PROCEEDINGS FROM THE GOVERNOR'S CONFERENCE ON COASTAL ZONE MANAGEMENT

October 22 and 23, 1974
Gulf Shores, Alabama

Sponsored for
Alabama Coastal Area Board
by
Mississippi-Alabama Sea Grant Consortium

MASGP-74-042

PROCEEDINGS FROM THE ALABAMA GOVERNOR'S CONFERENCE ON COASTAL ZONE MANAGEMENT

October 22 and 23, 1974

Gulf Shores, Alabama

The preparation of this document was partially financed through a federal grant from the Department of Commerce, National Oceanic and Atmospheric Administration, as authorized by Section 305 of the Coastal Zone Management Act of 1972. The program was administered by the State Planning Division, Alabama Development Office, Office of the Governor.

Sponsored for

The Alabama Development Office

The Alabama Coastal Area Board

by

The Mississippi-Alabama Sea Grant Consortium

TABLE OF CONTENTS

Areas of Critical Interest In
Coastal Zone Management

PREFACE

This Alabama Governor's Conference on Coastal Zone Management, sponsored by the Mississippi-Alabama Sea Grant Consortium for the Alabama Development Office and the Alabama Coastal Area Board, was attended by over one hundred federal, state, regional and local governmental and agency representatives, as well as interested private citizens.

The program for this conference was designed to address coastal zone management from the federal, state, regional and local viewpoints, using a series of keynote addresses. Also, areas of particular concern within the coastal zone were discussed by a panel of experts from seven different fields.

The main purpose of this conference was to exchange information. As Dr. Mattox pointed out, one of the strongest points of the Coastal Zone Management Act of 1972 is concerned with public participation. The activity of greatest public participation occurred on the second day during the workshop sessions, where all participants were encouraged to voice their ideas and concerns. These workshop moderators contributed a great deal toward insuring the success of this conference by soliciting valuable input from the conferees. The workshop moderators were: Gene Cody, Alabama Development Office and Alabama Coastal Area Board;

F. L. Doyle, Geological Survey of Alabama and University of Alabama in Huntsville; James B. Hildreth, U.S. Army Corps of Engineers; L. Willis Hyde, Alabama Development Office and Alabama Coastal Area Board; Warren McCord, Auburn University Extension Service; William E. Powell, Alabama Sea Grant Advisory Services; and Joe E. Seward, Mississippi-Alabama Sea Grant Consortium.

The Alabama Development Office and Coastal Area Board and the Mississippi-Alabama Sea Grant Consortium would like to express their gratitude to all of those who helped to make this conference a worthwhile contribution to the development of Alabama's coastal zone management program.

CONFERENCE AGENDA

October 22 and 23, 1974
Gulf State Park Lodge and Convention Center
Gulf Shores, Alabama

Tuesday, October 22, 1974

9:00 a.m. Conference Registration

Morning Session
10:00 a.m. - 12:00 m.

10:00 a.m. Welcoming Address: Cecil C. Horton, Past Mayor, City of Gulf Shores

Greetings from the Governor: R. C. "Red" Bamberg, Chairman, Coastal Area Board: Director, Alabama Development Office

Purposes of the Conference: Bruce W. Mattox, Ph. D., Director, Mississippi-Alabama Sea Grant Consortium

Federal, State, Regional and Local Perspectives of Coastal Zone Management

10:30 a.m. "Coastal Zone Management--An Overview from the Federal Standpoint" Judith Penna, State Programs Coordinator, Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, Department of Commerce

"The Relationship of Coastal Zone Management to the State of Alabama" The Honorable L. W. Noonan, State Senator, State of Alabama

"The Role of the Regional Planning Commission in Coastal Zone Management" Richard D. Pruitt, Director, South Alabama Regional Planning Commission

"The Relationship of the Alabama Coastal Area Board to Coastal Zone Management" Sidney D. Upham, Ph. D., Executive Director, Marine Environmental Sciences Consortium

"The Coastal Area Management Program for Alabama" L. Willis Hyde, Technical Advisor, Coastal Area Board; Alabama Development Office

12:00 m. Luncheon
Master of Ceremonies: R. C. "Red" Bamberg, Chairman, Coastal Area Board; Director, Alabama Development Office

Speaker: The Honorable Bill G. King, State Senator, State of Alabama; Chairman, Environmental Land and Water Management Committee

Afternoon Session
2:00 p. m. - 4:30 p. m.

Areas of Critical Interest in Coastal Zone Management

2:00 p. m. Panel Discussion
Moderator: The Honorable Bay Haas, Commissioner, Mobile County Commission

Panel:
Population Growth and Residential Development: Don Brady, Assistant Director, South Alabama Regional Planning Commission

Transportation and Navigation: Colonel Drake Wilson, District Engineer, Mobile District, U.S. Army Corps of Engineers

Commerce and Industrial Development: Fred Denton, Director of Industrial Development Division, Alabama Development Office

Pollution Abatement: W. T. Willis, Director, Alabama Environmental Health Administration

Recreation and Tourism: Doug Benton, Director, Alabama State Bureau of Publicity and Information

Fisheries: Wayne Swingle, Acting Director, Division of Marine Resources, State Department of Conservation and Natural Resources

Mineral Resources: Peter A. Boone, Chief Geologist, Geological Survey of Alabama

6:30 p.m. Social Hour

7:30 p.m. Dinner
Master of Ceremonies: James H. Faulkner, Publisher, Baldwin Times

Speaker: George W. Allen, South Atlantic Division, U.S. Army Corps of Engineers

Wednesday, October 23, 1974

Morning Session
9:00 a.m. - 12:00 m.

9:00 a.m. Workshop Sessions:
Population Growth and Residential Development
Transportation and Navigation
Commerce and Industrial Development
Pollution Abatement
Recreation and Tourism
Fisheries
Mineral Resources

12:00 m. Luncheon
Master of Ceremonies: L. Willis Hyde, Technical Advisor, Alabama Coastal Area Board: Alabama Development Office

Conference Summary: Workshop Chairmen

Adjournment

WELCOME TO GULF SHORES

Cecil C. Horton
Past Mayor, City of Gulf Shores

Ladies and gentlemen, welcome to this land of sunshine, sand and surf. I could not think of a more appropriate place in which to hold a meeting concerned with coastal zone management than right here in coastal Alabama. Considering the coastal areas in the nation, Alabama has among the longer shorelines. Beginning almost at the northern boundary and coming down Perdido Bay, around the Gulf of Mexico and back up Mobile Bay, we have covered many miles of waterfront.

Gulf Shores is a very appropriate place in which to hold a meeting on coastal zone management. To tell you a little about our town, we are not a city. We are still a town, but are growing quite rapidly. Many of you know that our population has increased 155 percent in the last census period. We do have, of course, an incorporated town. We have our own water and sewage system, a very strong zoning ordinance, and an even stronger building code. We have just enacted a subdivision regulation that is said to be the equal of any in Alabama. We are prepared to grow, and we are prepared to protect that which the good Lord has given us, and he has given us a great deal. We have

flood control, so that any residence or any business in Gulf Shores is protected if the owner desires flood insurance. There are a great many things I could say about our community, but since you are here, you will be able to see for yourself.

It is a fact, and I think Mr. Bamberg would readily agree, that at this moment you are probably breathing the purest air in the Southeast. Breathe deeply and enjoy it. This is good air. You are probably looking at the freshest and the finest water on the Gulf Coast. There are no islands or reefs offshore to interfere with the free flow of the tide. This purges our beaches once a day and leaves everything clean and fresh. Between here and the Yucatan Peninsula there is absolutely nothing except water.

Let me offer again, on behalf of Mayor Ingram and every citizen of Gulf Shores, the heartiest welcome possible to you. Please enjoy your stay here.

GREETINGS FROM THE GOVERNOR

R. C. "Red" Bamberg
Director, Alabama Development Office
Chairman, Coastal Area Board

This morning I want to bring you greetings from the Governor of Alabama, because he certainly would have loved to have been here. If there is one thing he likes, it is to be with people. I want to bring greetings to the local people that are here, as well as those who are from out of the State of Alabama. I understand there are some four or five states and the District of Columbia represented here. No doubt, the Governor would say to you that it is such a pity that you do not have the opportunity to live in Alabama. We do not know for sure, but we believe that we have more fine people in Alabama per square mile than anywhere else in the United States. You are certainly welcome to be here if you are from out-of-state, and I know the Governor would like you to visit us in Alabama whenever you can.

Today we are here to discuss coastal zone management in Alabama. I would imagine that we have just about as many ideas on coastal zone management as we have individuals in this room. Coastal zone management can be compared to sifting cornmeal. After taking corn to the mill to be ground, it must then be sifted to remove the chaff. Sometimes it must be sifted several times before all of the chaff is removed. I am

of the opinion that meetings of this kind are good to help sift the chaff. In this business of coastal zone management planning, there is much chaff which must be sifted.

We are all looking forward to having a good program and accumulating a great deal of information. This information will certainly be useful in formulating our coastal zone management program in Alabama.

PURPOSES OF THE CONFERENCE

Bruce W. Mattox, Ph. D.
Director, Mississippi-Alabama Sea Grant Consortium

As Director of the Mississippi-Alabama Sea Grant Consortium, I would like to add my welcome to this Alabama Governor's Conference on Coastal Zone Management. The major purpose of this conference is to exchange information. We have designed a program for this conference in order that the speakers may inform you first on the current thinking in coastal zone management. You will then have the opportunity to let your ideas on the program be known. One of the strongest points of the Coastal Zone Management Act of 1972 is public participation, and you are part of the public. You are the people who are going to formulate, implement, and be affected by the coastal zone management program, and the program must be what you want it to be. At tomorrow's workshop session, each conferee will be asked to provide input on a number of things, such as the needs of the coastal area of Alabama, the use conflicts in the coastal area, and some possible solutions to the problems we face in Alabama's coastal zone.

By saying we are going to inform you on the current thinking in coastal zone management, we do not mean that the coastal zone management program is well defined in any way except in an administrative sense.

The coastal zone management program is set up under law, as I have mentioned earlier. A tremendous amount of expertise has been tapped at the level of the Federal Government. Most coastal states are now beginning to secure people within their states to carry out this program. As Mr. Bamberg stated, there is probably a lot of chaff that must be separated from the wheat.

Last night while a group of us were talking, someone made the comment that he had heard a dictator had never been reared near the ocean. Of course, we did not know whether this was true or not, but it did cause us to begin to think. Why is it that a dictator may never have grown up near the ocean? Certainly, anyone who has seen the ocean during a storm has to feel quite insignificant. Likewise, anyone who has seen the tranquil beauty of the coastal area on a morning like this, must be at ease.

There will surely be no dictators in coastal zone management. Our speaker from the Federal Government will relate that this is a state program, and no dictator from Washington will tell us all how coastal zone management will be accomplished in Alabama. The people who will be affected by coastal zone management, people like you and me, will formulate the program, and our representatives will be responsible for implementing it.

Without further words, I urge you to please participate in the conference, talk to each other, and make an input in the workshop sessions. No doubt, we will end with a very useful product for planning coastal zone management in Alabama.

COASTAL ZONE MANAGEMENT--AN OVERVIEW

FROM THE FEDERAL STANDPOINT

Judith Penna
State Programs Coordinator
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration
Department of Commerce

One of the nicest things about my job is that I am actually paid to come to places like this. Periodically, I have to pinch myself to realize it is true. You people have a very beautiful stretch of the United States coastline here, and I envy you.

Today I would like to talk just in very general terms about the Coastal Zone Management Act, its basic provisions, what our Office of Coastal Zone Management in Washington is doing to administer that Act, and then say a few words about what states around the country are doing in starting their Coastal Zone Management Program Development work. Then I will turn the program over to your own people here in Alabama to talk about what is going on here.

First of all, I will try to summarize the provisions of the Coastal Zone Management Act. The purpose is to encourage states, in conjunction with local governments, conservation groups, local businesses and other interests, to take a comprehensive view of the coastal area, its problems and opportunities, and to establish a means for balanced decision-making

about its present and future uses. This Act is a state program in that the Act recognizes states as being prime movers in the development of a coastal zone management program. You will find that I use the word state in a very broad sense to incorporate state government, as well as a variety of regional and local interests.

The Act provides two kinds of incentives for participation. It is a voluntary program. One of these incentives is a two-phase grant program for the planning of the management program and then for the administration of that program after it is implemented. The planning and development grant provides for two-thirds federal money and one-third state funds for a three-year period. A one-third state, two-thirds federal funding system is provided for the implementation of the program. Another incentive is the provision in the Act that federal agencies will conduct their activities in the state's defined coastal zone in a manner which is consistent with the program adopted by the state. In other words, this provides the opportunity for states to say specifically what they would like to be done in their coastal area.

The Act speaks of six major components during the development period. These are things that states must do in order to develop their program. The first of these is to define the boundaries of the coastal zone, which turns out to be a much more complicated process than one would initially think. Next, each state must determine those land and

water uses which are permissible within that defined coastal zone. Thirdly, areas of particular concern within the coastal zone must be reviewed. States are also encouraged to establish priority uses in particular geographic areas. These might be high hazard areas, such as flood plains. Each state also is to set out the means of controlling the land and water uses. Again I want to emphasize here that when I speak of state, I mean state in a broad sense which incorporates the local government. Finally, the state must specify the organizational structure by which it will endeavor to manage the coastal zone.

The Act specifies that final program authority rests with the Department of Commerce. We are a part of NOAA, or the National Oceanic and Atmospheric Administration, Department of Commerce. It is our view that our decisions should back our state and local programs. Our responsibility is simply to set guidelines to administer the grant portion of the program and to provide technical assistance to state and local people as they develop their own program.

At this time I would like to introduce Carol Sondheimer, who is on our staff in Washington. Carol has recently joined us as the Southeastern Regional Coordinator. She will be working very closely with you people here in Alabama. I encourage you to introduce yourself to her because she will be able to provide you with much information about the progress of coastal zone management. In working with the various

states, there are three principle things that we do. One, which is quite obvious, is to provide the grant money. Secondly, we provide technical assistance and advice to program development. Thirdly, we provide assistance at the state and federal level in developing the management program which will be approved by the Secretary of Commerce.

Grant funds became available under the Coastal Zone Management Act last March. Since that time we have awarded approximately $8 million to twenty-nine states including Alabama. We have two other applications under review. The remaining three states, or rather one state and two territories, have been accepted to join the program within the current year. I should probably take just a moment to define a coastal state. Under the Act, the Atlantic, Gulf, Pacific and Great Lakes states are included. Also the territories of the United States, such as Guam, Puerto Rico and the Virgin Islands, are included.

Under the Coastal Zone Management Act of 1972, there is another grant program that has been established. It provides for the acquisition of estuarine land for the purpose of establishing natural field laboratories within the coastal zone. Under that program only one state, Oregon, has received a grant thus far.

One important area in which we will be involved is working with other federal agencies. We are endeavoring to do three things in our work with them. The first of these is to acquaint them with the Coastal

Zone Management Program. Secondly, we are encouraging them to consult with and provide assistance to states which are working to develop a coastal zone management program. Thirdly, we are setting up a means for federal agency review in order that we have the kind of mechanism that will insure federal consistency with an approved management program. Our major activity so far, in terms of working with other federal agencies, has been with the Environmental Protection Agency. This agency is specifically involved with coastal zone management because of the air and water quality standards. With the Corps of Engineers, which has recently recognized in a draft circular the existence of the Coastal Zone Management Act, we are working to encourage all District Engineers to become involved with the state fund program development. We are also involved with the Department of Housing and Urban Development in the planning of our flood insurance program. Each of these agencies clearly has a major impact on the coastal area. Finally, we are working with the Department of the Interior and its many bureaus and divisions.

Another major area of activity, which I have mentioned earlier, is one of support. We have established an information clearing-house. We have been involved with a series of issues where we hope to provide technical assistance to states. The principal one so far is coastal mapping, where we have used NOAA's National Ocean Survey and the United States Geological Survey. We are also in the process of publishing

some handbooks which may be of interest to you. One is concerned with the coastal environment, or the natural environment. Another one, scheduled for publication within the month, traces the over-all process of coastal zone management program development. A third one is in the area of state-federal relations. We have also undertaken some work on the specifically different natures of urban problems in the coastal area and on coastal esthetics.

I would like to conclude with a couple of brief comments on what states are doing during this management program development period. Most states are taking the full three-year period permitted under the Act to develop their program. In the first year they are concentrating on inventory work. They are also concentrating on the area of inter-governmental coordination with local and regional governments and with a wide range of other state and federal agencies. Another major element in a typical first-year program is conferences of the type we are now attending. This is a definite effort to involve people within the coastal zone at an early point. Second-year programs will analyze the data collected, endeavor to define the permissible priorities, outline the areas of particular concern, and finalize a boundary for the coastal area. States will also be looking at alternatives for the over-all program in terms of legislation. The organizational structure for managing the program will be a major concern in the second year.

In the third year, a typical state will bring all these pieces together and have public hearings for discussion and the final review of the management program. This will then be submitted to the Secretary of Commerce for approval.

THE RELATIONSHIP OF COASTAL ZONE MANAGEMENT TO THE STATE OF ALABAMA

The Honorable L. W. Noonan
State Senator, State of Alabama

It is a real pleasure to be given this opportunity to talk with you about the Coastal Zone Management Act of Alabama and some of the future prospects with respect to the implementation of this Act. In reading the title of the subject assigned me, "The Relationship of Coastal Zone Management to the State of Alabama," I understood that I should trace the pedigree or the family tree of the Alabama Coastal Area Act. In so doing, I feel that it is necessary for me to flashback to April 19, 1972, at which time the Corps of Engineers had its first public meeting in the Gulf area. The purpose of this meeting was to consider an offshore, deep water port facility. The first meeting was held in Mobile. However, later meetings were held in Tampa, New Orleans, and Galveston. As a result of these meetings it was quite apparent to all of us that it would be necessary , in order to be successful in this offshore facility, to work with an understanding of the geological needs, the hydrological needs and mineralogical needs throughout this area. The impact of this deep water port facility onshore and offshore must be considered. As the song today says, it was necessary that we began to "Let's Put It All Together."

We began by contacting about sixteen Federal agencies and departments, beginning with the Corps of Engineers, the Federal Energy Office, NOAA, EPA, the President's Council of Economic Advisors, transportation and commerce agencies, and other departments. From these various visits, there were eleven bills introduced both into the Alabama House of Representatives and into the Alabama Senate dealing with offshore, deep water, port facilities. Of these bills, however, only two contain references to the Coastal Zone Management Act of 1972. As a matter of fact, eighteen months later there were only two bills, one in the Senate, Number 4076, and one in the House, Number 1070. Only the formal bills included a coastal zone management provision. Fortunately for our Congress and for our people, the bill was finally adopted in the Senate and now is in the House for consideration by its conference committee sometime after November 12.

In May, 1973, we submitted our version of the Coastal Area Act. This was described as Senate Bill 311 and was adopted as Act 1274 of the 1973 regular session. At least ninety percent of this Act was adopted from the Federal Coastal Zone Management Act of 1972. All of those involved knew immediately that we were dealing with a piece of legislation which was very sensitive. Each of the various aspects of this Act must be considered if this legislation was ever to be implemented.

After approximately nine months, we have made some very progressive steps. We have now adopted some general rules of practice and procedure, and we have received a Section 305 Federal assistance grant for the first year's planning. There is a possibility that in the planning of coastal zone management in Alabama we will qualify for assistance for three years. Hopefully, it will not take us the total three years, since we have had our sights set on completing coastal management planning in 1976.

In our planning thus far we have used State agencies, county and local agencies, as well as State officials, county and local officials. As soon as the program is organized, it is hoped that the administration of the program can be carried out by those directly affected by coastal zone management.

Certainly it would be wise to discuss the coastal area of Alabama which will be most affected by coastal zone management. I would like to call your attention to the particular issues and problems of the coastal zone. One of these very important issues concerns the fact that this area of Alabama contains ten percent of our total population. This includes over 360,000 people. The problem is, however, the ability of our coastal resources to sustain this high concentration of people.

I am happy to say that for the past two years a considerable amount of study has been undertaken by the Alabama Marine Environmental Sciences Consortium, the Department of Conservation and Natural Resources,

the Geological Survey of Alabama, several Alabama universities and others. Efforts have been made to combine all of these studies to determine, identify and inventory several matters in the coastal area. Some of these involved matters are hydrology, mineralogy, elevation contours, saltwater seepage and industrial siting. Which areas of the coast are best able to withstand this additional demand upon its resources?

I must make an observation here, however. There is no question in my mind that our largest industries will have the expertise for determining whether they can locate in our particular area of the State. Our greatest concern will be with the small businessman, property owner and those individuals who are not aware of the comprehensive nature of the Coastal Area Act. For this reason, it is most important for the members of the Board, public officials and those versed in the questions pertaining to coastal zone management to educate our folks so that they understand we must be far more responsible in the future in planning for the utilization of our coastal resources.

The concept of coastal zone management is a "people's effort." Local leaders must be involved and must understand the Coastal Area Act, the rules and regulations. They must be involved in formulating this plan. The responsibility for the development of a successful and model Coastal Zone Management Act belongs to us all. As has been

pointed out, coastal management is not a dictatorship, but we must be reasonable. We must be foresighted, and we must be practical.

In conclusion, I would like to say that the members of the Ameraport effort and Legislators who work with us in the House and the Senate are very enthusiastic about the long-term aspects of the Coastal Area Act. We all need to become involved in learning more about coastal zone management so that we can offer effective input in formulating Alabama's Coastal Zone Management Plan.

THE ROLE OF THE REGIONAL PLANNING COMMISSION IN COASTAL ZONE MANAGEMENT

Richard D. Pruitt
Director, South Alabama Regional Planning Commission

With over three million of our people within easy traveling distance of our coast and spending increasing amounts of leisure time there, the need for clean air, clean water, clean beaches, and good fishing are rapidly increasing. At the same time, our growing population requires even larger port facilities and greater and greater amounts of mineral and energy yielding resources. In the past, decisions concerning the management of our coastal resources were made on an ad hoc, case by case basis. We can no longer afford this kind of fragmented approach. Clearly, the growing importance of the unique and limited resources of our coastal area, coupled with increasing conflicts over its use, demands a more rational and effective means of development.

In recognition of such conflicts, as you are aware, last year the State Legislature passed the Alabama Coastal Areas Development Act. Some sections of this act contain provisions similar to the National Act passed by Congress in 1972 and signed by the President. The purpose of the State legislation is to promote, improve, and safeguard the lands and waters located in the coastal areas of the State through a

comprehensive and cooperative management program. As interpreted, one of the primary missions of the management program will be to preserve, protect, develop, and where possible, restore or enhance the resources of the State's coastal areas. The coastal area is generally defined as the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder) strongly influenced by each other and in proximity to the shorelines of our two coastal counties. This includes transitional and interdtidal areas, salt marshes, wetlands, and beaches. This area is intended to extend inland from the shorelines only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on coastal waters.

Section 6 of the Act specifies that the Coastal Area Board shall provide for the development of a comprehensive coastal area administration program which is consistent with the National Policy expressed in the Coastal Zone Management Act of 1972. It further states that the program shall be prepared in cooperation with local, regional, state, and federal interests and shall comply with federal rules for coastal area planning and administration. It is this Section of the State Act which implies the role the Regional Planning Commission will assume in the Board's Coastal Zone Management Program.

Since the Regional Planning Commission is basically an organization that brings together local government officials within our coastal

counties to discuss common problems, exchange information and develop a policy on matters of mutual interest, it is in a unique position to assure that cooperation toward the achievement of the coastal zone management program goals and objectives is realized. Additionally, as part of its program, the Commission's staff provides technical assistance to counties and municipalities on matters related to land use, transportation, economic development, and other factors.

Cooperation, coordination, and participation are important parts in an effective program of the magnitude envisioned. Achieving a coordinated effort from the federal, state, regional, local, and public groups is of primary importance. Inputs from all levels in the participation processes will enable the final results of the program to effectively present the ideas and desires of all parties involved.

Three types of efforts are considered to be essential to assess desires and needs and integrate federal, state, regional, and local governmental agencies, along with the public, into the actual planning process:

(1) Informational--All agencies, groups, and peoples should be informed of the nature of the Coastal Zone Management Program. I am not merely talking about the groups or individuals who are present at today's program. I am thinking of the concerned public that will be affected by the deliberations of the Board. All too often, many of our plans are

developed in a vacuum. As a consequence, when they are presented to the general public they are either totally or, in part, unacceptable. Thus, the responsiveness inherent within the plan of study must allow for the concerns and needs of all agencies, groups, and peoples to be adequately addressed.

(2) Feedback--This is an essential activity in this process. The physical, social, economic, and ecological desires of those concerned should be discerned through feedback mechanisms in the public involvement program.

(3) Informational Exchange--This type of effort is also a necessary part of the planning process. No doubt, a program will be established for exchange of information among the various responsible agencies and the general public.

The Regional Planning Commission can assist in these efforts by participating in public meetings, informal workshops, and developing brochures explaining the current state of the planning process. The mix, intensity, and timing of these techniques will vary with needs and circumstances as they develop.

Since it is presumed that the proposed plan of study will result in a viable and dynamic management tool, the coordination procedures should follow in the same vein. A two-level coordination procedure which closely reflects the changing ideas and scope derived from feedback and informational exchange programs is necessary for program

success. To correctly assess the impact of changes in scope, new ideas, and effectiveness of coordination procedures, reviews must originate at the local level, but be finalized at a level where a broad scope is possible.

The functional coordination organization would consist of a management level section. It would include representatives from the regional Environmental Protection Agency, Mobile District Corps of Engineers, the Alabama Development Office, State Department of Conservation, Regional Planning Commission, County Health Departments, the Department of Agriculture, and local planning commissions. The second level, the operations level, should include all of these plus representatives from all interested agencies and groups along with other people or groups who can contribute to the effectiveness of the Coastal Zone Management Program.

Each involved agency, group, or peoples involved in the study should be solicited for inputs necessary to make the study responsive and successful.

The general public can play a decisive role in the planning process through: (1) Meetings and workshops to enable free exchange of information and ideas, (2) local interviews with community leaders, newspaper publishers, sociologists of local universities, industrial leaders, and political figures would provide information vital for a successful program, and (3) collecting past and current planning documents along

with public reaction to these studies. Calls on planners and planning agencies can be of considerable value in plan formulation.

With respect to the specific role that the Regional Planning Commission can play in the Coastal Zone Management Program, it will participate through: (1) Supplying information from studies in progress and past studies, (2) assisting the Board's staff in the public involvement program, (3) assuming that future studies, programs and plans are coordinated with the programs of the Coastal Area Board, and (4) providing assistance in other areas as needs develop.

In organizing for action, it is readily apparent that the problems we face are widespread. They can be solved only by a full state, local, and regional effort embracing not only sound, coordinated planning, but also an effective follow-through that reaches every community in the coastal area. Improving this area is the business of us all.

Since the Coastal Area Board will be the keeper of our coastal area, it will have the major responsibility for ensuring that all our programs and actions are undertaken with a careful respect for the needs of this area.

To meet future needs, however, organizational changes may be needed. State, federal, regional, and local institutions for dealing with the coastal area and natural resources have developed piecemeal over the years in response to specific needs, not all of which were originally

perceived in light of the concerns we recognize today. As such, many of their missions appear to overlap and even conflict. This would indicate the needed reforms which would possibly involve major reassignments of responsibilities among these groups for the development of a more effective Coastal Zone Management Program.

No matter how well organized the Program is, the key to success lies with the people of the area in the final analysis. Accordingly, private industry has an especially crucial role. Its technical talent and its demonstrated ingenuity in helping local communities and government in solving problems are needed, not only in helping to identify problems associated with our coastal areas, but also in helping devise new and better ways of managing these areas.

The Regional Planning Commission will work closely with the Coastal Area Board and with others as is appropriate in the development of effective policies for managing our coastal areas. It will work to enlist increased support from business and industry in the drive to preserve and enhance our shorelands, reduce pollution in all its forms to the minimum level possible, and provide a mechanism through which the Board, local governments, industry, concerned individuals, and groups can work together to accomplish desired management goals.

In the final analysis, however, the task of managing our natural resources and the coastal zone environment calls for a total mobilization of all forces. It involves governments at every level; it will require the

help of every citizen. It cannot be left to the ad hoc, piecemeal approach that is currently practiced. Neither should it be left to a few leaders or individuals. Rather it presents all of us with one of those rare situations in which each individual affected has an opportunity to make a special contribution to the total program effort.

In the coming year, the development and other demands upon our coastlines will increase in scope and intensity. There will probably be intensified pressure exerted by conservationists, environmentalists, individuals, and others for faster or slower action on matters related to our coastal area.

The Alabama Coastal Area Board, working with mayors and county officials, federal, state, and regional agencies, with concerned citizens, and private groups, can succeed in weighing the various needs of the coastal area, allocating priorities for the most effective use of our natural resources, and strive for balance among them.

THE RELATIONSHIP OF THE ALABAMA COASTAL AREA BOARD TO COASTAL ZONE MANAGEMENT

Sidney D. Upham, Ph. D.
Acting Chairman, Alabama Coastal Area Board
Executive Director, Marine Environmental Sciences Consortium

The Alabama Coastal Area Board is the designated state agency for coastal zone management in Alabama. This Board, working closely with many other State agencies and with help from interested citizens of the State, will propose a coastal management plan which will help us to improve, protect, and intelligently use our coastal zone. The coastal zone represents, perhaps, the most valuable land in our state, acre for acre, and it is of prime importance to all the people of the State, whether they live in the coastal area or not. The whole State has a big stake in its coastal zone.

It will be the job of the Coastal Area Board to carry out the Coastal Zone Management Program in Alabama as designated by the Commerce Department and by the U. S. Legislature and our State Legislature. Guidelines have been laid out, but it is primarily up to each state as to how it handles the job. The Coastal Area Board will eventually have a permit program which, we hope, will be simple and will be done in conjunction with other permitting programs so that the user will not be put to a lot of extra trouble. Areas of particular concern will have to be designated

by the Board, boundaries of the coastal zone established, permissible land and water uses defined, guidelines on priority uses in particular areas laid out, and much more. All of these things bring up questions in your mind, I am sure. Why a new agency to do this? Isn't it being done with local and existing agencies? The answer is no. This does not mean, however, that existing agencies or local political groups will be usurped by the Coastal Area Board.

The Board should act in such a way as to provide help and assistance to other agencies and local officials, and work through these people to accomplish goals which they might have difficulty in accomplishing themselves.

The Alabama Coastal Area Board is a new agency. In relation to many of the other states we are late-comers to coastal zone management. Mississippi has been active for five years, Florida for seven or eight years, and many other states have had some kind of coastal zone management for several years. Remember, we are just starting with our first meeting being held in January of this year. We have a lot of work to do which is basic to the coastal management program, and, unfortunately, it cannot be done all at once. There are a lot of problems in the coastal area which need attention and I am sympathetic to these. But if we rush in and decide issues now on emotion instead of facts, we will not be doing any better job than anyone else. I think we should do better and that we

can do better. We are working hard to clear the way now on some basic problems, such as defining the coastal zone, getting ready for a permit system, and really trying to understand just what our job is and how we cam implement our plans. I was struck by what Mayor Greenough of Mobile said at the last meeting of the Coastal Area Board, "This is not a usual State agency. We are actually dealing with a new type of government." I must admit I had not looked at coastal zone management in that light, but I believe he was right. This is not a normal state agency approach. It is state. It is backed by the Federal Government. It cuts across existing areas of jurisdiction. How then is it going to operate successfully? The Coastal Area Board must do its work with and through existing State agencies and local political groups. It should not usurp jurisdiction, but act as an aid to local authority, as I have said before. This is a fact I want to emphasize. The Coastal Area Board should become a center for knowledge for the coastal zone, bring help in the way of expertise, legal answers, and funding of various projects. The Board should be a place where anyone can go and get help and a place where anyone can find out what the facts are. If we do not know them, then we will get them. Working with state, federal, and local agencies, the Coastal Area Board can bring order and unified policies to the coastal zone.

One of our biggest tasks, as I see it, is to provide educational programs concerning the coastal zone so that the public, by learning what the problems of the coastal zone are and what other people are doing, can intelligently aid in the management of his own coastal zone. This conference today is our first effort along these lines. We hope, through the aid of the Sea Grant Program to continue public education on a smaller group basis around the whole coastal area, we can provide the public with a forum where they can express their interests. We can also bring in experts in many fields who can help explain how to go about solving our many and varied problems. We will use these meetings to organize citizens committees who can help us in preparing an Alabama Coastal Zone Management Plan. Our coastal zone plan must have citizen input. We hope that the citizens will help write the program, and we plan to give you that opportunity to help. It is my hope that the Coastal Area Board will be as close to the wishes of the citizens of Alabama as it is possible to be. It should be your source of information and your guide. It should reflect your thinking and it should organize a plan that will insure that your coastal area will survive. It can only do this with your help.

Problems in the coastal zone are almost always conflicting, and are very often decided on emotion and not on facts. I do not know why this is so, but it is true. Maybe people in the coastal zone like to

live more dangerously than others, or, perhaps, they have stronger feelings. In any event, almost any land use problem in the coastal area stands a good chance of ending in a knock down, drag out fight. The Coastal Area Board must insure that decisions in the coastal zone are based on data and facts and not emotion. Local political groups are the most important facet of decision-making and should be given all help possible. It is one of the functions of the Coastal Area Board to see that this help is forthcoming.

There are always two sides to a conflict--your side and my side. Each should have his turn at being heard. Each should be judged on the accuracy of his facts. It is our duty, as I see it, to help settle conflicts in the coastal zone by providing help, data, and a forum for intelligent discussion to both sides.

The Coastal Zone Management Program in Alabama may be the answer to a prayer. It may be our last hope. In any event, it is shaping up to be a brand new approach to solving some of our most difficult environmental problems. I sincerely hope that the Coastal Area Board, with a lot of help from you, will be instrumental in guaranteeing the continued existence, well-being, and stability of our Alabama Coastal Zone.

THE COASTAL AREA MANAGEMENT PROGRAM FOR ALABAMA

L. Willis Hyde
Technical Advisor, Coastal Area Board
Alabama Development Office

Previous speakers have described coastal zone management from different viewpoints--from the Federal overview, from the relationship of coastal zone management to the State as a whole, from a regional viewpoint, and from the perspective of the State policy making body, the Alabama Coastal Area Board. What do these various viewpoints mean in relation to the program to be undertaken in Alabama?

The Coastal Area Board is charged with the task of directing the development of a comprehensive coastal area administration program in recognition of the National policy expressed in the Coastal Zone Management Act of 1972 and in cooperation with local, regional, State and Federal interests. The Act specifies that the program should include at least the following work elements: (a) Identification of the boundaries of the coastal area subject to the jurisdiction of the Coastal Area Board, (b) identification of the State's coastal resources, (c) evaluation of these resources in terms of their quality, quantity, and capability for the use both now and in the future, (d) determination of the present and potential uses and the present and potential conflicts in the uses of each coastal resource, (e) a definition of what shall constitute

permissible land and water uses within the coastal area which have a direct and significant impact on the coastal waters, (f) an inventory and designation of areas of particular concern within the coastal area, (g) broad guidelines on priority of uses in particular areas, (h) provision for consideration of the local, regional, State, and National interest involved in the siting of facilities for the development, generation, transmission, and distribution of energy, (i) provision for permitting designated uses of the coastal zone as defined by the program, and (j) adequate provision of public notice, public hearings, and judicial review as provided under Alabama law.

The first work undertaken by the staff of the Alabama Development Office for the Coastal Area Board was the development of an application for Federal funds under Section 305 of the Coastal Zone Management Act of 1972. This application was submitted in May of this year and funding for the first year program, in the amount of $100,000, was approved. With the approval of the Federal grant and having obtained the required State matching funds, the coastal area management program was initiated on June 30 of this year. The Coastal Area Board Work Program consists of the long-range, three-year program directed toward a final coastal area management plan and the individual yearly efforts designed to make input into the final plan.

Very broadly, the three-year work program will be undertaken in seven major activity areas: (1) Program administration, (2) program coordination, (3) data acquisition and evaluation, (4) policy development, (5) public participation, (6) legal analyses and legislative drafting, and (7) management plan preparation. The various work elements are scheduled so that the three-year coastal zone management program will conclude in time to present a comprehensive management plan to the Regular Session of the State Legislature in the spring of 1977.

The first-year coastal area work program, which is just now beginning the second quarter, is attempting to bring together the many varied elements that must be considered in a comprehensive program. One of the major tasks is to collect, catalogue, and evaluate previous work by numerous Federal, State, regional and local governmental agencies, as well as private studies. Until we know this, we cannot properly define areas where research is needed to provide essential information.

Another major effort is to acquaint the public with the goals and the program of the Coastal Area Board and to solicit public input into the program. This conference is our first effort along these lines. In tomorrow's workshop sessions, we hope that each of you will be able to put forth some ideas that will contribute to our better understanding of coastal zone problems and possible solutions.

We will also be seeking public input into the program through the organization of a series of committees concerned with various coastal

problems. Organization of these committees will begin in the near future, we hope.

In a more technical sense, we will be working to formulate a final definition of the coastal zone boundary, to determine permissible land and water uses, and to determine areas of particular geographic concern within that defined boundary. As set out in Act 1274, the coastal area means:

> the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder) strongly influenced by each and in proximity to the shorelines of Alabama, and includes transitional and intertidal areas, salt marshes, wetlands, and beaches. The area extends seaward to the outer limit of the United States territorial sea and extends inland from the shorelines only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters.

The problem involved in this definition is the inland boundary of the coastal area. The Coastal Area Board has adopted a preliminary definition which includes three zones. The Primary Zone includes all publicly and privately owned lands at or below ten feet above mean sea level in Mobile and Baldwin Counties and all lands exposed and submerged to the seaward limits of the State's territorial boundaries. The Secondary Zone includes all of that area in Mobile and Baldwin Counties between the inland boundary of the Primary Zone and an altitude of fifty feet above mean sea level. The Tertiary Coastal Zone includes all of that area in Mobile and Baldwin Counties between the boundary of the Secondary Zone and one hundred feet above mean sea level.

The final definition of the coastal area will be the subject of considerable physical, biological, and legal research with due consideration given to local and state-wide goals and objectives. The final coastal zone boundary will extend inland only as far as necessary to control shorelands where the land use has a direct impact on coastal waters. The final definition is scheduled to be completed by the end of June 1975.

Work on permissible land and water uses and geographic areas of particular concern will be initiated but not completed during the first year. Work will also be undertaken to review existing legislation and its relationship to the policies of the Coastal Area Board. Where necessary, supplementary legislation will be drafted to eliminate conflicting responsibilities and policies.

The work program of the Coastal Area Board is currently being carried out by a two man staff from the Alabama Development Office assigned to the coastal area program. The primary responsibility of the staff is to see that the work program generally follows guidelines set out in the Federal application and that the work program is completed in an expeditious manner. Individual work elements within the work program are being carried out by several State agencies under contract with the Coastal Area Board. It is the feeling of the Board that, at least in the first year, other State agencies and State universities have the

expertise and staff to provide an important input into the coastal area program. In future years, it may be necessary to obtain the services of highly specialized consultants to provide required input into the program.

In conclusion, let me reiterate that the aim of the Coastal Area Management Program is to work as closely as possible with local governments and private citizens in developing a coastal area program. We will actively solicit input from the public and from all levels of government. We are aware that to have a workable program that leads to a viable plan, we must have a program that is developed by local people to deal with local problems. The function of the Coastal Area Work Program is to coordinate and participate in ongoing programs and to initiate new activities that are needed to provide the missing links necessary for the development of a workable plan.

LUNCHEON INTRODUCTION

R. C. "Red" Bamberg
Chairman, Alabama Development Office
Chairman, Alabama Coastal Area Board

Our speaker's experience spans over thirteen years of diverse but related activities in local, state and federal government and private business. The first four years included program planning and management positions with aerospace firms in the Huntsville area. His nine years of urban and governmental experience began when he was appointed Director of the multi-million dollar Downtown Development and Renewal Program for Huntsville. He was subsequently named Director of the first announced Model Cities Program in the nation at Huntsville. During his two years as Director of Huntsville's Model Cities Program, he also served on the National Steering Committee for Model Cities Programs and as Chairman of the Southeastern Model Cities Directors Association.

His other related experience includes work with the Miami-Dade County Model Cities Program; the Charlotte Model Cities Program; Delray Beach New Town Program; the Charlotte, North Carolina, Community Development Program; Huntsville-Madison County Jetport economic planning; and regional HUD-Model Cities Workshops on Planning, Development, and Delivery Strategy for Community Development and Model Cities Programs.

He adds significantly to his professional experience and knowledge of total cojmunity and regional needs, having served on various community boards, including Community Action Agency, Zoning Board of Adjustment, Regional Council of Governments Housing Committee, Manpower Area Planning Council, Madison County Day Care Association and the Madison County Mental Health Association.

Our speaker is also a member of the Alabama House of Representatives where he serves on the Local Government Committee and the Health Committee.

His publications include: "A New Dimension in City Planning," Alabama League of Municipalities, 1969; "Model Cities Planning," U.S. Congressional Record, 1969; and "Steps Toward Total Community Development," Alabama League of Municipalities, 1972.

Our speaker was selected Young Man of the Year in Huntsville in 1966 and one of the Four Outstanding Young Men in Alabama in 1967. He is listed in the 1967 edition of Outstanding Young Men in America and in the 1971 edition of Who's Who in Alabama. He is also listed in the 1972 edition of Who's Who in American Politics. He holds a Bachelor of Science degree in Industrial Management and a Bachelor of Science in Business Administration, two years of law school, and graduate studies in urban studies.

It is my pleasure and privilege to introduce our speaker, the Honorable Bill King, State Senator, State of Alabama.

LUNCHEON ADDRESS

The Honorable Bill G. King
State Senator, State of Alabama

Due to an improperly functioning tape recorder during this portion of the conference, we regret that Senator King's luncheon address was not available for printing in these proceedings.

PANEL DISCUSSION ON AREAS OF CRITICAL INTEREST IN COASTAL ZONE MANAGEMENT

Moderator: The Honorable Bay Haas
Mobile County Commission

POPULATION GROWTH AND RESIDENTIAL DEVELOPMENT

Don Brady, Assistant Director
South Alabama Regional Planning Commission

The level of demand for all types of housing depends on the extent of residential mobility. Nationally, census surveys indicate that about eighteen percent of all households move from one residence to another annually. A housing reference survey conducted by the South Alabama Regional Planning Commission in 1971 revealed a mobility rate of 17.9 percent in the planning area. A large majority, or 82.4 percent of the families interviewed, moved to their present residences from other locations within the planning area.

Locational factors appear to have a greater bearing on the selection of housing than the costs or the features of the dwelling itself. The locational preferences expressed by potential movers suggest that future housing demand will be channeled largely into residential areas in south and west Mobile County and in south Baldwin County. Single family units dominate the types of housing preferred by potential movers.

Residential land use acreage should increase forty to fifty percent in Mobile and Baldwin Counties by 1995. Industrial and commercial acreages should be up over 150 percent of present uses. Residential densities should increase in most coastal areas of the two counties to approximately three dwelling units per net residential acre.

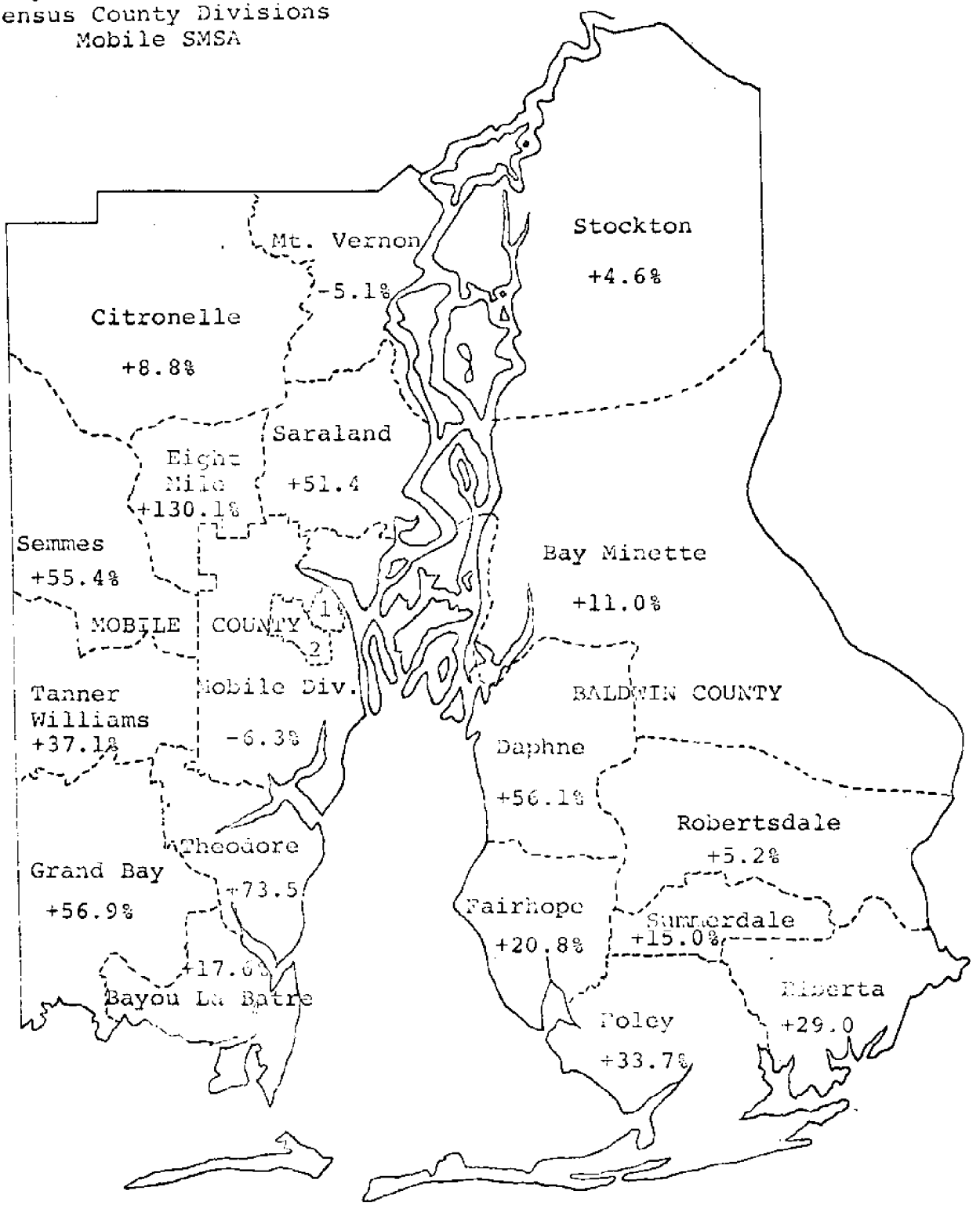
Several recent developments support the fact that the coastal areas are experiencing a steady upward trend in growth that is compatible with the Mobile Standard Metropolitan Statistical Area projections: (1) The Department of Housing and Urban Development has made available for the first time federally subsidized flood insurance for home owners on the Island. The availability of insurance of this nature will, no doubt, encourage new construction as the threat of storm damage has always been of serious concern to prospective builders. (2) The proposed development of pollution control facilities consisting of trunk sewers, collection sewers, pumping stations, force mains, and sewage treatment plants in south Mobile and south Baldwin Counties will stimulate development in these areas. (3) Oil drilling in the Gulf of Mexico, as well as the construction and operation of a Gulf superport and proposed major industrial plant developments in south Mobile and Baldwin Counties, will likely have a significant impact on the growth of these counties. (4) The fluctuating mortgage money market is, perhaps, the single most influential factor that will affect future residential development.

The availability of money at reasonable rates will certainly affect the trend towards constructing both primary and seasonal homes in the Alabama coastal areas.

In summary, most problems connected with coastal zones are related directly or indirectly to improper, unwise, or incompatible land use. Land available for general public recreation has decreased as more areas have been reserved for private residential development, commercial, industrial, and other non-public uses. Rapid growth of Alabama's coastal areas has created specific problems related to transportation, water and sewage, and other public facilities.

New planning and regulatory methods are urgently required. Land use planning is the key to preserving the natural environment and assuring proper development. Uniform permit procedures and forms should be established and enforced. County-wide subdivision regulations and zoning ordinances should be established and their administration coordinated with local municipalities in order to assure proper control of future land uses in Alabama's coastal areas.

Percent Population Growth, 1960-1970
Census County Divisions
Mobile SMSA



1 Chickasaw -15.5%

2 Prichard -12.2%

MOBILE SMSA TOTAL EMPLOYMENT
ANNUAL AVERAGES —— 1960 - 1974

Components of Population Change

Mobile SMSA & Component Counties: 1960-1970

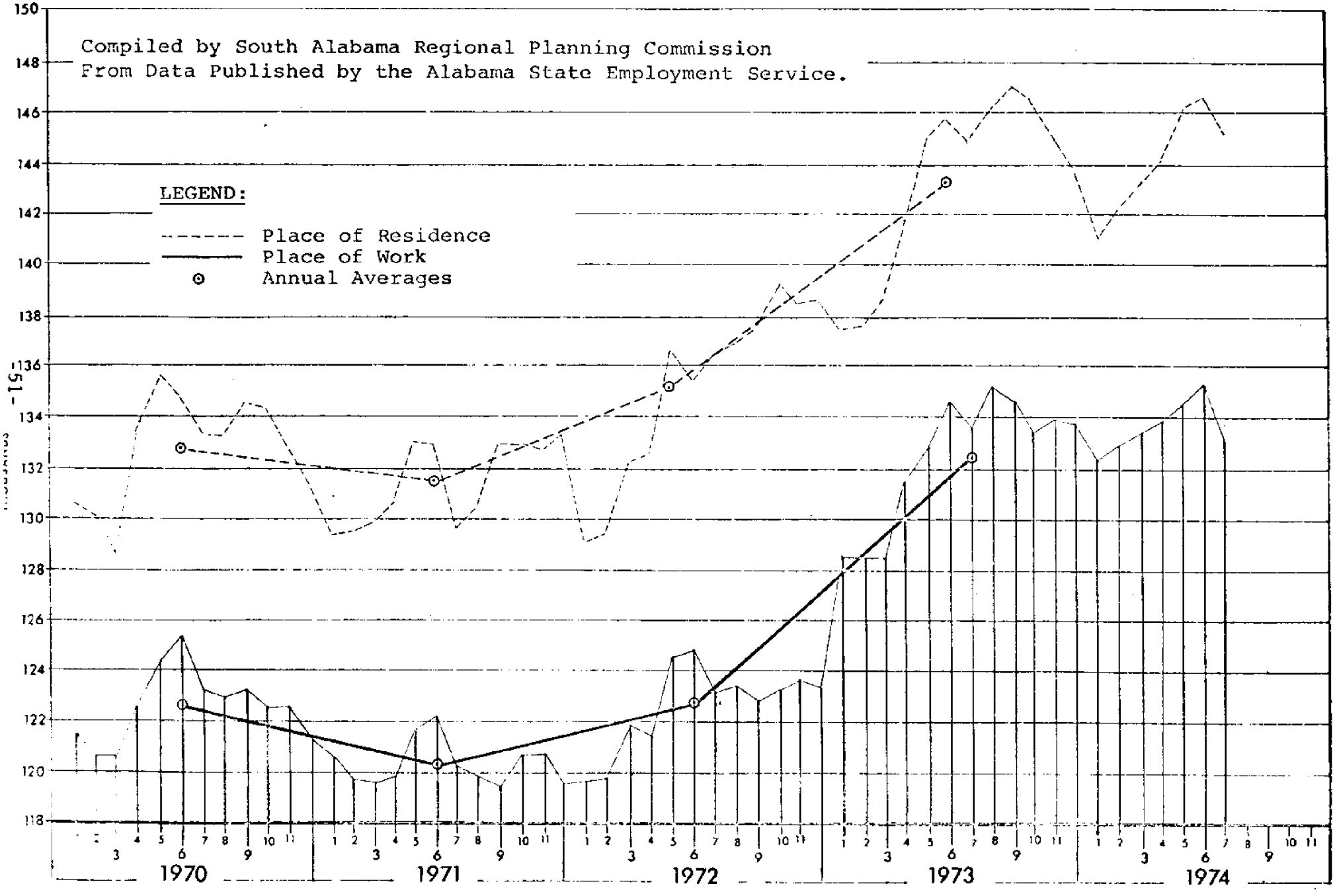
	SMSA	Mobile County	Baldwin County
1960 Population	363,389	314,301	49,088
+ Births	+87,056	+75,850	+11,206
- Deaths	-31,437	-26,631	- 4,806
Natural Increase	+55,619	+49,219	+ 6,400
Expected 1970 Population	419,008	363,520	55,488
Actual 1970 Population	376,690	317,308	59,382
Net Migration	-42,318	-46,212	+ 3,894
Percent Migration	-11.6%	-14.7%	+ 7.9%

Natural Increase	55,619	49,219	6,400
Net Migration	-42,318	-46,212	+3,894
Net Change in Population	+13,301	+ 3,007	+10,294
Percent Change	+ 3.7%	+ 1.0%	+20.9%

Source: U.S. Census, 1960 and 1970

MOBILE SMSA TOTAL EMPLOYMENT BY MONTHS

(MOBILE & BALDWIN COUNTIES)



Estimates of Population Change

Mobile SMSA & Component Counties: 1970-1973

	SMSA	Mobile County	Baldwin County
1970 Population	376,700	317,300	59,400
+ Births	+23,800	+20,100	+3,700
- Deaths	-11,200	- 9,300	-1,900
Natural Increase	+12,600	+10,800	+1,800
Expected 1973 Population	389,300	328,100	61,200
Estimated 1973 Population	390,100	326,000	64,100
Net Migration	+ 800	-2,100	+2,900
Percent Migration	+0.2%	-0.7%	+4.9%

Natural Increase	12,600	10,800	1,800
Net Migration	+ 800	-2,100	+2,900
Net Change in Population	13,400	+8,700	+4,700
Percent Change	+3.6%	+2.8%	+7.9%

Source: U.S. Census

Projected Population
Mobile SMSA and Component Counties: 1970 - 2000

	SMSA		Mobile		Baldwin	
	Population	% Change	Population	% Change	Population	% Change
1970	376,690	-	317,308	-	59,382	-
1980	434,000	15.2	365,000	15.0	69,000	16.2
1990	463,300	6.8	383,700	5.1	79,600	15.4
2000	506,000	9.2	412,200	7.4	93,800	17.8
Total Increase 1970-2000	129,310	34.3	94,892	29.9	34,418	58.0
Average Annual Increase 1970-2000	4,310	1.1	3,163	1.0	1,147	1.9

Source: U.S. Census 1970

Projections 1980-2000 OBERS

Indexes of Production for Selected Industries,
Projected, 1970 - 1995

	1970	1975	1980	1985	1990	1995
United States Total						
Mining						
Crude Petroleum & Natural Gas	100	114	132	146	161	180
Manufacturing						
Apparel & Other Fabric Products	100	138	164	191	222	266
Lumber Products & Furniture	100	165	202	239	282	339
Paper & allied products	100	133	162	194	232	288
Printing and Publishing	100	127	152	182	217	268
Chemicals & Allied Products	100	138	176	220	274	355
Petroleum Refining	100	105	121	139	159	186
Fabricated Metals & Ordnance	100	141	177	218	269	343
Machinery, Excluding Electrical	100	131	157	188	226	280
SMSA - Mobile, Alabama						
Mining						
Crude Petroleum & Natural Gas	100	160	215	243	274	312
Manufacturing						
Apparel & Other Fabric Products	100	167	244	312	398	523
Lumber Products & Furniture	100	172	223	264	312	376
Paper & Allied Products	100	132	163	198	241	303
Printing and Publishing	100	134	168	207	256	327
Chemicals & Allied Products	100	147	197	259	342	471
Petroleum Refining	100	117	144	174	209	258
Fabricated Metals & Ordnance	100	159	204	275	372	522
Machinery, Excluding Electrical	100	198	250	315	397	516

Source: U. S. Department of Commerce, Bureau of Economic Analysis

Population, Per Capita Income and Employment,
Historical and Projected, 1970 -1995

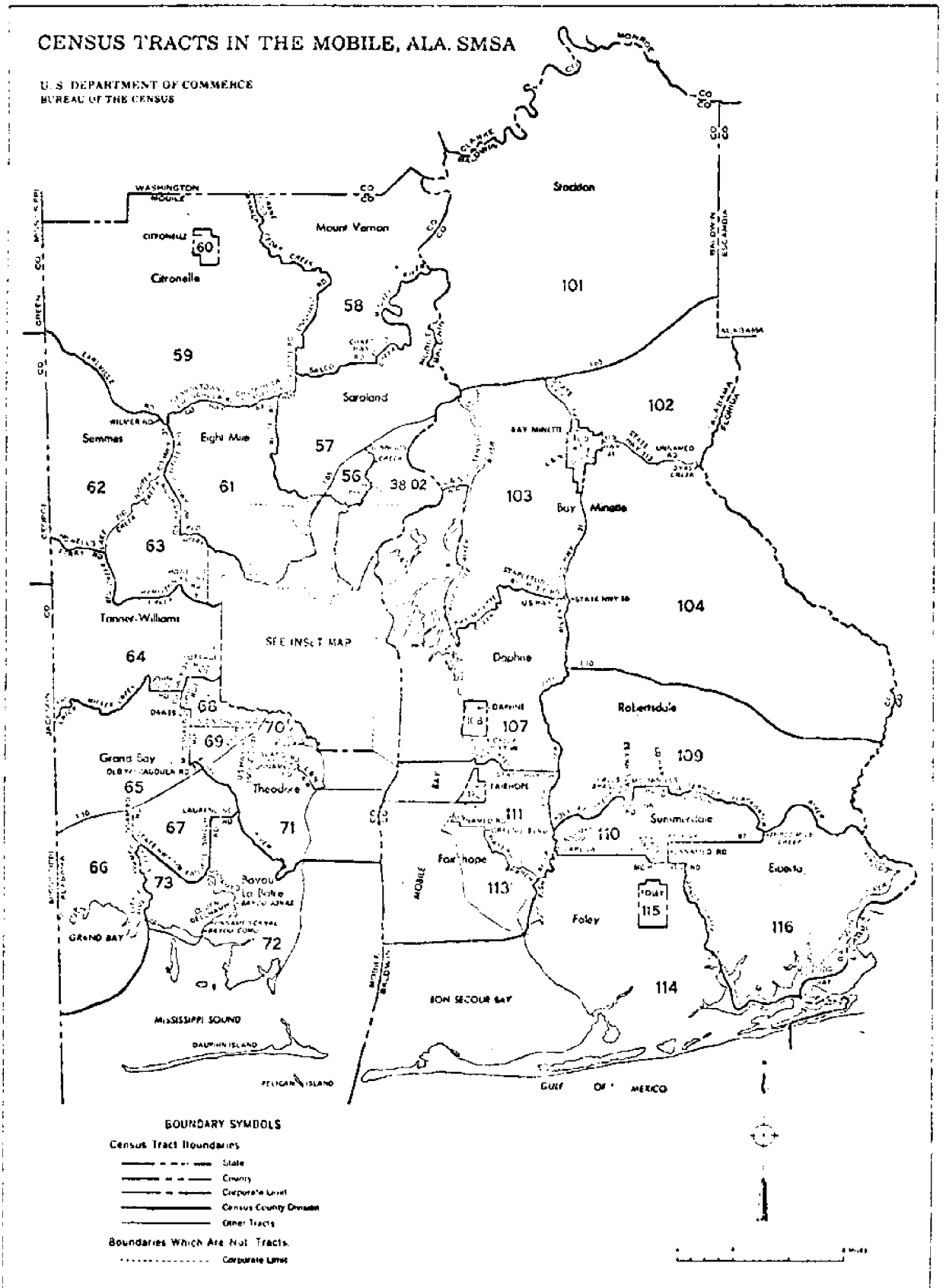
United States Total	1970	1975	1980	1985	1990	1995
Population, Midyear	203,793,000	218,629,700	234,208,000	251,355,700	269,759,000	288,270,500
Per Capita Income (1967$)	3,466	4,105	4,765	5,420	6,166	7,237
Per Cap. Inc. Relative (US = 1.00)	1.00	1.00	1.00	1.00	1.00	1.00
Total Employment	75,403,000	85,265,600	93,820,000	100,155,000	106,917,000	115,308,200
Employment/ Population Ratio	.37	.39	.40	.40	.40	.40
SMSA - Mobile, Alabama						
Population, Midyear	377,439	403,300	428,600	459,600	492,800	525,300
Per Capita Income (1967$)	2,585	3,226	4,014	4,619	5,316	6,296
Per Cap. Inc. Relative (US = 1.00)	.75	.79	.84	.85	.86	.87
Total Employment	122,800	145,200	176,400	186,900	198,100	212,700
Employment/ Population Ratio	.33	.36	.41	.41	.40	.40

Source: U. S. Department of Commerce, Bureau of Economic Analysis

LAND USE DISTRIBUTION BY
COUNTY AND REGION, 1968 & 1995
(Acres and Percent)

Classification	1968	1995	Change Number	Change Percent
		MOBILE		
Residential	57,242	86,784	29,542	51.6
Commercial	2,423	5,585	3,162	130.6
Industrial	3,164	8,573	5,409	172.8
Roads	15,274	19,956	4,682	30.6
Other TCU	5,473	5,924	451	8.2
Public & Semi-Public	4,247	6,354	2,107	49.6
Recreation & Open Space	3,037	7,712	4,675	153.9
Resource Production & Extraction	131,184	131,110	-74	--
Subtotal - Developed Land	222,044	272,083	50,039	22.5
Vacant	562,189	512,173	-50,016	-9.0
Water	202,970	202,970	--	--
Total Area	987,202	987,202	--	--
		BALDWIN		
Residential	9,212	15,450	6,238	40.3
Commercial	569	1,330	761	133.7
Industrial	444	1,478	1,034	232.8
Roads	17,071	18,116	1,045	61.2
Other TCU	4,663	5,437	774	16.5
Public & Semi-Public	5,385	5,950	565	10.5
Recreation & Open Space	6,563	7,998	1,435	21.8
Resource Production & Extraction	724,629	724,629	--	--
Subtotal - Developed Land	768,830	780,388	11,558	15.0
Vacant	255,149	243,591	11,558	4.5
Water	44,776	44,776	--	--
Total Area	1,068,755	1,068,755	--	--

Source: South Alabama Regional Planning Commission Estimates


CENSUS TRACTS IN THE MOBILE, ALA. SMSA
U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
Citronelle
Mount Vernon
Stockton
Saraland
Semmes
Eight Mile
Bay Minette
Tanner Williams
Daphne
Fairhope
Foley
Robertsdale
Summerdale
Elberta
Theodore
Grand Bay
Bayou La Batre
SEE INSET MAP
MISSISSIPPI SOUND
DAUPHIN ISLAND
PELICAN ISLAND
MOBILE BAY
BON SECOUR BAY
GULF OF MEXICO
BOUNDARY SYMBOLS
Census Tract Boundaries
State
County
Corporate Limit
Census County Division
Other Tracts
Boundaries Which Are Not Tracts
Corporate Limit

TRANSPORTATION AND NAVIGATION

Colonel Drake Wilson
District Engineer, Mobile District
U. S. Army Corps of Engineers

I am very much pleased to be here today. The Corps of Engineers shares the acute national concern over wise management of our coastal zones and is intensely interested in the efforts the various states are making to accomplish this. In addition, I appreciate the opportunity that participation in this conference provides for laying a firm groundwork for our future cooperation in working toward our common goal of safeguarding coastal resources.

If we may have the lights lowered, please, I should like to illustrate my remarks with slides. To show how the Corps of Engineers is involved in coastal zone management, I should like to explain briefly the Corps' civil works responsibilities and organization.

Since the early days of the Republic, when the only trained engineers available were army engineers, the Corps has been responsible for developing the nation's water resources. At first, when transportation and communication by water was of paramount importance, navigation was the principal purpose of development. Later flood control and shore protection were added, and, still later, as the wisdom of multiple-purpose development became apparent, a number of other secondary purposes were also added.

The Corps performs its civil work through a decentralized organization, under the direction of the Chief of Engineers at the Washington level. Under the Chief there are eleven geographical divisions engaged in civil works. These are, in turn, subdivided into thirty-six geographical districts. Along the Gulf Coast there are four Engineer Districts, Galveston in the Southwestern Division, New Orleans in the Lower Mississippi Valley Division, and Mobile and Jacksonville, both in the South Atlantic Division. The coastal zone of Alabama is in the Mobile District.

Many of the activities of these four districts profoundly affect the coastal zones of the Gulf States, physically, economically and socially. That is their purpose. The improvements have been made in accordance with the desires of local people as expressed by their representatives in Congress and concurred in by the Governors of the states affected.

The hallmark of the Corps of Engineers has always been its ability to respond to the changing needs and demands of the American people, whether for economic development, protection from the ravages of nature or enhancement of the quality of life. Persistent criticism notwithstanding, the Corps has become a leader in the preservation of environmental quality. Since it is our function to serve the people of this nation as they wish to be served, we look forward to cooperating with you fully as you work out guidelines for the wise usage of the coastal zone resources.

Now I should like to review briefly the major activities of the Corps of Engineers in the Gulf Coastal Zone, using my own district as an example. The first activity I should like to mention is the construction and maintenance of navigation channels. Although conditions have changed radically since the days when waterways were, in many cases, the only feasible means for transportation and communication, navigation is still of tremendous importance to the economy of the nation. It is the most economical method of moving many bulk commodities between points within the country and the only feasible means of moving many commodities to and from overseas points.

In the Mobile District we have six deep-draft harbors. These include Gulfport, Pascagoula, Mobile, Pensacola, Panama City and Port St. Joe. Two of these, Mobile and Pascagoula, are at the mouths of extensive river systems and are surrounded by extensive marshlands and deltas. All have a decided impact on the coastal environment. Let us take a closer look at Mobile, the busiest of these harbors, since it is the one in which you are most interested.

The economic influence of the Port of Mobile reaches far beyond the coastal zone of Alabama. It has served a wide area as a center of domestic and foreign trade since its settlement by the French in the early 1700's. In 1973 commerce at the Port exceeded thirty million tons. The Corps of Engineers has repeatedly improved the harbor channels since 1826. The present projects consist of a channel forty-two feet

deep across the bar at the mouth of Mobile Bay, a channel forty feet deep and thirty-five miles long through the Bay and in the lower end of the Mobile River, and various turning basins and feeder channels. In 1970 there was authorized a forty-foot branch channel from the main ship channel in Mobile Bay to an industrial area on the western shore near Theodore. The first phase of advance planning for this channel and a draft environmental impact statement are under way. We are also studying the advisability of deepening the main channels and providing additional turning and anchorage basins.

Of particular interest to this audience may be the hydraulic model of Mobile Bay which has been constructed at the Corps of Engineers Waterway Experiment Station at Vicksburg for determining the effect of the harbor improvements under consideration on the over-all environment of Mobile Bay.

The model, which is a little larger than a football field, reproduces to scale an area of about one thousand square miles, including all of Mobile Bay and adjoining water and land areas. Not only topography but also flow patterns, current velocities, salinities and tidal discharges are reproduced.

We have just completed a series of tests on the model designed to determine the effects on the Bay of various arrangements of the islands we propose to build out of the material excavated from the new Theodore

Channel. Next we will study the effect of the various other harbor improvements we have under consideration. When the model is not being used by the Corps of Engineers, it will be available for use by other agencies on a reimbursable basis.

In addition to the six deep-draft harbors, we have in the Mobile District over twenty shallow-draft harbors and coastal channels scattered along the Mississippi, Alabama and Northwest Florida coasts.

Among these are the small craft channels at Fowl River, Bayou Coden, Bayou La Batre, Dauphin Island, Bon Secour River and Fly Creek, all in Alabama. Several of the entrance channels from the Gulf are protected from shifting sands by stone jetties; one of these is at Perdido Pass near the Alabama-Florida line. All of these harbors and channels make important contributions to the economy of the coastal areas. All have an impact on the coastal environment.

One of the most important waterways in the Gulf Coastal Zone is the Gulf Intracoastal Waterway, a protected water route by which light-draft vessels not suited to navigating long stretches of the open Gulf can move to all coastal points from Carrabelle, Florida, to the Mexican border. It traverses coastal bays, sounds, and tidal estuaries, deepened as necessary and connected by artificial land cuts. In 1973 movements on this waterway amounted to $16\frac{1}{2}$ billion ton miles. The heaviest usage of this channel is along the Louisiana and Texas coasts but it is an important artery of commerce for its entire length.

All of these projects involve dredging, both when first constructed, and periodically thereafter to maintain channel dimensions. Dredging has become one of the most controversial activities in the coastal zone. This is probably due in large part to the fact that it is so noticeable and is by its nature a dirty operation.

The Corps of Engineers has devoted a great deal of study to the effects of dredging and this study is continuing. I will mention here a few of the effects we have been investigating.

Initial dredging frequently causes a fairly sudden physical change. For example, deepening a coastal stream may permit the salt wedge to penetrate farther up the estuary, thus modifying the existing salinity regimen. Constructing a channel across an offshore bar may interfere with the transport of sand down the beach. Creating a mound of dredged material in a body of water may influence flushing values and currents.

The dredging process itself also has its effects. Most of the adverse effects from the process result from the placement of the dredged material, rather than from its removal. These adverse effects can be largely avoided if the material can be placed on land. Let me say, the Corps is keenly aware of the difference between land and wetland.

The most obvious effect of discharging any dredged material in water areas is turbidity. The immediate effect of the turbidity plume is the reduction of light penetration in the water column and a temporary

reduction in the rate of photosynthesis in the floating and bottom plants which are a part of the food chain. However, studies have shown that the primary productive capacity of estuaries is principally from marshes and tributary streams, rather than from open water areas. Studies in Mobile Bay and other estuaries have indicated that surface turbidities from dredging operations approach normal levels within twelve hundred to fifteen hundred feet from the point of discharge. Ambient wind and water conditions determine the existence and extent of visible plume.

The most significant adverse conditions produced during material placement are due to sediment deposits, or mud flows. The two primary factors in causing mud flows are the kind and amount of particles resuspended. When silts and clays are deposited in open water, mud flows can be expected to occur. The thickness of the layer is reduced with increasing distance from the discharge point and with time. Until concentrations are in excess of 175 grams per liter and consolidation occurs, mud flows are subject to movement by gravity and, to a lesser degree, by tidal or wind action. Mud flows have been found to extend up to two thousand feet from the point of discharge. The mud flow covers the original bottom from one to several inches and some organisms capable of migrating up through it survive. But others, such as immobile and burrowing invertebrates and bottom-dwelling algal forms, may be covered and lost.

The effect of open water disposal on dissolved oxygen concentration is pronounced in the area surrounding the discharge point. There is an immediate oxygen demand when the sediments are dispersed. As a result, although the dissolved oxygen at the surface and mid-depth are only slightly depressed, a regimen of low dissolved oxygen exists in the mud flow. On the bottom this condition has been observed to extend for approximately eight hundred to seventeen hundred feet.

In the last two years a great deal of effort has been expended to determine if compounds bound to silts and clays are released when dredged material is placed in water areas. Our studies are not complete, but some release of heavy metals such as zinc has been found to occur. The released metals are apparently reabsorbed by the particles at the earliest opportunity.

The biggest problem we have in connection with a dredging project is finding suitable disposal areas for the dredged material. In the early days we simply placed the material alongside the channel in open water areas and along the banks of streams. However, the build-up of dredged material in some areas, the increasing quantities of material which must be removed from the larger channels required today, the disappearance of undeveloped areas along the waterfronts for land disposal and the necessity for preserving valuable estuarine systems all combine to require a different procedure. Throughout the coastal zone we are engaged in a search

for disposal sites and methods which will insure continued maintenance of the navigation channels while at the same time protecting the estuaries and remaining economically feasible. This tremendous problem must be solved if our ports and coastal waterways are to continue to exist.

In some instances we have found happy solutions. For example, the last time we performed maintenance dredging in the Ship Island Channel at Gulfport Harbor, we placed the material by Old Fort Massachusetts on the seriously eroded western tip of Ship Island to form a protective beach around the old fortification. Two years ago, while dredging a channel into Grand Lagoon from St. Andrew Bay, we used the sand removed from the channel to nourish the eroded beach at St. Andrews State Park near Panama City.

At East Point in Apalachicola Bay an island has been formed from material dredged from the channels. This island is used extensively as a resting place by shore birds. We are studying the feasibility of constructing islands in connection with dredging in Mobile Bay, as I showed you in discussing the Theodore Channel project. Such islands could be used in many different ways. We do need to find other constructive uses for the dredged material.

I should like to mention here a recent change in our procedure for reviewing our own Corps of Engineers' dredging projects. New regulations, promulgated by the Secretary of the Army in July of this year, set out in detail the factors we consider in the evaluation of all federal dredging

projects when they involve the disposal of material in navigable waters, whether they are inland, coastal or ocean waters. In general, these factors are the effects on marine ecosystems; wetlands; fish and wildlife; historic, recreational and scenic areas; and archaeological and cultural sites. While consideration of these factors themselves is not new, a new step has been added whereby we will issue a public notice of our plans, coordinate the planned work with all interested parties and even hold a public hearing at the request of any person who has a clear interest which may be affected by the dredging. Disposal sites will be selected in accordance with EPA guidelines for the disposal of dredged material. If following the guidelines would impair or prevent the continued maintenance of navigation, the economic impact will be evaluated and the question will be referred by the District Engineer to higher authorities for resolution. This new procedure is now in effect. The first public notice on Corps' dredging has been issued from my office on September 3.

One of the special problems in the maintenance of navigation channels along the Gulf is the removal of water hyacinths and other aquatic growth which effectively obstruct passage if allowed to accumulate in streams.

The water hyacinth was introduced into the United States at the Cotton Exposition in New Orleans in 1884. By 1898 it had spread to such an extent that Congress was requested to intercede. The Corps has been combatting the plant by various means since 1900. In Alabama the most serious problem is in the Mobile River Delta.

In 1965 Congress authorized a considerably expanded program for the control and progressive eradication of water hyacinths, alligatorweed, Eurasian water milfoil and other obnoxious aquatic plant growths from the navigable and allied waters of the United States in the combined interest of navigation, flood control, drainage, agriculture, fish and wildlife conservation, public health and related purposes. Under this program, all research and planning costs and seventy percent of operational costs are borne by the United States, and thirty percent of operational costs borne by local interests. The various Engineer Districts along the Gulf work with the appropriate state and local agencies on this program. The Department of Conservation and Natural Resources has been designated to represent the State in carrying out the program in Alabama. However, no work has been accomplished so far because of the lack of State funds, which could be allotted to field operations.

Another important activity of the Corps of Engineers in the coastal zone is shore protection. Federal participation in beach erosion control projects is subject to special laws and regulations. The extent of federal assistance depends on individual circumstances.

Basic research is done by the Corps of Engineers Coastal Engineering Research Center, which studies such matters as the transportation of sand by winds, waves and currents; the measurement and management of the natural forces that shape beaches and dunes; the relationships between

natural coastal forces and manmade structures; shoaling and pollution in tidal waters and rivers; the effects of shore and harbor programs on marine life; the natural forces involved in inlets, lagoons, sand bars and the like, particularly as they affect navigation channels; the effectiveness of manmade works of various shapes, spacings and materials in various coastal situations; and methods and effects of handling or moving sand and dredged materials.

At the present time the Mobile District has under way surveys to consider means for providing beach erosion and hurricane protection for the three coastal counties in Mississippi, Mobile County in Alabama, and the shores of Northwest Florida from the Alabama line to Indian Pass in Gulf County. Congressman Jack Edwards has requested the House Public Works Committee to authorize a similar study for Baldwin County in Alabama.

The last Corps of Engineers' activity which I should like to mention is our regulatory or permit program. This program is designed by Congress to assure wise and orderly development in and along the nation's inland and coastal waters. The program requires a comprehensive review process involving all federal, state and local agencies vested with environmental authority.

The basis for the Corps of Engineers' regulatory function over our waterways was formed when Congress grouped several statutes into

Sections 9 through 20 of the River and Harbor Act of 1899. Specifically, Section 10 provides that the creation of any obstruction not authorized by Congress to any navigable water of the United States is prohibited, unless the work has been recommended by the Chief of Engineers and a permit obtained from the Secretary of the Army prior to the start of construction. This statute applies to all structures from the smallest recreational dock to the largest commercial facility. It includes any dredging or excavation, as well as fills, which take place adjacent to or in navigable waters.

Navigable waters are defined as those which are presently, or have been in the past or may be in the future, susceptible for use by the public as a highway for trade and commerce. Federal regulatory jurisdiction extends laterally over the entire water surface and bed of a navigable waterway and includes all land and waters below the average high water mark in non-tidal areas or below the mean high tide line in coastal areas. In addition, activities which affect navigable waters are subject to federal jurisdiction, whether such activities occur within or outside of navigable waters.

Private ownership of underlying lands has no bearing on the prevailing federal jurisdiction. Marshlands and similar areas which are subject to innundation by mean high waters or the development of which would affect navigable waters are within the jurisdiction of the United States.

The requirement to obtain a permit for any work affecting navigable waters applies to federal, state, county and municipal agencies, as well as to the general public. Failure to obtain a permit may subject the parties involved to criminal or civil prosecution, or possibly both.

In processing a permit, the Corps coordinates each application with all appropriate federal, state, and local agencies and issues a notice to the general public allowing time, usually thirty days, for the submission of comments. In evaluating the permit application, the Corps considers all the comments received and makes its own analysis of the impacts of the proposed activity upon the public interest.

On April 3, 1974, the Chief of Engineers issued revised regulations which considerably broaden the factors which we consider in balancing the benefits which reasonably may be expected to accrue from the proposal against its reasonable foreseeable detriments. These factors include conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife, flood damage prevention, land use classification, navigation, recreation, water supply and water quality. No permit will be granted unless its issuance is found to be in the public interest.

In addition to taking into consideration the national concern for both protection and utilization of important resources, the District Engineer must determine whether an environmental impact statement is

required in connection with the permit application. If granting the permit appears to be warranted but the proposed activities would have a significant environmental impact, an environmental impact statement will be prepared, coordinated with interested agencies and individuals and filed with the Council on Environmental Quality prior to final action on the application.

In some instances the review may be a very time-consuming activity. If there appears to be sufficient interest to justify it, we hold a public hearing or meeting to make sure that all interested parties understand the work for which the permit is being requested and that both supporters and opponents have full opportunity to present their opinions in the matter. If a decision cannot be reached locally, all information is forwarded to the Chief of Engineers with a recommendation from the District Engineer.

Obviously, our permit program is an important element in coastal zone management. It is one which affords a continuing opportunity for the Corps of Engineers and state and local agencies to work together for the betterment of the coastal area.

This brings me to the note on which I would like to end, which is cooperation. During a recent speech the Chief of Engineers stated, "Today the human way of life, as it was known for thousands of years, is strained and threatened by the sudden vast acceleration of technical man on a course which can alter dangerously, and perhaps irreversibly, the ecological system of this planet on which his biological survival depends."

We all recognize this. That is the reason for the Corps' increasing emphasis on environmental considerations in all its programs. That is the reason for the establishment of the National Coastal Zone Management Program and for your conference here today. At the same time we must remember that a basic duty of government is to provide a social environment where its citizens can obtain food, clothing, shelter and some amenities of life. In meeting the continuing demands of an increasing population, we must seek to regulate resource use so as to make the utilization as beneficial as possible in terms of the resulting environment. To do this, all levels of government and all private interests concerned must work together on a continuing basis, not taking pot shots at each other after a decision has been reached, but cooperating in the decision making from the outset.

I offer you the full cooperation of the Corps of Engineers in your efforts to manage wisely the valuable resources of the coastal zones. I am sure the Corps can count on your full cooperation in its efforts in the same direction.

List of Slides used by Colonel Wilson

1. Corps of Engineers, Mobile District seal
2. Waterfront development
3. Beach scene
4. Permit pamphlet
5. Floating dock and walkway
6. Shell Point Village resort area, with finger canals
7. Chart: Permit procedure
8. Federal Register: Guidelines for Review of Fish and Wildlife Aspects of Proposals in or Affecting Navigable Waters, Vol. 39, No. 159, Pt. III, 15 Aug. 74
9. Chart: Permit decision based on public interest
10. Chart: Genesis of Corps Project
11. District civil works map
12. Mobile Harbor aerial featuring State Docks with large ships, July 74
13. Mobile Bay with Theodore Channel
14. Aerial of Theodore industrial area from Bay
15. Technicians working on Mobile Bay model near Theodore site
16. Mobile Bay model test chart: ALT ID and IG modified
17. Mobile Bay shore erosion
18. Beach erosion, hotel with swimming pool in front, Panama City Beach
19. Beach erosion, collapsed bulkhead at Holidan Inn, Panama City Beach

20. Beach erosion, bulkhead broken at private house south of Grand Lagoon, Panama City Beach

21. Chart: Possible beach erosion control project: Revetment

22. Chart: Possible beach erosion control project: Groin system

23. East end of Dauphin Island, aerial

24. Chart: Possible beach erosion control project. Beach restoration

25. Pumping sand onto beach, Panama City

26. Panicum amarum transplanted in March, 1972, two years and six months after transplanting. From 12 to 15 cubic yards of sand per lineal foot of beach has been trapped.

27. Propagative facilities for marsh grasses

28. Crew on transplanter

29. Nursery for production of uniform material for transplanting

30. 1200 foot section of sea oats planted on foredune, after 21 months

31. 1200 foot section of sea oats planted on foredune, after 5 years, with 16 to 20 cubic yards of sand per lineal foot of beach

32. Sand fencing to trap sand

33. Sand fence. Traps sand rapidly, but is short-term solution as fence deteriorates. Must establish vegetation on foredune.

34. Trails on foredune caused by dune buggies

35. Panicum transplanted on disturbed site. Vegetation was protected from excavation by mulch net placed over it.

36. Perdido Pass aerial

37. Dredge discharge, Alabama River

38. McFARLAND (w/CE name)

39. Chart: Distance to Dump vs. Cost (hopper dredges)

40. Dredge and diked disposal area, Gulf Intercoastal Waterway between Bon Secour and Oyster Bays

41. Old Fort Massachusetts before protection

42. Old Fort Massachusetts after protection

43. Mobile Harbor project map

44. Dredge at Petit Bois Island

45. Chart: Effects of open water disposal

46. Spoil island with birds, East Point

47. Chart: Legislative Requirements

48. Chart: Permits for Dredge or Fill Materials

49. Chart: The Corps of Engineers Dredge Material Research Program

50. Chart: Research Area

51. Corps of Engineers flag on bow of boat

COMMERCE AND INDUSTRIAL DEVELOPMENT

Fred Denton
Director of Industrial Development Division,
Alabama Development Office

Ladies and gentlemen, I have been asked to make some comments on commerce and industrial development in Alabama. My comments will be more concerned with industrial development because of the very nature of my job. I will attempt to give you some idea of what has been going on in Alabama industrially. Then I will make some general comments about industrial development which are applicable to Alabama, Mississippi or any other place. Hopefully, I will be able to lay a groundwork for you to use as a springboard for further discussion in your group sessions tomorrow morning.

The Alabama Development Office has been mentioned a number of times today. Let me just tell you a little about the history, purposes and organization of the Alabama Development Office. The ADO is the successor to the Alabama State Planning and Industrial Development Board, which operated in the State for a number of years. The ADO is really the newest department of state government in Alabama and was established in 1969 by the Legislature. It is, of course, headed by Mr. R. C. "Red" Bamberg who reports directly to Governor Wallace.

The establishing act states that the ADO shall be the principal staff agency of the Executive Branch to plan for the comprehensive

development of the state's human, economic and physical resources. In order to do this, the agency is organized into three basic divisions. The first of these is the federal-state program which seeks federal and state moneys to implement projects which are planned in the second division, the planning section. This section helps to bring about the orderly development of Alabama's communities and towns. The third division is that of industrial development, with which I am connected.

The basic purpose for the existence of the industrial development division is to help create manufacturing investments and manufacturing payrolls in the State of Alabama. To do this most effectively and competitively, we must surround ourselves with people who know what they are doing and can make things happen.

Let us now look at this term "industrial development." Over the years the term has really become a magic phrase. Through the country these words have been the title of thousands of committees and nonprofit corporations and foundations. It has been the subject of many documentary films, conferences, seminars and clinics. It has been the theme of national trade shows. It has certainly been a major plank in the platform of scores of political candidates.

In recent years, however, things have changed. Countless articles have appeared inAmerican periodicals reporting communites, which once were actively pursuing industrial growth and development, are now erecting "no trespassing signs." Regardless of these criticisms, industrial

development is still a magic phrase in Alabama. At no time in our history have Alabamians been more aware of the importance of new manufacturing payrolls and manufacturing jobs.

Three years ago the Alabama Development Office was told by the Legislative Budget Committee that the ADO had not asked for enough funds to continue its industrial development program for the next two years. We were told to revise the budget and resubmit it to that Committee. In fact, the exact words of the Committee were, "Go back and bring us a budget that will allow you to build an industry seeking team in Alabama that is second to none in the nation." Contrary to the Legislative treatment received by some agencies, the response that our department has been receiving regarding industrial development efforts is quite unusual, encouraging and appreciated. We did, indeed, submit a revised budget requesting substantially more than originally requested. Although we did not receive the total figure we asked for, we did receive more than has ever been funded for Alabama's industrial development program. Our objective from the beginning of this administration has been to make Alabama's industrial development effort second to none in the nation.

Earlier I mentioned that our division's reason for existence is to help create manufacturing investments and manufacturing payrolls in the State. People often ask what we are really trying to do with industrial development. I believe some statistics reviewed just a few minutes ago

regarding capital income, population growth and changes surely relate to this question. We are striving to help increase the per capita income of the people of Alabama. We have a vast reservoir of under-employed people. This was once true in many southeastern states, but has changed radically in most of our competing states. As you can see, if we lower our unemployment figure, we can raise our per capita income.

Industrial development, if we put it in its proper perspective, is a very basic and relevant phase of this whole economic development. The total economy consists of many facets which contribute in some measure to organized society as we know it. When we examine industrial development in its relationship to other activities, we find that it is basically a balance of trade with other areas. These areas, states or communities must maintain a balance of trade, if they are to develop an economy above the subsistence level.

No area can be self-sufficient in all of these facets of daily living. All communities or areas must import from other areas. The money to pay for these imported goods must be sent away from the area. Therefore, the area must have funds coming from outside sources or the area will become depressed. An area must produce a significant quantity of exports if it is to get fresh dollars with which to pay for its imports. Of course, there are always exceptions such as cities with large universities and cities with large government installations. Also included

as an exception would be areas which are tourist centers.

Next we should think in terms of what types of enterprises would best serve the purposes of the areas. There appears to be four basic wealth producing industries--agriculture, including forestry, mining, manufacturing and commercial fishing. These industries do help to provide a favorable trade balance for the areas in which they are located, and they are the foundation for prosperity.

Let us take a look at the area of commercial development, wholesale and retail distribution concerns, local consumption industries and service facilities. These contribute little towards creating basic wealth and do not improve the balance of trade. Their functions are, however, absolutely necessary to an organized community. Furthermore, they may be considered as multipliers of dollars. That dollar coming into the community is passed around between the various concerns before it is finally sent away to pay for some imports. Each time it changes hands, we must assume that exchange is a profitable transaction, which increases tax revenues. These activities are very important factors in economic development.

In the Industrial Development Division of the ADO we are in no way indifferent to commercial development. However, we do have our hands full working with industrial development. Therefore, our activities are confined mainly to the manufacturing sectors of the economy.

At the beginning of this administration we decided on several priorities. First, we planned to reestablish contact between our department and the other industrial developers in the State. The Alabama Development Office works very closely with several organizations that have been mentioned here today. We are trying to bring about a mutual trust and confidence among all of us involved in industrial development, which is absolutely essential to success. Our second priority has been to convert our office from a referral organization into an organization that is acutely engaged in industrial development.

POLLUTION ABATEMENT

William T. Willis
Director, Alabama Environmental Health Administration

Before beginning my discussion, I must say at this conference we are all searching for some productive thoughts and exchanges concerning what we can do to protect our environment and, at the same time, allow for reasonable development. I believe there is a middle ground where reasonable men can approach these problems to provide for development, not unlimited development, and yet preserve our natural resources. This can be accomplished with a degree of cleanliness which will provide for the proper maintenance, growth and propogation of all forms of plant and animal life. With that introduction, I would like to talk about the problems with which we are faced in trying to arrive at some compromises which must be considered.

Let us look at two or three areas involved in development. First, everyone would like to have a beautiful vacation cottage overlooking the beach with the waves coming in, birds flying around, and the opportunity to step out and swim in the surf. In response to this, all too often, you have developers who purchase a parcel of land for development. This development brings on the real problems of waste disposal and a water supply. In looking at this sewage disposal problem in developing this land, he must have approval in order to discharge into the nearest

waterway. However, the developer may find that this particular water course has been classified as a swimming and recreational area so he cannot discharge the wastes here. Where does he turn now but to individual septic tanks? After digging about six inches, he finds a geyser. Here again, where does he go from this point? The ground water table is too high for septic tanks, and he cannot put in a surface treatment plant which discharges into the nearby stream. It is an unfortunate situation, but one which must be faced.

Another problem we are facing is that of industrial development because everyone wants this in order to provide jobs in their community. Usually the ADO works very closely with us. We may review and perhaps expand the plans of potential industries for their waste disposal facilities. After the industry provides for the discharge of the undesirable constituents, the Water Improvement Commission may issue a permit for the construction and operation of that waste treatment facility.

The problem here is that in the process of removing the undesirable constituents, we create a massive amount of sludge. There is no regulation in the State of Alabama which provides that these concentrated sludges must be disposed of in any given manner. There is a tendency for one of several things to occur. First, the company simply dumps these sludges in any convenient place. During the first big rain all of these sludges are washed into a waterway. Secondly, these concentrated

sludges are stored in fifty-five gallon drums on the company's property. However, rust is constantly a problem, and eventually the drums begin to leak. Again after a big rain, we are right back where we started. Another alternative would be to haul these sludges to a sanitary land fill where they can be disposed of in a somewhat reasonable manner.

The coastal area of Alabama is among the hottest areas in the nation right now for industrial development. We do have definite problems on our hands. How much industrial development can we allow? Is pollution control equipment the answer to the problem? The answer is obviously no, because we cannot remove one hundred percent of the pollutants without unreasonable costs. After reaching a certain level, removing addition amounts of pollutants involves exorbitant costs. In other words, ninety-nine percent of the pollutants can be removed for a particular price, but to remove the other one percent would double the cost.

With the development of a superport we are going to have a massive demand for refineries and other petrochemical related industries. To operate these refineries will require tremendous amounts of electricity and energy. This means that power companies must increase the capacity of their energy plants. Of course, the problem is further aggrevated.

In Alabama we have a variety of shellfish beds near Dauphin Island. Periodically, these beds must be closed for the simple reason that the

bacterial count in the waters from which the oysters are harvested are too high to meet the Food and Drug Administration requirements. However, this not all due to industrial discharges. Studies indicate that even if there were no industries in Mobile, it would still be necessary to close these beds because of bacteria from non-industrial sources. How much residential development can we sustain and still have a thriving oyster industry near Dauphin Island?

One of the requirements for the location of industry, of course, is the water supply. Most large industries locate where they can secure adequate water from subsurface sources. The Gulf Shores area now has the problem of providing water for the tremendous increase in residential development. This presents a precarious situation, because the ground water supply is fast being depleted. If this trend continues, we are going to have to travel to other areas to provide an adequate water supply for this part of the country.

We should now look at some of the administrative procedures which have been set up to attack this problem. I want to emphasize here that I am not being critical of the system but am suggesting we may need some new approaches to these problems. In the past we have adopted a piecemeal approach to the problems of our environment. We do have strong water pollution and air pollution control standards. Therefore, we feel these resources are protected. However, we must remember one basic fact. There are only three places where waste material can ultimately be

discharged--the water, air or land. At this point in time we have an open policy of solid waste disposal on land. Is it better to remove sulfur dioxide from a power plant and create a solid waste problem of considerable magnitude? This, in turn, becomes subject to rainfall runoff into a stream, creating water pollution problems. On the other hand, is it better for this sulfur dioxide waste to be absorbed into the air we breathe?

In considering all of this, there are some facets which must be kept in mind. Underdevelopment could certainly cause economic strains for an area. Likewise, haphazard overdevelopment could cause environmental strains. You can certainly see the problems we all face. Also, it may be necessary to establish secondary water and air standards, not for the protection of public health but for the protection of esthetic values.

One of the main purposes of this type of meeting is to determine reasonable administrative approaches , where we can actually look at the environment in its totality and not in fragments. This is basically what we are striving to do now. However, I do not believe we can legislate a clean environment. The establishment of arbitrary standards gets us nowhere.

What I have mentioned here are things to be discussed so that we can find some answers for our coastal environmental problems. We must ask ourselves if we are really serious about protecting our environment. This may sound like a foolish question since we are here to discuss coastal zone management. Are we interested in maybe just one segment of our

environment and not concerned with the whole picture? There must be an attempt to provide an environmental program for all segments of the environment. It is the responsibility of us all to strive to provide a total environmental protection program.

RECREATION AND TOURISM

Doug Benton, Director
State Bureau of Publicity and Information

It is a distinct pleasure to be with you today in this beautiful State facility. It is also a genuine privilege to be the spokesman for a segment of activity which should be and must be a major consideration of this Governor's Conference on Coastal Zone Management.

Before I get into my remarks, I wonder if you will help me to make a point. I would like to ask each one of you who has traveled at least fifty miles to attend this conference to raise your hand. Thank you.

I would say that at least seventy-five percent of the people present here this afternoon raised their hands. That makes at least seventy-five percent of you tourists, because anybody who travels fifty miles or more, by any form of transport, from his home environs for any purpose, whether for business, health, recreation, or any other personal reason except commuting to and from his everyday work is a tourist, by definition of the word.

Now, while all tourists are important to Alabama, you are especially important tourists, because you are the people interested in protecting Alabama's coastal area from the influences that could harm it. You are the people interested in shaping and developing the area so that it can

perform, even better in the years ahead, its unique function of providing a special haven for family vacations. This is fun and recreation not only for the citizens of this area, but for all Alabamians, for all Americans, and even for visitors from other countries.

This coastal area of Alabama is one of the most beautiful and yet unspoiled areas of its type anywhere in the world today. Of course, it must be shared with anybody else in the world who chooses to come and enjoy it with us.

Our sharing of this area with visitors, or tourists as we call them, is not wholly unselfish. In successful sharing of our coastal areas, we develop what is known as tourism, which itself is a mix of diverse profit producing activities associated with other industries such as food, lodging, transportation, attractions, recreations, and many more. In addition to the profits that accrue to the state or region which sponsors it, tourism provides many other benefits to all participants, benefits that include such intangibles as education, culture, and, perhaps the greatest benefit of all, a better understanding of other people and their life styles.

Back to tourism as a beneficial business, the main point is that in total, tourism is big business even though it is comprised of a large variety of small and large establishments. To give you a rough idea of the size and importance of tourism, if it could be classified as a single retail activity, the amount of money spent in tourism nationwide would be

second only to the amount spent in grocery store sales across the country. To get down to the State level now, tourism, considered as a single industry, is the second largest business in the State of Alabama.

In 1973 travelers within Alabama, which includes our own citizens, as well as out-of-state visitors, spent more than $665 million. Out of this amount, almost $66 million went directly to the State of Alabama as taxes. If you are wondering where all this money came from, I can tell you that a significant part of it came from the forty million out-of-state visitors who came into Alabama last year. These people and their expenditures helped provide employment for almost eighty-five thousand people whose jobs are related directly or indirectly to Alabama tourism.

We are all interested in acquiring new industry for the State. At the Bureau of Publicity and Information we are working on trying to get a branch of an industry that seems ideal to me. This is how it works. Suppose one touring couple spends one day and night in an Alabama town as a result of our work. A modest figure for what this couple will spend is about thirty-five dollars for a room, meals, gasoline for their car's tank, shopping, and admission fees to local historic sites and other places. If we attract just one couple a day each day of the year, it would mean a visitor income of $12,775 for the community those couples visit. Just one hundred couples per day, certainly not a large target if you think in

terms of the motel rooms needed to accommodate them, would mean an annual visitor income of $. 3 million. This expenditure, in turn, would mean employment for approximately 127 people. Compare this with a new factory with a payroll of 127. How much more beneficial to the community is the income earned through travel, with its social and personal benefits, than the income of another factory which might, or might not, bring an element of pollution into the community along with its payroll. The 127 new travel related jobs would mean a payroll of about $. 5 million. This payroll, when spent in the community, will set in motion economic activity as the dollar turns over and over, resulting in another $. 5 in local business.

This visitor industry is growing so fast in Alabama as new plane routes cross the State and new interstate highways link us with our neighboring states, that many economists, planners and legislative bodies are unable to comprehend the impact. The State, as well as the world itself, has never experienced an age like the one we are in now, when so many people have enough money, leisure time, and education to enable them to enjoy the exciting adventures of travel. This is a new economic phenomenon. When we deal with travel, we are dealing with a new invisible giant of an industry, but an industry without smoke stacks, an industry without pollution, and an industry that provides the cleanest and most beneficial-to-all dollar that is in circulation today.

In addition to its financial rewards, travel has a second very real benefit, the social and educational one. Travel is, in a very real sense, an involvement with the lives of others. When we travel we become more open and more receptive to new ideas. We converse more readily with total strangers. Strangers become friends. Old prejudices tend to disappear. Travel helps us to overcome the dislike of the unlike. Travel strengthens ties between regions. It tends to reduce barriers. It helps reduce political tensions. It provides a means of opening the mind and enlarging the spirit so that those who travel and those who deal with travelers become more aware of other points of view.

I think, perhaps, you will all agree with me that travel is important from every point of view, and especially important for Alabama's coastal areas. What, then, does the future hold? Only the greatest possible excitement and opportunity seems to be imminent in the future. Not only are travel and its related service industries outpacing the growth of other industries, such as manufacturing and agriculture, but on a world-wide scale, international travel is growing at such a rate that tourism is now the largest single item in world trade.

Looking to the future, there is an opportunity of great significance which we as planners, managers and developers, interested in improving the attractions, the cultural activities and the natural resources of our State must consider. First of all, it is absolutely necessary that Alabama

attract a much greater flow of tourists to our State. We need to think of ways to balance our out-flowing tourist dollars with an equal flow of incoming earnings from out-of-state visitors. We need to think of ways to share our vast tourism resources here in the coastal area with visitors from other states and from other countries.

You all know, I am sure, that water-oriented activities make up the highest percentage of all outdoor recreation, and that goes especially for vacations. Second in popularity, perhaps, is viewing outdoor exhibits, historical sights, and natural scenic beauty.

The vacation slogan we have been advertising over the country for the last several years is "Alabama Has It All," and here is proof of that slogan. Alabama truly does have it all for any traveler or tourist who wants to spend a relaxing, interesting vacation that will let him do the things he enjoys doing without being pressured by crowds breathing down his neck and without costing him more than he can afford.

Alabama's coastline offers fifty-six miles of every kind of water oriented recreation for outdoorsmen, for sailors, for campers, for fishermen, for swimmers, for hikers, and just for sightseers. We have forty-six miles of the world's most beautiful beaches, thirty-one miles in Baldwin County and fifteen miles on Dauphin Island, plus ten miles of open sea at the mouth of Mobile Bay. In Alabama vacationers can take their choice, saltwater or freshwater, and practically walk from one body of water to the other.

The natural geographical advantages of Alabama's Gulf Coast make it a natural vacation paradise, and these features make this coastal region Alabama's major vacation destination. As I have already said, the popularity of the coastal area is growing at a tremendous rate. Estimates are that by 1980, the popularity of this area will increase more than fifty-six percent.

The main point I hope to leave with this conference today is that though tourism is not the only use for Alabama's coastal area, recreational development for increased tourism is one of the most important uses and one of the least damaging uses that can be put to this area. Recreation and tourism can go hand-in-hand with the production of seafood and the conservation of all types of wildlife to make this coastal region one of the State's major economic areas.

Other states and other regions, however, are eager to siphon the valuable tourism benefits that are now growing so well here. Specifically, we need to follow the recommendations made so ably in the Statewide Comprehensive Outdoor Recreation Plan if we are to develop Alabama's coastal area wisely so that its growth will benefit the greatest number. There are signs already that this development is proceeding according to those recommendations. First of all, a better access to the coastal area is being provided by Interstates 65 and 10, as well as the new four lane portion of U. S. 59 which we see underway north of Gulf Shores and by the new bridge east of here on

the road to Pensacola. A continuous improvement and upgrading of roads and bridges will do much to increase the area's popularity and its accessibility to visitors.

As the statewide recreation plans suggest, both a larger number and larger sized areas of beaches for public use will be needed in Alabama's Gulf Coast areas. The area needs more hiking trails, bike trails, wildlife refuges, golf courses, boat launch facilities, picnic tables, camp sites, and other facilities. More charter boats could be used to provide visitors with opportunities for fishing. Additional commercial establishments of all types could be profitably operated here.

As these new facilities and establishments are opened, it will be our job at the Bureau of Publicity and Information to re-educate the public in Alabama, all over the country, and in Canada that these facilities are available on Alabama's Gulf Coast.

As you all know so well, our Governor has devoted his administration to the careful development of Alabama, its people, and its natural resources. His programs for agricultural development, industrial development, and tourist development have been innovative. They have been constant, and most importantly, they have been successful.

Our conference here today, the Governor's Conference on Coastal Zone Management, is evidence of his great interest in and his support for the wise and proper long-range development of this area of our State.

Tourism, as we say, is important in Alabama. Here in Gulf Shores, the State's coastal area, the only thing more important than tourism itself is the growth of tourism. With the help of you all, with proper planning and careful direction, tourism will continue to grow here to provide the happiest combination of prosperity and preservation of our greatest natural assets.

All of those here today are important figures in that growth and development. We are equally interested, I am sure, in securing the best growth and the most advantageous development of this region. This already means so much to our State, but by your careful consideration and guidance can mean so much more.

Let me suggest that this coastal area is ours only in trust for the future. It is ours only to the extent that we share it with others and preserve it for the enjoyment of future generations. May I suggest that the ideal development and sharing of this area comes easiest and best through tourism?

FISHERIES

Wayne Swingle, Acting Director
Division of Marine Resources
State Department of Conservation and Natural Resources

Alabama's seafood industry is the oldest industry in the State. Some 2500 years ago during the period archaeologists refer to as early Woodland, the mound builders began extensive harvesting of oysters and other shellfish. These Indians created large piles of oyster shells along Alabama's coastal shores. These piles are called middens and usually are eight to ten feet in height and up to an acre in size. Carbon-14 dating has shown that the oysters were harvested until about 360 years ago.

In 1702 coastal Alabama was settled by the French who began to use the seafood resources. In 1786 the City of Bayou LaBatre was founded as a small fishing village. By 1972 the Port of Bayou LaBatre ranked ninth in the United States in the value of seafood landed. Alabama has several other ports where seafood is landed. These include Coden, Alabama Port, Dauphin Island and Mobile in Mobile County and Bon Secour, Gulf Shores, and Fairhope in Baldwin County. Continuing expansion and development has occurred in all these ports but Bayou LaBatre dwarfs them all in comparison of increased landings and shore facilities.

Alabama's seafood industry has developed rapidly over the last twelve years. In 1961 the landings of all seafood combined totaled about 8.5 million pounds valued at about $2 million to the fishermen. By 1972

the landings had increased to thirty-six million pounds valued at $17.7 million to the fishermen. This represents more than a fourfold increase in production and an increase in value of about nine times the 1961 level. The value to the fishermen does not represent the economic value to the State. The value to the economy of Alabama is approximately $70 million annually at present. The capital investment in Bayou LaBatre alone has been conservatively estimated at $500 million. Therefore, it is evident that Alabama's seafood industry is an important part of the State's economy.

There are approximately 5,000 persons employed directly in the industry of which 2,600 are fishermen. In addition, many thousands of additional people are employed in the support industries, such as shipbuilding net shops, board shops, repair shops, and other service facilities.

Our industry is fortunate that it is located on the Gulf of Mexico which is this nation's most productive fishing grounds. The Gulf is also the only sea which still has major unexploited fishery resources. For example, the Gulf shrimp fleet annually discards nearly one billion pounds of "trash" fish from its shrimp catch. The stocks of billfish and tunas which roam the open sea near the Continental Shelf are also an unharvested resource. We have just recently begun to harvest the swordfish from this area. The Gulf also has the single most valuable

fishery in the nation which is the shrimp fishery. The Gulf also claims the largest single fishery in the nation in terms of pounds landed, which is the menhaden fishery with annual landings in excess of one billion pounds.

Alabama's fishing fleet is one of the most modern and well-equipped in the country. It has the capability of fishing the entire Gulf. Its range is as far as Central and South America.

So far, all that I have presented has been in the positive vein; however, the seafood industry, like any other user of living resources, depends to a great extent on the good graces of its partner, Mother Nature. Therefore, the industry does have problems at times from adverse environmental conditions and also from the continual economic situation. I will discuss some of the problems as we cover the various fisheries.

The most important fishery in Alabama is the shrimp fishery. In 1972 it accounted for forty-eight percent of the total landings and eighty-three percent of the value.

Shrimp spawn offshore and the larvae drift toward and enter the estuaries. The very small juveniles move into the marsh vegetation where they feed on the microorganisms produced in the decaying marsh grasses. As they grow older, they move out into the shallow flats and eventually into the bay systems. The shrimp spawn all summer and larvae are

continually moving into the estuaries. The juveniles stay in the estuarine nursery grounds until they reach about four inches in length, then they begin moving offshore. This is the time that the season is opened and the harvest begins. The shrimp are harvested in both the inshore bays and sounds and offshore in the Gulf.

Shrimp are harvested by towing nets or trawls which drag along the bottom. Most trawls are fifty feet in width and most boats tow two of them. The trawls are hoisted aboard every couple of hours and the catch sorted. Most fish are thrown overboard. The catch is iced or frozen until returned to port.

Initially, Alabama's fleet consisted entirely of small bay boats. These were gradually replaced by large offshore vessels in the sixty to one hundred ton class. The emphasis has shifted to the offshore fishery. In 1972 Alabama's fleet landed sixty-two percent of its shrimp catch from the offshore waters between Mobile Bay and the Mississippi River. Alabama boats landed seventy-two percent of all the shrimp caught from this area. An additional thirty percent of Alabama's catch came from the offshore waters of Louisiana west of the Mississippi River. The remaining eight percent came from our inshore estuaries and from Mexico.

The modern shrimp boats represent a capital investment of $100,000 to $200,000. Generally, it has a mortgage period of five to ten years.

The result is extremely high monthly payments which must be met by the fisherman or boat owner.

The previous twelve years ending in 1972 were very good ones for the industry. However, in 1973 the whole northern Gulf from Alabama to Texas was subjected to extensive flood waters of an extended duration. This flood resulted in a high mortality rate among juvenile shrimp in the estuaries and greatly reduced the catch during the 1973-74 season, which ended this June. Alabama's landings of shrimp declined by thirty-two percent or by more than five million pounds. The Gulf shrimp landings decreased by twenty percent or by forty million pounds.

This reduced catch resulted in much higher prices which, in turn, resulted in increased imports of shrimp and shrimp products. The prices reached a level where sales declined due to household consumer rejection. In addition, the fuel crisis resulted in decreased restaurant sales, which generally accounts for the majority of shrimp purchases. The high prices and decreased sales resulted in approximately eighty-eight million pounds of frozen shrimp remaining in cold storage by April of this year. This large inventory resulted in the fisherman receiving much lower prices for this year's crop, while the prices of fuel, equipment, and supplies for operation and maintenance have more than doubled. More than sixty large trawlers have already been sold from Alabama's fleet by owners who were unable to meet their notes because of the poor

catch this last season. Fortunately, these boats were generally sold for a profit.

Some dealers have suffered losses on their cold storage inventory; however, generally, the industry is sound and Alabama's Congressional delegation and the Alabama Fisheries Association have arranged federal low interest, long-term loans for vessels and shore facilities through the Small Business Administration. This year's crop of shrimp should be good or average, and as the price will be lower, should sell well. The reduction in the size of the fleet, hopefully, will result in increased catches from the remaining boats so that they can compete with reduced prices for their catch and increased operating costs. The SBA loans should help alleviate the present situation by providing emergency loans for the boat owners.

The oyster industry in Alabama has always been subjected to a multitude of problems. Production of oysters has been very cyclic because of the unique environmental fluctuations associated with Mobile Bay and the drainage system. Mobile Bay receives the fourth largest river discharge in the United States, which drastically alters the salinity levels on the reefs, and occasionally causes severe mortalities. Mobile Bay also has the Jubilee phenomena, which periodically results in low dissolved oxygen in the bottom waters. This affects spawning success and periodically kills the populations of the reefs in the middle of the Bay.

The reefs are closed almost annually for periods of one to six months by the State Health Department because of the coliform bacterial levels. The coliform standard for closing the reefs imposed on the State by the Food and Drug Administration is poorly conceived and in need of revision. It unduly penalizes our oyster industry by extended closures. At least, it results in an oyster which is super safe from the health standpoint.

In addition, the State has never had adequate funds to manage the reefs to their fullest productive potential. Despite all these handicaps, the fishery has produced an average annual landing of 1.2 million pounds. However, the industry has had to rely on oysters imported from Louisiana or Texas to insure year-round production.

The oysters are harvested by hand tongs which resemble two garden rakes with a hinge joining the handles. Small boats of approximately a two ton capacity are used in the fishery. The shell and undersized oysters are returned to the water on the reefs. The harvested oysters are carried to the shops daily where they are opened or sold in the shell. The opened oysters are generally packed in pints or gallons. The price paid to the fisherman has increased in the last five years from nine dollars per barrel to about twenty dollars per barrel. During a good season, the fisherman can make from forty to eighty dollars per day. Shucked oysters in the gallon are one of the better deals in seafood as

the consumer price index has not increased from the 1967 level nationally, although local prices have increased to reach the national level.

Crab production varies somewhat as do the population levels of most estuarine species. Since 1964 the landings have fluctuated between 1.6 and 2.3 million pounds each year. Crabs are harvested almost exclusively in the bays and sounds. Almost ninety-five percent are caught in baited crab traps with the remainder taken incidentally while shrimp fishing. The traps are set out and generally run every two to three days. The crabs are transported alive or iced to the processing plants daily. There the crabs are boiled and the meat picked out by hand and packed. Both the oyster and crab industries presently rely on hand labor to process their products. When an especially good season occurs, they are unable to obtain the labor needed to fully utilize the crop. Mechanized processing is needed in these industries.

Fish that are landed in Alabama are usually taken by three methods, gill or trammel nets, shrimp trawls, or by hook and line. Most of the fish taken from the inshore or estuarine waters are taken by gill or trammel nets. These include such species as the mullet, speckled trout, white trout, redfish, and drums. The nets are set from small boats and normally are left only a short period before they are retrieved and the fish removed. Mullet is the mainstay of this fishery. Many of these fish are shipped in the round, or with viscera intact. This results in

poorer product at the consumer level. Recently, more of the catch is being cleaned or filleted. Approximately five million pounds of these species were landed in 1973 with over half being mullet.

The shrimp trawl catches many species of fish, such as the flounder, when the boats are fishing for shrimp. However, trawls have been used since 1968 to capture large croaker from offshore for a market on the East Coast. The landings of croaker have increased to thirteen million pounds by 1973. Croaker are also in demand by the Japanese, who make specialty products out of them. Japanese trade missions are presently negotiating with our industry leaders for export of minced croaker. If this market develops, the landings of croaker should increase by many times the present level. Small croaker, suitable for this product, are presently discarded from the shrimp catch.

The hook and line fishery is conducted primarily for snapper and grouper. The vessels used in this fishery are large schooners which make trips to the fishing grounds off the coast of Mexico, Louisiana and Texas. The catch is gutted and iced with the normal trip lasting from ten days to two weeks. Nearly one million pounds of snapper were landed in 1973.

The Department of Conservation and Natural Resources is charged by law with the responsibility for regulation and management of the marine fisheries resources. The Marine Resources Division is the arm of the Department which carries out these responsibilities. One of the most

important responsibilities is the enforcement of the seafood laws and regulations pertaining to seasons, harvest methods, and size limits. The Division has an enforcement section which carries out this important task. The enforcement officers are charged with patrolling some 433 miles of shoreline, 306 miles of streams, and 500,000 acres of estuarine and offshore waters. During much of the year, patrols operate twenty-four hours per day. These patrol activities are very important to the management of the fisheries stocks.

The Division also has a biology section consisting of six biologists and eight support personnel. One of the most important functions of the biology section is the management of the shrimp and oyster fisheries.

Since shrimp spawn offshore and reside in the estuaries for only a short period, shrimp management is confined to the period when the juvenile shrimp are abundant in the estuaries. The shrimp are monitored by continual sampling when they begin moving out of the marshes. When the small shrimp move into the bays, the shrimp season is closed. Sampling of the shrimp size continues until they reach legal size and the season is opened.

The oyster fishery is managed by planting oyster or clam shells on the reefs to serve as substrate on which the oyster larvae can attach. The free swimming larvae must have a hard substance to attach to within seven to ten days or they die. Shells collected from the oyster shops or purchased serve this purpose.

Normally, the Division plants one hundred to two hundred cubic yards to the acre from barges. The shells are washed off by high pressure hoses as the barges are moved over the reefs. The reefs are sampled by scuba gear to determine population density and sizes. Some reefs are closed when the population density or the average size declines.

One of the most important functions of the section is environmental assessments. Each proposed development along the coastal waters is investigated to determine if environmental damage to the marshlands and estuaries will result. If it is determined that environmental damage will occur, the Department recommends that the permit for the construction be denied or altered to eliminate its damaging affects. This one function is extremely important as the estuaries serve as a nursery ground for ninety-seven percent of all seafood harvested from the Gulf. If the estuaries remain undamaged, they will continue to produce annual crops of seafood forever. Fish kills are investigated, pollution and oil spills checked, and water quality parameters are monitored under this program also.

Another important function is resource assessment. Under this program biological inventories spanning several years have been conducted in the bays, sounds, tidal rivers, and streams. The oyster resources and buried shell deposits were surveyed. This type of data is important in formulating management policies for the various species.

Work is also carried out on the commercial production of various marine species in ponds with other fish culture techniques. Pompano and other species have been raised in cages. Oysters have been raised on strings and in racks. This work will eventually lead to fish culture techniques which may be used by the industry.

The Division is also charged with the responsibility of managing and improving the marine sport fishery. A hatchery complex was completed at Gulf Shores for the production of striped bass. The striped bass are being stocked into the estuaries to re-establish the native population. We have stocked 300,000 fish this year. Another sport fisheries program is our artificial reef program. Snapper reefs are being created offshore by sinking ships, barges, and boats. The Alabama Coast has almost no natural reefs, and the reef program is very important to the coastal fisherman.

This, generally, summarizes Alabama's seafood industry and the role that the Marine Resources Division plays in that important industry. We would certainly be glad to have you visit our hatchery complex while you are here at Gulf Shores.

MINERAL RESOURCES

Peter A. Boone, Chief Geologist,
Energy Resources Division, Geological Survey of Alabama

Coastal Alabama is part of a complex of interrelated, dynamic depositional systems that stretch from the Mississippi River Delta to DeSoto Canyon. This complex consists of large-scale, three-dimensional units or systems characterized by a distinctive suite of natural environments (physical, chemical, and biological) in which certain geologic processes result in unique sedimentary deposits.

This complex of systems has an overall balance in terms of erosion and deposition, hurricane impact, salinity variations, plant stabilization of sediments, and a myriad of other critical features. However, the balance can easily be disrupted by unwise use and development.

The extremely dynamic nature of this region and the degree to which modifications in one system may affect another system require recognition and understanding of the geologic processes and deposition systems that are fundamental aspects of the character of this region. The primary geologic processes affecting Alabama's coastal zone are prevailing winds, fluvial discharge, tidal currents, waves, and hurricanes. These processes act upon the coastal zone to produce the numerous depositional geomorphis features characteristic of coastal Alabama. Any activity that modifies the effects of these processes should be carefully considered and continually

monitored so that unexpected side effects are not detrimental to adjacent environments.

The major depositional systems comprising Alabama's coastal zone are estuarine, fluvial-deltaic, barrier island, and shelf systems. These include: (1) The Mobile Bay estuarine system, (2) the Mobile River fluvial-deltaic system, (3) the Mississippi Sound estuarine system, (4) the Mississippi Sound barrier system, (5) the western Florida barrier system, and (6) the Mississippi-Alabama shelf system.

Judicious management of Alabama's coastal zone will require comprehensive knowledge of the processes active and the environments present not only in Alabama, but in the entire complex of which coastal Alabama is only a part.

Coastal Alabama's resources fall into three major categories--water, mineral and energy. Water resources include the streams, lakes, and ground water of the region. In addition to water for consumption, the streams offer untold benefit for navigational purposes. Runoff from more than two-thirds of the State of Alabama drains into Mobile Bay through the Alabama-Tombigbee Waterway that will connect our coastal zone to the nation's industrial midwest.

Ground water makes it possible in many instances to locate large water-using industries away from the large bodies of surface water, thereby avoiding congestion and super-large industrial complexes. Use of ground water should be given more consideration in the future. Many

of the aquifers in south Alabama will yield one thousand gallons per minute or more than wells. Treatment and quality of water problems are usually fewer with ground water than with surface water.

It should be noted, however, that the band of freshwater marshes extending parallel to the coast and other marshlands that border many of the streams at higher elevations in the region are nothing more than areas of ground water discharge. Heavy withdrawals of ground water will tend to dry up these marshes and streams. Also, heavy withdrawals from coastal aquifers will sometimes permit the gradual advance of saltwater into the aquifer.

Alabama's coastal zone is amply blessed with water resources to meet the needs of future expansion in industry and population . However, in an area such as this, human activities and artificial developments tend to have an exaggerated effect upon the water related segments of the environment. Such activities need not be disastrous, but they should be carefully planned and executed with a view to protecting the integrity of the hydrologic environment. Roofs and pavements tend to reduce recharge and low stream flows and to exaggerate flood flows. Heavy withdrawals of ground water may reduce or dry up the flow of some streams. Projects involving the withdrawal of water, the disposal of wastes, or merely the wear and tear of concentrated human occupancy all affect water resources. The need for wise planning and management of these resources to insure

the maximum benefit to the most people for the longest period of time cannot be overemphasized.

Mineral resources are not extensively developed within the coastal zone of Alabama. Economically workable deposits and potentially workable deposits of clay, sand, gravel, shell, and heavy minerals occur in coastal Alabama. Development to date consists mainly of sand, gravel, clay, and shell deposits used to support construction activities.

Potential resources of heavy minerals, those having a specific gravity greater than quartz and commonly occurring as a minor constituent of a sediment, occur offshore from Dauphin Island. The heavies include ilmenite, rutile, zircon, and kyanite. Ilmenite and rutile are a source of titanium; zircon is a source of zirconium; and kyanite is used as a refractory material. Potential users of these resources are already located or have plans to locate within this area.

Development of sand, gravel, and clay resources should not pose any particular problems other than those normally associated with surface mining of terrigeneous materials. However, the removal of large quantities of sand from the beaches of the coastal zone will require serious consideration and judicious planning so that irreparable damage to a very dynamic environment does not occur. This also applies to any offshore mining of heavy minerals.

The energy resource potential of coastal Alabama has developed slowly, but is not on the verge of explosive growth. South Alabama is the richest

part of the State in oil and gas, and it is becoming richer. Large reserves of lignite also occur in south Alabama. Lignite is a low-rank coal that has yet to come into its own. However, it is presently attracting considerable attention. Reserves of two billion tons occur in a belt across the State inland from the coastal zone. Large tracts of acreage are being leased and rumors are rampant that large plants are being considered that will utilize up to 70,000 tons of lignite per day to manufacture synthetic natural gas and other synthetic petroleum products, such as methanol. Lignite is also being considered for use with coal in thermoelectric plants.

Alabama's petroleum reserves located in or near the coastal zone include eighteen oil fields and four gas fields for which the following statistics are compiled:

Cumulative production
- Oil - 151.6 million barrels
- Gas - 26 billion cubic feet

Reserves
- Oil - 130 million barrels
- Gas - 517 billion cubic feet

Production (Calendar year 1974)
- Oil - 14 million barrels
- Gas - 13 billion cubic feet

Tax revenue to State
- FY 1974 - $3.5 million
- FY 1975 - $6 million (an increase resulting in part from increased production and in part from new oil and stripper oil price increases).

Alabama imports liquid petroleum products and natural gas. Although production in the State is rising, present production is less than twenty

percent of the liquid petroleum products consumed and less than five percent of the natural gas consumed. With new field development we should produce about twenty-five percent of our liquid petroleum needs and fifteen percent of our natural gas needs next year. Many of the recent discoveries in the State, fortunately, have been gas fields capable of producing large quantities of gas and condensate. Some of this will be sold on the intrastate market so that local users will benefit from energy produced in Alabama.

During the past five years, the discovery of nearly twenty oil and gas fields in the State has intensified the petroleum industry's interest in Alabama. In fact, exploration activity in southwest Alabama is as vigorous as it is anywhere in the United States. Recent discoveries in Mobile County will undoubtedly increase the activity. As a result, we have to face the possibility of developmental activities along the coast and in our estuaries.

Offshore drilling is another factor to be considered. At the present time there is no drilling in Alabama waters. However, beyond the three mile limit, Federal leases have been sold and drilling is commencing. Development of fields in Federal waters could force drilling in State waters to prevent reservoirs in State waters from being drained. Our country needs the oil and gas from every source. The time will come when no deposits are sacred, either off-shore or on-shore. The only constraint

will be zoning well locations, masking them in some cases, and protection of the environment.

A major restraint to offshore development is the fear of major oil spills. Let me take a minute to put oil spills in perspective. By the end of 1973 some 18,200 wells had been drilled in U.S. waters since off-shore exploration first began. Of these, some 14,600 have been drilled in the Gulf of Mexico. Approximately one-third of the total drilled have been in state controlled waters, and the other two-thirds have been in the Federal Outer Continental Shelf. During the same period, there have been only four major oil spills, or spills in excess of five thousand barrels. All these have been from offshore production platforms, and none have left permanent environmental scars.

This is an accident rate of only 0.022 of one percent. Ironically, all four of these accidents occurred within a twenty-four month period in 1969 and 1970. While there is a remote possibility that similar accidents or even worse could happen in the future, logic and evidence would tend to indicate that research and development, stricter legislation and enforcement, and more importantly, a greater social and environmental awareness on the part of the petroleum industry can and will improve the safety record.

Since the widely publicized Santa Barbara Channel spill in January of 1969, much effort has been expended in controlling spills as well as preventing spills. These efforts have centered on the "three c's"--curtailment, containment, and clean-up. Industry and government oil spill contingency

plans are designed to minimize the amount and extent of the spills. Continued advances and efforts should provide greater protection in the future. Historically, the risk of major oil spills has been very, very small, and the potential for future spills has to be considered extremely small.

Oil and gas development in Alabama's coastal zone appears inevitable. This being the case, it is imperative to begin consideration of specific factors affecting the planning of judicious management for this development. Drilling activities, whether conducted on-shore or in the estuaries, should be planned so that critical areas (areas of specific ecologic, aesthetic, recreational or other uses) are not disturbed. This could be accomplished in some cases by directional drilling from outside the critical area.

Alabama's coastal wetlands and estuaries are extremely productive and valuable environments. The great value of these environments is generally accepted, if not always well understood. They serve as habitat, feeding, or nesting grounds for shore birds, fish, and other wildlife. Wetlands have been shown to be among the most productive environments on earth, and it is this great productivity that supports much of the life in the estuaries and coastal waters through a food chain based on vascular plant debris. Wetlands also play a considerable role as geologic agents and are important to shoreline stabilization. Any modifications, therefore, must be carefully planned.

Dredged channels for access to drill sites should be studied closely so as to cause as little damage as possible. These should be positioned to maximize the number of drill sites that can be serviced by a single access channel. Pipelines for gathering the petroleum from numerous production sites should be located to minimize the number of separate pipelines. Pipelines and access channels should occupy the same corridors where practical.

Offshore development has its own factors for consideration: (1) The use of multi-well platforms should be encouraged, and (2) pipeline landfalls from offshore production should be minimized. A single landfall for both offshore production and the Ameraport should be stressed.

Construction of refineries along the northeastern Gulf Coast will have to be planned, particularly if the expected development offshore is realized. Careful planning and monitoring of these refineries will minimize adverse effects to the environment. If production in the eastern Gulf is similar to some of the production in Escambia County (high in hydrogen sulfide), treatment facilities are going to be needed near pipeline landfalls.

These, then, are some of the aspects that must be examined when considering resource development in coastal Alabama. The list is not exhaustive, but hopefully points to areas of concern where planning is necessary.

In summary, resource development will occur in Alabama's coastal zone. Judicious management of this development requires consideration

of the dynamic nature and interrelationship of the environments comprising this zone. With foresight, development with minimal degradation to the environment of this very important region is possible.

DINNER ADDRESS INTRODUCTION

James H. Faulkner
Publisher, Baldwin Times

I am pleased to be able to introduce to you the speaker for this evening. We here in Baldwin County and Alabama have known him for a number of years. He has had a very successful career, probably because he has an ability which is contagious. He loves his job that he is doing, and is able to encourage other people to work with the enthusiasm he shows.

He was former Chief, Division of Seafoods and the Federal Aid Coordinator for the Alabama Department of Conservation. This is, of course, why he is so familiar with Alabama. He was educated at Michigan State University and Cornell University. He served in the United States Navy during World War II in the Pacific Ocean. He received the Mobile Scroll of Merit Award for his outstanding service and contributions in the field of marine resource management.

He is presently the Consulting Editor for the "Journal of Environmental Education" at the University of Wisconsin. In addition, he writes a weekly column for a number of southern newspapers relative to recreational boating and other subjects. He is the author of a textbook, Social Impacts of Environmental Planning. He is a member of the National Academy of

Sciences and the Ford Foundation Coastal Zone Studies Group at Woodshole, Massachusetts.

He is presently employed by the U.S. Army Corps of Engineers in the South Atlantic Division in Atlanta. Among other duties, he is the Liaison Representative for the Corps for coastal zone management planning for the states of North and South Carolina, Florida, Georgia, Alabama and Mississippi. He has many hobbies, but his favorite is sailing his catamaran with his older son, winning cups for races.

We are very fortunate to have this distinguished gentleman with us tonight. Ladies and gentlemen, it is my privilege to present to you George W. Allen.

DINNER ADDRESS

George W. Allen
South Atlantic Division, U.S. Army Corps of Engineers

As I wander around the Gulf Coast and the Southeastern Coast working on this business of coastal zone management, I have found there are a number of things that the people in the coastal zone must keep in mind in planning a coastal zone management program. The biggest problem, of course, is that of population. One reads this many times in the papers each day. The only problem with people is that there are just too many of them, and they all seem to be concentrating in the coastal zone. This small area that encompasses about thirty percent of the total area of our nation is now holding seventy percent of its population. This has developed into a problem which is not coastal zone management, but is people management. This is where the problems start. I do not know of a single concept in recent years which is going to demand as much coordination and effort as this development of a coastal zone management program.

One of the states in the Southeast made the colossal error of calling on their best lawyers and their greatest legal and political minds to develop a law of the coastal zone. After developing this fine law, and it was a good one, they said to the people of the coastal zone, "This

is your coastal zone law, how do you like it?" The people threw it back in their faces because they did not have an opportunity for participation in the formulation of the program. A grassroots effort is mandatory if this program is to be successful.

There is one thing that we all should certainly keep in mind in coastal zone management planning. The ultimate objective of all of this is not the coastal zone management plan. The plan itself is merely a tool by which the objectives are going to be obtained. The real objective, of course, is coastal zone management. With this, we begin a program of people management, and people ordinarily do not like to be managed.

Often, when we begin with something, we do not always know with what we are going to end. I have found this to be true in the states that I have visited concerning coastal zone management. Many coastal zone commissions have been appointed or designated by the governors of the particular states in many different ways. Some are direct gubernatorial appointees. In one state, the commissioners in the coastal counties were asked to appoint two people in the coastal zone to act as a coastal zone committee. It seems that everybody I know who does not have the responsibility for coastal zone management planning and implementation wants it, and those who do have the responsibility want to get rid of it.

What has happened without exception is that many of these commissions have come to the Office of Coastal Zone Management with the idea that, at last, they would be able to accomplish a few things in their own front yard that they had all wanted to take care of. They sat there with this rather selfish objective, which we all may have done if we had been in their position. All of a sudden, it dawned on them that they had a tremendous responsibility. Being responsible for another man's welfare puts a tremendous burden on your shoulders. This same process has been followed in each state that I have visited. People have begun this job knowing very little of what they were facing, because so little was known by anyone about coastal zone management. However, they finally realized the tremendous parameters for which they were responsible. To put it bluntly, they became a little chicken. I can invest my money and if I win, lose or draw, I make my own bed and have to lie in it. However, if I invest your money, with your complete trust that I will do the right thing, then I will stay awake at night worrying about it. Many of these coastal zone administrators find themselves staying awake at night worrying about the problems. What we are doing is developing a system within a system; we are developing something which has never been done before in our country. This is no job for a man who is dedicated only to building himself up.

There are a couple of problems that I run into throughout the coastal area. The first of these is the appointment of the commissioners.

How is it done? As I have stated, each state uses a different system. Most coastal states have already accomplished this. I bring this up because each state wants to know how it compares with other states. I must say, this is not a foot race. It is much better to take slow, deliberate steps and make sure they are right, than to rush and find out later the mistakes you have made. In coastal zone management planning and implementation, it is always important to keep in mind this sense of responsibility about which I have already spoken.

The next problem that comes along is that of legal problems. I am not a lawyer, but the legal parameters of this coastal zone business are gigantic. I do not know how these problems will be solved, but I feel quite sure that the legal minds of Alabama will arrive at some solutions. We Americans usually do.

Of course, the voice of the people must be heard in coastal zone management planning. We cannot force the program on anyone since it affects so many people and their personal environment. Your environment, if you wish to look for a definition, is that series of conditions which affects your life-style and may eventually affect your survival. Everyone has their own ideas as to exactly what they are looking for in their environment. If I were an industrialist, I would be concerned with industrial development in my general environment. If I were a conservationist, I would be looking for resource protection. If I were an honest political appointee, I would be looking for more services for

the people I represent. Putting all of these factors together is going to be a tremendous undertaking, but must be done. It is going to require some long-range, foresighted planning.

I would like to reemphasize my own particular point of view on this business of coastal zone management. In most states, those involved in coastal zone management planning feel that the plan is the objective. Plans are simply papers that accomplish nothing. These plans must be placed into affect, and they must be accurate and worthwhile.

WORKSHOP SUMMARIES

The activity of greatest public input at this Alabama Governor's Conference on Coastal Zone Management occurred during the workshop sessions on the morning of the second day. When registering, each conferee was to indicate which one of seven workshop sessions he would be most interested in attending. The conference participants were then assigned to the workshop of their choice from the seven listed below:

1. Population Growth and Residential Development
2. Transportation and Navigation
3. Commerce and Industrial Development
4. Pollution Abatement
5. Fisheries
6. Recreation and Tourism
7. Mineral Resources

Each workshop group was assigned a moderator and the groups were all asked to respond to the following three questions:

1. What do you feel are the major needs in Alabama's coastal zone?
2. What do you see as the major use conflicts in Alabama's coastal zone?
3. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

In addressing each of these questions, a three-phase process was used:

1. Answers to the basic question were solicited and recorded.
2. Each participant was asked to select the five answers he felt were most important.
3. Each participant was then asked to place his five most important answers in order of priority.

The scoring was accomplished next by awarding five points to each participant's number one priority item, four points to each number two priority, three points to each number three priority, two points to each number four priority, and one point to each number five priority. These values were totaled for each item by the moderator. This value is listed in parentheses to the right of each item. The final step was to array the answers in priority order with the one receiving the most points listed as number one and the others in descending order. The method used in compiling these responses is known as nominal grouping. The following is a listing of the findings of each workshop session:

POPULATION GROWTH AND RESIDENTIAL DEVELOPMENT

I. What do you feel are the major needs in Alabama's coastal zone?

1. Inventory and data bank (27)
2. Agency coordination (19)
3. Land use planning and regulating mechanism (19)
4. Goals and objectives with public participation (15)
5. Over-all local participation (11)
6. Water supply (8)
7. Public access to shore (7)
8. Professional services (5)
9. Setback law (4)
10. Study of sustaining capacity of ecosystem (4)
11. Sewage (1)

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Private vs. public uses (24)
2. Industrial development vs. preservation (23)
3. Population growth vs. natural ecosystems (22)
4. State vs. local (19)
5. Needs vs. costs (10)
6. Transportation vs. recreation and fishing (5)
7. Oil and gas development vs. recreation (1)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Zoning (32)
2. Regional plans (23)
3. Public awareness (20)
4. Permits and licenses (9)
5. Building codes (9)
6. Taxation (7)
7. Guided growth (5)

TRANSPORTATION AND NAVIGATION

I. What do you feel are the major needs in Alabama's coastal zone?

1. Reasonable limit on management of coastal zone and the use of manageable goals in developing the plan (24)
2. Unbiased educational program on pollution measures for industry, businesses, vessels, pleasure crafts and general public (12)
3. Improvement of ports to handle increased shipping (11)
4. Reasonable control of point and nonpoint sources of pollution--balanced programs with use of reason in consideration of other needs (9)
5. Definition of functions of the Coastal Area Board, avoid overlapping existing programs of other agencies (8)
6. Avoid use of "tunnel vision" (6)
7. Reduce number of agencies involved to simplify permit program (6)
8. Just compensation to landowner (property) (6)
9. Impact of upland pollution (nonprofit sources) on coastal zone (5)
10. Protection of marine resources (fisheries, etc.) (5)

11. Land use management in connection with navigation, recreation and other uses (4)
12. Solid waste management programs (3)
13. Air pollution control with adequate consideration of ultimate disposal (2)
14. Consolidation of information (2)
15. Job opportunities for underemployed and unemployed (1)
16. Protect and futher development of beaches and other water-related activities (1)
17. Control of construction along beaches (0)
18. Beach erosion control measures (0)
19. Comprehensive needs study (survey) (0)
20. Selective development of resources for energy and transportation (0)
21. Location of industry on selective basis (0)
22. Protect aesthetic values of coastal areas (0)
23. Enforcement on the individual (0)

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Deposition of dredge material (14)
2. Authority of one control agency vs. another (14)
3. Encouragement of growth of major heavy industry vs. environmental or recreational constraints (9)
4. Wetlands vs. all other uses (8)
5. Private determination of land use vs. agency determination (8)
6. Development of oil facilities vs. non-development (6)
7. Wild and scenic preserves vs. other uses (5)
8. Private ownership vs. public ownership and development of beach areas (4)
9. Fear of change vs. change (4)
10. Sewage disposal and clean water (2)
11. Agriculture and clean use (including forestry) in connection with cropping methods and fertilizing procedures (1)
12. Land use authority of Coastal Area Board vs. existing authority of local governments (1)
13. Subdivision development vs. recreation (0)
14. Recreation vs. waterborne transportation facilities (0)
15. Tourism vs. privacy (0)
16. Sport fishing vs. commercial fishing (0)
17. Recreation facilities vs. industry (0)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Consolidate permitting authority of agencies (16)
2. Better treatment of business and industry's story by news media and schools (14)
3. Restrain the authority, limits, and goals of the coastal zone board (at least initially) (12)
4. On-the-job training (exposure to industry and business story) of those involved in planning and implementing the coastal zone plan (11)
5. Abolish some agencies (10)
6. Elimination of "tunnel vision" in use by claimants for wetlands (10)
7. Submit all major issues to a referendum (0)

COMMERCE AND INDUSTRY

I. What do you feel are the major needs in Alabama's coastal zone?

1. Coastal resource analysis (17)
2. Basic information: Environmental, geological, current topographical maps, demograph (16)
3. Proper zoning laws for commercial and industrial uses (15)
4. Firm environmental protection laws (14)
5. Referendum (11)
6. Clean industries (7)
7. Public education on coastal zone management (7)
8. Compatible tourism and industrial and commercial development (5)
9. Less pollution (4)
10. Impact statement on tourism (4)
11. Complete erosion study in coastal zone (2)
12. Planned complexes of complimentary industries (2)
13. Less canal wall erosion (1)
14. Winter (off season) employment (0)
15. Agricultural land impact study (0)
16. Retirement area vs. industry (0)

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Development vs. wetlands productivity (21)
2. Open over-all planning vs. individual interests (17)
3. Residential vs. industrial development (10)
4. Population growth vs. crime (9)
5. Industry vs. environmental protection (9)
6. Urbanization vs. agriculture (8)
7. Tourism vs. adequate utilities, water, sewage, electricity (7)
8. Tourism vs. industry (7)
9. Factual information vs. heresay (5)
10. Industry vs. fishing (5)
11. Industrial development vs. adequate utilities (4)
12. Petroleum vs. fishing industry (2)
13. Commercial vs. sport fishing (1)
14. People and animals vs. white, sandy beaches (0)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Land use planning (21)
2. Proper zoning laws (setback law) (16)
3. Open, well informed planning with cost-benefit studies (16)
4. Adequate scientific studies and enforceable laws (14)
5. Public participation (13)
6. Controlled growth (12)
7. Protect individual rights (8)
8. Preserve the environment (3)
9. Improved scientific credibility (2)

POLLUTION ABATEMENT

I. What do you feel are the major needs in Alabama's coastal zone?

1. Establishment of goals and priorities (62)
2. Education--pollution problems and the choices to be made (23)
3. Development of a master land and water use plan (17)
4. Inventory of existing data and reports (15)
5. Consistency in regulations (15)

6. Inventory of pollution problems (14)
7. Agency coordination (13)
8. Comprehensive plan and organization for implementation (12)
9. Comprehensive plan and organization for implementation (12)
10. Protection of marine life resources (10)
11. Hazardous industrial wastes (5)
12. Erosion control--siltation, sedimentation (4)
13. What are the principal industrial wastes (0)
14. Standards (0)
15. Consideration of saltwater encroachment problems, institutional arrangements (0)
16. Coordination of economic planning (0)
17. Preservation of existing beaches (0)
18. Mosquito control (0)
19. Create more artificial reefs (0)
20. Comprehensive plan for docking and terminal facilities including financing (0)

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Economic conflicts (37)
2. Water use conflicts (34)
3. Development vs. preservation (32)
4. Agency/governmental conflicts, autonomy jurisdiction of governmental agencies (local government) (28)
5. Urban/industrial development vs. tourism/agriculture (17)
6. Cost-benefit ratio (12)
7. Provincialism-regional vs. local (11)
8. Who makes decisions relative to conflicts? (10)
9. Ignorance and cherished beliefs vs. long-range planning (10)
10. Conflict of resources vs. needs and demands (5)
11. Freshwater using industries vs. domestic and recreational uses (4)
12. Present development prior to coastal zone plan vs. existing unused coastal areas (4)
13. Shoreline/upland modifications vs. estuarine habitat preservation (4)
14. Water polluting industries vs. wildlife and marine life ecosystems (3)
15. Immediate growth and development vs. long-range undesirable effects (0)
16. Fisheries vs. mineral exploitation (0)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Public education (35)
2. Complete and implement a plan, a practical control program (28)
3. Agency coordination (24)
4. Land-use planning and federal/state funding (18)
5. Establishment of institutional arrangements for total management of ground water (12)
6. Establishment of an environmental superagency to solve non-legal problems (12)
7. Achieve public/private consensus of how to utilize the coastal zone (10)
8. Compromise, education and enforcement (10)
9. Identification of critical areas (10)
10. Continuing research to maximize use of the coastal zone (10)
11. State grants to subsidize choices that are made (7)
12. Provide for variances in existing standards to provide for "grandfather" situations when viable alternatives to closing facilities are not available (6)
13. Determine short and long-range economic priorities (6)
14. Broaden coastal zone law to cover oil production and related responsibilities (6)
15. Define choices and hold referendum (5)
16. Decision making based on practical cost-benefit analysis (5)
17. Establish zoning regulations (4)
18. Legal definition of coastal zone use priorities (2)
19. Status quo or "keep on doing what we have been doing" (0)

RECREATION AND TOURISM

I. What do you feel are the major needs in Alabama's coastal zone?

1. Long-range public water supply, sewage and garbage disposal system (27)
2. Diversified entertainment facilities for all ages which are secure, safe and sanitary (13)
3. Adequate land and recreational facilities for local and tourist public (12)
4. Unobstructed highway access from all directions with adequate signs to areas (11)
5. Close cooperation and coordination of all involved (9)
6. Transport link between Dauphin Island and Gulf Shores (9)

7. Establish a resources agency (water resources and development) (5)
8. Identify resources of area (inventory) and determine the best uses (5)
9. Land use plan (5)
10. More funds for coastal zone management which are adequate to do the job (3)
11. Quality control of aesthetic values (2)
12. Greater development of fish and wildlife activities (2)
13. Restoration of historical sites (1)
14. Development of mineral resources (1)
15. Airport (0)
16. Educate public for more participation (0)
17. Large overnight lodging and convention facilities (0)

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Ecological opposition to resource development (29)
2. Heavy industry vs. tourism/recreation (21)
3. Private vs. public ownership and use (20)
4. Community competition for resources development (9)
5. Rural vs. urban conflicts (9)
6. Land and water use plan conflicts (7)
7. Local use vs. outside interest (regional, state, federal) (5)
8. Riparian rights vs. general public (4)
9. Residential development vs. more commercialization (1)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Education (public participation) (31)
2. Citizen advisory committees (21)
3. Proper planning and zoning (total land/water use) (13)
4. Broaden powers of Coastal Area Board to plan, implement, and enforce and be a central decision making agency (12)
5. Establish priorities (11)
6. Memorandum of agreement among all agencies at the outset (10)
7. Coastal Area Board carry out publicity and information program (5)
8. Adequate funding of all areas and programs (1)
9. Approval and acceptance by public (1)
10. Coordination and cooperation in planning and implementation (0)

FISHERIES

I. What do you feel are the major needs in Alabama's coastal zone?

1. Pollution abatement (19)
2. Zoning and long-range planning for industrial and residential siting (12)
3. Marshland protection (sanctuaries) (9)
4. Preserve rural charm and naturalness of coastal zone (6)
5. Regulations on growth for conservation (5)
6. Adequately provide for protection of some of the state's best agricultural land that lies within the coastal zone (5)
7. Over-all ecosystems assessment (4)
8. Transportation for citizens (3)
9. Education of and coordination among coastal area users (3)
10. State-wide vs. local management of coastal zone (3)
11. Development of a mariculture research facility (2)
12. Determine wetlands that are state owned (2)
13. Fishery research needs--make public and appropriate agencies aware of these needs (1)
14. Forceful Coastal Area Board that is located in the coastal area (0)
15. Revised sanitary standards for shellfish water (0)

II. What do you feel are the major use conflicts in Alabama's coastal zone?

1. Residential and industrial land use vs. wetlands integrity (destruction) (25)
2. Water use conflicts (21)
3. Navigation development and maintenance vs. wetlands protection (14)
4. Conflicts for land resources (10)
5. Commercial vs. sport fisheries for available resources (4)
6. Growth of coastal area vs. resource supply (4)
7. Economic growth vs. aesthetic values (4)
8. Energy and mineral resource development vs. recreational and aesthetic values (3)
9. Local, individual property ownership vs. corporate, external ownership (3)
10. Conflicts of convenience vs. conservation (2)
11. Industrial development vs. water quality and ecosystems (0)
12. Beach development vs. dune protection of property (0)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Establishment of coordinated local, statewide, and regional zoning boards to zone development (industrial and residential sitings) to prevent damage to coastal resources (wetlands, unique ecosystems, water supply, etc.) (26)
2. Identification and long-range planning (review alternatives, set priorities and limits) for use of all coastal area resources (25)
3. Public education--local, statewide and national (19)
4. Public participation (debates, referendums) (11)
5. More effective controls on water quality (8)
6. Enforcement of existing laws (5)
7. Long-range planning and coordination of navigational needs with emphasis on spoil disposal (4)
8. Interagency and user group coordination (Understanding of each others' problems) (3)
9. Find ways to increase standard of living and income of people in coastal area without exploiting non-renewable resources (waters, wetlands, etc.) (2)
10. Development of new technology (2)
11. Establish agency to collect data on ground and surface water resources and regulate its use (0)
12. Advisory committee representing commercial and sport fishing interests to resolve conflicts (0)
13. Coordination between industrial and conservation interests prior to inviting an industry to come into area (0)
14. Wisdom of Solomon (0)
15. Adequate structuring of administrative and legal problems (0)
16. Money--funding of enforcement (0)

MINERAL RESOURCES

I. What do you feel are the major needs in Alabama's coastal zone?

1. Inventory of resources (physical, biological, geographic and critical areas) (25)
2. Land use planning (including coastal zone management) (13)
3. Inventory of needs (10)
4. Public education as to resources and alternate uses in the coastal zone (8)

5. Water resources protection especially in regard to sanitation quality (5)
6. Determine options (4)
7. Investigate for offshore petroleum (including estuarines with protection (3)
8. Development of new technology to protect the environment (3)
9. Determine plan to use known resources without causing permanent damage to other resources (2)
10. Protection and enhancement of biological resources and their habitats (1)
11. Development of mutually compatible habitats for both consumers and producers (0)
12. Siting of power plants (0)
13. Adequate fresh water (0)
14. Dredging (0)
15. Determine mining of sand and gravel, lignite, etc., and any other deleterious impact on coastal zone (0)

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Protect critical areas vs. energy, mineral, water resource development (21)
2. Protection of life support systems vs. resource use for industry and energy (16)
3. Conflict of private vs. public property rights (10)
4. Waste disposal from mineral extraction and energy production vs. preservation of natural conditions (7)
5. Concept of infinite resources vs. environmental awareness (5)
6. Maintaining water quality vs. demands of mineral and energy extraction (5)
7. Energy needs and urban encroachment vs. aesthetics (4)
8. Quality of environment vs. development (4)
9. Satisfying fresh water demand vs. supply (2)
10. Concept of ocean as indestructible vs. ocean as a fragile resource (2)
11. Recreation vs. mining and industrial development (0)
12. Navigation vs. mining and dredging (0)

III. What are some possible solutions to the identified use conflicts in Alabama's coastal zone?

1. Distribute inventory of all resources and needs (18)
2. Coastal and land use inventory, planning and implementation based on areas' capabilities and limitations (16)

3. Intense involvement of public in decision making (12)
4. Define property rights of subsurface and surface (9)
5. Establish a regional (interstate) priority system (7)
6. Involve all state agencies in seeking common goals and priorities (4)
7. Determine quality standards (3)
8. Initiate a state-wide study of conflicts to identify them (3)
9. Eliminate conflicting and overlapping permitting programs (3)

It is interesting to note that an analysis of the responses from the seven workshops to the three questions reveals some commonality among the workshops. The following is a list of these commonalities in no particular order of priority:

I. What are some major needs in Alabama's coastal zone?

1. Inventory of coastal area resources
2. Establishment of goals and priorities
3. Land use planning and regulating mechanisms
4. Public education on coastal zone management
5. Long-range planning for recreational, industrial and residential siting, and public water supply, sewage and garbage disposal systems

II. What do you see are the major use conflicts in Alabama's coastal zone?

1. Urban/industrial development vs. tourism/agriculture
2. Private vs. public ownership and use
3. Development vs. preservation
4. Water use conflicts
5. Ecological opposition to resources development

III. What are some possible solutions to the identified use conflicts?

1. Public education and participation
2. Adequate zoning laws
3. Land use planning
4. Establish priorities
5. Permits and licenses

PARTICIPANTS IN THE CONFERENCE

R. Michael Akridge
Engineer, Research and Environmental Projects
Alabama Power Company
600 North 18th Street
Birmingham, Ala. 35291

George Allen
U.S. Corps of Engineers
510 Title Building
30 Pryor Street, S. W.
Atlanta, Ga. 30303

Jo Ann Allen
Star Route, Box 605
Lillian, Ala. 36549

Captain R. E. Anderson
Officer-in-charge of Marine Inspection
U.S. Coast Guard
Mobile, Ala. 36601

R. C. "Red" Bamberg
Director, Alabama Development Office
State Office Building
Montgomery, Ala. 36104

Doug Benton
Director, State Bureau of Publicity and Information
11 North Union
Montgomery, Ala. 36104

William H. Black
Chief Engineer, Alabama State Docks
P. O. Box 1588
Mobile, Ala. 36601

Jerry J. Bodin
Mississippi Marine Resources Council
P. O. Box 215
Biloxi, Miss. 39530

William Bondarenko
Executive Director, Birmingham Regional Planning Commission
2112 11th Avenue South, Suite 220
Birmingham, Ala. 35205

Peter A. Boone
Chief Geologist, Geological Survey of Alabama
P. O. Drawer O
University, Ala. 35486

John M. Bordelon
Coastal Zone Coordinator
Louisiana State Planning Office
P. O. Box 44425, Capitol Station
Baton Rouge, La. 70804

Donald Brady
Assistant Director, South Alabama Regional Planning Commission
P. O. Box 1665
Mobile, Ala. 36601

Bettye H. Brown
Mobile Press Register
Mobile, Ala. 36601

Cole D. Brown
Rt. 3, Box 173-C
Foley, Ala. 36535

James Francis Caldwell
Executive Director, Mobile United
71 St. Michael Street
Mobile, Ala. 36601

Douglas Capps
Regional Planner, South Alabama
Regional Planning Commission
P. O. Box 1665
Mobile, Ala. 36601

E. Wayne Chapman
State Resource Conservationist
U.S. Department of Argiculture,
Soil Conservation Service
P. O. Box 311
Auburn, Ala. 36830

Cecil G. Chason
Town Attorney, Town of Gulf Shores
P. O. Drawer 458
Foley, Ala. 36535

Alfred S. Chipley
Director, Division of Solid Waste
State Department of Solid Waste
State Office Building
Montgomery, Ala. 36104

Robert R. Clark
Extension Recreation and Tourism
Specialist
Alabama Cooperative Extension
Service
Extension Cottage, Auburn University
Auburn, Ala. 36830

Howard A. Clonts, Jr.
Associate Professor of Resource
Economics
Department of Agricultural Economics
and Rural Sociology
Auburn University
Auburn, Ala. 36830

Gene Cody
Resources Use Planner
Coastal Area Board
Alabama Development Office
State Office Building
Montgomery, Ala. 36104

James H. Coil, Jr.
Manager of Administrative
Services
Scott Paper Co. --Southern
Operations
P. O. Box 2447
Mobile, Ala. 36601

James R. Cooper
Assistant Attorney General
Alabama Attorney General's Office
Administrative Building
Montgomery, Ala. 36104

Harry E. Crawford
C. P. Taylor Real Estate Co.
413 South McKenzie Street
Foley, Ala. 36535

Reuben E. Davidson III
Chief, Administrative Services
Alabama Air Pollution Control
Commission
645 South McDonough Street
Montgomery, Ala. 36104

S. L. Davis
Assistant Director
Association of County Commissions
of Alabama
660 Adams Avenue
Montgomery, Ala. 36104

Fred Denton
Director of Industrial Development
Division
Alabama Development Office
State Office Building
Montgomery, Ala. 36104

F. L. Doyle
Adjunct Professor of Hydrology,
University of Alabama in Huntsville
Regional Geologist, Geological Survey
of Alabama
P. O. Box 1247
Huntsville, Ala. 35802

Pyme Ekenstein
Membership Secretary, Save our Bay
156 White Avenue
Fairhope, Ala. 36532

Don Epley
Assistant Professor of Public Finance, Economics and Real Estate
University of Alabama
University, Ala. 35486

W. Donald Fattig
Associate Dean, School of Natural Science and Mathematics
University of Alabama in Birmingham
University Station
Birmingham, Ala. 35294

James H. Faulkner
Publisher, Baldwin Times
P. O. Box 471
Bay Minette, Ala. 36507

Brad Fell
Robertsdale Insurance Agency
P. O. Drawer 10
Robertsdale, Ala. 36567

J. Frank Filgo
Field Service Coordinator
Alabama Environmental Quality Association
P. O. Box 11000
Montgomery, Ala. 36111

J. B. Foley
President, Magnolia Land Company
413 South McKenzie Street
Foley, Ala. 36535

Paul Gates
Staff Assistant for Environmental Resources
Office of the Secretary
Department of the Interior
148 Cain Street
Atlanta, Ga. 30303

Conrad Gazzier
Department of Geology
University of Mississippi
University, Miss. 38677

Larry E. Goldman
Coastal Zone Management Coordinator
Mississippi Marine Resources Council
P. O. Box 497
Long Beach, Miss. 39560

Bay Haas
Commissioner, Mobile County Commission
P. O. Box 1443
Mobile, Ala. 36601

Rosa Hamlet
Assistant Attorney General
Alabama Attorney General's Office
Administrative Building
Montgomery, Ala. 36104

James B. Hildreth
Civil Engineer, U.S. Army Corps of Engineers, Mobile District
P. O. Box 2288
Mobile, Ala. 36628

W. L. Hood
Regional Forester, Gulf Region, Woodlands
International Paper Company
P. O. Box 2448
Mobile, Ala. 36601

Dr. W. Gary Hooks
Chairman, Department of Geology and Geography
University of Alabama
Box 1945
University, Ala. 35486

Verda Horne
Environmental Quality Chairman
Alabama League of Women Voters
Gulf Coast Chairman, Alabama Conservancy Board
708 Fairhope Avenue
Fairhope, Ala. 36532

C. C. Horton
Director of Public Relations,
Town of Gulf Shores
West Beach Boulevard
Gulf Shores, Ala. 36542

L. Willis Hyde
Technical Advisor, Alabama Coastal Area Board
Alabama Development Office
State Office Building
Montgomery, Ala. 36104

Eugene Ingram
Mayor, Town of Gulf Shores
P. O. Box 299
Gulf Shores, Ala. 36542

Elizabeth C. Johnson
Box 713
Lillian, Ala. 36549

Tom Johnson
Executive Director, Industrial Development Division
Baldwin County
245 Greene Road
Fairhope, Ala. 36532

Dianne Jones
Administrative Assistant to the Director
Mississippi-Alabama Sea Grant Consortium
P. O. Drawer AG
Ocean Springs, Miss. 39564

Myrt Jones
President, Mobile Bay Audubon Society
724 Brannan Court
Mobile, Ala. 36609

Rolf Juhl
Officer-in-Charge
National Marine Fisheries Service
P. O. Drawer 1207
Pascagoula, Miss. 39567

Clarence M. Kilian
Executive Vice President
Warrior-Tombigbee Development Association
512 18th Street North
Birmingham, Ala. 35203

Bill G. King
704 Eustis Avenue
Huntsville, Ala. 35804

McMillan Lane
Commissioner, State Department of Agriculture and Industry
1445 Federal Drive
Montgomery, Ala. 36109

Neal G. Lineback
Associate Professor of Geography
University of Alabama
Box 1945
University, Ala. 35486

W. Ross Lysinger
University of South Alabama
P. O. Box U-273
Mobile, Ala. 36688

Johnie A. Marable
District Program Specialist
Alabama Cooperative Extension Service
748 Heard Avenue
Auburn, Ala. 36930

Bruce W. Mattox, Ph. D.
Director, Mississippi-Alabama Sea Grant Consortium
P. O. Drawer AG
Ocean Springs, Miss. 39564

R. Warren McCord
Specialist, Community & Regional Development
Auburn University Extension Service
220 Duncan Hall, Auburn University
Auburn, Ala. 36830

John M. McCullough
Director, Forest Development Division
Alabama Forestry Commission
513 Madison Avenue
Montgomery, Ala. 36104

J. Baron McIlwain
Coordinator of Coastal Zone Management Activities
Mississippi-Alabama Sea Grant Consortium
P. O. Drawer AG
Ocean Springs, Miss. 39564

A. M. McMillan
Alabama Coastal Area Board
Baldwin County Commission
Stockton, Ala. 36579

Gil Melcher
Postmaster, U.S. Post Office
Gulf Shores, Ala. 36542

Walter J. Mernik
Building Inspector, Town of Gulf Shores
Star Route, Box 100-K
Gulf Shores, Ala. 36542

Darrell C. Meyer
Director of Planning
Alabama-Tombigbee Regional Commission
P. O. Box 269
Camden, Ala. 36726

Addie Middlebrooks
Coordinator, Tri-Rivers Waterway Development Association
300 North Foster Street
Dothan, Ala. 36301

Sylvia F. Minor
Coastal Zone Management Coordinator
Mississippi Marine Resources Council
P. O. Box 497
Long Beach, Miss. 39560

Alex Montgomery
Bureau of Sport Fisheries and Wildlife
17 Executive Park Drive, N. E.
Atlanta, Ga. 39329

William F. Moore
Deputy Director, Ameraport Offshore Harbor and Terminal Commission
Bel Air Mall II, Suite 119
3100 Cottage Hill Road
Mobile, Ala. 36606

Horace P. Morgan
Executive Director
Resources Advisory Board
Suite 402, Walton Building
Atlanta, Ga. 30303

Condee C. Nason
Director, State Parks
337 Spring Valley Road
Montgomery, Ala. 36111

L. W. "Red" Noonan
State Senator, State of Alabama
161 McGregor Avenue
Mobile, Ala. 36608

Dr. Thomas B. Norton
Councilman, Town of Gulf Shores
P. O. Box 475
Gulf Shores, Ala. 36542

Claude J. O'Connor
Councilman, Town of Gulf Shores
P. O. Box 276
Gulf Shores, Ala. 36542

Arnold E. Parsons
President, Polyengineering
2480 Government Boulevard
Mobile, Ala. 36606

Woodfin Patterson
President, Jefferson Davis State Junior College
Brewton, Ala. 36426

Judith Penna
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration
Rockville, Md. 20852

Howard M. Phillips, Ph. D.
Vice President for Academic Affairs
University of South Alabama
University Boulevard
Mobile, Ala. 36688

Jon Will Pitts
Area Director, Birmingham Area Office
U. S. Department of Housing and Urban Development
15 South 20th Street, Daniel Bldg.
Birmingham, Ala. 35233

Dr. Billy E. Powell
Alabama Sea Grant Advisory Services
800 Downtowner Blvd., Suite 104
Mobile, Ala. 36600

J. Phillip Pridgen
County Supervisor
Farmers Home Administration
Civic Office Building, Court Square
Bay Minette, Ala. 36507

Richard D. Pruitt
Executive Director, South Alabama Regional Planning Commission
P. O. Box 1665
Mobile, Ala. 36601

Doris Rich
Correspondent, Birmingham News
Magnolia Springs, Ala. 36555

Robert Roth
Environmental Protection Agency, Region IV; Southeastern Federal Regional Council, Suite 515
1371 Peachtree Street, N. E.
Atlanta, Ga. 30309

Shellene Scarbrough
Mississippi-Alabama Sea Grant Consortium
P. O. Drawer AG
Ocean Springs, Miss. 39564

David G. Schlobohm
President, Florida Institute of Remote Sensing
P. O. Box 84
Marianna, Fla. 32446

Joe E. Seward
Coordinator of Publications and Special Projects
Mississippi-Alabama Sea Grant Consortium
P. O. Drawer AG
Ocean Springs, Miss. 39564

Tom G. Shackelford
Director, Division of Water Safetv
Conservation and Natural Resources
74 North Union Street
Montgomery, Ala. 36104

Dr. E. W. Shell
Department Head, Department of Fisheries and Allied Aquaculture
Auburn University
Swingle Hall
Auburn, Ala. 36830

Frank J. Silva
State Programs Coordinator
U.S. Environmental Protection Agency
1421 Peachtree Street, N. E.
Atlanta, Ga. 30309

Lois F. Skipper
Councilwoman, Town of Gulf Shores
Star Route, Box 100-A
Gulf Shores, Ala. 36542

Everett Smith
Assistant State Geologist
Geological Survey of Alabama
P. O. Drawer O
University, Ala. 35486

Hattie Little Smith
Manager, South Baldwin Chamber of Commerce
117 North McKenzie Street
Foley, Ala. 36535

Mary Scott Smith
Star Route, Soldier's Creek
Lillian, Ala. 36549

Carol Sondheimer
Southeast Regional Coordinator
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration
Rockville, Md. 20852

Lloyd E. Stiffler
Vice President, Hand-Stiffler and Associates
Box 478
Gulf Shores, Ala. 36542

R. E. Sullivan
Member, Gulf Shores Planning Board
P. O. Box 59
Gulf Shores, Ala. 36542

Hugh A. Swingle
Assistant Chief Biologist
Alabama Marine Resources Division
P. O. Box 188
Dauphin Island, Ala. 36528

Wayne Swingle
Acting Director
Marine Resources Division, Department of Conservation and Natural Resources
P. O. Box 188
Dauphin Island, Ala. 36528

Thomas S. Talley
Biologist-in-Charge
U.S. Fish and Wildlife Service
P. O. Box 4277
Panama City, Fla. 32401

William H. Taylor
Acting Director
Cooperative Extension Service
Auburn, Ala. 36830

J. E. Thomas
Director, Mississippi Marine Resources Council
P. O. Box 497
Long Beach, Miss. 39560

May F. Tillman
Business Manager, Marine Environmental Sciences Consortium
P. O. Box 386
Dauphin Island, Ala. 36528

Jeannette Tootle
Mississippi-Alabama Sea Grant Consortium
P. O. Drawer AG
Ocean Springs, Miss. 39564

Sidney D. Upham, Ph. D.
Executive Director, Marine Environmental Sciences Consortium
P. O. Box 386
Dauphin Island, Ala. 36528

Ted Vallery
Economist, Natural Resources Center
University of Alabama
1220 Northwood Lake
Northport, Ala. 35476

Charles B. Vickery
County Extension Chairman
Alabama Cooperative Extension Service
Courthouse Eastwing
Mobile, Ala. 36602

Lois Gale Walker
Town
P. O. Box 299
Gulf Shores, Ala. 36542

James C. Warman
Director, Water Resources Research Institute
205 Samford Hall
Auburn University
Auburn, Ala. 36830

James C. Warr
Chief Administrative Officer
Alabama Water Improvement Commission
State Office Building, Room 749
Montgomery, Ala. 36109

William T. Willis
Director, Environmental Health Administration
Alabama Department of Public Health
501 Dexter Avenue
Montgomery, Ala. 36104

Colonel Drake Wilson
District Engineer, Mobile District
U.S. Army Corps of Engineers
P. O. Box 2288
Mobile, Ala. 36628

Lt. Gen. W. K. Wilson, Jr.
Consultant, Southern Industries Corporation
P. O. Box 1685
Mobile, Ala. 36601

John S. Winefordner
Senior Geologist, Siting and
Reservoir Surveillance
Alabama Power Company
600 North 18th Street
Birmingham, Ala. 35291

Harold B. Wise
State Representative, Alabama
House of Representatives
Route 2, Box 156
Kinston, Ala. 36453

MEMBERS OF THE ALABAMA COASTAL AREA BOARD

Mr. R. C. "Red" Bamberg, Chairman
Director, Alabama Development Office
State Office Building
Montgomery, Ala. 36104

Dr. Sidney Upham, Acting Chairman
Director, Marine Environmental Sciences
Consortium
P. O. Box 386
Dauphin Island, Ala. 36528

Mr. Claude Kelley
Director, Alabama Department of Conservation
and Natural Resources
Administrative Building
Montgomery, Ala. 36104

Colonel Reuben Wheelis
Director, Alabama State Docks
P. O. Box 1588
Mobile, Ala. 36601

Dr. Philip LaMoreaux
State Geologist
Geological Survey of Alabama
P. O. Drawer O
University, Ala. 35486

Mr. Bay Haas
Mobile County Commission
P. O. Box 1443
Mobile, Ala. 36601

Mr. Archie M. McMillan
Baldwin County Commission
Bay Minette, Ala. 36507

Mayor Gary A Greenough
Mobile City Commission
P. O. Box 1827
Mobile, Ala. 36601

AGENCY ADVISORS TO THE ALABAMA COASTAL AREA BOARD

Dr. Ira L. Myers
State Health Officer
State Health Department
State Office Building
Montgomery, Ala. 36104

Mr. James W. Warr
Chief Administrative Officer
Alabama Water Improvement Commission
State Office Building
Montgomery, Ala. 36104

Mr. Ray Bass
Director, State Highway Department
State Highway Building
Montgomery, Ala. 36104

Mr. McMillan Lane
Director, Department of Agriculture
and Industry
1445 Federal Drive
Montgomery, Ala. 36109

Mr. Kenneth Hammond
Director, Alabama Public Service Commission
State Office Building
Montgomery, Ala. 36104

Dr. Philip E. LaMoreaux
Supervisor, State Oil and Gas Board
P. O. Drawer O
University, Ala. 35486

Mr. James W. Cooper
Director, Alabama Air Pollution Control
Commission
645 South McDonough Street
Montgomery, Ala. 36104