

THE FUTURE OF THE NEW JERSEY SHORE :

Problems and Recommended Solutions



PROCEEDINGS OF THE GOVERNOR'S CONFERENCE
ON THE FUTURE OF THE NEW JERSEY SHORE

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State of New Jersey
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Problems and Recommended Solutions

Penny M. Brown, Editor

PROCEEDINGS

Governor's Conference on the Future of the New Jersey Shore
September 19, 1979

Cosponsored by
The Governor's Office, State of New Jersey
Rutgers, the State University

Center for Coastal and Environmental Studies
Rutgers, the State University
New Brunswick, New Jersey
1980

The conference and these proceedings were possible through the financial support of the New Jersey Department of Energy, the New Jersey Department of Environmental Protection, and Rutgers, the State University. The opinions and recommendations expressed in this proceedings reflect discussions at the conference and do not necessarily represent the views of these funding agencies.

ACKNOWLEDGEMENTS

A conference of this scope succeeds only as a result of hard work and cooperation among many people and agencies.

From the beginning, Donald Linky and Thomas Hall of Governor Brendan T. Byrne's Office of Policy and Planning took leading roles. A number of planning meetings occurred in that office between Rutgers faculty and the staff of the various state executive departments. From the Trenton meetings, the effort branched out into the state with meetings held in Ocean City, Jackson Township, and Neptune. These sessions solicited input from informed citizens to aid in preparing a conference agenda which would address local concerns.

Many people took part in establishing the seven panels. Special thanks must be given to the panel moderators:

Norbert P. Psuty--Beach Preservation
Herb Simmens--Coastal Development
Edward J. Linky--Energy
Derickson Bennett--Marine Fisheries
Philip Caton--Older Resorts
Stephen B. Richer--Tourism
The Honorable Warren Wolfe--Transportation.

They were responsible for organizing productive forums to exchange information and to facilitate group discussion of broad coastal topics.

After the conference, the rapporteurs furnished careful notes of the panel discussions to Penny M. Brown, Center for Coastal and Environmental Studies at Rutgers, who served as editor for this Proceedings. The thoughtful review of first draft manuscripts by these rapporteurs and many other participants helped to make this volume a workable finished document. Our gratitude is extended to Robert Abel, New Jersey Marine Sciences Consortium, who generously contributed the time and expertise of the Consortium in compiling a list of individuals in New Jersey with special knowledge of coastal issues.

The New Jersey Department of Environmental Protection and the New Jersey Department of Energy furnished necessary financial support as did the Office of the President of Rutgers University.

To the literally dozens of other workers who helped in the planning, execution and reporting of the conference, we express our heartfelt thanks. The conference and these proceedings owe the largest debt of gratitude to the more than 300 participants who contributed their accumulated knowledge and genuine concern about the future of the shore to make this conference a success.

--Leland G. Merrill, Jr.

Center for Coastal and Environmental Studies
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PREFACE

The Governor's Conference on the Future of the New Jersey Shore, September 19, 1979, provided an opportunity for public officials and private citizens to meet with technical resource people to review the past and contemplate the future of the New Jersey shore. The participants identified a broad range of issues confronting Atlantic Ocean shore communities from Sandy Hook to Cape May and took some first steps in finding solutions to those problems.

Governor Brendan T. Byrne welcomed over 300 participants to the conference in Point Pleasant and urged them to develop recommendations for actions that state, local and federal government, the private sector and citizens can take in the 1980's to preserve and enhance the shore. Professor Norbert P. Psuty, Director of Rutgers University's Center for Coastal and Environmental Studies, discussed the contribution of scholarship to these difficult policy questions. Their remarks make up Chapter I.

Remarks presented in the opening plenary session are reproduced in Chapter II to provide an overview of the current issues and problems from various state and federal perspectives.

The following chapters (III-IX) summarize the discussions of the specific panels dealing with Beach Preservation, Coastal Development, Energy, Marine Fisheries, Older Resorts, Tourism, and Transportation. These discussions reflect the views of local leaders, the private sector and concerned citizens, and offer recommendations for action and research to protect the shore zone and enhance the quality of life for its residents and visitors. Each panel summary is augmented by a selected list of information sources, including government agencies and programs, ongoing research, easily accessible publications, knowledgeable individuals and active organizations.

The problems facing the shore zone are many and complex. One conference cannot address all the issues or provide all the solutions. Some questions were raised which were left unanswered. The conference was a beginning point in what must be an ongoing dialogue between state agencies, the academic community and concerned local citizens and officials to search for the best possible solutions to the difficult problems that face New Jersey's sensitive shore zone.

SUMMARY OF RECOMMENDATIONS

The pressures on the shore zone to accommodate more intensive and diverse uses increased dramatically during the last decade. Demand at the shore for recreational use has risen about 50%. The enormous number of new housing developments could not keep up with the unprecedented demand for coastal residences. In addition, our ocean waters are seriously threatened by pollutants--sewage sludge dumping, industrial wastes, thermal discharge, etc. The interrelationships of the built and the natural environment are being repeatedly demonstrated. Residential development in wetlands has reduced the total area of marsh land, thus decreasing the estuarine dependent fish populations and reducing the catches of commercial and recreational fishermen. Development and control structures have often exacerbated erosion of our shore. The citizens of New Jersey cannot afford the environmental risks and the personal and economic tragedies that will accompany further unwise development and abuse of the shore zone.

The challenge of the eighties, as identified at this conference, is to devise a process of decision-making that will protect and enhance our coastal environment while providing the necessary support for a prosperous shore economy. This conference, although not offering solutions for all of the difficult problems raised, has identified the critical issues facing the shore in the coming years and has pointed to the type of changes that government and citizens must bring about to meet the challenge.

Coastal Development

There is growing concern about the folly of developing on the shifting sands of the shore zone, especially on our dynamic barrier islands. Specific suggestions were made to limit development.

- Development on barrier islands should be regulated to reduce lives and property at risk in the event of a catastrophic storm.
- Dune management districts should be identified and mapped for the length of coastal New Jersey.
- In the dune management districts no new development should be permitted, and no reconstruction should be allowed without a review and permitting procedure.
- Efforts to protect residents in the event of a natural disaster must be accompanied by plans at all levels of government to reallocate land use in the shore zone following severe damaging storms to prevent further human suffering and property damage.
- Revision of the federal flood insurance program is an urgent priority to prevent further development in flood hazard areas and to relocate structures damaged by storms.

Resource Management

The shore's valuable natural resources are being abused and polluted in many ways. In some instances, stricter regulations are required to preserve and enhance these resources for future generations.

- The Department of Energy must emphasize conservation in its policies to reduce the demand for electricity and therefore the need for new electric-generating facilities.
- The regulations on sewage sludge and dredge spoil dumping should be vigorously pursued.
- The state must begin a concentrated effort to reduce nonpoint source pollution from surface runoff, inadequately constructed septic systems, and landfill leaching.

Economic Viability

It is becoming increasingly difficult to maintain a viable economy at the shore. With gasoline shortages, our tourist economy faces serious threats. The fishing industry has not been able to expand to exploit recent opportunities for increased catches. The state has a responsibility to preserve and protect our coastal zone while promoting economic expansion of existing commercial resources and the development of new economic enterprises.

- The Division of Travel and Tourism, Department of Labor and Industry, should develop a comprehensive guide of attractions and tourist facilities to facilitate travel agent arrangements for vacations in New Jersey.
- State and federal government should jointly fund an operations research analysis of the issues involved in utilizing new fish species for domestic and foreign markets.
- The state should establish a task force to give quick advice on specific local redevelopment plans and programs at the request of coastal municipalities.
- The state should redistribute sales tax to more accurately reflect the enormous tax revenue brought in at the shore during tourist season.
- The New Jersey Department of Education should change the school year to provide a longer summer break and shorter mid-winter vacations.

Local Government Involvement

The demands for conflicting uses of fragile coastal resources must be balanced through comprehensive, long-range planning. State government must take the lead, but it must recognize that state-wide plans can only be successful if they are arrived at in the close concert with interested, local representatives. More than lip service must be paid to the concepts of home rule and public participation. Specific recommendations include:

- Regulatory power always should be assigned to the lowest feasible level of government.
- The Department of Transportation must strengthen and modify existing mechanisms for local input in the transportation planning process and develop new mechanisms for intergovernmental cooperation.
- Municipalities should adopt and enforce zoning and housing maintenance standards for future conversions of summer housing to year round occupancy.

Information Needs

If this system of divided responsibilities and balanced comprehensive planning is to work, it is essential to have accurate, readily available information and ongoing educational efforts. In many cases state government is the primary institution for data gathering, management, and storage.

- Integrated monitoring systems should be used by the N.J. Department of Environmental Protection to coordinate space, air and ground information.
- The N.J. Department of Environmental Protection should take greater advantage of existing modeling and analysis techniques, utilizing recent computer advances in geographic data management.
- The federal and state fishery management agencies must gather more reliable data.

Many complaints were voiced about the difficulty of finding information which currently exists. As better data gathering and storage is accomplished, mechanisms for information exchange must be improved to ensure that decision-makers in the private and public sector can find what they need to know. An important component of this exchange would be the initiation of educational campaigns.

- The state should prepare a list of data resources related to fishery management.
- With federal funding, the N.J. Department of Energy, in cooperation with builders and local officials, should establish a technical outreach program for use of solar technologies.

- The Division of Travel and Tourism, N.J. Department of Labor and Industry, in conjunction with the N.J. Department of Education and the N.J. Department of Environmental Protection, should support a mandatory school curriculum which would introduce students to New Jersey's unique cultural and physical attractions.
- The N.J. Department of Environmental Protection should inform local leaders of the inevitability of coastal change and the limitations of technology to deal with that change.

Research Needs

In some instances, considerable gaps exist in current knowledge. Some of the research areas that participants recommended be given priority in future state funding are:

- research to discover the effects of pollutants on marine life,
- basic research to determine how to spot neighborhood deterioration in its initial stages and to identify methods for reversing the decline, and
- explorations of options for encouraging the use of public transportation to the shore for recreation.

New Approaches Needed

Our decreasing supplies of natural resources and the increasing demands for use of the shore zone lead to a need for new approaches to solve persistent problems. Some of the changes needed in traditional policies are identified in the recommendations below.

- The N.J. Department of Transportation should revise its policies to allow more flexibility in responding to immediate, special needs of individual regions.
- The N.J. Department of Environmental Protection should review County Waste Management Plans with emphasis toward promoting the construction of plants which utilize refuse derived fuels.
- The N.J. Department of Environmental Protection should establish a program to allow dunes to develop and accumulate naturally.
- Legislative reform is urgently needed to define a decision-making process for energy facility siting which clearly designates appropriate roles for all concerned interests (local, regional, state--both public and private).
- Public transportation to the shore must be increased.
- Old shore resorts must encourage year round as well as seasonal tourist business.

Access to the Shore

The New Jersey shore is a valuable resource. All New Jersey citizens--present and future--have a right to enjoy its beauty and diversity.

- Continued state investment in access corridors should be supplemented by providing public transportation and parking at areas which constitute part of the state's recreational shoreline.
- The state Shore Protection Master Plan should provide a basis for long-term planning for public access to the beach.

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CHAPTER I

WELCOMING REMARKS

The Future of the New Jersey Shore

Governor Brendan T. Byrne

I welcome you to this conference intended to focus public attention on the diverse resources of the shore. This conference is called to gather new ideas on how to address the challenges that face the shore, and to learn from each other to build upon and protect its assets for future generations.

I have convened this conference to develop a firm set of recommendations for actions that state government, Congress, the federal government, the private sector and citizens can take in the 1980's to preserve and enhance the shore.

Staff of my office and Rutgers, the cosponsors of this conference, have prepared background and issue papers on these topics to guide and stimulate your debate and discussion. I appreciate the valuable assistance which Rutgers has provided in organizing this conference, and would particularly like to thank Professors Merrill and Psuty for their help.

I do not believe in conferences which fail to bring specific results. In the past I have convened Governor's conferences on selected issues of state-wide importance as a way of getting the best thinking in our state to focus on important issues and to spark action. A conference on the Pinelands held in December 1976 helped lead to my executive order on the Pinelands and finally the Pinelands Protection Act signed into law this past June. My conference on jobs led to a number of actions of state government to improve our economic development picture and streamline state government actions. I hope that this conference will lead to similar positive results, and encourage you to be as specific as possible in making recommendations for action.

It is particularly timely that we gather today, for on both the national and state levels important decisions affecting the future of the shore will be made in the coming months. National attention is focusing on the coast in 1980 and I join President Carter in endorsing the concept of the *Year of the Coast: 1980*, which he strongly supported in his environmental message of August 1979.

The *Year of the Coast* will involve a national campaign of diverse public and private groups united to educate our citizens about the importance of protecting, preserving and restoring our coast. I am proud to make New Jersey the first state to support the concept endorsed by the President.

New Jersey is committed to protecting coastal resources and the tourism and fisheries industries which depend upon a healthy natural environment and a sound economy.

We must preserve and build upon the diversity which characterizes our shore. A wide variety of beach experiences are available in New Jersey, from the excitement of amusement piers to the splendid isolation of the dune environment of Island Beach State Park and the Brigantine Natural Area, from

the oceanfront private homes in Monmouth County to the areas of cottages and motels in the Wildwoods.

There is truly a place at the shore for everyone. We must maintain this variety. As we gather ideas in this conference, let us retain and preserve the benefits of the shore as it exists today and build upon this diversity for the future.

When we think of how to protect the shore for future generations, we must start with its most vital resource--the ocean waters. In past years, fish kills, red tides, and sludge and garbage dumping have raised legitimate concerns over our modern world's abuse of the ocean. There are many things we still don't understand about the sea, but I hope that you will join me today in seeking to pursue the following goals.

New Jersey must strengthen its capability to become an international and national center for ocean research. We have already taken some steps, such as the creation of the New Jersey Marine Sciences Consortium, but we can do much more. This state has unique assets in private and public sector research facilities and personnel which can be directed to the fundamental problems and opportunities of our ocean. I pledge the state's support of efforts to attract new and expanded facilities of universities, private corporations, foundations and others interested in marine research to locate in New Jersey.

We must also set as a goal the elimination of the dumping or discharge of all noxious materials into the ocean as quickly as possible. There has been much discussion lately over the wisdom of the 1981 deadline for the dumping of sludge into the ocean. And some have suggested that for both economic and environmental reasons we should reconsider our position. Perhaps the experts have a point in that we should be certain that we can dispose of sludge safely on land before we end long-standing practices of ocean dumping. Yet beyond the scientific issue is something which has been overlooked--psychologically and emotionally it is offensive to those of us who love the ocean to tolerate man's continued disturbance of nature's complex ecological balance. The presumption must remain on the side of keeping the ocean pure, and I for one would continue our current policy of maintaining our objective of eliminating sludge and other forms of noxious dumping into the ocean as quickly as possible.

If we succeed in maintaining the quality of the ocean, we must place equal attention on the beaches and wetlands which are so vital to the ecological and economic identity of the shore. We have spent millions of dollars in the past on efforts to protect our shores through construction of jetties, seawalls, groins, breakwaters and other measures. Yet many experts now say that those engineering solutions may have done more harm than good in certain areas or were ineffective in others in affecting the natural erosion and buildup of our beaches and shores.

The next several months could be critical to the future of our shoreline as the state completes the master plan for shore protection authorized under the Beaches and Harbors Bond Act of 1977. Representatives of the team developing that important plan are here today to review its status with us.

In protecting our shoreline, we cannot repeat the mistakes of the past, nor give in to irresponsible demands for hasty and ill-considered projects which do not assess the impacts on our entire coast.

During the next year, we will also reassess the adequacy of current state programs which regulate coastal resources. I have previously proposed strengthening our controls over construction which threatens sand dunes and beaches. We may also have to review the extent of state coastal jurisdiction, both with respect to how far inland we go and how far we extend controls along the coast.

While our ocean and beach resources are essential to the shore's future, we must remember that the shore exists for people. Their problems of how they make a living; find affordable, decent housing; travel from place to place; and live and work together must be addressed in any coherent strategy for the shore's future.

Again, we may now be at a timely and critical point for the shore's economic and social fabric. Key problems were confronted this season as the nation, state and the shore faced the loss of cheap and plentiful gasoline. Along with the rest of the nation and state, the shore must reorient some of our traditional assumptions underlying our tourism, transportation, energy and economic strategies to the new situation.

Over the long-term, I am optimistic that the new energy reality can be an opportunity to recapture the tourism which we have lost in prior years to newer but faraway resorts. But this opportunity can only be realized if we take steps now to revamp our promotional campaigns and restructure our transportation system to assure our visitors that they can get to the shore and travel along it with ease.

This November we can take an important step to improve our transit network through the approval of the transportation bond issue, which includes funds for the North Jersey shore railroad rehabilitation and other important public transit and highway projects. I urge your suggestions on other specific steps we can take--where should we institute bus shuttles to the beaches, park and ride lots, off-peak reduced fares or even new waterborne passenger service.

The energy situation may also force reconsideration of the shore's economic structure in other ways. The growth of the shore as a commuter-oriented region may be affected as energy costs and availability make commuting more difficult.

While we work to strengthen our transit services, we also must make new efforts to assure that jobs are provided locally, that industries compatible with the shore are fostered and expanded.

One of those industries--marine fisheries--has been targeted for special attention today, and later this morning, I will sign into law important legislation to promote fisheries development in the state. But there are other industries which also must be expanded so that the shore's economy becomes more diversified to meet the year round needs of permanent residents for meaningful work.

New Jersey has already taken bold steps to revitalize our premier resort, Atlantic City, but we must seek separate strategies for the redevelopment of our other resort cities and towns. As with our urban policy as a whole, the answer for each town may be different. In Cape May, the already strong local efforts to attract Canadian tourists may be supplemented by compatible state policies. In Asbury Park, the city's growing image as a popular entertainment center along with renewed emphasis on business conferences and conventions may be an effective redevelopment scheme. In Long Branch, the encouraging signs of additional business through new amusement attractions and aggressive promotional campaigns may be aided by local efforts to attract major hotel development.

Neither I nor the state government has the final answer to how local towns should develop, but we do want your suggestions on how we can help to achieve local goals consistent with state policies and programs.

While our resort towns and the tourist industry understandably receive great attention as part of the shore identity, we must also recognize that the people of the shore have problems which are similar to those of other areas in the state. Thus, people of the shore are concerned about how they can afford to heat their homes this winter in the face of increasing energy costs; how they can obtain decent housing with inflation restricting homeownership to smaller segments of our population and rents placing great pressure on middle and low income families; how they can protect their jobs and their families during a period of economic slowdown; and how they can cope with problems of crime, poverty, discrimination and the rest of our modern social ills. These problems--while not unique to the shore--are nonetheless as real to the people who live here as they are to the people of Newark, Teaneck or Camden. During this conference today, we will naturally concentrate on those issues special to the shore, but I hope that we do not forget that these other problems deeply affect the well-being of our society and our people.

In closing, let me say that I am optimistic about the future of the shore and the future of this state. We have problems, but we have the people and the resources to solve them. New Jersey is not afraid to take on new challenges, or to take the lead on difficult issues and show how to get things done. This conference will not solve all our problems in one day, but will demonstrate that we have the commitment to continue our efforts to keep our state moving ahead.

The future may well see the Jersey shore a somewhat different place than it is now. With your help, we can ensure that the shore, while different, will hold the fascination for our children tomorrow as it does for us today.

The Contribution of Science to Decision-Making in the Coastal Zone

Professor Norbert P. Psuty

The Governor's Conference on the Future of the New Jersey Shore is an excellent opportunity to demonstrate concern for issues confronting our coastal communities. It is also an opportunity to draw attention to a particular process in issue and policy resolution. That process involves the use of scientific theory and data in decision-making. As cosponsor of the conference, Rutgers the State University wishes to restate its commitment to undertake research and analysis of data that pertain to major policy issues in the coastal zone. We believe that it is the responsibility and privilege of the academic scientific community to contribute to the resolution of public policy. The role of science is to provide the empirical and theoretical bases for decision-making. With that background, policy decisions can be well-founded and sound.

Rutgers is busy conducting research on a number of coastal problems. Information pertaining to specific projects will be conveyed in this *Conference Proceedings*, both in the discussion of issues and in the lists of information sources. Further, Rutgers has recently renovated the Marine Field Station at Little Egg Inlet near Tuckerton and completely revamped the Oyster Research Lab at Bivalve. Another pertinent facility is the blueberry and cranberry cultivation facility at Chatsworth, part of the Agricultural Experiment Station. In addition, the New Jersey Sea Grant Program, under the New Jersey Marine Sciences Consortium, sponsors research and has facilities at Seaville in Cape May County.

These research units combine to offer the state of New Jersey an excellent group of researchers whose expertise can be drawn upon to identify critical issues, provide data and analyses, and contribute to the narrowing of alternative solutions. This information can then be used in the public policy forum by decision-makers to resolve issues and establish policy. The scientists are not policy makers but rather contribute the basic information on which policy can be initiated and developed. This is the role of the research scientist and in this role the scientific community will contribute to the conference today.

CHAPTER II

OVERVIEW OF COASTAL ISSUES

The State Environmental Perspective on the Jersey Shore

*Remarks by Commissioner Jerry Fitzgerald English,
New Jersey Department of Environmental Protection*

The shore is many different things to different people. It is a place to pick up shells and go fishing, a place to work, a suburban home, and a retirement home for senior citizens. The Jersey shore has always been an attractive and favored vacation place due to its proximity to the population centers of the northeast.

The New Jersey Department of Environmental Protection (DEP) has two major roles in protecting and enhancing the shore. First, DEP is a conservator of the shore's natural resources of air, land, water, wildlife and fisheries. Second, DEP is a regulator of the shore environment under numerous state and federal laws.

DEP (and its predecessor agencies) has a long standing concern for the shore area, beginning with responsibility for navigation and commerce in the 1800's. The DEP-led beach walk along the 126-mile oceanfront shoreline from Sandy Hook to Cape May Point in 1976 was not the first time DEP staff has walked the shoreline. Every foot of the shore has been scamped over, inspected and reviewed at one time or other and explored by the air as well as by sea by DEP Commissioners and staff.

While DEP employees have a long standing interest in the shore and expertise and experience in addressing its problems, we need your help, the help of government officials, citizens and private industry in ensuring that the diverse resources of the shore are protected and managed properly. DEP does not stand alone in its efforts at managing the shore. Key partnerships have been forged and must be made strong and workable so that various levels of government, the public and private sector, interest groups and citizens all work together to protect this priceless resource.

As a conservator of shore resources, DEP is responsible for four state parks along the oceanfront shoreline, numerous Natural Areas and Wetlands in the bays behind the barrier islands, as well as various fish and wildlife management areas. Conservation of the shoreline and the proper mix of beach erosion control and land regulation measures characterize the Department's Shore Protection Program.

The Coastal Area Facility Review Act (CAFRA), which took effect six years ago, and the Wetlands Act of 1970 are perhaps the most visible regulatory programs of the Department that protect the shore environment. CAFRA has enabled the Department to halt inappropriate development at poor locations, steer needed development to environmentally compatible locations, and assist the private sector and local governments in designing projects compatible with the coastal environment. The Wetlands Act has stopped the rampant destruction of valuable coastal wetlands, while permitting essential minor projects that must have a wetlands location, such as an access road to a marina, to take place. Other DEP regulatory programs affect the

coastal environment as well, particularly the program of Water Quality Certifications under the Federal Clean Water Act.

To increase the predictability of DEP's decision-making at the shore, we have developed over the past five years with the assistance of thousands of individuals, municipalities and interest groups, the New Jersey Coastal Management Program Bay and Ocean Shore Segment, which Governor Byrne submitted to the U.S. Department of Commerce last summer and which received federal approval in September 1978. This program presents one of the most detailed sets of coastal policies of any state participating in the National Coastal Management Program. Each year the DEP is committed to revising and refining that program to make sure that it is responsive to the changing needs of the shore.

I invite your vigorous participation in the preparation of New Jersey's first Shore Protection Master Plan. This spring (1980) the Department will publish a draft plan and convene public meetings and hearings so that we may benefit from your thinking and advice before adopting a final plan. At the same time we will continue to undertake emergency and minor shore protection projects that we expect to be fully consistent with the Master Plan.

The Department urges that strong dune and shore protection legislation be enacted swiftly to protect existing beach and dune areas from inappropriate development, as well as to enable the dune-beach system to function naturally and provide protection for inland areas. Rutgers University is assisting the Department in preparing dune management area maps to help carry out this recommendation.

We will all be taking a fresh look at the sea through our expanded marine fisheries programs. Governor Byrne will be signing the Marine Fisheries Management and Commercial Fisheries Act today.

The inland waterways and channels of our state's coastal waters in the shore need dredging. These highways for commercial fishing and recreational boating are in serious condition.

President Carter and now Governor Byrne have designated 1980 as the *Year of the Coast*. I urge you all to debate vigorously the future of the shore today. The shore is a special place. Let us work together to develop firm ideas and proposals that will allow us to keep it that way.

Coastal Zone Management: A Federal Perspective

Remarks by Samuel A. Bleicher, Deputy Assistant Administrator, Office of Coastal Zone Management, National Oceanic and Atmospheric Administration

It is a great personal pleasure for me to be here with Governor Byrne to discuss the problems and prospects of the New Jersey shore. This year, the Coastal Zone Management Act of 1972 (CZMA) begins a new chapter. The final 305 program development grants were awarded in the past fiscal year, and the Administration, with Congressional consent, has terminated with this purely planning phase of the federally supported program. The results of five years of 305 funding are substantial:

--all 35 eligible coastal states and territories have participated in the program, affording coastal management issues prominent and concentrated attention at all levels of government;

--19 coastal states covering 68% of the nation's coastline already have developed and are implementing comprehensive coastal management programs which have been found to fully meet the requirements of the CZMA;

--by the end of 1980, if the 11 additional coastal management programs that are in the final stages of program development are approved, up to 95% of the nation's coastline could be managed in accordance with the requirements of the CZMA.

Status of the State Coastal Management Programs

In the past year, the Office of Coastal Zone Management (OCZM) has evaluated 13 approved state management programs operating under Section 306 program implementation grants. State accomplishments are reviewed in four categories:

--protection of significant natural systems such as wetlands, dunes, beaches, barrier islands, fish habitats and reefs;

--management of coastal development;

--provision of increased public access to recreational areas and preservation of cultural, historic, and aesthetic resources; and

--coordination and simplification of government decision-making.

I would like to take a moment to review some examples of the accomplishments we found in these areas.

Protection of significant natural systems. Many states are developing special management programs for fragile areas. Puerto Rico has proposed management recommendations for 14 natural areas. As a result, these areas are scheduled for adoption as reserves this month.

Fisheries management within state waters has received increased attention through coastal management programs. Wisconsin is undertaking a survey and assessment of reef and shoal areas to delineate spawning grounds and to establish allowable harvest levels by fish species. North Carolina has

revised its areas of environmental concern guidelines for Estuarine Systems to restrict development which would adversely affect estuarine resources and to permit only water dependent uses.

Management of coastal development. New Jersey has promulgated new administrative rules for managing coastal development and has revised rules under the Coastal Area Facility Review Act. Pre-application conferences are proving effective in discouraging the submission of applications for inappropriate development.

Wisconsin has completed comprehensive harbor plans for Port Washington, Green Bay, and Duluth/Superior. Maine and Michigan also have developed plans for large and small port facilities.

New maps designating coastal erosion hazard areas have been distributed to localities and are being used in land use decision-making in Rhode Island.

Increasing recreational access and protecting cultural, historical and aesthetic resources. New Jersey's demonstration beach shuttle project transported 7,500 people to the coast last summer. Public rights of access to the coast in North Carolina have been enhanced through revised standards for designation of areas of environmental concern. Coastal urban recreational efforts in the Detroit area have accelerated, including plans for linked parks along the riverfront. Construction of the parks will begin next year under a Land and Water Conservation Fund grant.

Coordination and simplification of government decision-making. New Jersey's Coastal Resources Division, Department of Environmental Protection, has consolidated the permit review procedure through an internal reorganization. In California, the Coastal Commission reports that the quality of coastal development proposals has improved. Developers appear to have come to anticipate the environmental concerns the Commission will take into account when reviewing proposals.

Coastal Zone Management--The Unfinished Agenda

In August, President Carter issued an Environmental Message in which he stressed the critical importance of preserving the nation's precious coastal resources and ensuring that coastal areas are managed wisely. Environmental groups have called for and the President has endorsed designation of 1980 as the *Year of the Coast*. I am pleased to see that Governor Byrne has also endorsed that designation, and I hope other states will follow his lead.

In his Environmental Message, President Carter announced his intention to submit legislation to reauthorize Section 306 guaranteeing each state a total of five years of federal assistance at current levels after program approval and before federal support is gradually phased down. He also underscored the importance of building on these programs to achieve national coastal management goals by recommending enactment of new amendments to the CZMA, which for the first time, would establish specific national coastal policies:

--to protect wetlands, estuaries, beaches, dunes, barrier islands, coral reefs, fish and wildlife;

- to manage coastal development to minimize loss of life and property from floods, erosion, saltwater intrusion, and subsidence;
- to provide predictable siting processes for major defense, energy, recreation, and transportation facilities;
- to increase public access to the coast for recreation purposes;
- to coordinate and simplify government decision-making; and
- to preserve and restore historic, cultural, and aesthetic coastal resources.

These amendments, currently under review within the Administration, would link future funding of state management programs with the achievement of these national goals.

The President also has directed the Secretary of Commerce to conduct a systematic review of federal programs other than the CZMA that affect coastal resources to determine conflicts with national coastal management goals and to provide a basis for recommendations to improve federal actions affecting coastal areas. In a real sense, this review provides the federal government an opportunity to do what the CZMA has encouraged states to do: to mold a comprehensive, coordinated approach to achieving wise use and protection of coastal resources. This review should lead to greater cooperation among federal agencies concerned with coastal issues and new initiatives that refocus or redirect federal activities in support of our national coastal policies. The National Oceanic and Atmospheric Administration, Department of Commerce, has begun this review and we hope to report to you on it soon.

In summary, I believe we can be proud of the record of the first five years of coastal zone management. But we cannot slacken our efforts. The real work of coastal management lies ahead as states implement their coastal management programs. I look forward to the challenges of the future. I am hopeful that five years from now we will be able to say that, thanks to the federal-state management partnership, the nation's coastlines are healthier than ever before.

The Year of the Coast*

To focus attention on the importance of protecting, conserving and restoring the nation's coastline, 1980 has been designated by President Carter as the *Year of the Coast*. We live in a recreation-minded, industrial society that is making unprecedented demands on the vitality of our shores. Although each single purpose use may seem justifiable viewed alone, the overall effect of excess use and piecemeal management is chaos.

Governor Byrne, in his keynote address at this conference, announced that he is joining with the President in promoting the *Year of the Coast*. The *Year of the Coast* will be celebrated in New Jersey by a large number of private and public organizations and individuals. The New Jersey Department of Environmental Protection and Department of Labor and Industry have begun organizing a calendar of conferences and other activities to be sponsored by a varied group of interested organizations and individuals.

The *Year of the Coast* will be coordinated at the national level by the Coast Alliance, a nonprofit organization, established in early 1979 by a group of conservation organizations to assume the initiative in conserving coastal resources. A significant event in 1980 will be the review of the U.S. Coastal Zone Management Act of 1972. This review presents an extraordinary opportunity to bring the concerns and expertise of all interested in the preservation and enhancement of our coastal resources to the forefront and to effect the reauthorization and revision of this legislation.

Particular efforts will be made to increase public awareness that the coastal margin--the thin edge of land and water where people and oceans meet--is actually a complex of valuable and fragile resources: estuaries and lagoons, beaches, bays and harbors, islands and marshes. Along the Atlantic and Gulf shores more than 300 barrier islands protect our mainland from violent storms, flooding and erosion; and our bays and wetlands, when not abused, act as powerful natural pollution control mechanisms. People not only visit the coast for recreation and sport, but whole communities depend on it for their livelihood.

Beyond its economic value, the coast has always been a special place for humanity. It nurtures our thoughts, refreshes our spirits, and through the ages has given rise to poetry, mythology, invention, and great civilizations. The sea-land relationship is fascinating, unpredictable, and alive with beauty. Along our coast, shellfish, birds, plants, fish, and microscopic life forms interact in delicate mutual interdependence. Waves, tides, sand and the geological variations of our continental shelf combine with weather and changing seasons to create an awesome drama: our richest and most mysterious natural resource.

*Partially based on "The Year of the Coast", a leaflet prepared by the Coast Alliance, 918 F Street, Suite 310, Washington, DC 20004.

Understanding the shore zone and the natural processes which shape it constitutes a continuing challenge to the scientific community. The Center for Coastal and Environmental Studies at Rutgers University joins with its cohorts at other institutions in 1980 in the ongoing exploration of coastal problems and exchange of information to enable society to make informed decisions about the management of this fragile resource. We salute the *Year of the Coast*.

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CHAPTERS III - IX

PANEL REPORTS

CHAPTER III

BEACH PRESERVATION

Coastal development has occurred largely without regard for the dynamic nature of the shore zone. The natural processes which alter the shoreline of New Jersey continuously erode the beach. Most attempts to cope with this phenomenon have not addressed the major natural causes of change, but rather, have focused on short-term technological stop-gap methods to protect structures and property. We are presently in the paradoxical situation of understanding that natural processes will continue to erode and shape our shores while being committed to protecting the massive residential infrastructure that has developed.

The major challenge in managing beach use is to plan for change. Given the dynamic system that characterizes our shoreline, not all uses or intensities of uses may be accommodated.

Beach Erosion

Natural Processes

Knowledge of the dynamics of our shoreline is fundamental if we are to plan uses which are compatible with natural processes. Currently there is little detailed information concerning the process of shoreline change, i.e., the mechanics of sediment transport and sediment budgets. Recent studies on rates of shoreline change (BP-3, BP-6) record displacement during a time when beach protection structures have been in place. The problem is that the structures may have held the shoreline more or less stationary through a period of time while the shore zone was losing sediment. Thus, the beach may be narrowing and dunes may be lost as the water-land contact is maintained.

RECOMMENDATIONS:

- The Department of Environmental Protection should commit greater resources to gather information on physical processes in dune, beach and offshore areas.
- The use of remote sensing for monitoring and survey should be expanded.

Mitigation

Structural control measures. In the past New Jersey has relied almost exclusively on structural solutions to beach erosion problems. Engineering structures (groins, jetties, seawalls) are still perceived by many municipalities as the most desirable solutions to their erosion problems. Local officials are often unaware of the limitations of these structural solutions. Engineering structures do not create any new sediment and thus do not replenish beaches which are losing sand. Structures such as seawalls and revetments maintain a water-land contact at a particular location

interrupting the natural exchange of sand and increasing the intensity of the waves. This dependence on structural measures to maintain a water-land contact frequently causes the attenuation of the recreational beach.

RECOMMENDATIONS:

- Structural solutions should be considered only in areas of development where extensive infrastructure, sewers, roads, etc., is already in place.
- The Department of Environmental Protection must educate local leaders to the limitations of structural solutions.

Beach nourishment. Artificial beach nourishment is an effective way of dealing with erosion, but the addition of sand to a beach is very expensive, often exceeding several million dollars per mile of shoreline. The cheapest alternative is to use sand from routine dredging of nearby inlets or navigation channels. Where this source is present, it should be moved onto the beach. However, suitable sand from dredging is usually in short supply and the only reliable source for the quantities that would be needed to maintain the beaches is in the offshore zone. The great expense of offshore excavation or mining of sands will prohibit the use of offshore sand for widespread replenishment of the beaches. It may be practicable only under special circumstances such as unusual storm erosion or on a very localized basis where intense utilization or protection of very high cost construction will permit a large expenditure of funds. Certain segments of the New Jersey shoreline may have sufficiently intense recreational use to justify the expense of this source of beach sands.

RECOMMENDATIONS:

- Methods of recycling sand from offshore to the adjacent beaches must be identified and their costs weighed against recreation and tourism benefits.
- All dredge spoil materials which are of suitable size and free of contamination should be transported to the beaches from inlets and navigable channels.

Coastal dunes. Coastal dunes serve the dual function of preventing storm overwash and damage to buildings in their lee as well as providing a natural source of sand to buffer shore erosion. Over the past decades, our coastal dunes have been systematically destroyed as construction of residential and commercial buildings has moved into the area near the water. In many areas the zone in which dunes naturally would form is occupied by structures, which are therefore completely exposed to the onslaught of storm waves and winds.

One method for preserving and rebuilding dunes, essential for storm protection and beach maintenance, would be to establish a dune management district (BP-4). A district plan should encourage the construction and maintenance of dunes while providing for the removal of existing structures as they deteriorate or are substantially damaged by storm, and as funds are available to purchase land and add it to the public domain. Green Acres funds (BA-4) have been identified as potential sources for beach front purchase, but the fifty-fifty local match required is more than most shore front communities can afford.

Less than one-half of our shore communities have ordinances which incorporate a dune district management concept. Of the shore municipalities which do have plans allowing for a zone in which dunes are permitted to accumulate and provide a buffer between the ocean and inland portion of the barrier island, many are now faced with the problem of how to revise those plans. As the barrier island shifts inland naturally the dune district is slowly narrowing and eventually housing is encroached upon by the migrating beach dune system. Presently many of these communities need to redraw their dune management districts, but cannot because of the amount of development which has occurred outside the former dune management district. At this point it would take a natural disaster to create an environment in many shore front communities in which rezoning could take place.

With guidelines from the state, it may be possible to establish state-wide programs that will lead to the improvement of the quality of our coastal zone and the development of shore front protection by natural dunes. An orderly retreat off of barrier islands is an essential management consideration. The Shore Protection Master Plan (BL-2) currently being discussed at open meetings will permit input and evaluation by shore communities.

The state CAFRA law (BL-1) is presently being circumvented by the 24-unit development syndrome. In areas either within or immediately adjacent to the dunes, statewide management objectives should allow CAFRA to evaluate each permit application on a unit by unit basis. Areas inland from the designated dune zone would be subject to the CAFRA permit system as it presently exists.

RECOMMENDATIONS:

- Dune management districts should be identified and mapped for the length of coastal New Jersey.
- In the dune management districts no new development should be permitted, and no reconstruction should be allowed without a permit.
- A program should be established to allow dunes to develop and accumulate naturally.

Barrier Island Use

Society's fixtures--houses, buildings, roads and utilities--are soon threatened by erosion from the migrating shoreline of our dynamic barrier islands. In areas such as Island Beach State Park, the same dynamics are present, but, because of the lack of permanent construction, the migrating dunes and the migrating beach remain of good dimension and are available for recreation uses. Dense residential development in the dune zone is detrimental to the maintenance of the natural protective dune system and is likely to accelerate erosion.

RECOMMENDATIONS:

- There should be a reduction in the number of permanent structures and the density of development allowed on the barrier islands.
- Uses such as low density development, limited infrastructure, recreation, etc., which are compatible with the dynamic shoreline and which can be served by low cost semi-permanent construction should have priority in future planning.

Disaster Preparedness and Post-Storm Planning

The most dramatic example of the effect of the dynamic forces of nature in the shore zone is the impact of severe storms. In 1962 a storm hit the barrier islands of New Jersey, killing 14 persons and injuring more than 1300. Property damages were estimated at \$80 million (1962 dollars). Since that time development has multiplied and the population on many barrier islands has exceeded the evacuation capacity of existing roadways. Future storms will undoubtedly exact a far steeper toll.

Local, county and state governments have the responsibility of preparing to meet disaster (BA-3, BA-8). There must be plans for evacuating the population in the event of a storm warning (BA-5), and there must be an effort to educate the residents about the risks of living in this hazardous zone.

Disaster preparedness also carries an obligation to redirect existing land use patterns and infrastructure to lessen the shore zone's vulnerability to natural hazards. Research has shown that unless a community has adopted post-storm plans for land use changes before disaster strikes, the reconstruction effort will not significantly reduce the area's vulnerability to future storms. Comprehensive planning at all levels must include established priorities for action in the event of a serious storm to control redevelopment and promote wise land use in the future.

RECOMMENDATION:

- Efforts to protect residents in the event of a natural disaster must be accompanied by plans at all levels of government to seize opportunities to reallocate land in the shore zone following severe damaging storms to prevent further human suffering and property damage.

The Effect of the National Flood Insurance Program

The National Flood Insurance Program (NFIP) was initiated in response to concern about the spiraling costs of disaster relief and the increasing tendency to build in areas vulnerable to floods. The program was designed primarily for riverine flood situations and many feel it has had a detrimental effect on attempts to limit development in the coastal zone by offering insurance at subsidized rates. In addition, flood insurance has been used in some cases to pay for reconstruction in locations which have been made even more vulnerable because the storm has removed whatever protection had been there (BP-2).

The Federal Insurance Administration (FIA), which administers the NFIP, presently is looking closely at its policies in relation to the coastal zone, particularly the payment of damage claims in areas where erosion not flood is the major cause of destruction (BA-3). The migration of barrier islands inevitably places buildings which were once safely behind the dunes closer and closer to the attacking waves.

The FIA is also exploring ways to implement a clause (Section 1362) in its enabling legislation (the National Flood Insurance Act of 1968) that would allow the purchase of property rather than payment for reconstruction. It is possible that the dune management district discussed above could become the region within which purchase rather than repayment for damages would apply in the shore zone.

RECOMMENDATIONS:

- The use of federal flood insurance damage payments for reconstruction in the dune management district should be prohibited. The NFIP should allow damage payments to be used for relocation out of the dune district.
- Flood insurance rates outside of the dune district should reflect the changes of the shoreline and the increased opportunity for damage with erosion.
- The Federal Insurance Administration should expedite the implementation and funding of Section 1362 to allow the government to purchase property where destruction is occurring in the immediate shore zone.

Beach Access

In some areas of our shore zone, public access to the beach is severely limited. Public use is discouraged by direct obstacles such as private property and fences, and by indirect impediments such as the lack of public transit and parking facilities.

The state should make a strong commitment to the provision of recreational resources for all its citizens. The current isolation of many of our public beach lands should be countered by the provision of walkways and easements through private property. In some cases, Green Acres funds have been used to provide access routes. Small park areas could provide additional recreation sites near the shore. Indirect restrictions on public use could be lessened by the provision of mass transportation (as with the Island Beach shuttle bus) and adequate parking in areas where avenues exist to the public shoreline.

RECOMMENDATIONS:

- Continued state investment in access corridors should be supplemented by providing public transportation and parking at areas which constitute part of the state's recreational shoreline.
- The state Shore Protection Master Plan, being prepared by Dames and Moore under contract to the New Jersey Treasury Department and the Department of Environmental Protection, should provide a basis for long-term planning for public access to the beach.

SELECTED BEACH PRESERVATION INFORMATION RESOURCES

Conference Panelists

- Moderator: Norbert P. Psuty, Rutgers University
- Panelists: Donald T. Graham, New Jersey Department of Environmental Protection
Thomas McKinney, Dames & Moore
Bernard Moore, New Jersey Department of Environmental Protection
Karl F. Nordstrom, Rutgers University
Colonel James Ton, U.S. Army Corps of Engineers
Anthony Villane, Assmeblyman
Saul Wiener, New Jersey Department of Environmental Protection
- Rapporteur: Norbert P. Psuty, Rutgers University

Agencies, Organizations and Research Facilities

- BA-1 *Center for Coastal and Environmental Studies*, Rutgers University, 104 Doolittle Hall, Busch Campus, New Brunswick, NJ 08903, (201) 932-3738.

The Center conducts research in many aspects of coastal resource management in New Jersey including dune district management, beach nourishment, and potential impact of onshore support bases for OCS oil and gas development. A publication list is available.

- BA-2 *Division of Coastal Resources*, New Jersey Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625, (609) 292-2795.

This division is responsible for New Jersey's coastal zone management program and policies. It reviews CAFRA and Wetland permits and enforces coastal regulations.

- BA-3 *Federal Emergency Management Agency*, 26 Federal Plaza, Room 19-100, New York, NY 10007, (212) 264-8395.

This regional office of the Federal Emergency Management Agency can provide information about federal disaster relief and hazard mitigation and insurance programs. The Federal Insurance Administration, which is part of the FEMA, administers the National Flood Insurance Program. The office is located at 90 Church Street, Room 801B, New York, NY 10007, (212) 264-4734.

- BA-4 *Green Acres Administration*, Department of Environmental Protection, 1301 Parkside Avenue, Trenton, NJ 08625, (609) 292-2454.

The Administration determines where and how state funds should be spent for park and open space acquisition, development and maintenance. The Division of Coastal Resources, DEP, reviews proposed expenditures for consistency with state coastal management policies.

- BA-5 *National Ocean Survey*, National Oceanic and Atmospheric Administration, Department of Commerce, Distribution Division, Code 44, Riverdale, MD 20840.

The National Ocean Survey publishes storm evacuation maps for coastal hazard areas. Several maps have been prepared for the New Jersey shore areas, including Point Pleasant, Atlantic City, and Cape May. The maps delineate areas subject to flooding from various storm surge heights and show main emergency evacuation routes. The maps are \$2.00 each; a list of maps is available upon request.

- BA-6 *Natural Hazards Research and Applications Information Center*, Institute of Behavioral Science, Building #6, University of Colorado, Boulder, CO 80309, (303) 492-6818.

The Information Center serves as a national clearinghouse for information concerning social and public policy aspects of natural hazards. It publishes a quarterly newsletter, assists in organizing conferences, prepares bibliographies, and responds to specific information requests.

- BA-7 *New Jersey Marine Sciences Consortium*, 101 College Road East, Princeton, NJ 08540, (609) 452-8465.

The Consortium is an organization of 23 colleges and universities in New Jersey and Pennsylvania which facilitates the design and execution of marine and coastal education, research and service programs in and among these institutions. Two central Consortium programs are the administration of the state's Sea Grant program and the promotion of precollege educational activities and summer undergraduate offerings by member institutions.

- BA-8 *Emergency Management Section New Jersey State Police*, John J. Kozak, Chief, Plans and Operations, P.O. Box 7068, West Trenton, NJ 08625, (609) 292-3853.

This section of the State Police is responsible for planning and responding to natural and man-induced disasters. The office coordinates its efforts with those of municipal and county emergency organizations.

Publications

- BP-1 *Barrier Island Handbook*, Stephen P. Leatherman, 1979, available from the National Park Service, U.S. Department of the Interior, North Atlantic Region, 15 State Street, Boston, MA 02109, (617) 223-7765.

This short publication provides an excellent overview of the natural forces shaping barrier islands and spits, their special environmental characteristics, and the impacts of recreation and development on the natural system.

- BP-2 *Coastal Flood Hazards and the National Flood Insurance Program*, prepared by H. Crane Miller for the Federal Insurance Administration, Department of Housing and Urban Development, June 1977, Washington, D.C. Available from the U.S. Government Printing Office, publication #721-300/734.

This reports the findings of a study undertaken to determine the effects of the National Flood Insurance Program on 15 selected Atlantic and Gulf coastal areas.

- BP-3 *Coastal Geomorphology of New Jersey*, Vol. 1, by Karl F. Nordstrom, 1977, NJ/RU-OCZM-TR#1-(I)-200-12-77, 39 pp., \$2.50. Vol. II, by Karl F. Nordstrom, et al., 1977, NJ/RU-OCZM-TR#L-(II)-100-12-77, 137 pp., \$4.50. Available from the Center for Coastal and Environmental Studies, Rutgers University, Doolittle Hall, Busch Campus, New Brunswick, NJ 08903, (201) 932-3141.

Volume I presents a set of recommended guidelines for a management program designed to assess the effects of erosion of the New Jersey shoreline and evaluates techniques for addressing erosion. It identifies mitigation strategies which are compatible with the dynamics of the shoreline systems and which maximize the recreational and protective values of the beach and dune areas.

Volume II develops a system for describing the New Jersey shoreline in terms of beach dynamics, identifies and characterizes problem areas, and suggests which management alternatives may be applied to relieve problems.

- BP-4 "*Dune District Management: A Framework for Shorefront Protection and Land Use Control*," by Karl F. Nordstrom and Norbert P. Psuty, in *Coastal Zone Management Journal*, Vol. 7, No. 1, pp. 1-23. Reprints available from the Center for Coastal and Environmental Studies, Doolittle Hall, Busch Campus, Rutgers University, New Brunswick, NJ 08903, (201) 932-3141, @\$1.00.

- BP-5 *The Jersey Coast*, Bureau of Coastal Planning and Development, Division of Coastal Resources, Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625.

This bulletin is published by the New Jersey Division of Coastal Resources several times each year to inform interested people of future public meetings, available reports and coastal planning and regulatory activities. Write the above address to be placed on the free distribution list.

- BP-6 *National Shoreline Study*, Regional Inventory Report: North Atlantic Region, 2 volumes, U.S. Army Corps of Engineers, Custom House, 2nd and Chestnut Streets, Philadelphia, PA 19106.

This study, undertaken in response to the River and Harbor Act of 1968, appraises the condition of the nation's shorelines and develops guidelines for protecting, restoring and managing our coasts to minimize erosion induced damages. The Corps also has other information on coastal erosion and structural control measures.

- BP-7 *New Jersey Coastal Management Program, Bay and Ocean Shore Segment and Final Environmental Impact Statement*, New Jersey Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625, (609) 292-8952.

This publication outlines a strategy to manage the future protection and development of the coast, in part to meet the requirements of the federal Coastal Zone Management Act. It describes location, use and resource policies for coastal regions and notes the implementation authorities currently existing in state government.

Statutes and Regulations

- BL-1 *Coastal Area Facility Review Act of 1973*, N.J.S.A. 13:19 et seq.

CAFRA empowers the Department of Environmental Protection to regulate the siting of certain facilities and activities (spelled out in the Act) including many types of industry, energy facilities, marine terminals, and construction of housing with 25 or more units. The long-term goal of CAFRA is to develop a coordinated, environmentally sound plan for the use of New Jersey's shore zone.

- BL-2 *Shore Protection Master Plan*, Division of Coastal Resources, Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625, (609) 292-8952.

The Shore Protection Master Plan is being prepared by Dames and Moore under contract to DEP, as authorized by the Beaches and Harbor Bond Issue of 1977. The Master Plan will provide strategies for the preservation of natural protective features and will ensure increased public access to the state's recreational beaches.

BL-3 *Wetlands Act of 1970*, N.J.S.A. 13:9A, et seq.

The Act defines coastal wetlands and regulates virtually any form of development or disturbance. Maps of the regulated wetlands are available from the Department of Environmental Protection, Bureau of Coastal Planning and Development, P.O. Box 1889, Trenton, NJ 08625, (609) 292-8952.

Individuals*

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*This list of individuals with particular interests and knowledge in coastal subjects has been graciously prepared by the New Jersey Marine Sciences Consortium under severe time constraints. The Consortium offers apologies to anyone inadvertently forgotten.

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CHAPTER IV

COASTAL DEVELOPMENT

Much of the New Jersey shore zone is facing unprecedented pressures for development. Residents and visitors compete for available housing, recreation and open space. At the same time, some older urban areas are experiencing a decrease in population, declining numbers of visitors, and deterioration of public and private facilities (see Chapter VII). Most new construction is for housing, with some expansion in retail and service facilities to serve a growing year round residential population. A number of energy facilities are present, and there is a small amount of industrial development.

The shore zone is a limited resource, and demand for this resource for a variety of conflicting uses is increasing. Key conflicts are those between energy generation, housing, and tourism; development and natural resources protection; residential development and the fishing industry; and expanding tourist attractions and the desire to maintain diversity at the shore. Coastal management policies must balance the demands for human use and development, while preserving and enhancing the natural amenities which make the shore a desirable place to work, live and play.

RECOMMENDATION:

- Responsibility for proving that it is necessary for a proposed use to locate in the shore zone should be on the developer.

The Coastal Environment

The development pressures not only conflict with each other; they are often incompatible with the natural processes at the water's edge. Coastal erosion, migration of dunes and the shoreline, the inevitability of catastrophic storms, and pollution of the marine environment must be considered in planning the development that will provide for desired human uses.

Dynamic Natural Processes

Inevitable sea level rise, coastal erosion, and the westward migration of the barrier islands characterize the unstable nature of the shore zone. It is becoming increasingly clear to coastal managers and local decision-makers that their plans are effective only if they recognize that the constructions of society in the shore zone will be encroached upon by the migrating shoreline. Attempts to stop these natural processes have been expensive and largely ineffectual. Engineering structures--groins, jetties and seawalls--have often failed to stop erosion and, at times, have had the unfortunate effect of accelerating the very processes they were built to retard. New Jersey must change its traditional approach of almost total reliance on these structural measures and examine alternative

strategies which will be compatible with the physical characteristics of the shore zone.

One method which will be suitable in a few locations is beach nourishment through the addition of new sand. This alternative is very expensive and should be undertaken only when there is an adequate supply of suitable quality sand.

The Department of Environmental Protection is in the final stages of preparation of a Shore Protection Master Plan (CL-3). The plan will outline a method for designating regional areas for erosion control, mitigation and/or restoration. The major objectives are to maintain and protect beaches through the identification of areas of concern for program development, including identification of state agencies involved, procedures for program administration and funding strategies, identification of legal authorities and funding programs and other techniques that can be used to meet management needs. There will be a strong emphasis on land use management techniques and little reliance on static protection structures. Public hearings are being conducted throughout the shore zone to review the plan, prepared by Dames and Moore under contract to the Treasury Department and DEP, and the plan will be finalized after analyzing the results of these meetings.

Dunes provide a natural form of protection for adjacent property. Coastal management policies should take advantage of opportunities to benefit from this natural protection by dune restoration, maintenance and protection projects. (For further discussion, see Chapter III).

RECOMMENDATIONS:

- Education of local officials and the public to the inevitability of coastal change and of the limitations of technology to deal with this change must be a part of the state's coastal zone management program.
- Municipal zoning ordinances should be developed to permit natural management of beach front areas.

Severe Storms

The New Jersey coast and barrier islands are subject to infrequent, but potentially catastrophic storms. In 1962 areas along the Raritan Bay were extensively inundated and the oceanfront barrier islands were breached and flooded in several places. This storm killed fourteen persons on the Jersey shore and injured more than 1,300, destroying nearly 2,000 buildings and damaging 14,000 more. Overall public and private losses were estimated at \$80 million (1962 dollars). The barrier islands today are more heavily developed and the population-at-risk has increased dramatically. Insufficient planning, limited road access for evacuation and general lack of awareness of hazards are serious concerns. The population on some barrier

islands probably already exceeds the capacity of the existing roads to evacuate the population within the possible warning time (CA-5, CA-8).

RECOMMENDATIONS:

- Municipal officials not only must develop preparedness and evacuation plans for hazard threatening situations but they also must increase public awareness of coastal hazards and reduce their municipality's vulnerability.
- Development on barrier islands should be regulated to reduce lives and property at risk in the event of a catastrophic storm.
- For islands on which population already exceeds evacuation capacity, alternative preparedness measures (e.g., vertical evacuation and hurricane resistant construction) must be implemented.

Impacts of Development

The tendency toward suburban sprawl development is especially harmful at the shore. Increased sediment loads into the bays and estuaries from developing areas with inadequate erosion and runoff control contribute to the volume of dredge material and to pollution of the water from nonpoint sources. The maintenance of navigation channels is an increasingly expensive problem. Scattered residential development is an inefficient use of scarce coastal land; it results in costly public service, and it cannot be served by public transportation. As oil costs increase, the problems of servicing these diffuse settlements will rise sharply.

RECOMMENDATION:

- Coastal jurisdictions must discourage suburban sprawl by encouraging the development of cluster housing.

Coastal Area Facility Review Act (CAFRA)

Housing is the main development impact in coastal areas. The CAFRA only regulates housing developments of 25 dwelling units or more. Studies in the Department of Environmental Protection's Division of Coastal Resources show a strong coastal trend towards building housing developments of 24 units or less. In some municipalities the majority of house building is outside state regulation. How can the cumulative impacts of these sub-threshold developments be managed to ensure responsible development of the coast?

RECOMMENDATION:

- Additional regulatory jurisdiction at the state and regional level should be provided through legislative action for development

in environmentally sensitive areas such as floodplains, dunes, bogs, fresh water wetlands, aquifer recharge areas and prime agricultural soils.

National Flood Insurance Program

Even well-intentioned efforts to control dangerous and potentially harmful development have not been totally successful. The National Flood Insurance Program--instituted to reduce the amount of money spent on federal disaster relief and to encourage wise floodplain management practices--has had the unfortunate side-effect of artificially increasing the value of hazard prone areas, promoting new development and allowing reconstruction of damaged structures in flood prone areas (CP-1).

RECOMMENDATION:

- Revision of the National Flood Insurance Program to reflect the special characteristics of the coastal zone is an urgent priority. These revisions should prevent further development in flood hazard areas and provide money for the relocation of structures damaged by storms.

Planning and Implementation of Coastal Management Programs

Data Gathering, Storage and Analysis

An equitable coastal management program can only be developed from accurate baseline data. Regional field surveys are time-consuming and expensive. There is a need to apply the most up-to-date regional remote sensing survey techniques. An ideal monitoring system would quickly detect relevant changes in land use patterns and environmental conditions and would notify all involved jurisdictions. The New Jersey Mapping Advisory Committee should consider these needs in its annual report (CL-2).

Rapid planning and management of coastal resources would be facilitated by computerizing the data available and taking advantage of recently developed spatial management techniques. Several models exist that are vast improvements over hand manipulation of maps, charts, and reports (CP-3).

The ability to plan for the coast is limited to the ability to predict accurately the implications of decisions. Scientific research has produced many analytical tools to aid in such prediction, e.g., runoff and erosion models.

RECOMMENDATIONS:

- Integrated monitoring systems should be studied and implemented to coordinate space, air and ground information.

- Studies should be made of the state of the art of data management, especially of recent computer advances, and a coordinated data base should be created with flexible and efficient data management techniques available to all levels of government and to the private sector.
- The Department of Environmental Protection should take greater advantage of existing modeling and analysis techniques and should sponsor research if there are crucial areas for which the necessary tools are missing.

Mechanisms for Policy Implementation

At present, coastal policy is made at all levels of government--federal, state, county and local. Because of the lack of coordinated debate between these policy making agencies, conflicts occur and confusion is created, especially in the permit process. The conference identified a number of coastal issues where coordinated policy is particularly important: flood insurance; development, especially on barrier islands; shore protection and dune management; nonpoint source water pollution; declining urban areas; diversification of employment; promotion of tourism; low-cost housing; dredging and dredge spoil disposal; settlement patterns and containment of sprawl; public transportation; and energy facility siting.

In the maze of intergovernmental authority, a problem of particular concern in New Jersey is the conflict between home rule and centralized state jurisdiction. Home rule advocates protest that centralized state jurisdiction has restricted development. County and state regulators suggest, on the other hand, that local governments do not have the incentive or capability to protect fragile regional resources since they have limited planning staff and funds and overwhelming needs to obtain maximum income from property taxes. Better policy coordination between the overlapping jurisdictions must be established through a creative partnership.

RECOMMENDATIONS:

- Regulatory power always should be assigned to the lowest feasible level of government.
- Higher governmental levels should monitor implementation, revise plans and examine variances.

Summary

Conflicting interests for development at the shore are many. These uses must be carefully balanced against the needs of the natural environments. In planning for the future of the New Jersey shore, it will be important to allow full participation by all segments of the public. The shore should be developed in ways which will reflect the needs of a state which has a great social diversity. DEP, as the lead agency for coastal management, must develop planning methods that can detect and define conflicts and rapidly explore and objectively compare alternative solutions.

SELECTED COASTAL DEVELOPMENT INFORMATION RESOURCES

Conference Panelists

- Moderator: Herb Simmens, Atlantic County Administrator
- Panelists: Jesse Hartline, Rutgers University
Elwood Jarmer, Cape May County Planning Board
David N. Kinsey, New Jersey Department of Environmental Protection
J. Kenneth Mitchell, Rutgers University
- Rapporteur: Stewart McKenzie, New Jersey Department of Environmental Protection

Agencies, Organizations and Research Facilities

- CA-1 *Center for Coastal and Environmental Studies*, Rutgers University, 104 Doolittle Hall, Busch Campus, New Brunswick, NJ 08903, (201) 932-3738.

The Center conducts research in many aspects of coastal resource management in New Jersey including dune district management, beach nourishment, and potential impact of onshore support bases for OCS oil and gas development. A publication list is available.

- CA-2 *Division of Coastal Resources*, New Jersey Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625, (609) 292-2795.

This division is responsible for New Jersey's coastal zone management program and policies. It reviews CAFRA and Wetland permits and enforces coastal regulations.

- CA-3 *Federal Emergency Management Agency*, 26 Federal Plaza, Room 19-100, New York, NY 10007, (202) 264-8395.

This regional office of the Federal Emergency Management Agency can provide information about federal disaster relief and hazard mitigation and insurance programs. The Federal Insurance Administration, which is part of the FEMA, administers the National Flood Insurance Program. The office is located at 90 Church Street, Room 801B, New York, NY 10007, (202) 264-4734.

- CA-4 *National Cartographic Information Center*, U.S. Geological Survey, 507 National Center, Reston, VA 22092, (703) 860-6045.

This center serves as the information arm of the National Mapping Program. They can provide access to the nation's cartographic products, including millions of aerial and space photographs and hundreds of thousands of maps. The N.J. Geological Survey is the state affiliate for the National Cartographic Information Center.

- CA-5 *National Ocean Survey*, National Oceanic and Atmospheric Administration, Department of Commerce, Distribution Division, Code 44, Riverdale, MD 20840.

The National Ocean Survey publishes storm evacuation maps for coastal hazard areas. Several maps have been prepared for the New Jersey shore areas, including Point Pleasant, Atlantic City, and Cape May. The maps delineate areas subject to flooding from various storm surge heights and show main emergency evacuation routes. The maps are \$2.00 each, list of maps is available upon request.

- CA-6 *Natural Hazards Research and Applications Information Center*, Institute of Behavioral Science, Building #6, University of Colorado, Boulder, CO 80309, (303) 492-6818.

The Information Center serves as a national clearinghouse for information concerning social and public policy aspects of natural hazards. It publishes a quarterly newsletter, assists in organizing conferences, prepares bibliographies, and responds to specific information requests.

- CA-7 *New Jersey Marine Sciences Consortium*, 101 College Road East, Princeton, NJ 08540, (609) 452-8465.

The Consortium is an organization of 23 colleges and universities in New Jersey and Pennsylvania which facilitates the design and execution of marine and coastal education, research and service programs in and among these institutions. Two central Consortium programs are the administration of the state's Sea Grant program and the promotion of precollege educational activities and summer undergraduate offerings by member institutions.

- CA-8 *Emergency Management Section New Jersey State Police*, John J. Kozak, Chief, Plans and Operations, P.O. Box 7068, West Trenton, NJ 08625, (609) 292-3853.

This section of the State Police is responsible for planning and response to natural and man-induced disasters. The office coordinates its efforts with those of municipal and county emergency organizations.

Publications

- CP-1 *Coastal Flood Hazards and the National Flood Insurance Program*, prepared by H. Crane Miller for the Federal Insurance Administration, Department of Housing and Urban Development, June, 1977, Washington, D.C. Available from the U.S. Government Printing Office, publication #721-300/734.

This reports the findings of a study undertaken to determine the effects of the National Flood Insurance Program on 15 selected Atlantic and Gulf coastal areas.

- CP-2 *Coastal Geomorphology of New Jersey*, Vol. I, by Karl F. Nordstrom, 1977, NJ/RU-OCZM-TR#1-(I)-200-12-77, 39 pp., \$2.50. Vol. II, by Karl F. Nordstrom, et al., 1977, NJ/RU-OCZM-TR#1-(II)-100-12-77, 137 pp., \$4.50. Available from the Center for Coastal and Environmental Studies, Rutgers University, Doolittle Hall, Busch Campus, New Brunswick, NJ 08903, (201) 932-3141.

Volume I presents a set of recommended guidelines for a management program designed to assess the effects of erosion of the New Jersey shoreline and evaluates techniques for addressing erosion. It identifies strategies which are compatible with the dynamics of the shoreline systems and which maximize the recreational and protective values of the beach and dune areas.

Volume II develops a system for describing the New Jersey shoreline in terms of beach dynamics, identifies and characterizes problem areas, and suggests which management alternatives may be applied to relieve problems.

- CP-3 "A Computerized System for Coastal Zone Impact Analysis," by Stephen S. Fitzroy in *Coastal Zone '78*, Vol. II, American Society of Civil Engineers, 345 East 47th Street, New York, NY 10017, 1978, pp. 987-1007.

This short article provides a good summary of factors to be considered in structuring a computerized geographic information system to aid coastal zone planning.

- CP-4 "Dune District Management: A Framework for Shorefront Protection and Land Use Control," by Karl F. Nordstrom and Norbert P. Psuty, in *Coastal Zone Management Journal*, Vol. 7, No. 1, pp. 1-23, 1980. Reprints available from the Center for Coastal and Environmental Studies, Doolittle Hall, Busch Campus, Rutgers University, New Brunswick, NJ 08903, (201) 932-3141, @ \$1.00.

- CP-5 *The Jersey Coast*, Bureau of Coastal Planning and Development, Division of Coastal Resources, Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625.

This bulletin is published by the New Jersey Division of Coastal Resources several times each year to inform interested people of future public meetings, available reports and coastal planning and regulatory activities. Write the above address to be placed on the free distribution list.

- CP-6 *New Jersey Coastal Management Program, Bay and Ocean Shore Segment and Final Environmental Impact Statement*, New Jersey Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625, (609) 292-8952.

This publication outlines a strategy to manage the future protection and development of the coast, in part to meet the requirements of the federal Coastal Zone Management Act. It describes location, use and resource policies and notes the implementation authorities currently existing in state government.

Statutes and Regulations

- CL-1 *Coastal Area Facility Review Act of 1973*, N.J.S.A. 13:19-et seq.

CAFRA empowers the Department of Environmental Protection to regulate certain facilities and activities (spelled out in the Act) including many types of industry, energy facilities, marine terminals, and construction of housing with 25 or more units. The long-term goal of CAFRA is to develop a coordinated, environmentally sound plan for the use of New Jersey's shore zone.

- CL-2 *New Jersey Executive Order No. 77*, August 27, 1978.

The Executive Order established the New Jersey Mapping Advisory Committee to consolidate state wide mapping requirements to eliminate duplication of efforts among various state, federal and local agencies. The Committee will seek information from map users in formulating priorities for the federal and state mapping programs.

- CL-3 *Shore Protection Master Plan*, Division of Coastal Resources, Department of Environmental Protection, P.O. Box 1889, Trenton, NJ 08625.

The Shore Protection Master Plan is being prepared by Dames and Moore under contract to DEP, as authorized by the Beaches and Harbor Bond Issue of 1977. The Master Plan will provide strategies for the protection of natural protective features and will ensure increased public beach access.

CL-4 *Wetlands Act of 1970*, N.J.S.A. 13:9A, et seq.

The Act defines coastal wetlands and regulates virtually any form of development or disturbance. Maps of the regulated wetlands are available from the Department of Environmental Protection, Bureau of Coastal Planning and Development, P.O. Box 1889, Trenton, NJ 08625, (609) 292-8952.

Individuals*

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CI-4 *Susan Bonsall*

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*This list of individuals with particular interests and knowledge in coastal subjects has been graciously prepared by the New Jersey Marine Sciences Consortium under severe time constraints. The Consortium offers apologies to anyone inadvertently forgotten.

- CI-6 *Richard Hires*
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Occupational interest: pollution, modeling
- CI-7 *Richard A. Kantor*
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Occupational interest: marine biology, coastal zone management,
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- CI-8 *David N. Kinsey*
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- CI-9 *Ira S. Kuperstein*
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CI-19 *Leonard E. Spiegel*
Monmouth College
West Long Branch, NJ 07764

Occupational interest: agronomy, biology--management, ecology--
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CI-20 *Mr. Robin Zimmer*
NJ Marine Sciences Consortium
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Occupational interest: impact assessments concerning the marine
environment and coastal planning

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CHAPTER V

ENERGY

The New Jersey shore is currently the site of many energy-related activities including electric generating plants and transmission systems and marine terminals necessary for the importation of foreign and domestic fuel products. In addition, the recent discovery of natural gas in several exploratory wells in the Outer Continental Shelf (OCS) off New Jersey raises the possibility of the shore zone providing onshore support facility sites and pipeline routes that would be required if gas is to be produced commercially.

The coastal zone is very sensitive to environmental disruption. Its varied and unique ecological systems are being threatened by estuarine pollution, wetland destruction, oil spills, and residential, commercial and industrial development. It is essential that both planning and regulatory mechanisms be developed to ensure that existing and future energy facilities will cause minimum impacts on the environmental system. This is especially important because the shore tourism industry, the primary economic factor in the shore zone, is based upon the protection and enhancement of high quality environmental resources.

Although there are many statutory authorities to manage coastal development, such as the Coastal Area Facility Review Act (CAFRA) of the Department of Environmental Protection (EL-1), there remains a need to coordinate and reconcile the planning and regulatory goals of various energy, environmental, economic and transportation programs.

Demand for Electricity

If consumer demand for electricity continues to rise, New Jersey can: 1) stress conservation, 2) purchase capacity from power pools such as the PJM (Pennsylvania, New Jersey and Maryland pool), or 3) build new baseload plants of either conventional or alternative technologies. Undoubtedly all three options will be pursued to some degree.

Conservation

Conservation has been the most ignored option in energy planning in the U.S., but with cheap energy sources running out, it must be seriously re-evaluated. Since conservation has the potential to appreciably stretch energy supplies without damaging the environment, it must assume a larger role in future energy planning.

Conservation means using energy more wisely. The state should focus on avoiding energy waste by promoting technologies that increase the efficiency of use. It has been estimated that nationally we waste 40% of all energy we use.

Two conservation programs proposed at this workshop are home retrofitting and the use of waste heat from power plants. Since New Jersey home ownership changes on an average of every seven and one-half years, if each dwelling were required to conform to certain minimum conservation standards at the time of a sale, significant conservation of energy in existing residences could result. An option, being investigated by the New Jersey Department of Energy (NJDOE), would allow the costs of retrofitting to be added to the selling price of the house. The increased mortgage payment would be offset by reduced heating costs.

Another promising area of conservation is the use of waste heat from electric generating plants. A typical electric power plant discharges large amounts of its energy into the air as waste heat. There must be an effort to utilize this energy resource. Lacy township, under NJDOE sponsorship, is investigating possibilities for utilizing the waste heat from the Oyster Creek nuclear plant.

RECOMMENDATION:

- The NJDOE must emphasize conservation in its policies to reduce the demand for electricity and the accompanying need for new, large scale generation facilities.

Power Pools

Can New Jersey's energy needs be met by purchasing power from other sources? How reliable will such service be? New Jersey utilities will certainly continue to be part of the PJM power pool in order to efficiently produce electricity and utilize the region's energy resources. On a short-term basis, purchasing excess capacity from other members in the PJM power grid can give the state some breathing space to examine its future energy options and carefully plan its future energy supply and use system. However, the energy shortages and environmental concerns facing New Jersey are also confronting the other states in the region. Participating in power pools will not necessarily be a reliable option for obtaining substantial new supplies of electricity in the future.

New Facilities

Siting. In the opinion of many, the shore has borne its fair share of electric generation facilities and additional sitings could jeopardize its environmental quality and economic viability. If demands for electricity continue to increase and new generating facilities are needed, there must be a commitment on the part of the state and federal government to encourage local input on siting decisions at the outset of the planning process. Shore community leaders feel that past siting decisions have not been made in a comprehensive manner. There is a growing fear that proper safeguards are not always taken by the Nuclear Regulatory Commission and that there should be some state and local oversight of operations after a nuclear plant has been built.

There is a particular need to develop mechanisms for siting control at the state level for fossil fuel plants, which do not come under federal authority and hence are allowed to develop without proper public control. Within a large portion of the New Jersey shore zone the development of electric generating plants is regulated by the Department of Environmental Protection under CAFRA.

RECOMMENDATIONS:

- Legislative reform is urgently needed to define a decision-making process for energy facility siting which clearly designates appropriate roles for all concerned interests (local, regional, state--both public and private).
- Any reform of the Nuclear Regulatory Commission or a succeeding agency should design a process for local input in nuclear facility siting and operational decisions to the extent possible without contravening federal pre-emption in the area.

Fuel mix. The New Jersey Department of Energy must address the question of what is the proper fuel mix for future electric generation. New Jersey endorses the concept of reducing dependence on foreign oil and so must change its current heavy reliance on oil to meet its electricity demands. The conventional options of fossil fuels and the increasing commitment to nuclear generation have some common problems. Cooling water, necessary for all types of electric generation plants, is in short supply. The Delaware River has probably reached its threshold level for accepting this warmed effluent. Although the effects of this discharge are not entirely documented, it is known that fluctuations in water temperature can be responsible for fish kills and substantial changes in ecological systems. The NJDOE is sponsoring research to examine the thermal impacts of electric generating plants on receiving waters and to develop implementable thermal loading standards (EA-2).

As the nation becomes more dependent on coal to meet its energy demands, problems of increasing air pollution associated with the burning of coal will have to be faced. One alternative for reducing air pollution associated with burning coal would be to locate coal plants on offshore platforms. The benefits and costs of such a plant need to be studied further.

The problems associated with nuclear power plants were emphasized by the near catastrophe at Three Mile Island. Safety standards at plants must be strengthened at the federal level and problems of disposal of radioactive waste must be more carefully addressed. Leaders of shore zone municipalities dependent on tourism fear that the mere presence of a nuclear facility will have a detrimental effect on their business.

Small vs. large systems. The trend toward large, centralized generation units must be scrutinized. Do the savings in capital, labor and transportation costs outweigh the costs associated with failure of a single large unit and potential interruptions of service for large numbers of customers?

Small units may prove to be more efficient and more reliable in certain cases. In the past New Jersey has served as a guinea pig for nuclear clusters. This practice should not continue without closer control by the state.

Alternative technologies. To meet future energy demands New Jersey must re-examine traditional methods and systems and provide opportunities for new technologies to be assessed. Refuse burning plants offer an attractive energy option since they allow for recovery of valuable resources, lessen the solid waste disposal problem, and take advantage of one of New Jersey's few indigenous fuels. However, a realistic approach to engineering, public acceptance, and waste stream flow control problems must be taken if this fuel is to be widely used.

The New Jersey Solid Waste Management Act (EL-3) requires that refuse burning be examined in County Solid Waste Management Plans.

RECOMMENDATION:

- The New Jersey Department of Environmental Protection should review County Solid Waste Management Plans with strong emphasis toward promoting the construction of plants which utilize refuse derived fuels.

Solar technology provides an alternative for meeting energy demands with a renewable resource. Passive solar heating for new houses and solar water heaters have the greatest potential for alleviating demand for heating fuels.

RECOMMENDATIONS:

- The U.S. Department of Energy should provide more money to states to promote the use of solar energy.
- The NJDOE, in cooperation with municipalities, should revise the Municipal Land Use Law to specifically designate land use planning and regulatory measures to promote the adoption of solar energy.
- With federal funding, the NJDOE, in cooperation with builders and local officials, should establish a technical outreach program on the best means of utilizing both active and passive solar technologies.

It is becoming increasingly difficult to find suitable sites for electric generation plants. The Delaware River is at its heat threshold level, environmental protection efforts in the shore zone and the Pinelands severely limit their use for energy activities, and urban areas are approaching or exceeding air quality standards. These problems confronting development of new electric generation facilities underscore the crucial need for efficient conservation to reduce energy demands.

Outer Continental Shelf Facilities

Exploration in frontier areas for hydrocarbon resources presents the possibility of exploitation of gas and oil in the Outer Continental Shelf (OCS) of the New Jersey shore. Recent natural gas discoveries in the Mid-Atlantic Baltimore Canyon Trough area have increased the probability that coastal, as well as inland, regions of the state will be used for energy facilities such as a natural gas pipeline. To accommodate such energy development in an environmentally acceptable manner, New Jersey must explore the associated issues and problems before they arise, and must attempt to identify solutions.

One such planning effort is devoted to the siting of natural gas pipelines from the OCS to the onshore. (Pipelines are the option identified in the NJDOE master plan and in the Coastal Zone Management program as the most likely and preferred hydrocarbon transport mode for OCS resources.) This study, sponsored by the NJDOE and conducted by the Center for Coastal and Environmental Studies, Rutgers University, has developed a methodology which can be used to analyze the impacts (biological, physical, institutional, socio-economic) of any proposed natural gas pipeline construction projects in New Jersey (EA-1). Recommendations of the best management methods to be employed for both construction and operation of natural gas pipelines will be made to ameliorate any adverse impacts. NJDOE is undertaking a variety of related studies, designed to furnish local governments with information on potential OCS development facilities (EA-2).

Current information points to the probability that pipelines can be designed and routed to avoid environmentally sensitive areas, yet still be economically feasible. OCS development currently appears to be a more attractive energy source than other alternatives that could affect the shore, e.g., nuclear electric generation, coal fired electric generation, or Liquid Natural Gas facilities.

RECOMMENDATION:

- The availability of natural gas in the Baltimore Canyon area represents an environmentally acceptable fuel source for consumption in New Jersey. The benefits of the increased availability of this clean energy source should be weighed against any negative impacts posed by the siting of natural gas pipelines and ancillary facilities.

Marine Transportation of Energy Supplies

New Jersey waters have long been a site for marine transport of energy supplies. Because of such natural constraints as shallow and narrow channels, a number of problems exist in the port areas. Some ships are required to lighten (transfer cargo to barges) in order to negotiate the channels to tank farms and refineries. The ships that do enter the port are by necessity small crude carriers. These two factors require a large number of transfers in order to deliver energy supplies, increasing the opportunity for spills that would pollute urban waterways.

What are New Jersey's options to continue its tanker trade but to reduce its risk? Because most tankers are foreign, the state has little control of safety standards. Both statutory and regulatory authority exists at the federal level to ensure that foreign vessels in U.S. territorial sea and inland waters abide by strict safety standards. However, the Coast Guard lacks both the money and personnel to enforce these requirements.

One type of facility which should be examined to see what advantages it could offer in New Jersey is a deepwater port (DWP). Studies indicate that deepwater ports may be safer because they accommodate larger, newer, better designed tankers; require fewer transfers; reduce traffic within port areas; and eliminate the chance of ships grounding. They have the additional benefit of freeing valuable waterfront property for other uses. The NJDOE is initiating a study of a DWP in New Jersey (EA-2). The study will gather data on the number of present facilities, capacity of ports and refineries, and examine what opportunities exist for New Jersey to accommodate a DWP.

RECOMMENDATIONS:

- The federal government should appropriate more money for the enforcement of safety standards for foreign vessels.
- The NJDOE should examine existing modes of marine transport of hazardous substances and make recommendations for increasing safety in New Jersey harbors and waters.

SELECTED ENERGY INFORMATION RESOURCES

Conference Panelists

- Moderator: Edward J. Linky, New Jersey Department of Energy
- Panelists: Frances Beinecke, Natural Resources Defense Council
Sal Bellasai, Transco
John Feehan, Atlantic City Electric Company
Commissioner Joel Jacobson, New Jersey Department of Energy
David Morrell, Princeton University
Anthony Tizzoli, Port Authority of N.Y. and N.J.
- Rapporteur: Bruce Hoff, New Jersey Department of Energy

Agencies, Organizations and Research Facilities

- EA-1 *Center for Coastal and Environmental Studies*, Doolittle Hall, Busch Campus, Rutgers University, New Brunswick, NJ 08903, (201) 932-3738.

The Center is a research arm of the University which conducts and supports marine-related research and serves as a source of information about the coastal zone of New Jersey. The Center has conducted a variety of coastal energy-related research activities, e.g., heat exchange to the environment at the Oyster Creek Discharge Canal, and Onshore Support Bases for OCS Oil and Gas Development: Implications for New Jersey. Publication list available upon request.

- EA-2 *Coastal Energy Impact Program*, New Jersey Department of Energy, 101 Commerce Street, Room 507, Newark, NJ 07102, (201) 648-4340. Contact: Nancy Fiordalisi.

The Coastal Energy Impact Program (CEIP), Section 308 of the Federal Coastal Zone Management Act, provides funds to assist states in dealing with impacts from existing, expanded or new coastal energy activities. The New Jersey Department of Energy serves as state coordinator for this federal program. State agencies, county and municipal government, and research institutions are eligible to receive CEIP grants and loans. For information on programs currently being sponsored in New Jersey, contact the above address.

- EA-3 *Department of Biological and Agricultural Engineering*, Cook College Campus, Rutgers University, New Brunswick, NJ 08903, (201) 932-9753. Contact: David Mears.

The Department can provide information on alternative space heating projects utilizing solar energy and waste heat.

- EA-4 *New Jersey Department of Energy*, 101 Commerce Street, Newark, NJ 07102, (201) 648-3410.

The Department of Energy was created in 1977 to provide comprehensive planning for the energy needs of the state.

Publications

- EP-1 *Municipal Solid Waste: Resource Recovery*, Martin P. Wanielista and James S. Taylor, eds., August 1979. Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, publication #PB 801-14283, \$21.00 prepaid.

This is a collection of papers delivered at the Fifth Annual Research Symposium cosponsored by the University of Central Florida and the U.S. Environmental Protection Agency. Papers are included on mechanical and chemical processes, economic research on solid waste management, utilization of recovery materials and environmental impacts. The volume serves as a reference on current state-of-the-art and research in many areas of solid waste management.

- EP-2 *The New Jersey Energy Master Plan*, October 1978, New Jersey Department of Energy, 101 Commerce Street, Newark, NJ 07102, (201) 648-3290, \$3.00.

The plan was prepared in accordance with the Department of Energy Act of 1977 (N.J.S.A. 52:27 F-1 et seq.) which directed NJDOE to "adopt a master plan for a period of 10 years on the production, consumption and conservation of energy". The plan gives an overview of energy resources and demands, outlines policy objectives and details implementation powers.

- EP-3 *New Jersey's Implementation Plan to Eliminate Dependence on Foreign Oil: A Preliminary Analysis*, prepared by the N.J. Department of Energy in cooperation with the N.J. Department of Transportation, August 1979. Available from the Department of Energy, 101 Commerce Street, Newark, NJ 07102, (201) 648-3290, free.

This implementation plan was prepared in response to President Carter's July 15, 1979 announcement of a program to reduce the level of oil imports. The plan documents New Jersey's dependence on foreign oil and presents a range of programs and policies to reduce that dependence. The plan discusses current and future energy consumption, fuel substitution options, and conservation and alternate technologies.

Statutes and Regulations

- EL-1 *Coastal Area Facility Review Act of 1973*, N.J.S.A. 13:19-et seq.

CAFRA empowers the Department of Environmental Protection to regulate certain facilities and activities (spelled out in the Act) including many types of industry, energy facilities, marine terminals, and construction of housing with 25 or more units. The long-term goal of CAFRA is to develop a coordinated, environmentally sound plan for the use of New Jersey's shore zone.

- EL-2 *Municipal Land Use Law*, N.J.S.A. 40:55 D-1 et seq.

This Act empowers municipalities to regulate land use.

- EL-3 *Solid Waste Management Act*, N.J.S.A. 13:1 E-1 et seq.

This Act authorizes the Department of Environmental Protection to supervise the collection and disposal of all solid wastes and related operations. Every county in the state must draft a solid waste management plan. The Division of Coastal Resources, DEP, reviews the plans for consistency with coastal policies.

- EL-4 *Spill Compensation and Control Act*, N.J.S.A. 58:10-23.11 et seq.

The purpose of the Act is to offer financial protection in clean up guarantees and compensation for financial loss in the event of a chemical spill. The Act levies a tax of \$0.01 per barrel upon owners or operators of major petroleum facilities.

Individuals*

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Occupational interest: energy, coastal zone management

*This list of individuals with particular interests and knowledge in coastal subjects has been graciously prepared by the New Jersey Marine Sciences Consortium under severe time constraints. The Consortium offers apologies to anyone inadvertently forgotten.

CHAPTER VI

MARINE FISHERIES

The issues identified in the marine fisheries session translate into a series of adversary relationships. The central issue is to determine how the limited resource base, New Jersey's nearshore marine and estuarine water, will be used. For waste disposal? To support renewable fishery resources? As sites for petroleum drilling and processing? As scenery for nearby vacation homes? How will these problems of conflicting uses be resolved? What priorities will be established? The fair and efficient use of coastal and offshore resources will require comprehensive data and information, experienced and openminded examination, the best available technology and considerable compromise.

Marine fisheries have a significant economic impact in New Jersey. Commercial fishing activities harvested over \$44 million of shellfish and finfish in 1978. An additional \$100 million of economic activity was generated by these landings.

Recreational fishing activities contribute an even larger benefit. An estimated \$300-400 million were spent in New Jersey in 1976 on fishing equipment, transportation and other supplies and services. The state should recognize the importance of recreational fishing and make every effort to ensure that its interests are represented on commissions, advisory boards and at public hearings. The major problems affecting recreational fishing are limited access, competition (real or imagined) with commercial fishing, and destruction of marine habitat. Sportfishing depends in great part on a clean, attractive environment for both the fish and the fishing enthusiasts.

Resources

Pollution

Ocean pollution was named the most serious problem facing the coastal environment in a survey of commercial and recreational fishing enthusiasts conducted by the Eagleton Institute, Rutgers University (FA-3). Pollution from sewage sludge dumping, outfalls, industrial wastes, runoff from developed land, and thermal pollution all contribute to the degradation of important marine environments. An average of four to five million cubic yards of sewage sludge are discharged per year in nearshore ocean waters. Regional sewage systems dump billions of gallons of treated wastes in the ocean. Add to that seven to eight million cubic yards of dredge spoils and three to four million cubic yards of chemical and acid wastes and it becomes apparent that the problem is, indeed, a major one.

However, both fishermen and the general public believe that the situation is improving, and there is hope that it will continue to improve. The switch to regional waste water treatment, favoring ocean discharge, will decrease the amount of pollutants in near ocean waters over the next ten years, and regulation of development--such as provided in the Coastal Area Facility Review Act (FL-1), the Wetland Act (FL-4) and in coastal management

programs (FP-3)--should help to control pollution.

RECOMMENDATIONS:

- The state should strengthen efforts to diminish pollution of our waters. Regulations on sewage sludge dumping and dredge spoil dumping should be vigorously pursued.
- Recent research has identified nonpoint source pollution as a serious contributor to the problem of pollution of coastal environments. The state must begin a concentrated effort to reduce pollution from surface runoff, inadequately constructed septic systems and landfill leaching.
- Support for research to discover the effects of pollutants on marine life should be continued.
- Wetland and estuarine habitats must be preserved.

Fisheries Management

In addition to pollution, various other factors contribute to the depletion of the fishery resource base: heavy foreign and domestic commercial fishing off New Jersey shores, a dramatic upsurge in recreational fishing, and natural and man-induced calamities such as disease and algae bloom. Federal and state laws have been enacted which promise better management policies for the future.

At the federal level the Fisheries Conservation and Management Act of 1976 (FL-2) regulates offshore harvesting by foreign and domestic fleets and provides preferential treatment for domestic fishermen within the 200-mile limit. This legislation establishes Regional Fishery Management Councils charged with determining and enforcing limits on the catches of each species. This should help prevent serious depletion of fishery resources by foreign fleets in the 3- to 200-mile Fisheries Conservation and Management zone.

The New Jersey Marine Fisheries Management and Commercial Fisheries Act (FL-3) signed by Governor Byrne at this conference, authorizes the development and enforcement of fisheries management plans by the Department of Environmental Protection in cooperation with the federal government and a new Marine Fisheries Council to be created by this legislation.

If the goal of wise management is to be met, it is essential that well-defined objectives of fishery management (e.g., maximum physical yield, maximum economic yield, optimum sustainable yield) be selected and documented early in the process. Fishermen must have a strong voice in development of management policies. State, local, regional and federal coordination is essential. Action at one level affects all other levels. It is especially important to strengthen the mechanisms for interstate cooperation through the Mid-Atlantic Fisheries Council.

Data Gathering and Information Exchange

A basic element of wise decision-making is access to good information. More and increasingly accurate data are needed from both federal and state sources, not only to enhance regional fishery management, but to improve the basis for commercial fisheries development decisions. Inaccurate data increase the perceived risks of fishing operations and make it more difficult to raise capital for development projects. The focus of responsibility for assembling and providing these data currently is at the federal level. This information is only as good as the raw material provided by the fishermen. Inaccurate information will, in the long run, result in management decisions harmful to all.

There was general recognition that many potential users of fishing information do not know what data are collected, how to obtain them, or how to evaluate them. There needs to be a better understanding of the kinds of fisheries-related information made publicly available by the National Marine Fisheries Service (FA-6) and the Environmental Data and Information Service (FA-4), both of the National Oceanic and Atmospheric Administration, Department of Commerce. The New Jersey Sea Grant's Marine Advisory Service (FA-9) can be particularly helpful in this regard. There should be a public education effort to dispel misunderstandings among producers (fishermen), processors; state agency representatives, sportfishermen and marketers. This might be undertaken as part of the marine extension service authorized in the New Jersey Marine Fisheries Management and Commercial Fisheries Act of 1979 which will enhance the extension service already in existence under the New Jersey Sea Grant Program (FA-10).

RECOMMENDATIONS:

- The federal and state fishery management agencies must gather more reliable data.
- A greater effort should be made on the part of the public sector and of the academic community to ensure that existing information at universities and other research institutions is available to decision-makers.
- The state should prepare a list of data resources related to fishery management.

Special Management Problems for Shellfish

Shellfish are more sensitive than finfish to pollution and tend to concentrate contaminants. Presently, 25% of New Jersey's waters are closed to shellfishing, condemned because of pollution. The hard clam fishery has been especially hard hit. Concentration of fishing efforts in the reduced area of those waters still open to fishing has led to serious stock depletion in local areas. Overfishing, particularly with surf clams, is a serious problem.

Recent studies have shown that some shellfish have been able to breed and thrive in the condemned areas. Populations of greatest density of both hard clams and surf clams are currently in condemned waters. Management of closed areas with dense populations of surf clams is a matter of interstate concern (FA-11).

RECOMMENDATIONS:

- The role of habitat protection served by areas closed because of pollution should be further examined.
- Overfishing of shellfish, and the surf clam particularly, is becoming such a crucial problem that data and assessments must be continually updated to prevent stock depletion and facilitate effective management.

Expansion and Development of Commercial Fisheries

Rational conservation and management of New Jersey's marine environment is needed to allow expansion and development of the commercial fisheries industry.

Underutilized Species

The result of a recent national study of fisheries resources suitable for domestic and foreign export provides direction for economic expansion. This study, *Export and Domestic Market Opportunities for Underutilized Fish and Shellfish* (FP-3), identified several abundant, underutilized species off New Jersey's coast, e.g., mackerel, butterfish, squid, silver hake (whiting) and red ling. Federal, and now state, legislation establishes preferential American access to the fisheries of the coastal waters in the 200-mile territorial zone off New Jersey's coast. If the state is to take full economic advantage of these underutilized resources it must carefully coordinate its conservation management plans and its economic development goals. In order to encourage the fishing of new species, New Jersey must have the fleets, ports, docks, shore-side processing facilities and marketing arrangements to utilize these species profitably (FP-5, FP-6).

In addition to identifying underutilized species, the federal study also discusses the impediments to development of these resources. It states:

The major impediments are organizational, institutional, legal or motivational in character. Because of these problems a high degree of perceived risks becomes associated with new development. The degree of perceived risks is compounded by a lack of system level planning in the industry. This lack of planning capability is a consequence of the many small regional economic units with little vertical integration that make up a large portion of the industry. Impediments of a technical or physical nature exist also, but they probably can be resolved more easily as system plans are developed. Over the short term, a significant lack in port and harbor facilities will deter development.

Near term constraints exist for production capacity in some areas of the country and for technological transfer in some aspects of production. Adequate financing is available to the industry if the degree of perceived risks can be lessened.

(pp. xiii-xiv, FP-2)

It is now imperative that regional and state fisheries councils develop together the system level planning necessary to pursue successfully this opportunity. They should consider the following concerns raised at this conference:

--Can New Jersey compete with New England for processing facilities? The seasonality of catches from many of these species, such as whiting and mackerel, may preclude cost effective management of the necessary processing facilities.

--There is considerable diversity of opinion as to whether processing must be carried out in plants or aboard the fishing vessels themselves. Certain species may require processing immediately following the catch, whereas other species maintain flesh consistency long enough to permit processing ashore.

--Previous studies have inferred that stock assessment is subject to considerable seasonal and geographic flux. It may be necessary for some examinations to be carried out continually to provide reliable data.

--More comprehensive and accurate data on financing of plants and other processing facilities are needed in order to reduce investment risk.

--Careful examination of the recreational fishing possibilities for several underutilized species is needed.

RECOMMENDATION:

- State and federal government should jointly fund an operations research analysis of the issues involved in utilizing new species for domestic and foreign markets, including diversification, capital, industrial expansion, etc.

Support Facilities

There is a general consensus that New Jersey suffers from inadequate docking facilities both in quality and quantity. Limited and poorly designed ports severely crowd New Jersey's commercial fishing fleets, resulting in inefficient operations and damaged craft. In some locations, recreational fishing craft also are crowded and lack maneuverability. Should private dock operators be solely responsible for needed improvements, or is there a role for local or state government in this process?

RECOMMENDATIONS:

- The Governor should appoint an impartial committee to examine all of New Jersey's fishing ports, with the objective of aligning

ports and functions in a logical manner, comparing needs with capabilities and ultimately recommending the best "fits".

- The federal government should work closely with the fisheries industry and the state of New Jersey to keep pace with and facilitate fisheries development.

Planning and Coordination

The fishing industry in New Jersey is characterized by small, independent operating units. Although the necessity for coordinating the expansion activities of the fishermen, the processors and marketers is obvious, there are few formal mechanisms for such coordination. The state should assume the vital role of coordinator of fishery development plans to provide cohesive policies and financial assistance for the individual expansion plans of the private sector.

RECOMMENDATIONS:

- The state of New Jersey should evaluate the manner in which prices are determined. The current consignment pricing should be replaced by an auction system similar to that used in New England if it would bring higher prices to fishermen.
- The New Jersey Department of Environmental Protection should relax its coastal zone management regulations and procedures to respond to the needs of the fishing industry for waterside developments.
- As the state works with major fishing companies to plan expansion and development, it should keep small fishermen informed of all expansion plans.
- The state should provide an advisory service to small companies to develop expansion plans for their operations.

The fishing industry in New Jersey faces many new opportunities--increased national and state commitment to wise fishery management, preferential treatment for fishing certain species, and state government's avowed intent to help the industry. These new opportunities can be exploited only if the fishing industry itself is committed to expansion and if the concerned state and federal agencies closely coordinate their programs with the interests of the private sector.

The principal value of the Governor's Conference was that it opened the communications necessary to capitalize on these opportunities. There must be an ongoing discussion among federal, state, and local agencies, universities, private societies, and most importantly, New Jersey's fishing industry.

SELECTED FISHERIES INFORMATION RESOURCES

Conference Panelists

Moderator: Derickson Bennett, American Littoral Society

Panelists: Pete Barrett, *New Jersey Fisherman*
Bradley Brown, National Marine Fisheries Service
Michael Collins, N.J. Economic Development Authority
Russell Cookingham, N.J. Department of Environmental Protection
Honorable Samuel S. DeVico, Middle Township
Churchill Grimes, Rutgers University
Harold Haskin, Rutgers University
Captain Jon Larsen

Rapporteur: Robert Abel, New Jersey Marine Sciences Consortium

Agencies, Organizations and Research Facilities

FA-1 *American Littoral Society*, Sandy Hook, Highlands, NJ 07732,
(201) 291-0055.

The Littoral Society is an international organization for the study and conservation of marine life. The organization has publications, field trips and special projects.

FA-2 *Center for Coastal and Environmental Studies*, Rutgers University,
104 Doolittle Hall, Busch Campus, New Brunswick, NJ 08903, (201)
932-3738.

The Center conducts research in many aspects of coastal resource management in New Jersey including shellfish and finfish ecology and production and can guide information requests to appropriate individuals conducting marine research at Rutgers. A publication list is available upon request.

FA-3 *The Eagleton Institute of Politics*, Woodlawn, Douglass-Cook
Campus, Rutgers University, New Brunswick, NJ 08903, (201)
932-9384.

The Eagleton Institute is skilled in conducting and analyzing surveys. For information on the Eagleton polls on politics and public opinions in New Jersey, contact the above address.

FA-4 *Environmental Data and Information Service*, National Oceanic and
Atmospheric Administration, Department of Commerce, Page Building
#2, 3300 Whitehaven Street, Washington, D.C. 20235, (202)
634-7232. Individual copies free.

The EDIS annually publishes *Fisheries of the United States*. This document includes statistics on commercial and recreational fishery landings by region, world production by species and countries, world production of processed products, details on American imports and exports, lists of related publications, and descriptions of services given by various agencies.

- FA-5 *The Mid-Atlantic Regional Fisheries Management Council*, Room 2115, Federal Building, North and New Streets, Dover, DE 19901, (302) 674-2331.

The Council prepares, monitors and revises Fishery Management Plans for all fishery resources in the Atlantic Ocean (except for highly migratory species) seaward of New York, New Jersey, Delaware, Pennsylvania, Maryland and Virginia.

- FA-6 *National Marine Fisheries Service*, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, 3300 Whitehaven Street, N.W., Washington, DC 20235.

The basic mission of the NMFS is to protect fishery resources and encourage their optimum utilization. The local office of the NMFS keeps records on all fish landings, by type of fish and county. The address is National Marine Fisheries Service, 26 Main Street, Toms River, NJ 08753, (201) 349-3533.

- FA-7 *New Jersey Department of Environmental Protection*, Division of Fish, Game and Wildlife, P.O. Box 1809, Trenton, NJ 08625, (609) 292-9450.

This division is responsible for managing the fish and wildlife resources of the state. This includes research and educational programs as well as enforcement of state fish and game laws and maintenance of state fish and wildlife management areas.

- FA-8 *New Jersey Economic Development Authority*, Capital Place One, P.O. Box 1446, Trenton, NJ 08625, (609) 292-1800.

The New Jersey Economic Development Authority is a government agency designed to arrange low interest, long-term financing for industrial and commercial projects to stimulate employment and investment in New Jersey.

- FA-9 *New Jersey Marine Advisory Service*, Rutgers University, Department of Environmental Resources, P.O. Box 231, Cook College, New Brunswick, NJ 08903, (201) 932-9633.

The New Jersey Marine Advisory Service works with and through the cooperative extension service of Rutgers the State University and county governments. MAS makes available appropriate educational service materials and programs relating to coastal and marine areas.

- FA-10 *New Jersey Marine Sciences Consortium*, 101 College Road East, Princeton, NJ 08540, (609) 452-8465.

The Consortium is an organization of 23 colleges and universities in New Jersey and Pennsylvania which facilitates the design and execution of marine and coastal education, research and service programs in and among these institutions. Two central Consortium programs are the administration of the state's Sea Grant program and the promotion of precollege educational activities and summer undergraduate offerings by member institutions.

- FA-11 *Rutgers University, Department of Zoology*, Busch Campus, New Brunswick, NJ 08903. Contact: Harold H. Haskin (201) 932-3809.

Rutgers maintains active research and informational service programs in the culture of marine and estuarine shellfish. Projects deal with resource management and effects of pollution on the resources.

Publications

- FP-1 *Catalogue of Rutgers Marine Research*, D.K. Richardson and N.P. Psuty, 1975, 117 pp., NJ/RU-CCES-TR #1-200-75, and *Supplement to the Catalogue of Rutgers Marine Research*, S. Bonsall and N.P. Psuty, 1976, 57 pp., NJ/RU-CCES-TR #2-100-01-76. Available from the Center for Coastal and Environmental Studies, Doolittle Hall, Rutgers University, Busch Campus, New Brunswick, NJ 08903, (201) 932-3141, @ \$1.00.

The catalog and supplement list marine-related research projects conducted by the faculty and students of Rutgers University. Each entry is annotated.

- FP-2 *Export and Domestic Market Opportunities for Underutilized Fish and Shellfish*, prepared for U.S. Department of Commerce, by Earl R. Combs, Inc. assisted by Arthur Young and Co., December 1978. Available from National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce, 3300 Whitehaven Street, NW, Washington, DC 20235.

This study describes the market opportunities for underutilized fish and shellfish which exist in the U.S. Fisheries Conservation Zone. It identifies impediments to development of the underutilized resources by the U.S. industry.

- FP-3 *New Jersey Coastal Management Program: Bay and Ocean Segment and Final Environmental Impact Statement*, Department of Environmental Protection, Bureau of Coastal Planning and Development, P.O. Box 1889, Trenton, NJ 08625, (609) 292-8952.

This publication outlines a strategy to manage the future protection and development of the coast, in part to meet the requirements of the federal Coastal Zone Management Act. It describes location, use and resource policies and notes the implementation authorities currently existing in state, federal and local government.

- FP-4 *New Jersey Directory of Marine Resource Personnel*, 1979, New Jersey Marine Sciences Consortium, 101 College Road East, Princeton, NJ 08540, (609) 452-8465.

This directory is designed to serve as an information resource to and for the marine-oriented community of New Jersey. The directory lists over 200 people giving address, specific interests, and past, ongoing and future projects.

- FP-5 *A Proposal for the Development of the New Jersey Fisheries Industry: A Working Paper*, New Jersey Governor's Office of Policy and Planning, 1979. Available from the Governor's Office, State House, Trenton, NJ 08625, (609) 292-6000.

This proposal documents the potential for economic expansion in the fisheries industry and outlines the role of state agencies in assisting this expansion.

- FP-6 *Review of Commercial Fishing in New Jersey and NJEDA's Financial Role in its Development*, Mike Collins, October 1979. Available from the New Jersey Economic Development Authority, Capital Place One, P.O. Box 1446, Trenton, NJ 08625, (609) 292-1800.

This reviews marine resources: fleets, ports and docks; processing facilities; and current development programs. It identifies characteristics of the New Jersey fishing industry which inhibit growth and outlines recommendations which would improve NJEDA's role in aiding industry economic growth.

Statutes and Regulations

- FL-1 *Coastal Area Facility Review Act of 1973*, N.J.S.A. 13:19-et seq.

CAFRA empowers the Department of Environmental Protection to regulate certain facilities and activities (spelled out in the Act) including many types of industry, energy facilities, marine terminals, and construction of housing with 25 or more units. The long-term goal of CAFRA is to develop a coordinated, environmentally sound plan for the use of New Jersey's shore zone.

- FL-2 *Fisheries Conservation and Management Act of 1976*, PL 94-265.

This federal legislation established the 200-mile fisheries zone in which fishing by foreign and domestic fleets is restricted to an optimum yield level. It also creates priority for domestic fishermen.

- FL-3 *New Jersey Marine Fisheries Management and Commercial Fisheries Act*, PL 1979, Chapter 199.

The Act authorizes development and enforcement of a fisheries management program by the New Jersey Department of Environmental Protection. The Act further establishes interdepartmental task forces to expand the commercial fisheries industry, the commercial aspects of recreational fishing, aquaculture, and the development of processing and marketing facilities for fish and fish products. The legislation creates an 11-member Marine Fisheries Council to contribute to the preparation and revision of fisheries management plans by the Department of Environmental Protection, approve or disapprove proposed rules or regulations, advise the DEP commissioner, and hold periodic meetings.

- FL-4 *Wetlands Act of 1970*, N.J.S.A. 13:9A, et seq.

The Act defines coastal wetlands and regulates virtually any form of development and disturbance. Maps of the regulated wetlands are available from DEP's Bureau of Coastal Planning and Development, P.O. Box 1889, Trenton, NJ 08625. There is a small charge.

Individuals*

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*This list of individuals with particular interests and knowledge in coastal subjects has been graciously prepared by the New Jersey Marine Sciences Consortium under severe time constraints. The Consortium offers apologies to anyone inadvertently forgotten.

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Occupational interest: artificial reef design

- FI-26 *Stewart M. Tweed*
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Occupational interest: advisor to commercial and sport fishermen
- FI-27 *James C. Van Loon*
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Occupational interest: fish net design and use for catching and farming
- FI-28 *Judith Weis*
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Department of Zoology and Physiology
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CHAPTER VII

OLDER RESORTS

Many of New Jersey's shore municipalities face problems characteristic of old urban areas, such as high unemployment, population loss (especially in the 30-50 age group), loss of economic base and a subsequently weakened tax base, aging public infrastructure, deteriorating housing stock, and declining retail business.

Problems Unique to Older Shore Municipalities

The severity of these problems has generally been greater for old shore than for inland communities since the seashore towns have become heavily reliant on an inherently unstable tourist economy that is at the mercy of weather, recreation trends and, increasingly, gasoline availability. The emphasis on tourism requires that many major capital systems and services be built to accommodate a summer population which is many times that of the year round population. In addition, in most towns two business districts have developed and must be maintained--the tourist-oriented boardwalk and the downtown central business district. High unemployment rates also plague shore communities because local businesses are unable to absorb the large number of people who are employed by the tourist industry only for the summer season.

Major Capital Systems

Major capital systems (drainage, sea walls, sewage, water systems, bulkheads, streets, and harbor channels) of older shore areas are in severe stages of decline. Many of these systems were built between 1900-1940 when a combination of price stability and late federal works programs allowed the construction of extensive new facilities. In many instances decayed bulkheads, undredged harbors, etc. threaten the heart of an area. Capital facility needs of these communities should be reviewed and priorities should be set for resolution and implementation. In many cases, the communities' needs far outweigh their resources for dealing with them. The state should re-examine its policies on capital improvement funding and sales tax distribution to recognize the particular problems of towns built to support the state's valuable tourist economy.

RECOMMENDATIONS:

- The state must aid shore municipalities in making needed capital improvements.
- The state should redistribute sales tax to more accurately reflect the enormous tax revenue brought in at the shore during the tourist season.

Conflicts Between Seasonal and Year Round Business

Local business districts in established resorts have greatly deteriorated as have boardwalk and other shore front businesses. Often these old shore towns are compelled to choose which of their business districts to revitalize because there is insufficient funding available for both. Because the primary economic factor is tourism, the boardwalk is most often targeted for redevelopment with the hope that it can generate enough new money to support efforts to improve the central business area. There is growing evidence, however, that a successful revitalization plan must include both sectors of the business community. A city which suffers from the problems associated with urban decline, such as high unemployment, increased crime and deserted buildings, will not be attractive to tourists.

RECOMMENDATION:

- Old shore municipalities must encourage year round as well as seasonal businesses.

Seasonal Employment

In older shore communities unemployment rates range between 10 and 18% as compared to the state average of 7.2%. Successful redevelopment plans will provide jobs suitable to the employment needs of the community's residents so that all sectors of the population will benefit from efforts at rejuvenation. In examining plans for redevelopment and new employment opportunities, a wide range of questions should be considered:

--Is there still an unfilled demand for year round convention facilities, especially for moderate size conventions?

--Can incentives be found to lure small businesses to the shore, or at least keep those open which are already there?

--What other year round permanent employers are especially suited to the older shore communities?

--Is gambling, such as Jai Alai, a viable solution to stabilize the economy of one (or more) towns? Would it have any significant regional impact?

RECOMMENDATION:

- State and local government should draw on the research expertise within higher education and private research groups to identify potentially successful strategies for reducing the high unemployment rate in older shore resorts.

Redevelopment Efforts

There are three distinct but closely related aspects of shore communities which must be revitalized: central business districts, neighborhoods and

tourism. Comprehensive plans must be developed which will encompass all three areas. Local redevelopment projects will have many goals--to create a stable year round economy, creatively develop and utilize the tourism base already in place, create jobs for the large number of unemployed residents, and build a community which is a pleasant place to live, work and raise children.

Central Business Districts

Characteristically the deterioration of local business districts has been in response to the overall decline of an area, often exacerbated by the development of modern inland shopping centers. There are 25% commercial vacancies on Cookman Avenue in Asbury Park, for example. This disinvestment trend seems to have halted, but communities are mired at this level with no real revitalization taking place. Business districts must be revitalized, but on the basis of year round residential and commercial development so that the local economy is not totally subject to seasonal fluctuations. This redevelopment should take place compatibly with, but distinct from, the tourist-oriented recreational developments which are traditionally associated with the waterfront (OA-4, OA-5).

RECOMMENDATIONS :

- The state should establish a task force of private and government experts in economic development to give quick advice on specific local redevelopment plans and programs at the request of coastal communities.
- Municipal government must take a comprehensive planning approach towards economic development projects, by involving not only city officials and planners but also lenders, developers, local business leaders, and development experts.

Residential Areas

Neighborhood preservation. Since there is such a diversity of communities and neighborhoods, no single solution can be found to the problem of neighborhood deterioration. Municipalities must recognize that neighborhoods are the building blocks of community stability and that rehabilitation of housing and commercial buildings in neighborhoods should be pursued with local, state, federal and private funds to the fullest extent possible.

State supported neighborhood preservation programs are currently in operation in the seashore communities of Asbury Park, Pleasantville, Atlantic City, and Cape May (OA-6). These experiences are showing that neighborhoods can be effectively turned around when citizens, lenders and government form a working partnership to revitalize a neighborhood.

RECOMMENDATIONS:

- The state Neighborhood Preservation Program should be expanded so that additional needy municipalities can receive state experience and funding.
- Future bond issues for housing should specifically designate funds for neighborhood preservation programs.
- Research should be supported to identify: 1) early indicators of neighborhood deterioration, 2) actions which would reverse deterioration trends and 3) conditions which are necessary for successful revitalization.

Attracting a year round population. How can older resorts reverse the trend of out-migration of middle income families and the consequent erosion of the tax base and purchasing power? It is clear that a significant number of middle income residents will not be attracted to these older communities unless there is adequate commuter transit. Improvements of the mass transit system would entice commuters and small businesses back to the shore zone, especially in strong commuting areas of Monmouth County. This recommendation was strongly supported in the Transportation Panel (see Chapter IX).

A particularly underutilized asset of some communities is their residential waterfront property, e.g., Keansburg and Union Beach. These attractive locations could be the cornerstones for housing developments that would again attract middle income families to the older communities.

Conversion of seasonal housing. Many shore resorts have a stock of seasonal housing which does not meet basic code standards for minimum floor area, insulation and permanent fuel supply. In some instances, the housing crunch has encouraged year round occupancy of these dwellings. Poorly designed and illegal conversions tend to create the slum of the future.

RECOMMENDATIONS:

- Municipal funds should be targeted to encourage the rehabilitation of those poorly converted structures already occupied.
- Municipalities should adopt and enforce zoning and housing maintenance standards for future conversions of seasonal housing to year round occupancy.

Tourism

Although the economic problems of older resorts are in part a result of their dependence on tourism, these cities must build on this base of tourism resources as they try to rejuvenate their communities. These resources are the ocean, the beaches and clean air, and the infrastructure that has been

developed to serve tourists. Each area must determine what makes it unique and attractive, and capitalize on those features. While emphasis in shore communities must shift away from the former total reliance on tourist-related businesses to a more stable year round economic base, for many years to come tourism will be the main economic factor.

Ameliorating the impacts of the gasoline shortage. If the gas shortage continues, people must be offered alternatives to private automobile travel. The reliance solely on the car not only will hurt summer business but will also deter families from moving to the shore permanently. This in turn will discourage new commercial and industrial development since the labor force to support these uses will never materialize. In the long run, public transportation alternatives must be found that are attractive, efficient and convenient for tourists.

The tourist industry cannot afford to wait until public transportation systems can be planned, implemented and accepted. It is necessary to take some short-term action to ensure that people who want to go to the shore will be able to get fuel for their trip home.

RECOMMENDATIONS:

- The state should increase allocations of gasoline to the shore area during the summer months as a short-term solution to the decline in tourism due to the gas shortage.
- In the long-term the state must provide public transportation to the shore.

Expanding the tourist season. One of the main problems for an economy built on tourism is that the season is currently so short. The best weeks in September are lost because children are back in school. An effort to expand the tourist season would be facilitated by a delay in the start of the school year. This matter should be presented to the New Jersey Education Association for discussion. (See recommendations in Chapter VIII.)

RECOMMENDATION:

- The tourist season should be extended into mid-September.

SFLECTED OLDER RESORTS INFORMATION RESOURCES

Conference Panelists

Moderator: Philip Caton, Department of Community Affairs

Panelists: Jack Bisbee, Central Jersey Bank and Trust Co.
Robert Burchell, Center for Urban Policy Research, Rutgers
Robert Halsey, Monmouth County Planning Director
Thomas Ricci, Ricci Construction Company
Charles Worthington, Atlantic County

Rapporteur: Morton Farrah, Department of Community Affairs

Agencies, Organizations and Research Facilities

OA-1 *Center for Urban Policy Research*, Rutgers University, Building 4051, Kilmer Campus, New Brunswick, NJ 08903, (201) 932-3133.

The Center conducts research in many areas of urban policy and maintains an up-to-date library of related materials. A publication list is available.

OA-2 *County Planning Directors.*

Atlantic--Robert Tublitz, Division of Planning, Guarantee Trust Building, Atlantic City, NJ 08401.

Cape May--Elwood Jarmer, County Building, Cape May Court House, NJ 08210, (609) 465-7111.

Ocean--Steven Pollock, 119 Hooper Avenue, Toms River, NJ 08753, (201) 244-2121.

Monmouth--Robert D. Halsey, Court Street and Lafayette Place, Freehold, NJ 07728, (201) 431-7460.

OA-3 *New Jersey Bell*, Department of Urban Affairs, 540 Broad Street, Newark, NJ 07101, (201) 649-9900.

New Jersey Bell can provide market data relevant to residential and commercial development.

Other major New Jersey utility companies also have urban affairs officers that are able to provide data and advice helpful in development activities.

OA-4 *New Jersey Economic Development Authority*, Capital Place One, P.O. Box 1446, Trenton, NJ 08625, (609) 292-1800.

The New Jersey Economic Development Authority is a government agency designed to arrange low interest, long-term financing for industrial and commercial projects to stimulate employment and investment in New Jersey.

- OA-5 *Office of Business Advocacy*, Department of Labor and Industry, Division of Economic Development, John Fitch Plaza, Trenton, NJ 08625, (609) 292-0700.

The Office was established to assist businesses having problems with state government. In addition to other programs, it provides aid to developers of large construction projects to expedite the permitting process.

- OA-6 *State Neighborhood Preservation Program*, Division of Housing and Urban Renewal, Department of Community Affairs, 363 West State Street, Trenton, NJ 08625, (609) 292-7898.

This program helps finance activities that will promote the restoration of threatened but still viable neighborhoods. The program also provides technical assistance, in the form of workshops, conferences, and information bulletins, to local governments and through them to neighborhood residents on various aspects of neighborhood preservation, such as housing rehabilitation financing and successful new techniques.

Publications

- OP-1 *Review of the Probable Impact of Atlantic City Casino Development*, A Report of the New Jersey Department of Community Affairs, Bureau of Regional Planning, January 1980. Limited copies available from DCA, Office of Public Information, 363 West State Street, Trenton, NJ 08625, (609) 292-6055.

This report examines the accelerated rate of casino growth, describes some of the effects of casino development, and examines the natural, private and public resources available to accommodate this growth.

Individuals*

- OI-1 *Bonnie J. McCay*
Rutgers University
Department of Human Ecology
Cook College
New Brunswick, NJ 08903

Occupational interest: anthropology

*This list of individuals with particular interests and knowledge in coastal subjects has been graciously prepared by the New Jersey Marine Sciences Consortium under severe time constraints. The Consortium offers apologies to anyone inadvertently forgotten.

- OI-2 *James D. Murray*
New Jersey Marine Advisory Service
P.O. Box 421
Marmora, NJ 08223
Occupational interest: economics, education, commercial and
sport fisheries
- OI-3 *Frank Tinari*
Seton Hall University
Department of Economics
South Orange, NJ 07079
Occupational interest: economic analysis of seashores
- OI-4 *Robert Vamberg*
Rutgers University
Graduate School of Business
Newark, NJ 07102
Occupational interest: marine transportation economics and
management

CHAPTER VIII

TOURISM

Tourism, the state's second largest industry, forms the economic base for most of New Jersey's shore communities. Expanding the number of visitors and hence the economy of the shore zone was the primary issue addressed by this conference panel. Other panels at this workshop grappled with related issues of maintaining environmental quality (Beach Preservation, Coastal Development), revitalizing declining areas (Older Resorts), and providing adequate transportation (Transportation). It is left to each local shore community to balance the often conflicting goals of encouraging growth and preserving the unique features of its attractions.

Three general techniques were identified for expanding the tourism resource: better marketing and advertising, improving the quality and variety of tourist attractions and lengthening the tourist season. In each of these areas, the New Jersey Division of Travel and Tourism, Department of Labor and Industry, can play a major role through its legislated responsibilities. Set up in 1977, the Division is authorized to expand tourism in New Jersey by formulating a master plan to provide an optimum of satisfaction and high-quality service to visitors, to protect the natural beauty of New Jersey, and to sustain the economic health of the tourist industry in a manner and to the extent compatible with such goals (TL-1, TA-2).

Better Marketing and Advertising

Promoting a More Accurate Perception of New Jersey

A major obstacle in promoting tourism is the lack of accurate knowledge among state residents and potential visitors about New Jersey's cultural and physical attractions. The Division of Travel and Tourism must improve New Jersey's image. When you say New Jersey you should see beaches, not smokestacks; rolling hills, not chemical plants; historic buildings, not dilapidated tenements.

RECOMMENDATIONS:

- The Division should take a lead role in developing a new image for the state by working with the media to emphasize good aspects, not just crime, pollution, etc., and by developing uniform symbols to be used on tourist advertisements which will invoke pleasant images of New Jersey.
- The Division, in conjunction with the Department of Education and the Department of Environmental Protection, should support a mandatory school curriculum on Learning About New Jersey (TP-4).

Strengthening the Tourist Industry's Advertising Efforts

The diversity of the industry necessitates a central point for coordination of individual efforts. The Division is uniquely suited for this responsibility. The Division should aid individual businesses to use their advertising budgets effectively and should supplement these individual efforts to promote a healthier economy for all. To do this the Division must have accurate data on the number of visitors, amount spent in advertising, possible target audiences, economic benefits and costs to the state from tourism, etc.

In 1979 the Division sponsored an analysis of their ad campaign promoting New Jersey tourist attractions in order to provide a cost per response ratio for various advertising and markets. This is a first step in gathering the baseline data necessary to advertise and plan effectively.

RECOMMENDATIONS:

- The Division's Master Plan must include strategies for gathering needed data (TP-1).
- The Division should aid lodging facilities, restaurants, attractions, etc. in preparing vacation packages which could be marketed by travel agents with a commission awarded for each package sold.
- The Division should develop a comprehensive guide of attractions and tourist services that would facilitate travel agent arrangements for vacations in New Jersey.
- The Division should develop familiarization tours for representatives from the travel industry.

Visitor's Centers

New Jersey currently has four visitor's centers which serve primarily as information booths. States with more extensive networks of visitors' centers have reported that 46% of all cars that stop at a center spend an extra night in their state. A 1977 study of transportation reports that only 748,000 of the 9,622,000 people who passed through New Jersey in 1977 on their way to another destination stayed the night (TP-2). Well-run visitors' centers could greatly increase the amount of money spent in New Jersey on lodging.

RECOMMENDATION:

- The Division of Travel and Tourism should:
 - a. locate state-operated information centers at the gateways to New Jersey (major incoming roadways, airline terminals, and mass transit terminals);

- b. develop training programs for hosts and hostesses;
- c. expand visitor services at existing information centers to include clean restrooms, literature racks and displays, toll free reservations, video cassettes, foreign exchange information, multilingual literature, and current lists of attractions and special events; and
- d. coordinate these activities with others producing tourist information to reduce costs and duplication.

Improving Tourism Resources

Developing a successful marketing approach is, of course, only one side of the problem. The product being sold must be desirable and it must be examined and improved periodically if it is to continue to attract customers.

Upgrading Resources

Some of New Jersey's shore municipalities are faced with declining use and deterioration, while other areas are confronted with pressures for growth. Few of these small municipalities have the expertise and funds necessary for long-range planning and many do not know the options which are available for financial assistance. The Division of Travel and Tourism should encourage the rejuvenation of existing attractions and the development of new attractions, in conjunction with the Economic Development Authority (TA-3).

RECOMMENDATION:

- The Division of Travel and Tourism should be the coordinating agency for local efforts to improve and develop tourist facilities.

Unnecessary Government Hindrances

Government regulations on the tourism industry are necessary to ensure the safety and rights of customers and employees. These regulations apply predominantly to amusement parks and boardwalk attractions. The continued success of these businesses is vital to the economic stability of many shore areas. Government regulations must not unnecessarily hinder their profitable operation.

Ride safety. The amusement industry shares the state's concern for the safety of its customers and, in some instances, has voluntarily enforced stricter standards than the state regulations. However, the industry feels that regulations would be more equitable and effective if industry representatives played a more active role in consulting on those decisions, especially after accidents.

RECOMMENDATION:

- The Office of Safety Compliance, Division of Workplace Standards, Department of Labor and Industry, should re-examine policies for setting ride safety standards to ensure that they include careful research and sufficient input from the amusement industry.

Child labor laws. Child labor laws were enacted primarily in response to conditions existing early in this century and often do not reflect the realities of today's labor market and social system.

The most troublesome obstacle in hiring young people in the tourist industry is the length of time required to obtain a work permit. The industry recognizes the need to verify a child's age and ability to do certain kinds of physical work, but the present system is too time consuming and discourages employers from hiring teenagers. Other areas that should be examined are the application of the minimum wage guidelines to student workers and the limitation on the time of day that teenagers can work. The industry would favor exemptions that would continue to protect the student laborer from exploitation, dangerous environments, overwork, and unsupervised occupations while providing a more expeditious system for hiring of young workers. This would benefit the industry and the young work force looking for employment.

RECOMMENDATION:

- The legislature should conduct hearings on child labor laws to explore options for changing existing laws or granting exemptions similar to those in farming to respond to the needs of the tourist industry and its young work force.

Expanding the Season

The tourism economic base could be expanded considerably by lengthening the time that it is in productive use. The current summer season allows 10 weeks of use (weather permitting). The major constraints on expanding the season are the length of the school year and traditional vacation patterns.

Lengthening the Summer Tourist Season

The primary constraint to expanding the summer season is the length of the school year. Not only does this determine the scheduling of family vacations, but it also controls the availability of high school students for the labor force of amusement parks, boardwalk attractions and restaurants. Amusements that open before the close of school in New Jersey must hire out-of-state workers who often stay for the entire summer and eliminate jobs for New Jersey youths. The school year in New Jersey is almost 10 months long. It is lengthened unnecessarily by the number of long vacations (Christmas recess, spring recess, President's week) during the year. These prolonged holidays encourage out-of-state travel. A shorter school year

could be instituted without losing any actual time in class, by eliminating or shortening these mid-year vacations. This would expand the summer tourist season, increase the number of in-state vacations during the school year, and allow young people to work additional weeks.

RECOMMENDATIONS:

- The Department of Education should change the school year to begin two weeks after Labor Day and end two weeks after Memorial Day.
- The Division should identify perceived constraints on expanding the season and work to eliminate them.

Off-Season Vacations

It is commonly believed that a major problem in expanding tourist-related businesses in the off-season is that most people can only vacation during the traditional summer tourist months. A recent study at Rutgers University (TP-3) has shown that there is a great deal of flexibility in when people *can* take vacations. An effort must be made to reach those potential tourists who have no real constraints on the time of year that they schedule vacations.

RECOMMENDATIONS:

- The Division of Travel and Tourism should:
 - a. Key off-season advertising to younger families, senior citizens, and singles, making travelers aware of good weather, water conditions and less crowds.
 - b. Encourage attractions and facilities to offer special off-season discount rates.
 - c. Promote special events during the off-season and mid-week focusing on the natural assets of the shore including fishing, boating, seafood, and bird watching. The Division should provide special brochures and promotional efforts to publicize special events.

SELECTED TOURISM INFORMATION RESOURCES

Conference Panelists

- Moderator: Stephen B. Richer, Division of Travel and Tourism
- Panelists: Anthony Catanoso, Mayor, North Wildwood
William Eames, Atlantic City Chamber of Commerce
Gary Shaw, Tourism Advisory Council
Dan Young, U.S. Travel Service
Cliff Zukin, The Eagleton Institute of Politics, Rutgers
- Rapporteur: Larry Williams, Division of Travel and Tourism

Agencies, Organizations and Research Facilities

- TA-1 *Discover America Travel Organization, Inc.*, 1899 L Street, NW, Washington, DC 20036, (202) 293-1433.

This national association of the U.S. travel industry deals primarily with marketing and promoting travel to and within the U.S. The organization informs members of new information and legislation which affect the tourist industry and sponsors national meetings for the industry.

- TA-2 *Division of Travel and Tourism*, Department of Labor and Industry, P.O. Box 400, Trenton, NJ 08625, (609) 292-2496.

The Division is responsible for promoting travel and tourism within the state. It works closely with the tourist industry and with local government. The Division also serves as a central distribution point for information prepared by other governmental agencies and private businesses on tourist attractions in New Jersey.

- TA-3 *New Jersey Economic Development Authority*, Capital Place One, P.O. Box 1446, Trenton, NJ 08625, (609) 292-1800.

The New Jersey Economic Development Authority is a government agency designed to arrange low interest, long-term financing for industrial and commercial projects to stimulate employment and investment in New Jersey.

- TA-4 *New Jersey State Chamber of Commerce*, 5 Commerce St., Newark, NJ 07102, (201) 623-7070.

The Chamber of Commerce can provide information about tourist-related business. Valuable information can also be provided by the local chapters.

- TA-5 *United States Travel Service*, Department of Commerce, Washington, DC 20230, (202) 377-2000.

This branch of the U.S. Department of Commerce is primarily involved in publicizing the United States abroad as a vacation site. As part of their service they collect and make available data on how many foreign citizens visit each region of the U.S., how much is spent, and where they live.

Publications

- TP-1 *Division of Travel and Tourism Master Plan*, Department of Labor and Industry, P.O. Box 400, Trenton, NJ 08625, (609) 292-2496.

The Division sent a draft of its first Master Plan to the Governor in February 1980. The ten-year master plan (to be reviewed annually) outlines planned efforts in marketing and advertising; expansion and upgrading of attractions and events, related considerations such as transportation and environmental problems, and internal organization and implementation procedures.

- TP-2 *National Travel Survey*, U.S. Department of Commerce, Bureau of the Census, DSD, Room 3343, FOB3, Washington, DC 20233, (202) 763-1798.

This annual census contains information about trips of over 100 miles or more taken within the U.S. It provides basic demographic data about the travelers, and indicates means of transportation and distance traveled.

- TP-3 *New Jerseyan's Vacations: A Statewide Survey*, V.I. Report and Questionnaire, January 1979, The Eagleton Institute of Politics, Rutgers University, Woodlawn, Douglass-Cook Campus, New Brunswick, NJ 08903, (201) 932-9384.

This is the first report from a study being conducted by the Eagleton Institute of Politics, Rutgers University, for the Division of Travel and Tourism. The purpose of the survey is to determine what type of people vacation in New Jersey, where they come from, how much money they spend, and what activities they pursue while here.

- TP-4 *Report of the Advisory Council on New Jersey Studies in the Public Schools*, March 12, 1979, Department of Education, 225 West State Street, P.O. Box 2019, Trenton, NJ 08625.

The Council proposed measures to improve the use of local resources in teaching New Jersey Studies in social studies, arts, science, language and other areas of the school curriculum. The report

notes that New Jersey educators should take advantage of the state's diversity--its old and rich history, intense urbanization, multiethnic heritage, and its varied physical geography.

- TP-5 *Review of the Probable Impact of Atlantic City Casino Development*, A Report of the New Jersey Department of Community Affairs, January, 1980. Prepared by the Bureau of Regional Planning, Division of Planning. Limited copies available from DCD, Office of Public Information, 363 West State Street, Trenton, NJ 08625, (609) 292-6055.

This report examines the accelerated rate of casino growth, describes some of the effects of casino development, and examines the natural, private and public resources available to accommodate this growth.

- TP-6 *Tourism in the Second Half of the 70's*, in *Utah and Tourism Recreation Review*, Vol. 4, No. 1, January 1975, Institute for the Study of Outdoor Recreation and Tourism, Utah State University, Logan, Utah 84322.

This article discusses the prospects of the tourist industry in view of present and future energy supply problems, rapid inflation, and climbing unemployment.

Statutes and Regulations

- TL-1 *Division of Travel and Tourism Act*, PL 1977, Chapter 225.

This Act established a Division in the Department of Labor and Industry to provide an optimum of satisfaction and high-quality service to visitors, to protect the natural beauty of New Jersey, and to sustain the economic health of the tourist industry. The Act also created the Tourism Advisory Council consisting of appointees representing the tourist industry, counties, municipalities and citizens.

Individuals*

- TI-1 *Charles Giammona*
New Jersey Marine Sciences Consortium
Fort Hancock, NJ 07732

Occupational interest: artificial reefs

*This list of individuals with particular interests and knowledge in coastal subjects has been graciously prepared by the New Jersey Marine Sciences Consortium under severe time constraints. The Consortium offers apologies to anyone inadvertently forgotten.

- TI-2 *Lauren Kelley*
U.S. Park Service
Building 18
Fort Hancock, NJ 07732

Occupational interest: medical emergency preparedness
- TI-3 *James D. Murray*
New Jersey Marine Advisory Service
P.O. Box 421
Marmora, NJ 08223

Occupational interest: economics, education, sport fishing
- TI-4 *Frank Tinari*
Seton Hall University
Department of Economics
South Orange, NJ 07079

Occupational interest: economic analysis of seashores

CHAPTER IX

TRANSPORTATION

The health of the shore economy and the success of the tourist industry rely to a great degree on the provision of easy access to tourist attractions. State, regional and local leaders share the responsibility to plan for the special transportation needs of the shore zone, balancing the seasonal demands for service and the continuing needs of year round residents. They must find methods for cooperation at all levels of government and devise flexible planning techniques to accommodate long- and short-term goals.

Public Transportation

The shortage of petroleum fuels, which is facing all of the United States and which hit the northeast with particular severity during the summer of 1979, threatens the viability of a tourist economy which has developed to serve vacationers in their automobiles. During the most difficult months of the 1979 energy shortage, unnecessary trips, such as those for recreation, were the first driving activities to be curtailed.

Shore residents are encouraging the New Jersey Department of Transportation (DOT) to commit a greater share of its planning and funding resources to public transportation. They see efficient, reliable mass transit as an alternative which must be considered to solve many of the shore zone's unique problems.

Variable Demands

During summer weekends, transportation systems are inundated with 1-2 million people going to the shore. Although in the past most of these tourists have used the highway system, public transportation systems would provide more flexibility.

Traditionally people have not used mass transit for leisure trips. However, there is evidence that the energy shortage itself has given some impetus to the use of public transportation. In June 1979, during the height of the gasoline shortage, ridership on Transport of New Jersey bus service from Philadelphia to the shore was reported up 32% from June 1978.

RECOMMENDATIONS:

- The DOT should expand public transportation systems to the shore in response to the gas shortage.
- The DOT should fund research on how to encourage the use of public transportation for leisure activities.

- The DOT should explore options for providing public transportation geared to the unique needs of tourists--vehicles with more luggage space, refrigerated lockers for storing fish, etc.
- The DOT should coordinate their planning efforts with local communities to provide mobility within the shore area--transportation to beaches, restaurants, amusements.

Commuter Needs

Those shore residents who must commute to urban employment centers find rail and bus service slow. It takes about the same time for a commuter from Philadelphia to get to New York City (85 miles) as it does for a resident of Little Silver (50 miles).

RECOMMENDATION:

- DOT should support the electrification of the North Jersey Coast Line as far as Bay Head and should extend the line to Lakewood and to Atlantic City in the future.

Needs of the Elderly

The percentage of elderly people residing in the shore zone is higher than in other areas of New Jersey. In 1975, 14.4% of the region's population was over 65 years, while the state's average was 10.4%. In Cape May County the percentage (20.5) was almost twice the state's average.

RECOMMENDATION:

- In implementing public transportation plans in the shore zone, planners should provide for the needs of the elderly.

Environmental Constraints

The shore zone is an area especially sensitive to environmental disruption. As the number of tourists increases and development pressures mount, transportation planners are challenged to supply services within the constraints of state and federal environmental regulations and perceived aesthetic preferences.

RECOMMENDATION:

- Public transportation service should be improved to diminish environmental problems such as air pollution and wetlands encroachment.

Transportation Planning

New Approaches to Transportation Demands

It is clear that the private automobile cannot be relied on as the principal means of transportation in a future of uncertain gasoline availability. Existing mass transit systems (rail and fixed route buses) have not been successful in providing adequate service for a large number of citizens. Transportation planning must examine new alternatives. These should include all forms and combinations of paratransit--van pools, jitney, cabs, dial-a-ride, etc. (TRP-5).

One possibility being explored in the shore zone of New Jersey is high speed waterborne service. The Port Authority of New York and New Jersey is pursuing a study of possible routes, destinations, and fare structures. There is money allocated at the federal level for experimentation with such a service (TRP-2).

RECOMMENDATION:

- The DOT and local transportation planners should develop flexible and innovative transportation programs to deal with future demands.

Shared Responsibility

The DOT planning process allows for local elected officials to express their concerns through their regional Metropolitan Planning Organization (TRA-3). The DOT also sends representatives to all county board meetings. However, participants at this conference were convinced that local concerns were not being given adequate consideration in current highway transportation planning.

The transportation system to and within a region has a tremendous influence on growth patterns and economic development. Transportation problems of one municipality or special interest may not be shared by others, but projects to solve those problems can potentially have impacts on the whole region. Transportation planning must be a part of overall comprehensive planning.

It is important to form an inter-governmental partnership for planning, implementation, and funding. Ocean County has initiated several public transportation projects which demonstrate its commitment to share the responsibility (both planning and funding) to find solutions to pressing transportation problems. The results of three pilot projects conducted this summer are being analyzed to assess the public transportation needs of Ocean County residents and tourists. The county will work with municipalities and the state to plan and fund transportation services to meet these identified needs (TRA-5).

SELECTED TRANSPORTATION INFORMATION RESOURCES

Conference Panelists

Moderator: Warren Wolf, Freeholder Ocean County

Panelists: Richard K. Brail, Rutgers University
Peter Koelsch, Monmouth County Rail Subcommittee
Melvin R. Lehr, New Jersey Department of Transportation
John Mortensen, Irate Shore Commuters
Richard Squires, Freeholder Atlantic City

Rapporteur: James Pivovar, New Jersey Department of Transportation

Agencies, Organizations and Research Facilities

TRA-1 *County Planning Boards*

Atlantic County Planning Board, 25 Dolphin Avenue, Northfield, New Jersey 08225, (609) 646-7502.

Cape May County Planning Board, County Building, Cape May Court House, New Jersey 08210, (609) 465-7111.

Monmouth County Planning Board, Court Street and Lafayette Place, Freehold, New Jersey 07728, (201) 431-7460.

Ocean County Planning Board, 119 Hooper Avenue, Toms River, New Jersey 08753, (201) 244-2121.

TRA-2 *Department of Urban Planning and Policy Development*, Lucy Stone Hall, Rutgers University, Livingston Campus, New Brunswick, NJ 08903. Contact: Richard K. Brail, (201) 932-4002.

This department has undertaken a number of studies on urban transportation planning, including transit services for the elderly and air quality and transportation planning.

TRA-3 *Metropolitan Planning Organizations*

The New Jersey Department of Transportation makes its decisions in partnership with local elected officials working through their regional MPOs. In Ocean and Monmouth Counties, the MPO is the Tri-State Regional Planning Commission, 1 World Trade Center, 82nd Floor, New York, NY 10048, (212) 938-3315. In Atlantic and Cape May Counties the MPO is the Atlantic City Urban Area Transportation Study Policy Committee, 730 Guarantee Trust Building, Atlantic and North Carolina Avenues, Atlantic City, NJ 08401, (609) 345-6700.

- TRA-4 *New Jersey Department of Transportation, Planning and Research*, 1035 Parkway Avenue, Box 101, Trenton, NJ 08625, (609) 292-3160.

This division of DOT is working with the Port Authority of New York and New Jersey to develop a plan for high speed water-borne transit from New Jersey to New York.

- TRA-5 *Ocean County Planning Board*, 119 Hooper Avenue, Toms River, NJ 08753, (201) 929-2054.

Ocean County is taking an aggressive role in an effort to solve its transportation problems. It has initiated projects to determine the level of bus service needed in the county--both in urban and rural areas. The county is encouraging all levels of government to participate in planning and financial responsibility to implement a comprehensive public transportation system.

- TRA-6 *Transportation Program*, Department of Civil Engineering, Princeton University, Princeton, NJ 08540, (609) 542-5449.

This program on transportation is coordinated by the Engineering Department but is interdisciplinary. It provides a curriculum on transportation technology, systems, analysis, and planning.

Publications

- TRP-1 *Checkpoints*, New Jersey Department of Transportation, 1979. Available from the Bureau of Publications, NJDOT, 1035 Parkway Avenue, Box 101, Trenton, NJ 08625. Free.

Checkpoints is a directory of DOT's internal offices and functions published to aid citizens in obtaining information from and about the Department of Transportation.

- TRP-2 *Increased Transportation Efficiency Through Ride Sharing: the Brokerage Approach*, by Frank Davis, et al., Department of Transportation report #DOT-TST-7736. Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, publication #PB267546.

This report describes a project carried out for the Department of Transportation utilizing the concept of hiring a transportation "broker" to arrange the most efficient transit services for a client.

- TRP-3 *National Travel Survey*, U.S. Department of Commerce, Bureau of the Census, DSD, Room 3343, FOB3, Washington, DC 20233, (202) 763-1798.

This annual census contains information about trips taken within the U.S. of 100 miles or more. It provides basic demographic data about the travelers and indicates means of transportation and length of trip.

- TRP-4 *New Jersey's Implementation Plan to Eliminate Dependence on Foreign Oil: A Preliminary Analysis*, prepared by the NJ Department of Energy in cooperation with the NJ Department of Transportation, August 1979. Available from the Department of Energy, 101 Commerce Street, Newark, NJ 07102, (201) 648-3290. Free.

This implementation plan was prepared in response to President Carter's July 15, 1979 announcement of a program to reduce the level of oil imports. The plan documents New Jersey's dependence on foreign oil and presents a range of programs and policies to reduce that dependence. The plan discusses current and future energy consumption, fuel substitution options, and conservation and alternate technologies.

- TRP-5 *Public Transportation: Planning, Operations and Management*, by George E. Gray and Lester A. Hoel, Prentice-Hall, 1979, \$29.95.

This collection of papers on public transportation serves as a general introduction to concepts in public transit and discusses innovative techniques for better planning and operations. See particularly papers on Commuter Ridesharing and Public Transportation Marketing.

- TRP-6 *Review of the Probable Impact of Atlantic City Casino Development*, A Report of the New Jersey Department of Community Affairs, January 1980. Prepared by the Bureau of Regional Planning, Division of Planning. Limited copies available from Department of Community Affairs, Office of Public Information, 363 West State Street, Trenton, NJ 08625, (609) 292-6055.

This report examines the accelerated rate of casino growth, describes some of the effects of casino development, and examines the natural, private and public resources available to accommodate this growth.

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