorelines, setbacks of not less than 20 feet, and not more than 40 feet inland from the upper reaches of the wash of normal waves. It further empowered the Commission to establish rules and regulations governing the use of such shoreline areas. Under this law, the counties, which are our main local jurisdictions, are required to enforce these rules and regulations, and permitted to establish setbacks of greater than 40 feet if desired.

Thus, the State of Hawaii has placed strong emphasis on a comprehensive, long-range planning process, which recognizes the interrelationship of a variety of needs, resources, interests, and pressures. A product of this planning process is studies leading to action, and in many of the planning projects, the management of coastal zone resources is of major importance. One of our products was a publication called "Trails for Walking." This resulted in legislation which would offer to Federal, State, county, and private agencies with overlapping or related land ownership or jurisdiction a plan for joint administration of trail systems, and particularly of interest in Hawaii, of shoreline trails. A corollary legislative act is intended to assure public access to our beaches and shorelines.

Hawaii's efforts to improve the quality of its environment have focused on its State Land Use Law. Recent attention has been drawn to this law by Fred Bosselman in his report on the "Quiet Revolution," and Mr. Bosselman gives Hawaii some credit for having started this quiet revolution; although recent experience in administering this law has been anything but quiet.

Having this planning and implementation too at the State level has kept Hawaii's planning process in the forefront of contemporary State planning and practice. As we will explain shortly, our State administration hopes to use a revision of its basic land use planning and control system as a core of its coastal zone management program. Hawaii's Land Use law was a direct outgrowth of our first State general plan. It was passed in response to certain worrisome environmental trends in the period just prior and subsequent to our attainment of Statehood some 12-13 years ago. The State's usable lands are extremely limited; our prime agricultural lands were facing pressures from urban sprawl. Scattered developments and speculative subdivisions raised questions of public costs vs. private benefit. The necessity to protect our shorelines and other scenic assets, our forests, water, and other natural resources was clearly recognized. Thus, our State Land Use law sought to preserve these prime agricultural lands, to guide urban growth for more efficient use of public services and facilities for permitting reasonable housing, commercial, and industrial expansion, and to establish a system for prudent management of our environmental resources.

The Law provides for a State Land Use Commission, appointed by the Governor, and confirmed by the Senate. The Commission is authorized to classify all public and private lands in the State in one of four classifications: urban, rural, agricultural, and conservation. It has power to establish specific boundaries for each classification throughout the State, to revise these district boundaries on the basis of a petition and hearings procedure, or a mandated, comprehensive review every five years, and to prescribe general uses permitted in each district. No changes in designated land uses are permitted without going through these procedures. Detailed uses in the urban, rural, and agricultural districts are administered and enforced by Hawaii's four county governments, and in the conservation district by the State Department of Land and Natural Resources.

Thus, we've had a State Land Use law in effect for the last 11 years, and a Land Use Commission which has functioned over approximately the last 9 years. What have been their impact and effect on the growth of our community and the quality of our environment? As in most public and controversial bodies of this type, there have been opposing views and differing interpretations. At the time of the last mandated 5-year boundary review in 1969, the planning firm of Eckbodine, Austin, and Williams, of San Francisco, noted these positive results:

1. The State Commission has been stricter than the counties in approving petitions for rezoning.
2. Scattered development, with one or two notable exceptions, had largely been brought to an end.
3. Speculative subdivision of new lands beyond the need for new home sites had been greatly reduced.
4. Prime agricultural and conservation lands had been protected from urbanization.

Critics, however, have been concerned about continuing conversion of agricultural lands - especially the more highly productive ones, into urban use. They have been concerned about speculation, which has caused some land and housing prices to rise, while other lands are being withheld from use. They've been concerned about instances of lack of coordination between State and county decisions - and between State zoning and State real property tax assessment practices. The jury may still be out; but it can be noted that the various attempts over the past decade to have the law repealed have been roundly defeated, while a number of key amendments strengthening the powers of the Commission have been passed. As I mentioned previously, our experience has emphasized that a State land use control policy can only be effective as part of a comprehensive planning program which embraces social, economic, environmental, administrative, and financial aspects.

This planning has to be long-range - looking into the future - and requires coordination and interaction of functional plans by governmental and private agencies, in order that the community's total resources be used to meet the needs of its citizens in optimal fashion. There is a strong need for comprehensive planning at the State level, not only to examine and evaluate functional plans, such as those in transportation, agriculture, recreation, education, but also to provide new insights, new directions, new information, new programs, and new methodologies for State government generally. Without the solid grounding and a comprehensive planning process, the flexibility deemed desirable in land use and coastal zone administration can easily slip off into an expedient ad hocery.

The paucity of States' general plans, or a viable State comprehensive planning process in our nation, however, indicates serious political obstacles, not only to planning implementation, but also to the concept of centralized planning itself. Small wonder that State planning agencies have been preoccupied with a search for relevance, for organizational structures arise which may assure their existence amidst ever-changing Federal guidelines and ever-restive local jurisdictions. It is seen that the end result of a State planning exercise has been to place the State planner in the Governor's office, without either one knowing exactly what he was supposed to be doing there - that is, the planner, not the Governor. In Hawaii's case, a relatively strong centralized government facilitated the passage of appropriate enabling legislation, and the working out of administrative procedures necessary for the redistribution of traditional zoning powers. In the general case, this redistribution should not be impossible, since it is axiomatic that if a State can delegate its police power to regulate private land use in the public interest, it can also exercise it.

Recently, our Department completed a 5-volume central Oahu planning study, an analysis of future development trends, potentials, and pitfalls in the rich

agricultural central plain of our capital island of Oahu. As a result of this work, we then undertook, in 1972, a review of our State Land Use law. On the basis of the review, Dr. Daniel Mandelker, of the Washington University Law School, an international authority on land use control, who is present in our audience today, assisted us in drafting a revision of the Land Use law for submission to the 1973 Hawaii State Legislature. In addition to the need to correct existing deficiencies, one of the key purposes in drafting the revised Land Use law was to anticipate passage of the pending National Land Use Policy Act, and the National Coastal Zone Management Act. A careful attempt was made to modify Hawaii's system of State land use controls so that they might conform to the expected methods of implementation requirements of these two measures, without in any way losing the momentum the State had achieved in this field.

Our proposed revision, first, provides for general policy guidelines for land use. They would be set by the Department of Planning and Economic Development, and would guide the Land Use Commission in exercising its powers under the Act. The revision then amends the existing provisions of the Land Use law relating to classifications of land use districts. It confirms existing classifications, and makes clear the policy of preserving the agricultural and other natural resources of the State, consistent with the public interest, by introducing a competing consideration of damage to such areas which would be measured and balanced against the prior standard of need. In order to assure that owners of property in agricultural districts would not bear tax burdens disproportionate to the income potential of their land as classified, the proposed statute provides that agricultural lands shall be assessed on the basis of the value of the land in agricultural use. Whenever any land which has been taxed for its agricultural value is reclassified to an urban district, however, the Act provides for the partial recapture of any property taxes which have been lost to the State because the land has already been taxed at its agricultural value.

Parenthetically, a separate measure, similar in content to this proposal, was enacted by the 1973 State Legislature, and signed into law by Governor Burns in May, 1973.

Finally, for those areas of great concern to the State, the State Administration is given authority in the proposed Land Use law revision to designate areas of critical concern, and to assume direct control of development within these areas. This technique for regulating land and water uses on a site-specific basis, is the major thrust and the most controversial provision of our proposed revision. As defined in our proposal, areas of critical State concern include areas having significant agricultural and environmental value to the State, areas proposed for new towns, or for urban renewal, or areas in which major governmental or private development has been proposed, such as airport and harbor facilities, highway interchanges, or housing developments. Within these areas, the State could exercise a ladder of powers, ranging from the setting of specific development standards and the preparation of precise plans for the area to the pre-emption of State and local codes and ordinances based upon a review of any plan, regulation, or application which affects development in the area. As a method for controlling land and water uses within the coastal zone, our critical areas technique is directly applicable to the treatment of particular areas of concern within Hawaii's coastal zone, as a complement to the broad, the direct, the Statewide regulatory functions we now exercise under our present State Land Use law.

In point of fact, we believe our critical areas technique is more suited to the fine-grained ecology of coastal areas than the recently-enacted Florida legislation and the American Law Institute proposals, both of which deal primarily with appeals, and with State review of local zoning and similar regulations. This, then, is a core regulatory machinery, around which we hope to build a unified land use and environmental management system. Our review of NOAA's preliminary guidelines for administering the Coastal Zone Management Act has led us to conclude

that there are no serious conflicts between the approach we are proposing and the requirements of the National Coastal Zone Management Act. Although Federal requirements under the pending National Land Use Policy Act are still unknown, we believe that our system would be compatible with that measure also.

One should not conclude from this account, however, that Hawaii is without problems in dealing with its ever-changing land use, environmental, and coastal zone concerns. The proposed revisions to Hawaii's Land Use law were a controversial issue throughout the legislative session, and were finally defeated by strong local government interests, which resisted any alteration in the status quo alignment of county and State powers over land use and development. Even a compromise, which would have made the State's role in areas of critical State concern only advisory and not regulatory, did not gain acceptance by county governments and their supporters. The proposed revisions remain under active legislative consideration, however, and hopefully should be acted upon in the forthcoming session.

The New Federalism, at least as it is applied in the management of our physical environment, results in additional powers and responsibilities for the States, sometimes at the expense of local governments. The Clean Air Act, the Water Quality Act, the Coastal Zone Management Act, the pending National Land Use Policy Act, all make State governments the focal point in planning, programming, and regulation for environmental quality. If the move to strengthen State planning and management powers at the expense of local prerogatives is strongly resisted in Hawaii, as it has been, and Hawaii has had a history of centralized State government, an effective environmental and land use decision making at the State level, then we can expect even more resistance in other States where there has not been such a background of State government initiatives and involvements.

What, then, are the needs of State governments within the context of the New Federalism in general, and the implementation of the National Coastal Zone Management Act in particular?

The first need, I believe, is for putting the Federal house in order. EPA, Interior, HUD, Commerce - just to name a few - are all seeking to participate in the land use game through the various programs which they administer. Unless immediate attention is given to improving coordination among these programs, the development of a unified approach to environmental management at the State level will not be possible. Hawaii and several other coastal States, I'm sure, will want to develop a coordinated management program, by melding the programs mandated in separate cases of Federal legislation to meet their special problems and particular situations. In Hawaii's case, this program could be built around a central regulatory or review mechanism for planning and controlling land use and physical development in areas of critical State concern, this mechanism which I have just described.

A second related need is for flexibility in the preparation and interpretation of Federal guidelines to allow States to develop and implement their programs in whatever way best to meet their particular needs. This flexibility should provide an added incentive for States to participate in at least being an incremental management program. The need for flexibility has been borne out in Hawaii's attempt to revise its Land Use law, and solve its relatively simple interjurisdictional problems. Consolidation and flexibility at the Federal level are the keys to giving the States the opportunity to develop effective, comprehensive, and coordinated environmental management programs.

Seemingly contradictory, but a corollary to the notion of flexibility, is the need for the relevant Federal agencies to be firm with State Legislatures, county commissions, and other groups, which would hinder the effectuation of a particular management program. This type of formal or informal wrist-slapping may be neces-

sary, because of the absence of sanctions to enforce either participation or compliance. It is doubtful that the mere presence of incentives or program grants will be sufficient to ensure the types of institutional changes implied in either the National Land Use or Coastal Zone Management Acts.

States in which Federal agencies are a major user of a coastal zone will also expect NOAA to be a firm lobbyist or advocate for State interests and State coastal zone guidelines with Federal coastal zone users, including the U.S. Armed Services. Those States will also require research and technical assistance - there is still a relative scarcity of knowledge of basic cause-and-effect relationships and processes in the coastal zone. Here, a clearing-house mechanism for keeping States abreast of each other's activities and problems or the commissioning of national research proposals could be helpful. The research and information needs referred to here are, of course, for applied materials. Research must be related to management; we need studies, for example, which relate water quality to land use controls, which delve into the possibility of developing control mechanisms for water areas similar to those for land uses. Implementation should always be stressed, for States do not need to be caught up in an endless round of inventories, data collections, and studies for the sake of studies.

Really, a primary need of the States is for imaginative yet pragmatic administration and coordination of the Federal programs now directed at the environmental quality issue by all levels of government. We need to build gradually a new system of intergovernmental cooperation; we do not know yet precisely how to do this. There is the obvious roadblock created by the conflicts between powerful local interests and those seeking to impose rigid uniform frameworks from above. To some extent, the new working relationships among State, local, and the national government will be decided by the interplay between the national administration and the Congress.

While the debate goes on, and new legislation and guidelines are hammered out, the States do have the opportunity to use this period of creative pause, to coin a phrase, to solidify the character of their planning, and to develop their own initiatives to come to grips with the forthcoming programs. The National Land Use Policy Act, the Coastal Zone Management Act, the Water Quality Act, the Better Communities Act, urge States to take the first steps for some in this direction. The challenge to the States is whether or not they can build up their planning capabilities and develop their planning processes in order to deal with their most critical environmental management problems in a farsighted and comprehensive manner. A mandate to the Federal Government is not simply to satisfy itself that the States are doing this, but to coordinate its own divergent planning interests and to set forth goals and guidelines that are appropriate to a true national growth policy.

Nevertheless, the States now have at least the opportunity, with Federal statutory and financial and technical support, to set their directions and to delve into the bewildering complex of local jurisdictional problems that have hampered rational environmental and land use decision making in the past. In the past, State planning has been preoccupied with its search for relevance, for systems, structures, and roles to ensure its continued existence. For the future, State planning must start building substance within structure, and face head-on the environmental issues people are concerned with, no matter how difficult the task, and unpromising the early returns.

Comment from the Audience: Seldom do you find such an abundance of truth as in the words that Dr. Mark has said. Speaking for the State Planning Group in New York State, I would like to say that we endorse fully the remarks that he has presented, and I commend him very much for making them. He's been both profound and provocative, has outlined some things that are at the same time

truisms, but yet they outline a course of action that has pervaded this whole conference. They are practical and realistic, and I thank you for your remarks, Dr. Mark.

> *Question: One of the issues that we constantly run into is the issue of compensatory zoning - whether or not you have to pay for the potential loss because you keep the farmer from subdividing. May I ask you to respond to that first? Secondly, has it been an issue in Hawaii; and third, have you had any evidence of loss of land value because of your State-wide land use planning?*

Answer: Those are all good, tough questions. Yes, it is an issue. In Hawaii, land values generally have been rising; there has been enough of it on the market to meet immediate urban needs so that there has not been those sorts of demands for these types of compensation. I'm sure in other States it may be a different sort of situation. I think it is a problem; my own feeling is that somehow as planners and as representatives of the public interest, we've got to try to educate the community at large in terms of the overall public interest overriding whatever private losses may be suffered in the process. This is not an easy chore, but I think this is our challenge.

Question: You have not been in court yet?

Answer: Not yet, no.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART I

Dr. Frank Carlson, Office of Land Use & Water Planning
Department of the Interior

As I look out over this group, I'm appreciative of the fact that at least a couple of the participants have exercised a little more informality in attire than most of us here; and it should be in the tradition at least of Annapolis. In years past, I've attended meetings of the AERS here in Annapolis, where if one came to the podium wearing a tie, he would probably be asked to leave. By the way, if any of you in the audience who are from the Atlantic Coastal States do not know what AERS stands for, that is exemplary of the kind of problem we have in bridging the gap, perhaps, with technical information transformed into usable information for managers. I don't want to let the moment go by, since Bob Knecht has overlooked it, to let you think that this guy standing up here as background for most of the meeting is a sportsman. He is our hard-working biologist of the National Marine Fisheries Service out there on the Outer Banks of North Carolina in the middle of the winter freezing for the purpose of tagging striped bass to get information on migration - so he is a member of AERS. Oceanographers are members of AERS - the Atlantic Estuarine Research Society.

The point here is that Interior has approximately 70,000 employees scattered across the country, and they are carrying out broad responsibilities that have been given to the Department for the management of resources of national interest. The activities that they cover are described in a brochure, which is in your package. I'm not going to go into this, simply because there is a lot of detail; you may want to study this at your leisure. What I wanted to emphasize is that most of the assistance that the Department of the Interior provides is in the form of information and advisory services.

At this point, we have limited types of grants programs which are largely the Land and Water Conservation Fund, administered by the Bureau of Outdoor Recreation - Federal Aid Program, Fish and Wildlife Restoration, also grants to States for development of water resources institutes. And because our organizations or agencies, among which these programs are divided, consist of 8 major bureaus and a like number of smaller offices with different regional and organizational structures, we're suggesting that if you have specific inquiries or wish further information on the material contained herein, that you address these to the Office of Land Use and Water Planning, the address of which is given on the first page. The one exception is the Water Resources Institutes of the States, the addresses of which are given in the handout.

In addition to the information contained herein, the Interior Department, within the past 8 months, has initiated a series of regional symposia on land use planning, workshops on applications or remote sensing to land use planning, and most recently, workshops on the utilization of remote sensing for the development of a standardized approach to land use classification. Having reviewed what Interior does in this brochure, seeking further information may ultimately result in your wanting to come in with a specific request for assistance. It is important that a request for assistance be not just, "We want this;" because it would be very difficult for an agency within the Department, or the Department as a whole, to assess the magnitude of the need. And so these are some suggestions for approaching the problem of requesting assistance.

First of all, we would want to see identified the purpose, objectives, and scope of the request; the work plan for the utilization of assistance; the overall personnel and funding requirements, broken down into what commitment the State is willing to make, and what it would require of the Interior Department; and finally the alternatives if the Federal assistance were not available. It's

just not enough to give it to the office; you have to recognize, as I'm sure you all do, that we all have our programs that have been established through the budget process; we all have these priorities to carry out the work that has been previously authorized. And so to help us reorder our priorities, we need a strong mandate from State and local governments in terms of what they need; and this mandate really has to come through, perhaps, at three levels. It has to come up through the organization, through the office through which you're interfacing that has the specific program which you want; it should come in to the Director of the agency from which you want the service; and it should come also to the Secretary, because through that mechanism we get a better overall picture of, in fact, the kinds of things that we should be doing to be responsive.

Rather than to go over a lot of details, I would like to come back to a point that Shelley Mark made. We need to better integrate the kinds of research management advisory capabilities that we have at Interior. We see increasing need for multi-disciplinary approaches to problem solving. Certain of our agencies have developed this approach for their own needs; we're increasingly trying to do this to meet State needs, and therefore have instituted a program on an experimental basis to attempt to get at the answers to the problems facing the resource managers, decision makers, in a timely fashion and in language they understand. For this, I am asking Tom Buchanan, who is the sub-district chief of the Water Resources Commission of the U.S. Geological Survey with the Department (based in Miami), to describe the program that the Department is involved in in Florida.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART II

Mr. Thomas J. Buchanan, Subdistrict Chief, U.S. Geological Survey,
Department of the Interior

The program that Frank just discussed, the experimental program, is called the RALI Program - RALI stands for Resource and Land Information. The program started back in October, and the Department recognized the problem that people were having in obtaining data from the Department. This was really generated by the environmental impact statements, where people had to go to numerous offices within the Department to get the data. So the prime purpose of the RALI Program was to find a way of getting the Department of the Interior data to the local people, the States, the counties, in a form and in a convenient manner, and all in one location. This is a problem that is being handled at the Washington level, and they are doing a lot of work on this right now.

The second problem, and the second objective of RALI, was to look at the data we're collecting to see if we're collecting the proper kinds of data, in the proper time frame, and in the proper manner. The third objective, and the one I'm going to talk to you about this afternoon, is to take a look at areas where the Department did have a great deal of environmental data, look at the environmental problems in those areas, and apply the Department's data to the environmental problems to show some of the alternatives or solutions. We were not attempting to come up with recommendations in our demonstration areas. We were attempting to show what alternatives are available to the State and local people, and provide them enough information that they would have the basis of environmental data to make decisions.

We selected four places in the country. One of the locations we selected was South Florida. We selected South Florida because we want to work in a coastal area; and there were many environmental problems in the coastal area of South

Florida. We selected a very small segment of the South Florida area - south Dade county. The city of Miami is in Dade county, and we selected the area from the city of Miami south into the southern boundary of the county. We selected this area because there were many concerns to the Department -- Everglades National Park is there; the Biscayne National Monument is there; there are many fish and wildlife problems; many recreational problems. When we got into this area, we decided that we just couldn't select a coastal area; we had to take a look at the upland area also, because what was happening in the upland area had a great effect on the coastal area.

The area we studied was from the center of the city of Miami on the north, to Florida Bay on the south (a distance of approximately 30 miles); and from Everglades National Park on the west, to Biscayne Bay, the Keys, and the Atlantic Ocean on the east. This was a multi-disciplinary study, and we had the participation of every bureau within the Department that had any activity at all within Florida. The lead agency in the RALI study was the Geological Survey -- we were responsible for coordinating the study and getting the material together. The basis of the report will be that we will be showing the data available, showing the problems and the alternatives.

One of the things we've attempted to do in this report, and I want to emphasize this again, is that we have attempted to show the people the types of environmental data the Department of the Interior has, show them some of the environmental problems. We hope that we've touched on most of the environmental problems in the study area, showing them the alternatives that are available, and giving them, hopefully, enough information that they can apply economics and other political and zoning considerations to these alternatives to make the decisions that are necessary for the orderly development of the area.

Dr. Carlson: I think that this lends emphasis to the comments that John Clark made this morning on the interrelationship of the resources, and how one action in one area has a significant impact elsewhere. Therefore, going back to Bill Hargis, you really have to start out with an inventory of the resources that you've got, know what their capabilities are, and the limitations that those different resources have for the kinds of activity you're dealing with.

I think the big question that is always coming across to planners and decision makers is, if all of these things are interrelated so, to what extent can we impact on them and still retain that resource, particularly if it's a living resource? I think you've seen in this case how, as John Clark again pointed out, where the fringe is such a highly productive area that there are ways of maintaining the productivity of that fringe and still carry on recreational pursuits that benefit by having that fringe and can be carried on without destroying it.

With that, we conclude the Interior's presentation.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART III

Mr. William Johnson, Deputy Administrator, Soil Conservation Service
Department of Agriculture

You may wonder why the Department of Agriculture is on this program, what interest the Department has in the coastal zone. To clear up these questions, I might remind you that USDA has the mission of assuring that the nation's food and fiber production is sufficient both for domestic needs and for export. Lately, we've all noticed that foreign sales of farm products are the best moneymakers we have in the international market place. In addition, the Secretary of Agriculture has the leadership role for rural development. Although 50% of our population lives on or very near the coast, there are still extensive coastal zones that are rural and are used primarily for farming, grazing, and forestry. Farmers and ranchers are the custodians of all the land that you people want to use for other purposes.

The Department of Agriculture is another large group of agencies - some 21 of them all together - dealing with a great diversity of agriculturally related problems and activities, but not exclusively agricultural, as we'll see. Services supplied by the Department impact on all the people in this country, from those who produce the food and fiber, and those who transport, grade, process, package, and market these products, and to you, the consumer, who buys the products in the supermarket or department store. Extensive programs of research and resource data collection and analysis are carried out in support of the Department's missions. At least nine of our agencies have products, services, and programs with applications and implications to the coastal zone. During the next few minutes, I shall try to give you an overview of the kinds of programs, products, and services we can supply that will help you to evaluate your coastal zone resources; to analyze the problems of resource use; and to deal with these environmental, economic, and developmental questions in the coastal zone.

I have tried to organize these remarks not by agency, but by major subjects, starting with research and ending up with emergency programs. Two Agriculture agencies, the Argicultural Research Service and the Economic Research Service, are dedicated to research, both basic and applied, in food and fiber production, agricultural engineering, pest control, human nutrition, wildlife food and habitat, agricultural and natural resource economics, and soil and water conservation. The Forest Service, in addition, carries out research to minimize erosion and sedimentation, and reduce other forms of erosion on forest lands. In addition, the Cooperative State Research Service provides research grants for basic and applied research at State universities and agricultural experiment stations, and schools of forestry. Just recently, CSRS gave something like $55,000 to the University of Maryland to study oysters in Chesapeake Bay - a curious kind of project that relates to water temperature and social conditions. I'm not sure whether they're talking about social conditions of the oyster or human social conditions, but it's an example of one of the kinds of grants that clearly has implications to coastal zone utilization.

A part of the ongoing research administered by these four agencies is directly applicable to the problems of the coastal zone. Opportunities exist for additional research into these problems, as State and local interest grow in planning and management. The Washington offices of these agencies - Agricultural Research Service, Forest Service, Economics Research Service, and CSRS, the Cooperative State Research Service, can supply information on data that is available on ongoing research and on the channels for proposing new or additional research in coastal zones. ARS and the Forest Service have regional and field offices which can help in providing answers to your questions about research. All these things are given in the handout which you all got in your packet.

Next, I want to talk about a subject that is particularly of interest to me, and to my agency - resource data collection, analysis, and dissemination. Many of the Department's agencies collect data on soil and water and related resources, and on agricultural production as related to land use and other factors of economic importance. Five of the agencies have systematic programs for collection of resource data and the analysis, publication and dissemination of that data. My own agency, the Soil Conservation Service, has Federal leadership for the National Cooperative Soil Survey, for the Conservation Needs Inventory, and for the program of land inventory and monitoring, authorized under the Rural Development Act of 1972. Like you, Lance, I have a program that isn't funded. Like Bob, my land inventory monitoring program is offered, so we're sort of in limbo right at the moment.

SCS also operates a snow survey and water supply forecast program in the Western States. It carries out a river basin and watershed survey. As a part of the land inventory and monitoring program, it identifies actively eroding areas, prime sources of sediment, flood plains, and wetlands. All of this data is available for your use and for the use of local agencies of State government. Soil surveys, as many of you know, are published in a standard series. I'm not going to go into any great detail on soil surveys and how they are made; but they constitute an inventory in considerable detail, usually at rather large scales, of the soil resources of an area, commonly a full county area. We also include in these publications interpretations of soil behavior under different uses, and with different kinds of treatments. Free copies of these can be had from our Washington, State, and field offices, and from a variety of other sources.

Interim reports and special reports on soil resources can be had from our local field offices, which serve as headquarters for the Soil Survey activity. The Soil Conservation Service has an administrative office in each of the 50 States

and Puerto Rico, and it has more than 3,000 field offices well disseminated throughout the country. At these field offices, we have engineers, conservationists, soil scientists, and planning technicians who can assist agencies of government in, first of all, obtaining the data they need, in analyzing that data for organization and management of coastal areas. These scientists and engineers are parts of multi-disciplinary teams, well accustomed to working together with State and local officials in solving resource problems, and in planning resource use and management. Many of the other agencies of the Department have similar kinds of planning expertise and data collecting. For example, the Economic Research Service carries out a national program of economic research on agricultural and natural resource problems, which they publish in a number of places. They also maintain files of data by counties with information from the census of Agriculture and from other sources - data on land use, land ownership, income, and crop and livestock production. ERS prepares reports on historical and projected agricultural production and land use. Other sources of resource data in the Department are the Forest Service, the Agricultural Research Service, and the Statistical Reporting Service. These provide data on vegetation, agricultural production, and other forms of agricultural statistics. The best way to get data from these agencies is through their Washington office, with the exception of the Forest Service; and you have specific references to their regional and area offices in your handout.

The Agricultural Stabilization and Conservation Service is an agency designed to administer specified commodity and land use programs for production adjustment, resource protection, and price and income stabilization. You may wonder what that's got to do with the coastal zone. Well perhaps not so much directly; but to carry out its mission, ASCS needs up-to-date air photo coverage, and it has developed an enormous capability and expertise in this field. The imagery avail-

able is in large and intermediate scale, black and white, conventional photography. The Salt Lake City Office of ASCS, which is in your directory, is the place to make inquiries and to order this kind of photography.

On the subject of education, when you get ready to try to carry out some of your programs in individual coastal counties, educational facilities will, of course, be a necessity. The Extension Service of the Department of Agriculture is our educational arm - it provides programs based on the needs of local environments, cooperatively with the State land grant university. The Extension Service carries on programs in many States on coastal zone activities. The Director of Extensions at your State land grant university can provide a lot more information on these programs and on the available educational and technical assistance.

For some activities in the coastal zone, credit facilities are going to be important. The Farmer's Home Administration manages multi-billion dollar loan and grant programs for resource conservation and development, for recreational facilities, community water and power facilities, and for farm operations. The majority of these loans are related to production and farm facilities, and probably they have a limited application to your interests. But some of these loans and grants are made for business operations that are not strictly farming, and some of them definitely apply to the coastal zone, particularly those relating to community water and power facilities.

Next in the field of conservation and environmental quality - SCS, Forest Service, ASCS, manage programs of technical assistance and incentives to land owners, operators, and developers for land and water management to control erosion and improve environmental values; for land use planning, housing, recreation and waste disposal, strip mine reclamation, protection of forests against fire, diseases, insects, etc. Technical assistance is available in the form of printed

guidelines and on-site assistance from soil scientists, engineers, vegetative specialists, planners, and other technicians.

The rural development program, about which we've heard a lot recently, includes a number of programs aimed at improving economic and environmental conditions in rural areas. Many of these programs, of course, relate to farms and ranches; but there are others designed to improve community water and sewer facilities and provide technical and financial assistance to rural areas. The agencies primarily concerned are Extension, Farmer's Home, Soil Conservation Service, and Forest Service.

Finally, under emergency programs, several agencies provide natural disaster relief and rehabilitation programs that function through State and county emergency boards made up of representatives of USDA agencies. So when you get a hurricane, a flood, or whatever, in the coastal zone, there are some opportunities for disaster relief through Agriculture agencies.

I'd like to tell you, in the next 2-3 minutes, an example of how you get some of this assistance. Most of what we have to offer comes free - there's no charge. If we have the data, if we have the technical expertise available, it's ordinarily available without charge. If we don't have it, and you want us to provide it, that may be a more difficult question. But let's take for example, how do you get a soil survey of a coastal area from the Soil Conservation Service? If it has been published in this form, all you have to do is ask for it and you'll get it. If it has been surveyed but not yet published, or if field work is in progress and has not yet been completed, then we can provide you with copies of field sheets, along with descriptions, classification of soils, and interpretations of the soil survey. At the very worst, you might have to pay a little bit for copies of the field sheets, but it would be a very nominal charge. If no survey is available, and none is scheduled, then your procedure is to approach our State conservationist, the line officer, the administrative officer in charge of operations in your

State - and you can find his address in your handout - he will tell you that decisions about priorities for surveys are discussed at an annual meeting with other cooperators of the Soil Survey, and that you will have an opportunity to present your case, to ask for assistance in accelerating or initiating a survey in an area of interest to you. If you can persuade the others that your priorities are higher, then you will get your survey started and completed with all possible haste. I might say in this connection that cost-sharing funds for this kind of thing are sometimes acceptable; it depends on what our ceiling limitations might be. They've never been known to slow down a survey, and sometimes they can help to accelerate it.

Supposing none of this is possible. We can still help you, because we have small-scale soil maps of essentially every county in the United States; we have descriptions and general interpretations of the soils, their behavior, to tell you how they react to various kinds of uses and treatments. We can tell you, for example, soils in the coastal zone that are salty; soils in the coastal zone that are not salty; fresh water marshes vs. salt water marshes; the salt water marshes - we can tell you about those that are the kind called Cat Clays, that if they become drained, if they should become dried out, someone tries to utilize them for some sort of development, lower the water table, induce oxidation, and soil reaction becomes so extremely acid that vegetation all dies, and you've literally got a wasteland - we can tell you where these areas are. We can provide on-site assistance in evaluating soil conditions, in interpreting available information, advising on laboratory work that might need to be done, and help you to get that laboratory work, so that no matter if there is literally nothing that is available in a published form, we can still provide assistance. All you need to do is get in touch with the State office of Soil Conservation in your State and make your needs known.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART IV

Dr. Walter Groszyk, Chief, Water Program Planning & Accomplishments Branch, Environmental Protection Agency

I'm here today as a representative of an Agency that's getting a growing negative reputation in that we always tell people what they can't do rather than what they can. I'd like to maybe sweeten the negativism somewhat, and talk to you about three grant programs that we have available to do planning nationwide, but also planning in the coastal zone, and how that particular planning can interface with some of the requirements we have under the Federal Water Pollution Control Act of 1972.

That particular Bill basically sets various enforcement, regulatory procedures for achieving a certain water quality standard by 1983. That water quality standard is that there shall be fishable water everywhere and swimable water everywhere. Generally speaking in the coastal zone, we already have that sort of standard, except in certain estuaries, as a promulgated standard by the States, and it's not a matter of upgrading to that. But we have a situation, I think, where as we go and do controls on inland waters, we will have pressure from industries, communities, etc., to promote development in the coastal zone, because there is presumably some ability of the oceans, etc., to absorb the pollutants that can be discharged there.

The three grant programs that we have - and we enclosed some copies of regulations that are either interim or proposed for those programs - involve one at the State level, one at a sort of super-regional level, and one at the local level. Local level regulations aren't out yet; we're still thrashing them around a bit, and we'll hopefully have those in the Federal Register within the next month.

The State planning program is a requirement under the States' continuing process that they develop basin plans for all waters in the country. This includes

all waters of the coastal zone. Generally speaking, these plans will involve their particular organizational and administrative structure for controlling pollution from all discharge points. The law specifies that every discharger, whether it's community, industry, commercial establishment, vessel, etc., requires a permit if he discharges any pollutant into the nation's waters in the coastal zone. The State planning process that we have enunciated in these regulations is basically a mechanism for getting the appropriate level of pollutant reduction assessed against each individual discharger. We have provided for the States in the State Control Agency Grant Program a portion of the $40 million FY-74 grant to assist them in doing this. We expect this will be a continuing effort on a yearly basis, and probably somewhere on the order of $15-25 million per year Federal grant funds to the States for assisting them in this planning.

The second area that we have is an area-wide planning program which will be done by generally an SMSA, but it's not restricted to such. It's the first 100% Federal planning grant ever issued by the Federal Government. We have $350 million worth of contract grant authority for this. Contract grant authority is somewhat different from customary Federal authorization, appropriation, etc., in that it is not subject to an appropriation by Congress. All Congress can do to control it is to approve an appropriation to liquidate the amount of costs that are on the contract. This particular area-wide planning will establish an area-wide management agency which has very extensive regulatory powers. It includes land use zoning, site location zoning (in that they can prohibit location of new dischargers or community development, etc.), and it's very controversial.

The third area is local planning, which will be the first stage of the General Community Construction Grant Program. That has a 75% Federal grant, and involves basically an assessment of what that community should do from the position of growth, position of existing community development, to abate pollution

from the sewered population of that community. The amount of money that we foresee for this is probably in the neighborhood of several hundred million dollars in grants. The Agency has some other programs related to the coastal zone. I could summarize those for you before framing an issue involving coastal zone development.

We have basically a companion piece of legislation called Ocean Dumping, which is to regulate and control dumping of pollutants beyond the territorial seas. The first series of criteria controlling that dumping has been published, and that's also in the packet. These criteria will similarly be established for discharges into the territorial sea. They are intended to be somewhat restrictive. What we have is a situation developing where we have a technological threshold which says no matter where the tide is located, or the discharge is located, that the quality of the water is not to be considered in setting the basic pollutant reduction that has to be assessed against them. We have certain States which have to engage in several hundred million dollars worth of municipal sewage treatment plant construction - basically because of this technological threshold - and they are seeking to get some waivers. One of the things that we have in this situation is that if we give that waiver to a community, we will probably be confronted with having a similar request to waive from industries. This will probably promote, or could promote if we granted the waivers, extensive development or pressure for development in the coastal zone. I think you should be aware of that.

We also have within the Agency some research activities conducted on the part of the coastal area. We have to provide reports to Congress once every three years on estuarine pollution. We did a report in 1970-71, and made that available; the next one will probably be provided around 1975. We also conduct a series of research studies basically directed toward the development of water

quality criteria, transportation processes - how that particular pollutant moves through the environment, and also threshold levels and parameters necessary to support and protect indigenous species of wildlife. Basically, anti-degradation provisions exist in the Water Bill, and some people would say that they exist even more strongly than they do in the Clean Air Act. This basic provision is very inhibitory to growth.

We have a situation, I think, that now with a certain ambient threshold level being established and a certain ceiling - if you want to consider it that - being written on permits for all these discharges in the country - and the first sets of permits are going up now - is that those existing discharges forever more may represent the ceiling as to the quantity and quality of the waste that they can discharge. This has very controversial and very far-reaching implications, in that if a community of 10,000 anticipates growing to a population of 40,000, if it receives a permit for a population of 10,000, it could not be expanded to reflect the increase in growth. So the community would be confronted with several alternatives:

1. It could go to a high technology level and try to still achieve that same permit ceiling.
2. It could provide for basically no growth, but just replacement growth.
3. It could go to land disposal, such as is required in California - some other alternative type of technology that doesn't result in discharge.
4. It could try and strike an equilibrium with some of its neighbors, and they could trade off, so that Community A could have some growth, but borrowing some of the capacity from Community B down the stream or next on the coast.

These particular anti-degradation provisions, I think, will mostly affect inland waters, because generally speaking we are rationing down - we just can't

increase in capacity - but within the coastal zone, there is the assimilative capacity on the part of the oceans, and what we are confronted with again is, perhaps, a major geographic and economic redistribution. If any of you have any sort of feeling or ideas on this, I eagerly solicit your views - just send them to me, please.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART V

Mr. Kenneth H. Murdock, Office of the Chief of Engineers,
U.S. Army Corps of Engineers

Ladies and gentlemen, I'm going to have to start this off with an apology, I'm afraid. I don't come with a package of grants - the Corps of Engineers is not a granting agency. In fact, we're not even a basic data-collecting agency. I guess the common term for what agencies such as the Corps have is really an action program. We get all of our money directly from the Congress, specific appropriations out of Congress for management by the Corps for Corps-type programs. However, as some of you may know, we have programs that have a great deal of relationship to the coastal zone.

Really, my concern here for the next few minutes will be to try to outline some of the programs and activities that the Corps has that relate to the coastal zone. Of course, the program of the Corps involves a broad range of responsibilities that relate to protection, development, management of water and related land resources. These responsibilities cover such things as comprehensive planning; project implementation-type planning; design and construction, generally project-oriented; and again the operation and maintenance of projects. We also support this with research and regulatory programs in the navigable waters, both coastal and inland. Basically, as I noted, the money that we receive from the Congress is to be managed and spent by the Corps; we do not normally have a program that will give money to States or to local governments for their management and their use.

In our programs in the coastal zone, I concentrate primarily on the navigation authority; the beach and shore erosion protection enhancement area; coastal flood protection and flood plain management services; water-based recreation; and related fish and wildlife conservation enhancement. The problems that we face

today in using our natural resources to meet whatever needs happen to be generated in the near future must be balanced, not only by popular demand, but by existing legislation, with the need to protect and enhance environmental values, and to reflect social values as well.

A few words about our organization. I'm not going to go into detail; in fact, I didn't provide a detailed organization chart, because I really don't think it relates very well to what we're trying to do here today. Our basic program, of course, is managed by the Office of the Chief of Engineers in Washington, by the Director of Civil Works. We work through division offices. Nine of the eleven Corps of Engineers divisions are in the coastal zone, of which there are approximately 20 operating offices. One of them is a division office, and the rest are district offices. A district is where the work goes on; this is where we carry a program out. I did provide a chart in the handout kit that shows the boundaries of the districts. Someone who really wants to learn about what the Corps is doing in their area should go to the District Engineer.

Similarly, we have a series of research-type organizations that support our field activities and then provide general information to the public, such as the Coastal Engineering Research Center here in this area, which recently moved from the District of Columbia down to Fort Belvoir, Virginia. We also have the Waterways Experiment Station in Vicksburg, Mississippi; the Institute for Water Resources, also recently moved to Fort Belvoir; the Cold Regions Research and Engineering Lab at Hanover, New Hampshire; and even the Waterborne Commerce Statistics Center, which is down in New Orleans.

Along the lines of these research facilities, particularly the ones that do basic research, either to support our program or someone else's, such as the Coastal Engineering Research Center, or the Cold Regions Lab, or the Waterways Experiment Station - they do work on a reimbursable basis for a State and local government,

and many of these research labs have done this over the years. It's not their primary mission, but they're happy if they can, in order to accomodate a program of a State in specialized research that relates to the coastal zone. The Technical Director of CERC, incidentally, asked me to place in your handout kit his summary of capabilities. The Coastal Engineering Research Center moved last month to Fort Belvoir, Virginia, and will be moving all of its facilities there eventually. They will be able, however, to do anything that is outlined in that technical publication.

Under the Coastal Zone Management Act, Section 307-C, the Federal agencies have to carry out their activities in the coastal zone in a manner consistent with the approved State management programs. At this point, I'd like to touch on some of these programs in the coastal zone in relation, as much as I can, to the interest of a State. The Corps Navigation Studies Programs relate to the improvement of the coastal and Great Lakes waterways and harbors. We try to provide safe and economical waterborne movement of commodities, commercial fishing, and recreational boating, etc. These are individual studies funded by the Corps that work with the detailed planning of a construction project specifically authorized by the Congress, or to maintain an existing project, such as the approach channels to a portion of the Port of Baltimore. As Mr. Stanton indicated yesterday, much of the development of the port itself is by private interest, or by State, or by Port Authority - someone other than Corps of Engineers.

As we in this country continue to face the prospect of limited or diminishing raw materials, particularly those that come from domestic sources - and I might note, as others have, that petroleum products head the list of those that are currently short - the need for deep water navigation facilities will become more acute. During 1972 and this year, the Corps has been coordinating a series of studies of deep seaport and harbor requirements for the North Atlantic, Gulf, and Pacific

Coast. These studies investigate such items as off-shore alternative terminals, giving particular attention to the very large crude oil carriers' taking of the trade in a critical commodity due to the economic advantages of very large crude carriers. There is not much question that they are coming; it's a question of whether we can accomodate them in this country and capture the economic advantages that they have.

These deep port studies identify the advantages and disadvantages of using super-sized vessels in commercial trade; and we try to identify the deep water ports sites, giving consideration to the environmental, social problems, and impacts as well. It's not just an engineering study.

In cooperation with the States, other Federal agencies, the maritime industry, we try to pull together the engineering, physical, biological, etc., information that will bear on a series of decisions that are going to be made about the use of a superport. Of course, the final decisions are related to what we're going to do in the way of importing of ore and crude petroleum. This is not a decision for the Corps, we're just providing information. However, the coastal States in particular have a very significant stake in where deep water port facilities are provided, if, in effect, a decision is made to develop them.

In another area, that of shore protection and restoration and enhancement of shorelines, the Corps, in cooperation with, again, State and local interests, develops programs to halt erosion, restore or enhance shorelines for public recreation, park, and wildlife refuge uses. Federal participation in each insures stabilization projects, and primarily is justified by this recreational use by the public. Under existing law, the Corps has authority from the Congress to provide Federal participation in the cost of restoring and enhancing shorelines, with the intent of minimizing the erosion caused by wind and tide-generated waves breaking along these principle shorelines. The cost of protection and restoration is based

not on a fixed or flat formula in all cases, but on the type of shore ownership use. Some of the discussion this morning about private vs. public use of shoreline bears on the extent to which the Corps can share. In effect, if there is no public benefit, Federal funds cannot be used; it's that simple. Our participation in the first cost of protecting shores owned by public agencies, non-Federal public agencies, can go up to about 50%, not counting the cost of the land.

However, these shorelands must be open to recreational use by all on equal terms to get the 50% grant. Under special conditions of participation, beach protection for a State or other publicly owned shore, park, and conservation area - which is more than just a beach or recreation area - is eligible for Federal cost sharing up to 70%, again excluding the land cost.

Related to this same area is our coastal port protection, where an economically justified project, providing hurricane, tidal, or lake flood protection can, by precedent, receive a Federal share up to 70% of the project cost. In this case, the local government, State, or municipality is required to provide the land easement and rights-of-way; if they do not total 30%, they make up the difference in a cash grant. But they must provide at least 30% of this project, provided it is justified. These are, of course, all coastal zone projects.

Relating to the Great Lakes, recently we've had a series of damaging events - storm-induced waves, waves set up combined with the very high lake levels that we have now - have caused extensive shoreline erosion and flood problems. We have made a number of special studies, and outlined some emergency actions intended to protect life and property. Last December we started a program along the shores of the Great Lakes which, where damage can be justified by investments, we will do some limited work to protect the low-lying communities. However, the local communities have to provide the necessary rights-of-way. There is no hope, however, of protecting all of the lake-shore community; they are going to suffer damages

because of an abnormal series of events, because of the manner in which the lake flood plain has been occupied.

Which brings me to another program, which I think is one of the more valuable that we have that the States can make a great deal of use of, and that is the Flood Plain Management Services Program. This program provides technical and planning assistance to the States that relates directly to the way in which flood waters impact on lands on the flood plain. We have prepared in recent years roughly 700 formal flood plain information reports covering all or a portion of roughly 2,000 locations that have a potential for flood loss. Looking at the impact of this kind of a program, we find that about 600 areas, municipalities, regions, have adopted ordinances that attempt to deal with the flood problem.

This Flood Plain Management Services Program offers the basis for non-structural - that is, non-traditional - types of solutions to existing or potential flood problems which give the State or local official a weapon to use in dealing with the problem at the local level. In effect, he is getting from the Corps technical guidance, technical advice, on how to avoid the flood losses. We don't spend a great deal of money in this area - about $9 1/2 million in this fiscal year - but this is double what it was five years ago; so the trend is in the right direction, and the need is there. We cannot really meet the need to the extent that the States place a demand on the Corps, but we're doing the best we can.

This assistance and guidance generally is provided to a State on request. It also includes assistance in preparing flood plain regulations, including such items as flood plain zone assistance, subdivision regulations, building codes. However, this is the State and local job to carry these out, not the Federal job.

Also, under the National Flood Insurance Program, the Corps assists in setting the rate structure for the program of insuring against flood losses for those established on the flood plain.

Another area is our regulatory programs that relate to navigable waters. As, of course, most of you know, the 1972 amendments to the Federal Water Pollution Control Act gave the Environmental Protection Agency what used to be called the Refuse Act Permitting Program under Section 13 of the old 1899 River and Harbor Act. Now all the Corps does is review these for their impact on navigation. However, we still retain, under other sections of that same 1899 Act, the very important responsibility to regulate applications for permits for dredging, dredge spoil disposal, filling, and construction in navigable waters - and "navigable waters" has been much more broadly defined by the new Act. In fact, the whole series of recent pieces of legislation, beginning with NEPA - the National Environmental Policy Act - and the 1972 coastal zone legislation, places a great deal of stress on the environmental values and the public interest which is beyond just the environmental values, before the Corps can issue a permit. When the States have adopted their coastal zone management programs, and secured the approval of the Secretary of Commerce, the Corps will be in a position to support the States' certification required under the Coastal Zone Management Act.

Related to that, and the problem Mr. Stanton mentioned this morning, is the increasing concern for the disposal of dredge material, particularly from the polluted harbors. The Corps now is authorized to make a nation-wide comprehensive research study concerning the disposal of dredge material. We hope that the early development of some reliable environmental data will assist in making some of the sound judgements that are needed on the requirements for handling dredge material, particularly to avoid extremely costly projects that may not be necessary in light of greater environmental data and its sound use in making a judgement on the handling of dredge material. The States are required, or a locality is required to assist the Corps in designating spoil disposal locations, and providing this location; so this is an element of local cooperation that makes the State directly

responsible for the decision on where dredge material is to be disposed - whether it's in a contained disposal area near the site, or must be hauled out beyond, as California originally intended, the 100 fathom line. This would make the increase in cost 10-20 times beyond what it has been in the past. They will have to look in great detail at the environmental data, the social data, the economic data, that relates to decisions such as these that must be made in conjunction with the States.

The Corps Estuarine Studies Program covers, of course, the full range of purposes that I have indicated. Detailed studies of major estuaries have included the Chesapeake Bay, San Francisco Bay, Delaware Bay, Mobile Bay, and Galveston Bay. We carried these studies out as team efforts with the involved States and Federal agencies, with the idea of better understanding the dynamic processes going on in these estuaries. This effort is supported by both the hydraulic or, if you wish, physical model, and a series of mathematical models. Dr. Hargis outlined some of the approaches that the Commonwealth of Virginia was using. Taking this Chesapeake Bay area as a local case in point, the people in this area feel that this is a critically important estuarine resource to the area. It is a focal point of investigation, not only by the Commonwealth, but by the Corps of Engineers, other Federal agencies, and the State of Maryland; and decisions made here have a great deal of interest to the general public.

The Baltimore District Corps, where I indicated all the work is done, is in the early stages of building a very large hydraulic model of the Bay. We expect to see this model completed and verified approximately three years from now, perhaps in the summer of 1976, and put to work in a joint Federal-State research effort, to try to focus on the Bay's complex problems, to try to understand better how the Bay operates. This site, incidentally, is just across the Chesapeake from the Annapolis area at Mattapeake, Maryland. It will be conveniently located to those interested in research in the Bay area.

In the way of other programs that are relatively new, the Corps, a little over two years ago, cooperating with the Environmental Protection Agency and several State governments, initiated a pilot wastewater management planning program. We began this program with five very large metropolitan areas that directly impact on the coastal zone. Here we tried to identify and analyze, on a regional basis, a range of alternative technologies for achieving a high quality treatment of wastewater. This is not just a processing of information and data, but goes beyond this to the array of social, environmental, and economic effects to the best that we can array these, so that the data is available to the local governments for making a decision on what system they will decide to implement. The Corps does not implement wastewater management systems; this is a local responsibility under the 1972 Act, with grants by the Environmental Protection Agency.

We found and confirmed one thing, however, in this regional program in the last year - that when you look at one urban-type problem you can't isolate that from others, and as a result we find as we raise solutions for, let's say, wastewater management, solutions for a series of other types of problems - stone water run-off, urban flood problems, etc. - become apparent. So, in effect, you must approach this kind of study from a comprehensive basis, much as the Corps and other agencies in the past have approached river basin studies - as comprehensive efforts into disciplinary cooperatives. We have, in effect, redirected much of our traditional survey programs with the idea of assisting these urban locations; and this year we began what we're calling an Urban Studies Program, which focuses principally on water resource management in an urban region.

Two things that I want to bring out in these urban studies is that the responsibility for comprehensive urban planning remains with the locality - we're not trying in any way to weaken this, but to provide additional information, additional capabilities, to the urban locality that requests such a study, so that they can

make their decisions more in line with the existing information that is available. Also, we try to fill the vacuum where our authority permits, in planning in an urban region - filling the vacuum in the water and related land resource area in particular, but we're not going to duplicate somebody else's program.

Essentially, the Corps - in the Urban Studies Program - will provide a coordinated planning service for State and local governments, so that the planning complements local planning, and responds to what the people of that area want. Again, the economic, the environmental, and the social impacts we're required by law to array in any of our decisions - any of the data that we analyze that relates to decisions that must be implemented by other people.

In summary, the Corps has an active and diverse program under way in the coastal zone. Over the past several years, we have increasingly redirected our planning and research, in particular, toward activities to provide more of a decision-making service to State and local governments. The national needs have, over the years, changed; and the States' responsibilities for natural resource management have grown; and they are going to continue to grow. I suspect that this is the trend, and that there will be a Corps efforts to follow that trend. We will be providing more of a planning research service as a part of our programs to the States and to the local governments.

If you have a problem you believe relates to any of the programs that I have just very briefly touched on, that the Corps is involved in, or to one of the research offices, don't go to the Washington office. Don't come to our Director of Civil Works. Go to the Division or the District Engineer, the man on the ground in your area. He is in the best position to advise you on whether he can help you or not; and if he can help you, what kind of application, or formal request, if any, is needed to carry out a program. And he also can give you information or the help you need in preparing any requests or any applications that may be needed.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART VI

Dr. Richard Kolf, Program Manager, Environmental Systems & Resources Office
National Science Foundation

I think that one thing that should be clear very quickly is that the National Science Foundation certainly stands in a different position here among the other Federal agencies in the terms of your viewing us as a resource which you can use to solve your immediate problems.

For these two days now, I think we have all been looking at the same set of problems, with some different perspectives. To try to classify some of the moods that I heard, there seems to be one trend that was along the line that our problems are very urgent, we do know quite a few things right now - let's get on with it - and another sort of group that was saying, on the other hand, that these really are very complex problems we're talking about, and that if we're not careful we will be doing irreversible harm.

I suppose that the National Science Foundation's perspective is more towards this dilemma side of the fence, although with the Research Applied to National Needs programs, we are trying to mobilize research to do some good in the near future. For those of you who don't know the National Science Foundation well, it's a Federal agency which was formed in 1950, and its unique concern is to foster scientific progress generally. This is done mainly through grants and contracts in support of scientific research and research facilities. None of this research is conducted in-house by our own staff; we don't have a mission in the sense of any of these other agencies that are speaking with you this afternoon; we do not have regional offices, we have only one office in Washington, D.C.

Several years ago, Congress directed NSF to search for ways to apply scientific knowledge to help solve national problems. It was in response to that that this new program area was formed, entitled "Research Applied to National Needs,"

or RANN. Within RANN, the Division of Environmental Systems and Resources, the Division that I am in, and Phil Johnson, who was the Chairman this morning, is the Division Director, operates a program we call the Regional Environmental Systems Program. This is the element which is most directly concerned with coastal zone management, the one which would like to be helpful in this overall job of organizing and managing the coastal zone.

Another trend in the conversations these past several days has been that certainly, although there are characteristic problems in the coastal zone, the various coastal areas are quite different. They are different because the natural systems themselves are different - they are also different because the socio-economic pressures which they are feeling are quite different also. For instance, even though we can speak of oil in Louisiana or on the Alaska slope, certainly the situation in the two areas is different.

There will, therefore, always be, we would expect, a spectrum of development and management strategies which might be applied to the problems which occur. And it is the major aim of our program area to enhance man's capability to select from the spectrum of possible strategies. These strategies must be developed for specific environments, and within the context of the overall societal goals.

Many regional environmental problems arise from the conflict over alternate uses of space, the utilization of certain resources, and the maximizing of particular product yields. In this regard, resource managers are frequently unable to project accurately and evaluate the consequences of possible alternate policies affecting the environment.

The complexity of environmental management issues, we think, stems from multiple uses of land, air, and water resources. I suppose that has been obvious to most of those who have been speaking. Whereas many uses of a particular area may be possible, some combination of these uses are incompatible, at least at high or

intense levels of activity. Further, the capacity of various ecosystems to sustain human activities is only partially understood. Compounding the environmental constraints to human activities are these varying human desires and values, as well as the human experience of our present political institutions with regard to handling these complex issues.

The complex environmental problems are characteristically intractable to a fragmented, disciplinary study approach. This, I suppose, is the party line of our Division. An interdisciplinary, or systems, approach, to such problems is, therefore, often necessary. In addition, land use and resource management problems are essentially regional in nature; but their ultimate solution is complicated by the fact that the decision structure tends to be at a local level. Environments vary but tend to be geographically bounded, whereas government units are politically bounded with overlapping jurisdictions. Therefore, it is desirable to focus on regional problems and to link the research efforts to specific local users of the results for concerted action.

It should be clear that NSF, through the RANN program, is seeking new levels of understanding of environmental problems. Since complete ecological knowledge is not a realistic hope yet, we believe the scientifically valid methods and criteria must be developed in a timely fashion to aid decision makers accounting for uncertainty and human preferences as well as possible, and yet flexible enough that they can be readily modified as the knowledge base improves. We are, therefore, in the business of supporting research, but hope to build into each of our projects a formal relationship between the researchers and the research user agencies, which often will be the cognizant State agencies. In contrast, I might say, we are not in a position to offer direct grants to States in support of their planning needs.

Another contrast, and one which might be not so easily recognized, I suppose, is that many of these problems might be approached from the standpoint that Dr. Hargis was explaining the other day - that it is necessary to collect data, to develop a good inventory, in continuing data-taking systems, to have a good information storage and retrieval system, and to have a base of scientific help which can help you analyze those when you have an immediate problem. This is not how we see our mission in attempting to seek new levels of understanding of the environmental problems. There are many other agencies that are in the business of data collection for our particular missions.

This lists what we feel are some of the goals that we attach to our projects, and I'll try very quickly to tell you of the few projects that we have going. They are relatively few, and most of them have been going for less than a year, so we have no particular output to offer you at this point.

The projects more or less classify themselves this way: We have one in the Chesapeake Bay which is tied very closely to the Corps of Engineers' Chesapeake Bay study. We have another in the Delaware Bay. Both of these tend to be oriented around the pollution problem. As Dr. Johnson mentioned already this morning, our study of the various management agencies in the Chesapeake Bay area showed fairly conclusively that the primary problem in most of the agencies' minds is the problem of domestic waste. Besides these two, we have another project in the State of Texas, and we have Joe Mosely and Senator Schwartz here - both of them are very closely attached to that project. I might add that each of these projects has someone here who would back me up on the questions if you want to approach them later. Bill Hargis and Garrett Power are attached to the Chesapeake Project; Joel Goodman is attached to the Delaware Project that we have.

The Texas Project, we think, is farther along the route to producing something which may be meaningful and usable to some of the others of you. It is a two-year

project, going into its second year right now. The first year was to produce an environmental assessment, and the second year of the project, the team of the University of Texas at Austin is attempting to develop a method for predicting the effects of environmental policies; and they are working very closely with the State in choosing the policies they will evaluate in their tests.

A fourth project that we have is at Oregon State University, and this one is focused on dredging and spoil disposal. The objective is to develop and evaluate methods suitable for measuring and evaluating the ecological changes due to estuarine dredging operations.

As I said, none of these projects is completed, none of them has an output which I can offer you. We do intend to develop a very careful utilization plan, which will as well as possible develop from each of these projects the transferable parts, and to make them usable to other States that may have similar needs. We do not have those utilization plans completed at this point.

I might say that what I intend, first of all, is, through our present contacts with the Council of State Governments, to try to analyze the ways in which the output might be best transferred to you, and to go from there. We have, in other words, this base of the Council of State Governments, and also the Coastal Zone Management Office, through which we will try to work. One of the values in being here today is to get your ideas of how we might be useful, since our relationship has to be a little bit more remote and secondary than in the case of the other agencies.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART VII

Mr. Robert Paul, Director, National Growth Policy Division
Department of Housing and Urban Development

This is kind of a homecoming for me, because as some of you know, I wandered out of a coastal State, namely California, in fish and game work a few years ago - we were worried about wetlands and things. It's one of those occasions where you wonder about some of those early discussions you had 10 years ago about how to preserve a coastal wetland would ever turn into an organization that we have here today, and the number of people that we have involved.

For those who may not be State Planning Officers, HUD is sort of an unknown agency to many of you, I suspect. We've gotten a lot more recognition lately, though, since the old Paul Newman movie is beginning to show up on the late show; and one of my children is convinced that my real job is to go out and kill cows and get hoof-and-mouth disease in the coastal plains of Texas, which I think is a very appropriate setting for some of this group.

HUD is a different agency in contrast with our friends from the Corps, because we really don't do anything. We're frank to admit it; we're the Department of Housing and Urban Development, yet we build no houses, nor do we do any urban development. Our mission in life, as we see it, is to react to the wishes of others; and that's basically how our programs have evolved and what we do now. This is not to say that we wouldn't appreciate all the help we can get from you people to help us sell flood insurance policies, or in some cases to put some of your more unscrupulous lot sellers in jail when the lots are really under four feet of water. I understand land sales work is absorbing a tremendous amount of time, and we hope to be in a position soon to ease some of your problems by shutting down a few more of these real high-powered land sales that are going on around some of the coastal zones of the country. In some of these areas, we get some

sense of satisfaction. In most cases, our job is strictly to react to somebody else's application and supply the money that other people need to help do a job and meet our particular goals and objectives.

Lately we've also played a very strange role for us, namely that outfit in town called the Office of Management and Budget, OMB, has found us; and every time that a good new planning program comes along, like land use or coastal zone, or they want to change another program, like EDA (Economic Development Administration), there is a little line that shows up in the budget that says, "if you really want some money for planning, go over to HUD, they have a lot of it." The distinctive part about this is that HUD doesn't really use many acronyms; we use numbers - like 701, 235, and this tends to confuse people a lot. When you just arbitrarily say to a good marine biologist, "now about the 701 program," he gets this real blank look. In the meantime, the State Planning Office has already got their hand in our pocket and they've got the money anyway. I see a split in the audience here between those people who have never heard of us, and those like Shelley Mark and Phil Savage who have heard of us and have made good use of us. And when Shelley listed the resources, he's really looking at only one of those resources, because he's learned how to use us, and use us pretty effectively. And we're awfully happy to have the chance to work with him on the program they've developed.

The first thing I want to tell you is the traditional programs that some of you have known from HUD have disappeared. We are in an interesting year of transition; as of the first of the year, we terminated a lot of our traditional categorical grant programs. These were the community development programs, the help we used to be able to give when a town wanted to come in and buy a park, or buy a piece of beach - we were in a position to, say, give them half the money for it, under a grant program for open space, or to help a water system or a sewer

system, or even urban renewal. All of these programs are caught up in the Administration's policy thrust to go into revenue-sharing approach, and all of this has evolved into the Federal Communities Act, which was mentioned earlier, I think, by Shelley. That's now in Congress, where we've taken all of our available grant programs, the hardware programs at least, and have proposed to put them into a block grant basically to cities.

There is something of interest for you State people here, because for the first time, a fair percentage, maybe 20% of this total block of money, which is $2-3 billion per year, is going to go to States. And it's going to go to States at the Governor's discretion to redistribute these funds to some extent as he sees fit. This, as I say, is about 20% of the money, which will be channeled through States for the Governor to use just as he sees fit; although there are some restrictions on how much has to go into metropolitan areas. Basically, we are a metropolitan area-oriented agency; in a sense, we complement the new Rural Development Program in the Department of Agriculture.

So our new bill does provide that the major share of the money does go to metropolitan areas and to big cities. What's left over is going to States; and I can see opportunities, for instance, for some Governors, and some Governors will use these monies to augment land acquisition programs, or they could use them for many different purposes. In the planning side of the shop, where I am, the same thing is happening. In the past, we've had HUD programs working directly with big cities or metropolitan planning agencies where they would come to us with an application, and we'd fund them directly - a two-thirds planning grant, a 701 Program. This, too, is probably going to change. It is going to change in about the same fashion, except that rather than going to cities, this is going to be an entirely State-run program. The long-range goal, at least as written in this year's budget, is that all planning grants will go to Governor's for distribution to all of the eligible recipients within the States.

Currently, there are five general recipients of planning money: big cities; metropolitan agencies; area-wide planning agencies; local assistance for small towns; and direct State planning programs. The smallest part of this money has always gone into the direct State planning programs in the past; although for the last couple of years, the States have handled the distribution of funds for local assistance and for non-metropolitan planning agencies.

With all of these lumped into one sum and going to the State, I think that, if our past experience with similar programs is typical, you'll see a rather sharp and major buildup of the direct State planning activities. As I say, beginning next year, I don't have to tell you where our area offices are located, or our regional offices are located; if you want to get some of our planning money, all I can say is, get acquainted with your friendly Governor, because he is really going to be the guy controlling the allocation of funds; and we are going to step nicely out of the picture in all probability.

To implement this completely, of course, requires new legislation. This is wrapped up in a bill which I had hoped to bring a copy of today, but OMB seems to be having some clearance problems; so I really can't talk about it too much yet - it's not in final form. This will be called, very novelly, the Responsive Governments Act. We've been accused of having contests for titles to put on our new bills, but this is one that was picked, believe me, outside of the Department. As I say, the thrust of this will be a rather sharp increase in the total amount of money available for what used to be called planning, and now is going to be called more management than planning - use of the funds is quite unrestricted in terms of being used for planning and management purposes, basically directed to Governors. In the next fiscal year, we'll be in a transition period; but we're going to try to move under existing legislation as much as we can into this State distribution system; so I hope that you're getting my message loud and clear.

Don't bother to call us, call your friendly Governor, if you really want to take advantage of that little item in the budget that says, "if you're short of money, come to HUD."

I rather liked Shelley Mark's phrase that it's time for a "creative pause." I want to make sure that you don't equate this with another phrase like "benign neglect" in referring to our program for next year. I assure pause" is a fine phrase; we're in the middle of this now, we're reshaping our programs quite rapidly, and quite along the lines that I think will be of more direct benefit, particularly to coastal zone and land use planning.

In the material that was passed out, we suggested a couple of things that you might not have thought of in terms of how you might use some of the HUD 701 money that you can lay your hands on next year. Our policy is very clear; as long as there is planning and management, we don't care. I suggest that if you hadn't thought about it, you could use HUD funds for studies to prepare the stage for implementing coastal zone and land use policy legislation, or getting into direct land use planning now, there are critical environmental areas, while waiting for the Land Use Policy Act to pass. Of course, if the Governor so wishes, any funds from HUD can be used for any part of your coastal zone planning program. I stress again that if the Governor wants to use it this way, we think it's grand, and there is no HUD policy to prevent it.

One thing that some States are beginning to use more of - and we would encourage, by the way - is the type of thing that Shelley mentioned that we think is extremely crucial. There would be no restriction on the use of HUD planning 701 money to begin to revise your own State laws, making studies of law revisions, or organizational changes that you may need to better manage the land use and coastal zone planning programs when they come along.

Again, I would like to reflect a little bit on the comment made by the State of New York on Shelley Mark's presentation. His listing of what the States' needs

are, I think, is highly appropriate; and I would only say that from the Federal, and particularly the Federal planning point of view, I think we will be moving in the same directions just as fast as we can, particularly this coordination of Federal planning activities and Federal planning requirements. I think you'll see some rather sharp moves within the next year to go into the single agency handling more different types of planning. It's not too important to you, but it's very important on the metropolitan and area-wide level; and we're absolutely committed to getting the Federal house in order, as Shelley suggested as the number one priority. And working with Bob and Lance and the rest of us, I think we can really show you some improvements along this line within the next year.

RELEVANT FEDERAL PROGRAMS AND RESOURCES - PART VIII

Mr. Robert Wildman, Senior Program Officer, National Sea Grant Program.
National Oceanic and Atmospheric Administration

I'm supposed to have about half an hour to describe Commerce's programs; but I assure you I won't take anything close to that. So with real apologies to my colleagues in the Department, and particularly in NOAA, I'm just going to skim over the highlights to identify some of the activities and programs which may be of interest to the State and local governments.

In attempting to cover Commerce's programs, I've tried to use the approach of someone from outside the Federal Government by saying, "Okay, they've got something that I want or may want; now how do I go about getting it?" So with that in mind, looking at Commerce first - that is, other than NOAA - we have a group under the Assistant Secretary for Science and Technology which primarily is involved in coordination of inter-agency programs, and particularly those in the environmental area. At some point in time, you may find need to identify some of the broader programs in Commerce, and want to go to that group.

There are a couple of other groups in Commerce which are heavily involved in the information and data field which you might not think of looking to. One is the National Technical Information Service, which was formerly known as the Commerce Clearing House. NTIS has R&D reports from about 250 different agencies; they number about 300,000 at the present time, and I think they add about 200 reports per week. So there is a monstrous repository. These reports are available individually, some of them are collected abstracts, which you can obtain; and like all good Federal programs, they have their series of brochures which describe these services and how you get them.

The other organization within Commerce which you shouldn't overlook is the Social and Economics Statistics Administration. This Administration includes a bureau well known to all of you - the Bureau of the Census and the Bureau of

Economic Affairs. They are heavily involved in the collection, analysis, and dissemination of economic and demographic statistics; and in addition, I understand the Bureau of the Census does offer a special seminar for State and local governments on how to use the various Federal statistics that they collect.

The fourth group within Commerce, outside of NOAA, that is heavily involved in the coastal zone field is MARAD - the Maritime Administration. Most of you are very familiar with MARAD; they are conducting work in the ports, port facilities, and intermodal transportation systems fields; they are working on ship pollution abatement. They are also involved in some special programs like the liquefied natural gas transportation program, and like the Corps of Engineers and the Department of Transportation, looking at offshore deep water terminals. They have some special reports out - one as a result of a study by Soils Associates that was published last year; another that is put out by the MARAD staff itself on the economics of deep water terminals. Both of these are quite new reports. They also represent a good resource in terms of technical advice, should you want to discuss any of your problems in that field with them.

I'll turn now to NOAA, which has a significant activity, as you know, in this field. Nearly every component of NOAA does something in the coastal zone management area, all the way from the Administrator and the Associate Administrators and their staffs, down through each line component. Some of the contacts by State governments may well be at these higher levels; but I think for my remarks this afternoon, I will limit them to the line components, where you'll probably be most frequently involved with the staff there.

There are several things that the various NOAA groups do have in common. First, that each staff has technical expertise in the several fields for which they have responsibility. These people are available for consultation on coastal zone problems, with certain limitations; and those are ones that will surprise

you a bit. I am sure that in nearly all instances where the assistance can be provided with a few hours of discussion, there is going to be no problem. However, should a large amount of staff time or actual data collection or analysis or dissemination be involved which is not a part of an ongoing program, the existing and probable future limitations on funds and manpower will probably present some difficulties. Some re-programming of funds and diversion of personnel from assigned or approved projects could be required. However, this should not discourage anyone from requesting information or assistance from the appropriate NOAA component directly, or through the Office of Coastal Environment.

You'll notice in the handout that is in the packages that you received at the start of the Conference that several of the NOAA components do have field or regional offices to which you can turn to get a more local point of contact. This is true of the National Marine Fisheries Service, the National Weather Service, the Environmental Data Service, and the Sea Grant Program, through its participating universities.

I will not discuss the activities of the NOAA groups, because they are well discussed and described in this brochure. I will call your attention to certain of these groups. If you are looking for information in a certain field, some of them are more specialized than others. For instance, in the living resources area, the obvious group to turn to would be the National Marine Fisheries Service. They collect and maintain data on the abundance, location, and availability of all kinds of commercial fishing and other living resource thought. They are involved in management programs; they have a significant State-Federal cooperative effort; they do provide some aid to States that includes some work in the management field through the Federal Aid Program, Public Law 88309. They are also involved in a voluntary inspection program of seafood processing plants. They administer the Marine Mammal Act of 1972, and like most agencies, are involved in water resource problems.

If your interest at the time lies more with ocean boundaries, tidal information, currents, that sort of thing, then the group would be the National Ocean Survey in NOAA. They conduct continuing surveys in various locations around the country to take information in fields such as geodesy, gravity, they do aeronautical charting, hydrography, oceanography, everything in that area. They are involved in delineating shorelines, and providing information on tides, currents, etc. A series of current and recent studies are described in this brochure in which the National Ocean Survey is involved.

One of the projects which you might be interested in that does involve NOS is the cooperative effort with the State of Florida, and it's a program in which they are sharing the cost on a 50-50 basis. This project is one in which they are attempting to identify and establish the mean high water marks for legal purposes, and does involve the setting of tidal data plains, aerial photography, and the making of maps. I understand they hope to end up with about 450 separate maps which will cover the entire coastline of the State of Florida, and this program is scheduled to last some five more years.

Another group in the general environmental field which does have some information in coastline areas is the National Weather Service. Although they are primarily atmospherically oriented, they collect a variety of information on the oceans and attempt to use this to predict and warn of adverse weather conditions, including floods, hurricanes, etc.

A rather highly specialized source of information in NOAA is the National Environmental Satellite Service. NESS works with the NASA and Interior groups, and it does obtain data from operating environmental satellites.

The primary in-house research arm of NOAA, the Environmental Research Laboratory, has labs in various places in the country, including Boulder, Seattle, and Miami, and does a wide variety of research programs in things like physical

and geological oceanography, geophysics, air-sea interaction, collecting a lot of information in this field. They do have a small satellite oceanography program; they are managing a program which has grown from a very small Sea Grant project a few years ago into a significant effort now - it's called the NOMES project - the New England Ocean Mining Environmental Study. This program is intended to attempt to identify the environmental effects of sand and gravel mining operations, and it is located in the waters off Massachusetts. The Department of the Interior, the Corps of Engineers, EPA, the Coast Guard, the State of Massachusetts, several universities, and a couple of private companies are involved in this cooperative effort.

All of these NOAA groups, and many others, take an enormous amount of data. Most of this data is to be found in the Environmental Data Service of NOAA, particularly in the National Oceanographic Data Center. Again, NODC has information available to you for use of their services, both in putting data in and in taking data out. This user's guide details everything you want to know about how you use the service, and it's available from NODC.

Another part of EDS is the Environmental Science Information Center, which is NOAA's librarian; but it also indexes, abstracts, and announces scientific and technical publications. They also have a fine brochure. Most of these, incidentally, have been out on the table; and if they are still there and you want to take them, please do so.

One NOAA component which I can say without being suspected of being biased that is really one of the key ones in the whole field of coastal zone management is the Sea Grant Program. We have activities throughout the United States in many different fields, but our greatest effort is in the support of programs which provide information of use in coastal zone development, coastal zone management. We operated primarily through academic institutions, and have worked

in the coastal zone management field in about 20 States. Our research programs really cover the waterfront - we've got work on law and economics; public policy and management; applied oceanography of all kinds; living resource definition; coastal and ocean engineering; ports and terminals; ecosystem analysis; environmental modeling - all these kinds of things.

And in addition, we have the advisory service programs. The Marine Advisory Services started out as an element just as the Sea Grant Program; they have recently been expanded so that it is NOAA-wide, and involves not only the academic institutions that we support, but also the other NOAA components. There is an existing Marine Advisory Service in 21 of the 30 coastal States; and we've either held discussions or planned for an expansion of that to the other States. In many of the States, it is directly linked, and in some it's a part of the cooperative or Agricultural Extension Service.

Some Sea Grant support has been provided to State and local governments, primarily through cooperative programs with these academic institutions. But in some instances - for instance a program we had for about 3 years with the Nassau-Suffolk Bi-County Regional Planning Board on Long Island - we have supported local government directly in the planning efforts. Our grants are on a cost-sharing basis; our funds cannot exceed two-thirds of the total cost of the total project.

I have left to last one of the hosts for the Conference, the Office of Coastal Environment. It is the focal point in NOAA for the coordination of coastal management programs. It involves two other sub-groups, including the Man Undersea Science and Technology Program, which does provide manned undersea support for investigations in the coastal environments. This involves use of habitats, submersibles, divers in some of the programs. The other very significant program, MESA, the Marine Ecosystems Analysis Program, is intended to provide a better

understanding of the marine environment and man's impact on it. This program will consist of regional studies, and it is starting with the study of the New York Bay area. MESA also administers the Marine Protection Research and Sanctuaries Act of 1972, working with EPA and the Corps of Engineers.

Lastly, the Coastal Zone Management Task Force, which, as you know, administers the Coastal Zone Management Act of 1972, and will provide grants for the development of coastal zone management programs, administer those programs, and then purchase and operate estuarine sanctuaries as natural field laboratories. This last group is really, I guess, the one you turn to for assistance when all else fails. Bob didn't authorize me to say that, but since he and the rest of the group in OCE are close friends of mine, I'm just going to take a chance and offer it anyway.

I think I would like to conclude by saying that in going through this exercise of identifying what we have in Commerce, and in listening to the discussions this afternoon, it appears to me that we could easily overwhelm State and local governments with all kinds of information and data, which frankly wouldn't help them a great deal. One of the key problems may well be in defining exactly what you need and in what form, so that the Federal agencies can, in fact, be helpful to you.

CLOSING REMARKS
Mr. Marston

I think one of the important lessons we've learned from this day-and-a-half is getting a better understanding of what it is that we think, or the dimensions of this coastal zone problem, this land use problem. Surely, I think, the presentations that we've had this afternoon give you some sense of the dedication of the Federal Government, and perhaps give you some sense of the overwhelming resources and perhaps some of the discontinuities that exist between the Federal resources and the needs of the State.

I think Shelley Mark, and other speakers, too, have captured the sense of an undercurrent that I think many of us have sensed for some time now: that indeed we do need a new system for intergovernmental working relations, and that includes both the technical and management assistance that the various agencies that will have responsibility for administering the coastal zone program and the land use program will have to bring to this task.

Obviously, there is just no question in my mind that the Land Use Bill is going to require the collective talent of a whole lot of people, certainly beyond the breadth of experience and the competence of one Department. The Department of the Interior couldn't hope to do all that's called for in this legislation, any more than I'm sure Bob would acknowledge just by the presence of these other Federal agencies, the coastal zone management is going to require the cooperative effort of a lot of Federal, State, and local agencies. It's going to require the collective efforts of industry and academia. And I think, surely, it's a tribute to the kind of leadership that we've seen demonstrated here over the past day-and-a-half that you see this recognition. I think this forum has provided a good introduction and an easy exchange of some of the problems that we all face; we're all at the cutting edge, and we're all going to have enormous responsibilities in trying to provide some more rational approach to the planning and management of our national and natural resources.

We need a lot more work; and I for one - and I'm sure Bob Knecht shares in this - would welcome any thoughts you have in terms of how we may be able to better identify what it is you think you need to do the kind of job that is being pushed on you, and pushed on you quickly. I'm talking now to State and local people principally. It's important that we know, because we have the unfortunate task - or fortunate task, depending upon your perspective - of trying to get our agencies to re-order priorities, to assist us in the implementation of these important programs. In addition, we have the responsibility of developing a demand rationale that can be used to sell new programs and to communicate to the Office of Management and Budget and to the Congress what you feel needs to be done. We can't do that in a vacuum. The trouble in the past has generally been that we have tried to do it in a vacuum; and as a result we've misrepresented the facts, we have not provided the kind of services and the kind of products that indeed are responsive to your needs.

So, in my judgement, this kind of a forum has been most helpful; but we need an awful lot more work. And of course, we need to avoid the costly duplication that comes with new programs. The moment new money comes down the pipeline, everybody casts around for the simple answers, the panaceas. We simply cannot afford that any more - there are too many people who are checking, and properly so, to make sure that we use our money in the most cost-effective way.

I for one want to take this opportunity again to express my appreciation to Bob Knecht and to all the others, and to our participants today, and to you, for your attention and patience.

CLOSING REMARKS

Mr. Knecht

My remarks will be short, since the hour is late and it's been a long afternoon and a long day -- but I hope an interesting one.

I think the sense comes across clearly to all of us that the States must continue and accelerate their efforts in the area of coastal zone planning and management. The time is short. Essential projects are being held up, on the one hand, and other developments that will turn out to have been ill-advised, are going ahead for lack of information on their full impact.

There is one statistic that drives the coastal zone management problem home to me. In the case of land, at present there are 10 or 11 acres of land for each citizen in the United States. Of course, this will decrease as the population increases. But in the coastal areas, there is only 2 1/2 feet of coastline per person at the present time. That's "shoulder to shoulder" along the U.S. coast for our population. If you subtract Alaska's coastline and population, it's not shoulder to shoulder, but stomach to stomach -- about 1 1/4 feet per person. Our coastline is a finite and very limited resource.

In any event, I would like to review a couple of the points that have come home to me in the last couple of days. I think those of us that have organized the Conference have been pleased with the response, with the attendance, and with the interactions that have been taking place, both here within the Conference room and during the informal parts of our meeting. Yesterday, when we got into the question of land use vs. coastal zone and separate program

vs. an integrated program, important though sometimes divergent points of view were expressed. Too seldom are the opponents and proponents of one or another point of view in the same room to debate these issues. Often the argument seems to occur in a vacuum. This kind of discussion promotes understanding and the eventual solution of the problem.

Another point that came across clearly was the strong feeling, mentioned repeatedly of the importance of involving local governments in the process of planning and management from the early stage, so the plans, the mode of operation, and the framework that develops at the State level will be one that they had a part in forming. When the time comes to accept or reject a specific proposal in the State legislature, it will be accepted and the program ready for implementation only if the affected groups have been involved from the beginning. I think this will be especially true when it comes to the question of designating areas of more than local concern, critical area designations, and areas of particular concern. That process surely will need to have local government and area-wide entity involvement.

Several other points came up that I would like to speak to very briefly. First, concerning the question of the kind of land and water use controls that might be appropriate for a particular State as it decides on this aspect of its coastal zone management program. In some States it seems clear that a combination of bundling together of wetlands controls, beach controls, pollution controls, and so on might be sufficient to constitute an effective coastal zone management program. In other situations, broader land use controls may be the approach to take. I don't think, necessarily, that one can make a flat statement as to any "correct" solution in all cases. Obviously, the approach has to be tailored to the situation.

The other point that came out, it seemed to me, was the suggestion that States ought to move now to try to legislate to meet some of the immediate problems, based on what is known now. A coastal zone management program does not necessarily involve one all-inclusive statute addressing all of the problems and laying out a magnificent solution in a single stroke. It will undoubtedly be an evolving process in most States; and important time should not be lost in waiting for all of the answers and the ultimate solution.

Frank Carlson gave me some ideas that he felt moved to write down. He has put them in the form of challenges to both the Federal people and the States people. He feels that the challenge to the States -- the coastal States particularly -- is to develop an inventory of the projects and programs that they, the State people, would have us at the Federal level do in their areas if they were ordering our priorities. In effect, it might involve looking at what the Geological Survey is spending in California annually. I don't know what it is -- lets say $50 million -- and ask how the State governments would spend that money if it had full control over that particular Federal activity. Clearly, some Federal activities now being performed in the States are being done for national purposes. Others are performed in response to Federal perception of State and local needs. We all believe that there ought to be more effective State involvement in setting these priorities. We continue to ask for your help on this.

Concerning the challenge to the Federal level, he suggests that we ought to develop a better inter-agency mechanism for responding to State needs; and he suggests providing a one-stop request service for States. To implement such an idea is obviously a substantial undertaking; but I think it's useful for us to be thinking about it.

I would like to touch on a couple of other specifics and then draw the

meeting to a close. What are we going to be doing at the Federal level concerning the coastal zone management program in the next six months?

First, we hope to receive your comments on the guidelines that we disseminated yesterday. As we mentioned, they are open for comment for the next 60 days. We think the guidelines are important because they set a framework and set the program in particular directions, and we want your comments and suggestions. Six months from now will be too late with regard to the shape and content of these initial guidelines; we need your ideas now.

Second, we're going to start the process of preparing the guidelines that will describe the Federal approval process for State management programs. These guidelines will be much more difficult to prepare than the first set. The first set were more or less administrative in nature; but these get down to the heart of the issue as to how the Federal Government should look at proposed State management programs -- how do you get at the question of insuring that a State has dealt with the matter of development of more than local concern in the proper way, has dealt with the matter of national interest adequately, etc.? We especially will need your help in these guidelines. We would like your suggestions as to how to approach the process -- how would you prepare this set of guidelines if you had to do it? We feel that we have complete flexibility with regard to approaching the problem, and we'd like creative suggestions. We'll be beginning the process within the next month.

We also intend to begin work setting up the mechanics of the Grants Program under the Coastal Zone Management Act. As I mentioned yesterday in my opening remarks, we're confident that one way or the other, that grant money will be available to assist States to further their efforts in the development of coastal zone management plans. We need to develop a grants processing system for that purpose.

Repeating what I said yesterday, we would like to have your reaction with regard to the desirability of preparing the Federal publication that was described in the handout yesterday. As I mentioned, it would be called "Guide to Federal Technical Assistance Programs in Coastal Zone Management". Would it be useful? Should we spend time and effort on it or not? In a sense, it would be an attempt to pull together what you've heard over the last two hours in a somewhat more organized fashion. We would like to hear from you.

While we continue to actively persue the implementation of the Coastal Zone Management Act, I want to say that we intend to stay in close touch with Lance Marston's land use program office. We think that it would be inappropriate to have our guidelines develop without coordination with or reference to the evolving land use program. We intend to operate these programs in an inter-related and closely coordinated way.

No conference ever ends without the mention of the next conference. We've been thinking about that and I would like to share our ideas. We think that the next step should be a series of regional meetings or conferences. We've been prompted in thinking along these lines by some of our State contacts. In particular, there is a discussion going on now of a conference in the Great Lakes area for late summer. Also, there has been some talk with regard to a conference in the Gulf area some time in the next six months. I can imagine a series of smaller conferences on a regional basis as the program moves forward. These conferences would be the appropriate time to bring in local government officials to a greater extent, to narrow the geographic focus to a particular region and its problems. Someone mentioned that the educational problem was an important one, and it surely is; these conferences would seem to be a good opportunity to try to bring more people into the growing coastal zone management circle.

I want to give a very hearty thank-you to all of you for coming and for participating, and for being such good conference-mates, so to speak, over the last two days. We have found the discussions very useful from the standpoint of our Task Force -- and the work that lies ahead.

APPENDIX A

Alphabetical Index to Speakers and Additional Biographical Material

BISSELL, Howard	Environmental Scientist, Jones & Stokes Associates, Resource Consultants, Sacramento, California; formerly employed by State of California (See pp. 93 Session II)
BODOVITZ, Joseph	Executive Director, California Coastal Conservation Commission, San Francisco, California (See pp. 99, Session II)
BUCHANAN, Thomas J.	Subdistrict Chief, U.S. Geological Survey, Miami, Florida (See pp.251, Session IV)
CARLSON, Dr. Frank	Office of Land Use & Water Planning, Department of the Interior, Washington, D.C. (See pp.247, Session IV)
CLARK, Dr. John	Senior Associate, Conservation Foundation, Washington, D.C.; formerly employed by Department of the Interior, Washington, D.C. (See pp.155, Session III)
CLEMENT, Roland C.	Vice-President, National Audubon Society, Washington, D.C.; also, Chairman, Advisory Committee, U.S. Army Corps of Engineers; degrees in Biology and Botany from Brown University and the Wildlife Management Program, Cornell University (See pp.209, Session III)
CONRAD, R. Deane	Special Assistant on Environmental Matters, Office of State-Federal Relations, Council of State Governments, Washington, D.C.; formerly City Planning, City of Chicago; B.S. in Political Science, M.A. in Urban Planning, Loyola University, Chicago, Illinois; Post-Graduate studies at George Washington University, Washington, D.C. (See pp. 19, Session I)
DOLLIVER, James M.	Administrative Assistant, Office of the Governor, State of Washington, Olympia, Washington; formerly Administrative Assistant to Washington Congressman; A.B.A., Swarthmore College, LL.B., University of Washington (See pp.41 , Session I)
FRASER, Charles	Sea Pines Plantation Inc., Hilton Head, South Carolina; formerly Member, President's Advisory Committee on Outdoor Recreation and Natural Beauty (President Lyndon B. Johnson); formerly Member, President's Advisory Committee on Environmental Quality (President Richard M. Nixon); past Chairman, Institute of Environmental Design, National Association of Home Builders; present Vice-Chairman, National Recreation and Parks Association (See pp.199, Session III)
GARDNER, Richard	Deputy Director, Coastal Zone Management Task Force, National Oceanic and Atmospheric Administration, Department of Commerce, Rockville, Maryland (See pp.79 , Session II)

Alphabetical Index to Speakers and Additional Biographical Material (cont'd.)

GOTTSCHALK, John	Executive Vice-President, International Association of Game Fish and Conservation Commissioners, Washington, D.C.; formerly employed by Sport Fisheries and Wildlife Service, Department of the Interior; also former Assistant to the Director, National Marine Fisheries Service, Department of the Interior (See pp.213, Session III)
GROSZYK, Dr. Walter	Chief, Water Program Planning and Accomplishments Branch, Environmental Protection Agency, Washington, D.C. (See pp.263, Session IV)
HARGIS, Dr. William, Jr.	Director, Virginia Institute of Marine Science, Gloucester Point, Virginia; also, Chairman, Department of Marine Science, College of William and Mary, Williamsburg, Virginia; also, Professor of Marine Science, University of Virginia; B.S. and M.S. from University of Richmond, Richmond, Virginia; Ph.D., Florida State University, Gainesville, Florida (See pp. 81, Session II)
HOLLOMAN, Dr. J. Herbert	Director, Center of Policy Analysis, Massachusetts Institute of Technology, Cambridge, Massachusetts; formerly Senior Manager, General Electric Company; formerly Assistant Secretary of Commerce of Science and Technology, Department of Commerce; formerly President, University of Oklahoma (See pp. 21, Session I)
JAMES, William, The Honorable	President, Maryland State Senate, Annapolis, Maryland (See pp. 20, Session I)
JOHNSON, Bruce	Coordinator and Staff Director, Florida Coastal Coordinating Council, Tallahassee, Florida; also, Member, Governor's Task Force on Land Use; formerly Director, Florida Commission on Marine Science and Technology; M.S. in Geology, Southern Methodist University (See pp. 93, Session II)
JOHNSON, Dr. Philip	Division Director, ESR/RANN Program, National Science Foundation, Washington, D.C. (See pp. 151, 225, Session III)
JOHNSON, William	Deputy Administrator, Soil Conservation Service, Department of Agriculture, Washington, D.C. (See pp. 255, Session IV)
KEIFER, David	Director, Delaware State Planning Office, Dover, Delaware; Graduate, Albright College and Temple University (See pp. 113, Session II)
KNECHT, Robert W.	Director, Coastal Zone Management Task Force, National Oceanic and Atmospheric Administration, Department of Commerce, Rockville, Maryland (See pp. 3,9, 63, 301, Sessions I & IV)

Alphabetical Index to Speakers and Additional Biographical Material (cont'd.)

KOLF, Dr. Richard	Program Manager, Environmental Systems and Resources Office, National Science Foundation, Washington, D.C. (See pp. 279, Session IV)
MACK, Vice-Admiral William	Superintendent, U.S. Naval Academy, Annapolis, Maryland; formerly served in Office of Chief of Naval Operations, Bureau of Naval Personnel, Department of Defense; Commander, 7th Fleet, Yankee Station, Gulf of Tonkin; Graduate, U.S. Naval Academy, 1937 (See pp. 7 , Session I)
MARK, Dr. Shelley M.	Director, Department of Planning and Economic Development, Office of the Governor, State of Hawaii, Honolulu, Hawaii (See pp. 235 , Session IV)
MARKS, William	Chief, Water Development Services, Department of Natural Resources, State of Michigan, Lansing, Michigan; also, Chairman, Governor's Interdepartmental Committee on Water and Related Land Resources; and Alternate Commissioner, Great Lakes Basin Commission; also, Vice-Chairman, Coastal States Organization (See pp. 141 Session II)
MARSTON, Lance	Director, Office of Land Use and Water Planning, Department of the Interior, Washington, D.C. (See pp. 229,299 Session IV)
MENDONSA, Arthur	City Manager, Savannah, Georgia; Member, American Institute of Planners; M.A. in City Planning, Georgia Institute of Technology (See pp. 31 , Session 1)
MURDOCK, Kenneth H.	Office of the Chief of Engineers, U.S. Army Corps of Engineers, Washington, D.C. (See pp. 269 , Session IV)
PAUL, Robert	Director, National Growth Policy Division, Department of Housing and Urban Development, Washington, D.C. (See pp. 285 , Session IV)
POLLOCK, Howard	Deputy Administrator, National Oceanic and Atmospheric Administration, Department of Commerce, Washington, D.C. (See pp. 65 , Luncheon Speaker)
SCHWARTZ, Aaron R. ("Babe")	Chairman, Texas Coastal and Marine Council, State Senator, Austin, Texas; formerly Member, Texas House of Representatives (See pp. 113 , Session II)
ST. AMANT, Dr. Lyle S.	Director, Louisiana Wildlife and Fisheries Commission, New Orleans, Louisiana; also, Louisiana representative to Coastal States Organization (See pp. 161 , Session III)

Alphabetical Index to Speakers and Additional Biographical Material (cont'd.)

STANTON, Joseph L.	Administrator, Maryland Port Administration, Baltimore, Maryland; also, Member, International Organization of Port Commissioners; past President, American Port Authority Administrators; former journalist and public relations representative for Baltimore and Ohio Railroad; U.S. Coast Guard (See pp. 175 , Session III)
STERN, Peter	Vice-President,Regional Environmental Planning, Northeast Utilities Company, Hartford, Connecticut; formerly employed in Tennessee Valley Authority; former consultant, Arthur D. Little Co.; formerly with Conservation Foundation (See pp. 191 , Session III)
SUDDATH, Capt. Thomas (U.S.N., Ret.)	Secretary-Treasurer, Coastal States Organization, Cohasset, Massachusetts; Graduate, U.S. Naval Academy; Destroyer Commander (See pp. 5 , Session I)
TIMMERMAN, James	Director, Division of Marine Resources, South Carolina Wildlife and Marine Resources Department, Charleston, South Carolina; President, Coastal States Organization; former Chairman Department of Biology, The Citadel, Charleston, South Carolina (See pp. 141 , Session II)
VARIN, Daniel	Chief, Rhode Island Statewide Planning Program, Providence, Rhode Island; Registered as Community Planner, State of Michigan; formerly with Blair Associates, consultants, Providence, Rhode Island; former Member, Detroit City Planning Commission, Detroit, Michigan; Member, Detroit Housing Commission (See pp. 129 , Session II)
WILDMAN, Robert	Senior Program Officer, National Sea Grant Program, National Oceanic and Atmospheric Administration, Department of Commerce, Washington, D.C. (See pp. 291 Session IV)

APPENDIX B

CONFERENCE ON ORGANIZING AND MANAGING THE COASTAL ZONE
U.S. Naval Academy
Annapolis, Maryland
June 13-14, 1973

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APPENDIX C

PUBLICATIONS

	NAME	OBTAINABLE FROM
1.	"Description and Analysis of the Coastal Zone and Shoreland Management Programs in the U.S." Earl H. Bradley and Dr. John H. Armstrong (1971)	Sea Grant Program University of Michigan 1101 North University Bldg. Ann Arbor, Michigan 48104 MICHU-SG-71-214
2.	"The Dimensions of Coastal Zone Management." Proceedings of the Annual Meeting of the Council of State Governments, Seattle, Washington, July 1971 Edited by John M. Armstrong and Thomas H. Suddath	(Same as above) MICHU-SG-72-302
3.	"The Structure of Management and Planning for the Coastal Zone"	(Same as above)
4.	"Integrity of the Chesapeake Bay" Chesapeake Bay Interagency Planning Commission	Robert F. Tribukait National Resource Planner Room 103 301 West Preston St. Baltimore, Md. 21201
5.	"Coastal Zone Management in Florida - 1971." Florida Coastal Coordinating Council	Coastal Coordinating Council 309 Magnolia Office Plaza Tallahassee, Florida 32301
6.	"Local Coastal Zone Management: A Handbook" Florida Coastal Coordinating Council	(Same as above)
7.	"Planning Inventory - Florida's Coastal Area - Volume 1: Countries and Cities" Florida Coastal Coordinating Council	(Same as above)
8.	"Clearwater Coastal Zone Management Plan" Florida Coastal Coordinating Council	(Same as above)
9.	"Proposed/A Plan of Conservation and Development for Connecticut" Conn. Office of State Planning	Connecticut Office of State Planning Dept. of Finance and Control 340 Capitol Avenue Hartford, Connecticut 06115

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	NAME	OBTAINABLE FROM:
10.	"Environmental Impact Analysis/ Philosophy and Methods - Proceedings of the Conference on Environmental Impact Analysis, January 1972	Sea Grant Program 1225 West Dayton Street University of Wisconsin Madison, Wisconsin 53706
11.	"Institutions and the Generation of Purpose" Whose Environment Gets Managed and for What John S. Steinhart	(Same as above) Report #2
12.	"Multi-Use Problems in the Great Lakes", based on a symposium, The Great Lakes - Sink? or Swim? October 1970	(Same as above) WIS-SG-72-107
13.	"Port Expansion in the Puget Sound Region 1970-2000" Division of Marine Resources	Division of Marine Resources University of Washington Seattle, Washington 98195 WSG-MP-72-1
14.	"Bibliography of Literature - Puget Sound Marine Environment" Eugene E. Collias (1971)	(Same as above) WSG-71-6
15.	"Index to Physical and Chemical Oceanographic Data of Puget Sound and Its Approaches" 1932-66 Eugene E. Collias	(Same as above)
16.	"Guidelines for Marine Resource Planning and Policy on Long Island" Prepared for the Marine Resource Council, Nassau-Suffolk Regional Planning Board	The Center for the Environment and Man, Inc. 275 Windsor Street Hartford, Conn. 06120
17.	"State of the Art for Selected Marine Resource Problems on Long Island" Prepared for the Marine Resources Council	(Same as above)
18.	"Economic Factors in the Development of the Coastal Zone"	Sea Grant Office Massachusetts Institute of Technology Cambridge, Mass. 02139 MIT-SG-71-1

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	NAME	AVAILABLE FROM:
19.	"Power, Pollution and Public Policy" Issues in Electric Power Production, Shoreline Recreation, and Air and Water Pollution Facing New England and the Nation	Sea Grant Office Massachusetts Institute of Technology Cambridge, Mass. 02139 (Report #24)
20.	"California Coastal Zone Conservation Act/Interim Permit Control - Legal and Procedural Time Factors"	Sea Grant Office University of Southern Calif. Los Angeles, Calif. 90007 USC-SG-AS1-73
21.	"Procedures and Programs to Assist in the Environmental Impact Statement Process" Jens C. Sorensen and Mitchell L. Moss (1973)	(Same as above) USC-SG-AS2-73
22.	"Marina Del Rey Study/The Development of the Marina" George P. Schultz	(Same as above) USC-SG-5-72
23.	"Costs and Benefits of the Abatement of Pollution of Biscayne Bay, Miami, Florida" Ruth M. Sampedro (1972)	Sea Grant Office University of Miami Coral Gables, Florida MSG-2-35147
24.	"The Lakefront Plan of Chicago" Chicago Plan Commission and Chicago Park District (1972)	City of Chicago Dept. of Development & Planning Room 100, City Hall Chicago, Illinois
25.	"Second National Symposium on State Environmental Legislation Program" April 9-12, 1973 Honorable William J. Lanting	Council of State Governments Iron Works Pike Lexington, Kentucky 40505
26.	"Rosters of Legislative Officers and Leaders - Chairmen of Selected Committees and Clerks and Secretaries - 1973"	(Same as above) February 1973 RM-502
27.	"Publications Price List - Jan. 1973"	(Same as above)
28.	"Power to the States - Mobilizing Public Technology" (Report and Supporting Analyses)	(Same as above) RM-485

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	NAME	OBTAINABLE FROM
29.	"National Legislative Conference Training Program - 1973"	Council of State Governments Iron Works Pike Lexington, Kentucky 40505
30.	"Selected Bibliography on State Government 1959-1972"	(Same as above) RM-492
31.	"State Administrative Officials" Classified by Functions - 1971	(Same as above) Supplement II
32.	"State Elective Officials and the Legislatures" - 1973	(Same as above) Supplement I
33.	"A Framework for Planning in State Government" Alan Walter Steiss	(Same as above)
34.	"Environmental Quality and State Government"	(Same as above) RR-21
35.	"Structure and Management of the Council of State Governments"	(Same as above) RM-470
36.	"State Government" - Special Issue on Revenue Sharing - Winter 1973 Volume XLVI - Number 1 Robert H. Weber - Editor Ralph J. Marcelli - Associate Editor	(Same as above)
37.	"The States' Role in Land Resource Management"	(Same as above) RM-474
38.	"To Improve Cooperation Among the States" Report of the Committee on Strengthening Interstate Cooperation Commissions (1962)	(Same as above) RR-4
39.	"1973 Suggested State Legislation" Volume XXXII	(Same as above)
40.	"The Integration of Planning and Budgeting in the States" Report of the National Governors' Conference Committee on Executive Management and Fiscal Affairs Advisory Task Force	(Same as above) RM-434

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	NAME	AVAILABLE FROM:
41.	"National Symposium on State Environmental Legislation - Summary Report" March 15-18, 1972	Council of State Governments Iron Works Pike Lexington, Kentucky 40505
42.	"The States' Role in Land Resource Management - Supplement Richard G. Rußino and William R. Wagner	(Same as above) RM-474
43.	Roster of Legislative Service Agencies	(Same as above) RM-489
44.	"Federally-Sponsored Multijurisdictional Planning and Policy Development Organizations" A Major Policy and Action-Oriented Study for the Office of Management and Budget	(Same as above)
45.	"Strategies for Natural Resource Decision-Making" Sept. 14, 1972 (revised Dec. 6, 1972)	New England River Basins Comm. Technical Services

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