



carolina forum

Beach Houses And Shifting Sands An Interview With Dr. Orrin H. Pilkey

One of the burning issues of coastal planning today is the subject of beach development. On one side are those who feel development is inevitable yet manageable through actions taken to alter the beach and protect the structures: protection of development is paramount. On the other side are those who feel beach preservation is the overriding concern. Their argument centers on the fact that actions taken to save the structures will only result in damage to the shoreline. They advocate beach development that recognizes the inevitable dynamism of the coastal ecosystem and does not interfere with that process. This, however, translates into development that is very different in concept and value from traditional notions of property ownership and enjoyment.

In the thick of the controversy is Dr. Orrin H. Pilkey, who has been called "the man who wants to let the lighthouse fall in." His view, simply put, is that the beach is a dynamic system that will run its course regardless of what man does to change it. Whatever intrusion man makes into the system in order to save it is doomed; in the long run he will cause more harm than he tried to prevent.

Dr. Pilkey's concern for beach preservation is explained at length in his 1979 book, *The Beaches Are Moving*, co-authored by Wallace Kaufman. It is the culmination of his many years as a passionate observer of coastal change and as Professor of Marine Geology at Duke University. Dr. Pilkey is also president-elect of the North Carolina Academy of Sciences.

carolina planning: Your most recent book is entitled *The Beaches Are Moving*; just what do you mean by this?

Pilkey: The title refers to the fact that we have a worldwide sea level rise going on now caused by the melting of the polar icecaps, and, as a consequence, beaches everywhere are moving back. The beach is a dynamic

system. Even if the sea level weren't rising, the beach would be moving back and forth in place, changing its shape. When the beaches move, property is lost as the sand is taken here and added there, just as inland erosion moves soil from one ecosystem to another, from field to river or swamp, or from swamp to ocean. The moving sand of the beaches stays in the beach system or is replaced by sand arriving from fresh sources. The beach ecosystem, under natural conditions, does not lose any vital material; it merely moves and survives, so long as man does not get in the way of that movement.

e p:

You have said that compatible beach development requires a drastic re-orientation of how people view their houses; that instead of representing permanent capital assets, houses should be built as more or less inexpensive, disposable shelters which will not stand in the way of natural forces. Please elaborate on this.

Pilkey:

The fundamental damage caused by development on islands comes when people try to protect their houses by building seawalls, jetties, and groins, or by pumping sand. So just building a big expensive house, if it is built on pilings, won't necessarily do fundamental damage to the island. The problem is that the type of person who will build a million dollar house on a beach is also the type of person who will insist upon, and who is powerful enough politically to get, engineering structures put in front of his house. And engineering structures, which are called stabilizing structures, will *always* destroy the

beach in the long run. If the beach is deemed worthy of preservation, then it becomes politically essential to keep the million dollar house off the beach. If I thought it were possible for million dollar homeowners to let their houses fall in and be good sports about it, I wouldn't suggest that we should have cheaper housing. So, it is for political and economic reasons that I suggest we should allow only cheap housing on the beaches -- housing that will be allowed to fall in when its time comes; housing nobody will spend a great deal of political effort on in trying to save, because it is the saving of that house that will destroy the beach. As an example, I have seen small beach communities where the houses were cheaply built and some of them were even built on skids so they could simply be pulled back as the shoreline advanced with the rising sea level.

The best example of the problem is when Hurricane David came by and removed a lot of the beach in front of Sea Island, Georgia. Sea Island has some very, very wealthy people, and in spite of all the urging to the contrary, a massive seawall has just been built. And a massive seawall will destroy the beach. But these people are the captains of American industry, and there's no way the state of Georgia is going to tell them not to build a seawall, or in other words, tell them "it's time for your house to fall in."

e p:

The co-author of *The Beaches Are Moving* is Wallace Kaufman, a North Carolina realtor and developer. Where does the private development sector fit into your scheme for beach preservation?

Pilkey:

Oh, we admit to the desirability of development on barrier islands under certain circumstances. The purpose of the book was not to explain the folly of all development on barrier islands, but rather to explain the folly of the present type of development and to explain the long range effect of what's being done. More than anything, we try to emphasize the long range -- the fifty to 100 year effect which is a very difficult thing for people to visualize. Private developers possibly can see ahead ten years -- the more enlightened of them -- and maybe I can't blame them for not looking beyond

that, but we're trying to get people to look beyond that ten years and see what's down the road for them if they build right next to the beach or build jetties on inlets.

e p:

How and where can development exist on the beach?

Pilkey:

There are two ways of looking at this. If you're willing to take the chance of letting your house fall in and are willing not to stabilize, then development could take place virtually any place on a barrier island. But, in reality, if one wants a house to last long enough for their grandchildren to take advantage of it, and if one does not want to be part of the political system that will eventually destroy the beach, as we see in all of our old, developed islands, one generally should build on the back side of barrier islands, in maritime forests, or at high elevations. One must be a little careful though, because some of North Carolina's islands are eroding on the backside even faster than they are on the front side. Much of the data regarding erosion rates of beaches are available in most coastal states to potential homebuilders. The main considerations are 1) potential destruction from a storm, and 2) shoreline erosion caused by the sea level rise. *No* place on a barrier island is safe, but there are many places, for example on the Outer Banks of North Carolina, where people have lived for over 100 years. This is because the early settlers were no-nonsense people who were out there

Orrin H. Pilkey

Photo by Conrad Neumann



fishing or keeping away from the law, and they weren't there for the sea-view. They were very concerned about the safety of their homes, so they built in very safe places.

e p: So what you are saying is that the existence of a structure on a beach is not the problem; it's what you do to preserve the structure.

Pilkey: That's right. The existence of a structure is *not* the fundamental problem. It is only the political potential of that house that is a danger to the island.

e p: At what point does the destruction of beaches and the shoreline become irreversible?

Pilkey: That's a good question. It hasn't been studied, but one can see irreversible damage on the northern New Jersey shoreline: Monmouth Beach, Sea Bright, Long Branch. These are places where, because of the reflection of waves from seawalls and similar structures, the shore face is so steep that there is no way sand can be pumped back there in an economic fashion -- it would disappear quickly. So the only thing these communities have to look forward to in the future is building bigger and better seawalls. At what point it becomes irreversible is not really known; as a 'guesstimate' I would say within thirty years after the placement of a seawall and similar structures the situation probably becomes irreversible on most barrier islands.

What we have to study is how we can reverse these irreversible trends. In the New Jersey and south Florida situations, for example, can we bulldoze down those seawalls, get rid of the houses and motels on the front side of the island, and allow nature to roll on? This is a total unknown at the present time. Sea Bright, New Jersey, is an example I like to talk about, where I would guess the island is 100 yards wide. I suspect that if the island had gone its natural way, it would be 200 yards behind where it is right now.

e p: How would you evaluate the federal government's performance with respect to coastal preservation, and do you see it taking a more aggressive role in the area?

Pilkey: The need for additional protection, so to speak, of the coastal areas is manifested right now in the bill that's going through Congress, the Burton Bill, which is a barrier island bill, and looks as if it has some chance of passing. The bill is an incredibly strong bill, as it is presently written, that will basically take the federal government off the barrier islands, and it will preserve areas that are not now developed. The federal government has finally stepped back and taken a big look at the cost of barrier island development, and discovered the long-range cost is just overwhelming. For example, the flood insurance program and other things such as bridges, sewers, water, roads, and so forth cost a lot of money. If the federal government were to step off the islands, development would halt *instantly* -- so fast your head would be swimming, there's no question about it. The federal government has recognized this, and whether this Burton Bill will make it through or not, or whether there will be another bill two years from now, there's no question in my mind that barrier island development, at least the federal role in it, is going to be considerably diminished, which is the way it should be.

e p: Isn't the rationale for the Burton Bill based on the idea that buying the islands now is much cheaper than in the long run?

Pilkey: That's right. Buy them now before we have to buy them many times over when we put in our stabilization, pay for the houses when they fall in, and provide disaster relief when the storms come. Not only is it necessary for planners to be able to consider the long-range environmental effects of development on barrier islands, but planners must also be able to understand and visualize the long-range economic effects of shoreline stabilization. There is good evidence that over a period of years the cost of shoreline stabilization to the public pocket, either through taxpayers or private individuals, far exceeds the value of the property that's being saved. Under these circumstances one wonders why we continue to stabilize. The problem is that we continue to look at this problem from a short-range viewpoint. From a ten- or twenty-year viewpoint the economics look very good -- it's

worth saving these houses; the houses are worth three million dollars and it's only going to cost a million and a half dollars to "save them." But then ten years later, you have to save them once again, and then ten years after that, you save them once again, and meanwhile it gets more expensive to save them. One example of the cost of this is the new beach in Miami Beach. It costs 67 million dollars to put in fifteen miles of beach, and that fifteen miles of beach could disappear in a single storm. Chances are it will disappear very rapidly; I would expect it will be gone in ten or fifteen years -- it's a difficult thing to predict at this stage of the game but probably in ten or fifteen years that 67 million dollar beach will be gone and then they will have to pump another one, all at taxpayer expense. The question is whether it's worth it. Of course Miami Beach has a lot of big buildings that one can put up economic justification for, but how about Wrightsville Beach in North Carolina? Wrightsville Beach is not a community like Miami Beach, and we've spent several million dollars there on replenishment.



Photo by Ocracoke Photographer, Ann Ehringhaus

e p: Replenishment is often the compromise solution reached when attempting to satisfy both the persistence of a beach system, and the pressures of development. How do you feel about coastal zone management?

Pilkey: Coastal zone management is really the only hope for our barrier islands. The system just will not work without some overseer. We can see this already on our old, developed islands. For example, look at the communities of Wrightsville and Carolina Beach in North Carolina. They refuse to learn the lessons of New Jersey and are doing exactly the same kind of thing the people of New Jersey did 100 years ago. Every community develops in a vacuum; maybe this is a fact of life that planners know about but I didn't know about it, so it has come as a surprise to me that the lessons of New Jersey and southern Florida have had no bearing on the development of North Carolina.

Another thing that I have learned that perhaps planners knew long ago is that many times there is a lot of rhetoric among government officials, planners, and scientists. I used

to think that such noise meant that progress was being made, but it turns out that the developers and realtors are often just plowing right along doing things just as they did thirty years ago, in spite of all our so-called increased knowledge, understanding, sensitivity, and so forth.

e p: You have said that beach erosion to an engineer is beach migration to a marine geologist. How can planners best overcome the problems caused by these differing perspectives?

Pilkey: That's an incredibly difficult problem. If I knew the answer to that I could solve the American shoreline problem. I think a major problem that we have in developing the American shoreline in a sensible way is the conflict between geologists and engineers -- their difference in outlook. There are many engineers who still do not admit the sea level is rising, and yet almost all geologists think the main cause of the shoreline erosion problem is the sea

level rise. Of course looking at it from even a broader viewpoint, we don't really look at it as beach erosion, we think it's island migration. In fact, we're sure it's island migration. Islands are migrating back toward the mainland and the mainland is eroding at the same time. Well, if we're so far apart that we can't even agree on what the main problem of shoreline erosion is, then there is no way we can possibly solve this problem.

The geologists' basic contention is that 1) the sea level is rising, 2) it is the main cause of shoreline erosion, 3) everything the engineers do is designed toward stabilization, or stopping the island migration. In other words, they do nothing to respond to the sea level rise. All of the alternatives by which one could respond to the sea level rise are indeed painful because they involve having to let the island move -- no question about that. So houses have to fall in and politicians do not like to talk about that. But houses do not really have to fall in; they can be moved, they can be purchased, there are other alternatives, too. There are three possible solutions that I can think of that respond to the sea level rise. One is do nothing and let the houses fall in when the time comes or some modification of that. Two would be the so-called Fire Island solution: don't pump sand on the front side of the island, but instead pump sand on the back side of the island; in other words, migrate it artificially. Three, an idea given to me by Jay Langfelder, an engineer at North Carolina State University, use minimum standards of shoreline engineering structures. That is, allow people to build a seawall; but it would have to be made out of biodegradable materials like wood, and it would have to be very weak. The seawall might survive the five-year storm but it shouldn't survive the ten-year storm. This stabilization would not be permanent and would not 'New Jersey-ize' the island.

a n: What would you say are the proper roles and strategies for coastal planners?

Pilkey: In my view as a geologist, survival of our islands hinges exclusively on keeping the engineer off the island, period. I really can't give planners specific instructions or suggestions other than to say that they must urge

that houses should not be built where they will fall in some day, and of course, that's very difficult in view of the fact that most of our islands in North Carolina are eroding on the front side three to six feet a year. Somehow, in planning, planners must designate zones on the front side and sometimes on the back side of the beach where the houses will someday fall in or will someday have to be moved. I don't know how a planner can do that, but under no circumstance should we continue to have permanent development of an expensive nature close to the beach. That is the most disastrous type of development one can have in terms of the long-range future of that island.

a p: So, you're suggesting that planners should tailor land use and development regulations to generate these outcomes.

Pilkey: Right -- exactly. Again, since I'm not a planner, I don't understand how this is done, but it's a matter of somehow getting the regulations into the community or the development that will allow for long-range survival of the system. And I would also urge planners to expand our horizons far beyond that of a politician or a developer. A developer can see to the end of development, a politician can see until the next election, and I think planners somehow have to get a fifty-year vision; I would urge all planners of coastal barrier islands to visit New Jersey.

In a vivid example of the dilemma between beach preservation and shoreline stabilization, the National Park Service has decided to build an underground wall to temporarily protect the Cape Hatteras Lighthouse from erosion caused by the Atlantic Ocean. Only seventy feet of beach remains between the lighthouse and the ocean and it is not expected to last through the winter. Although the Park Service has a policy of letting nature take its course on the shoreline, this stopgap measure will give it time to decide what permanent measures -- if any -- will be taken to protect the lighthouse. The proposals include doing nothing, moving the lighthouse, and erecting more permanent barriers. A spokesman said the Service will weigh the costs and benefits of tampering with nature against saving a piece of history.

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North Carolina Nature Conservancy

Conservation Through Private Action

Until about four years ago, few people in North Carolina had ever heard of Carrot Island and Bird Shoal with the exception of Beaufort and Carteret County residents, naturalists, and those connected with the adjacent Duke University Marine Laboratory. Carrot Island and Bird Shoal, located directly across Taylors Creek from Beaufort's historic Front Street, have traditionally served as open space for the area's townspeople. Yet it took the threat of development and the publicity that followed for most people to realize just how special this area really is. Much earlier, in fact, this island complex served as an inspiration for Rachel Carson's first book, *The Edge of the Sea*. In 1949, Ms. Carson spent her summer walking the tidal flats and warm sand of this 474-acre island complex and wrote of the beauty and uniqueness she found there:

...to visit Bird Shoal, one goes out by boat through channels winding through the town marsh of Beaufort and comes ashore on a realm of sand held firm by the deep roots of beach grasses, the landward border of the shoal. The burrows of thousands of fiddler crabs rule the muddy beach on the side facing the marshes. The crabs shuffle across the flats at the approach of an intruder and the sound of many small chitinous feet is like the crackling of paper. Crossing the ridge of sand, one looks out over the shoal. If the tide still has an hour or two to fall to its ebb, one sees only a sheet of water shimmering in the sun.

Early in 1976, Beaufort residents unexpectedly discovered that a private developer had purchased a portion of Carrot Island and Bird Shoal and intended to auction it off in five- and ten-acre parcels. A large portion of this property was under county jurisdiction, had no zoning designation, and could therefore be sold immediately without complying with any subdivision ordinance requirements.

Over a hundred individuals from Beaufort and Carteret Counties formed the Beaufort Land Conservancy Council to voice their opposition and initiate a fundraising drive to purchase the island. Through small donations and with the help of substantial contributions from three local industries, the Council was able to raise \$85,000 towards acquisition. In need of additional funds equaling three times that amount, the group turned to the North Carolina Nature Conservancy, a non-profit conservation organization, for help in acquiring the property.

The North Carolina Nature Conservancy was keenly interested in the preservation of the area because of the Carrot Island complex's long-standing importance as a special nesting place for sea and marsh birds. After lengthy negotiations with the developer, the Conservancy obtained an option on the property far below the asking price by offering tax incentives and a cash purchase. The Conservancy's purchasing power through a national revolving fund enabled it to move quickly. This, combined with contributions raised by the Beaufort Land Conservation Council, secured the property. The Conservancy will be repaid through an in-state fundraising campaign by Duke University and, upon completion, the University will retain title to the island. With a recently established Stewardship Committee comprised of local residents, representatives from the Duke University Marine Lab, and naturalists and scientists, a management plan will be developed for these islands to guide their future preservation. Acquisition of ecologically important property, its protection and stewardship, and education are the primary goals of the North Carolina Nature Conservancy. As a state chapter of the National Nature Conservancy, the North Carolina Nature Conservancy is committed to the preservation of natural diversity through the protection of lands containing the best components of our natural heritage. To date, the Conservancy and its members have been responsible for the protection of over 100,000 acres of North Carolina's forests, marshes, mountains, swamps, and islands such as Carrot Island and Bird Shoal.

The North Carolina Nature Conservancy first opened its doors in Chapel Hill in 1977. Today it has grown to over 2,000 members statewide, developed a substantial network of volunteer consultants, and is staffed by four full-time professionals. The Conservancy is a publicly-supported, non-profit, tax-exempt, scientific and educational organization governed by an elected Board of Trustees. Often referred to as the real estate arm of the conservation movement, the Conservancy retains and manages certain acquisitions while transferring others, when appropriate, to local, state, and federal agencies. Activities of the Conservancy are made possible through contributions, foundation grants, and membership dues.

Over the course of four years the Conservancy has made substantial contributions toward the preservation of North Carolina's coast as well as other areas of the state. Since its inception, the Conservancy has successfully preserved eight of the ten most ecologically

significant areas in North Carolina. Areas of significance are usually identified by the North Carolina Natural Heritage Program, a Natural Areas Inventory which began as a cooperative venture between the Conservancy and state government, and is now administered through the North Carolina Department of Natural Resources and Community Development. The Natural Areas Inventory is a cumulative process of identifying critical habitats' and species' occurrence throughout the state. This information is available for the preparation of environmental impact assessments, and the planning of commercial and residential development. Use of this information by planners, developers, and other decision-makers often alleviate adverse impacts on the environment.

Two of the Conservancy's earliest projects are in the coastal county of Brunswick. A gift of 11,900 acres of marsh and high ground on Bald and Smith Islands from the Baldhead Island Development Corporation was later transferred to the State and incorporated into the North Carolina Park System. A management plan is currently being drafted by the Conservancy for another gift of 13,850 acres from the Federal Paper Board Corporation in the Green Swamp. This area provides habitat for a variety of important species such as: black bear, the American alligator, the bald eagle, Venus' flytrap, and that once abundant but rapidly disappearing feature in North Carolina, the pocosin.

Early in 1978, the Conservancy received one of the largest single grants in history ever given to a private conservation organization. The R.K. Mellon Foundation contributed \$4 million toward acquisition and protection of two key tracts on the Currituck Outer Banks in Currituck County known as Monkey and Swan Islands. Totalling 6,806 acres of shoals, freshwater marsh, islands, and 2.5 miles of ocean-front property, this single acquisition includes one of the finest expanses of undeveloped beach on the Atlantic Coast, as well as critical feeding grounds for migratory waterfowl along the Eastern flyway. This purchase also included conservation easements on 4,500 acres freshwater marsh from the Swan Island Hunting Club, over which the Club will retain title.

Never has there been an ecological issue in the state of North Carolina that demands the degree of cooperation between federal, state, and local governments as does the future of the Currituck Outer Banks. The U.S. Fish and Wildlife Service is attempting to create a wildlife refuge in the area that will extend from the Virginia border south to the Village of Corolla, including all marsh lands south of Corolla to Dare County. There is enormous pressure to develop this area for second homes and consequently, environmental problems such as sewage disposal, alteration of the barrier islands, and disruption of wildlife habitats are preeminent.



Photo by Fred Annand

Perhaps the most significant unprotected natural area on the coast, Nags Head Woods, represents the ultimate challenge and success of the North Carolina Nature Conservancy to date. Totalling 1,860 acres, this ancient maritime forest and freshwater pond system spans the shoreline from Roanoke Sound southward to Jockey's Ridge State Park. One of the eight National Natural Landmarks in North Carolina, Nags Head Woods is the Conservancy's most important and complex project to date. Believed to be of national importance in terms of biological diversity, Nags Head Woods claims thirteen bird and five plant species considered rare and endangered in the state, as well as seventeen additional species of plants listed by the Cape Hatteras National Seashore Park as being rare or endangered on the Outer Banks.

Private contributions in excess of \$735,000 have made it possible for the North Carolina Nature Conservancy to pursue its preservation goals at Nags Head Woods. Having identified a core area of 300 acres, considered to be the most critical from a preservation standpoint, the Conservancy has successfully acquired 255 acres through the use of a wide range of acquisition techniques. With the Conservancy's tax-exempt status under Section 501(c)(3) of the Internal Revenue Code, methods such as gifts of land, bargain sales, and conservation easements become useful tools in the protection of land. Beginning with an initial gift of 30 acres in Nags Head Woods, the Conservancy has acquired an additional 225 acres by utilizing these acquisition methods coupled with rights of first refusal and fee simple purchase.

While the Conservancy continues to work toward completion of this nature sanctuary, planning has become of the utmost importance. A Stewardship Committee headed by Dr. Albert E. Radford, professor of botany at the University of North Carolina at Chapel Hill, is charged with determining the management and future educational and scientific uses of the preserve.

The Town of Nags Head is also a major land-owner in the area and has recently applied for a Coastal Area Management Act Grant to compile and implement a Master Land Use Plan for its and the Conservancy's holdings in Nags Head Woods. The Master Plan will analyze the present use patterns, determine the effects of these activities on the fragile nature of the area, and draft regulations to enforce appropriate future uses. Upon completion of the plan, it will be the Conservancy's policy to permit the maximum public utilization of its sanctuaries consistent with preserving the essential natural character of the sites.

The North Carolina Nature Conservancy is committed to the protection of our State's natural heritage not only along the coast, but also in the Piedmont and mountain regions. With successful projects such as Roan and Yellow Mountains in Avery County and Bluff Mountain in Ashe County, the Conservancy fully intends to continue its conservation efforts in the State. Two important current projects are the leasing of Bat Cave, a National Natural Landmark in Rutherford County, and the acquisition of conservation easements for over 2,000 acres at Rainbow Springs on the Nantahala River. The Conservancy will also investigate, in the near future, the use of local land trusts in various areas of the state to protect and monitor smaller natural areas.

While the Conservancy has accomplished a great deal, a tremendous challenge remains in the area of land conservation in North Carolina. Planners, both in the public and private sectors, are capable of making an enormous impact on the future of preservation. The Natural Heritage Program, with the use of computerized data, can provide planners with invaluable information on areas of ecological significance. Sound planning coupled with public awareness will enable North Carolina to continue protecting its natural heritage for our benefit as well as for the benefit of generations to come.

Frederick W. Annand
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The North Carolina Nature Conservancy seeks support for its operations through volunteers, memberships, and contributions. For further information please contact: The North Carolina Nature Conservancy; P.O. Box 805; Chapel Hill, NC 27514.

Congress Revises Coastal Zone Management Act

On October 1, 1980, Congress cleared and sent to the President the final bill HR 6979 containing a package of significant amendments to the Coastal Zone Management Act of 1972. The intended impact of the bill, according to the report of the full Committee on Merchant Marine and Fisheries, was to strengthen the Act; moreover, the bill aimed to signal to the States a continued commitment on the part of Congress to a program of support for states managing the valuable resources of the coastal areas.

The bill also reauthorized the Coastal Zone Management Act of 1972 (CZMA) for five more years, an action meant as an incentive to those states not involved in a CZMA program to participate in the voluntary coastal management program. The Committee deemed this step particularly timely, since 1980 has been designated and presidentially-endorsed as the "Year of the Coast" -- a designation intended to refocus national attention upon the increasingly complex problem of carefully developing yet preserving coastal resources.

Final bill HR 6979 was a compromise between the original bill offered by the House Merchant Marine and Fisheries Committee and a bill passed by the Senate on June 3, 1980. According to the *Congressional Quarterly*, the compromise, as passed reduced existing authorizations for coastal planning grants by \$75 million. However, new State grant programs were established to revitalize urban waterfronts and to ameliorate adverse environmental effects associated with increased coal trans-shipment and alternative energy development. Though the original House Bill offered a total of \$848 million over an eight year period, the bill as cleared authorized \$805 million over a five year period. Of that amount \$240 million will be apportioned among the 25 states that voluntarily participate in the basic Coastal Zone Management program.

OVERVIEW OF KEY PROVISIONS OF HR 6979

A sweeping glance at the key provisions of these newly enacted amendments to CZMA indicates a shift from the development phase of the CZMA program to an implementation and enforcement phase of state management efforts. For example,

former Section 303 of the Coastal Zone Management Act embodied a general, rather vague declaration of the national policy behind the Act. The section provided very little guidance concerning the objectives to be achieved by the States under a CZMA program.

The new, amended § 303 expands the original policies to include a list of eight more specific national policies for which state management programs should provide. These national policies include protection of natural resources within the coastal zone, minimization of loss of life and property caused by improper development and destruction of dunes and barrier islands, and provision of public access to the coasts for recreational purposes. Another national objective is to give priority consideration to coastal-dependent uses and orderly processes for siting major facilities related to fisheries development, energy, recreation, national defense, and transportation. Moreover, states should, "to the maximum extent practicable," locate new commercial and industrial developments in areas where development already exists. Finally, amended Section 303 also encourages, as national policy, the participation and cooperation of federal agencies, state and local governments, and other regional agencies in carrying out the purposes of the Coastal Zone Management Act.

House Bill 6979, as passed, significantly altered the procedure set out in § 306 of the CZMA for awarding an administrative grant to a state. Specifically, the Secretary of Commerce must now find, prior to awarding a grant, that the coastal state will spend an increasing proportion (up to 30 per cent) of each grant received on improving the state's achievement of the § 303 objectives. This provision is modeled after a demonstration effort instituted by the National Oceanic and Atmospheric Administration (NOAA), which has targeted 20 per cent of federal administrative grants in fiscal years 1979 and 1980 for selected issues of national concern. The apparent purpose of this procedural change is to ensure a balance of expenditures to meet national needs as well as state needs.

A further amendment to § 306 of the CZMA encourages, but does not require, states to designate coastal resources of national significance and to establish standards for their protection. The committee comments to HR 6979 point out that a desirable feature of the Coastal Zone Management program is that participation by the states has been purely voluntary in the past. To continue the voluntary nature of state involvement, no provision has been made for federal intervention when states choose not to designate coastal resources of national significance.

RESOURCE MANAGEMENT

A brand new section added to the Coastal Zone Management Act is § 306 A, entitled "Resource Management Improvement Grants."

Actually, the new section consolidates portions of existing law and expands the use of authorized funds to enhance implementation of state management programs.

Section 306 A sets up state grants to implement three objectives:

- a) Preservation or restoration of natural resource areas,
- b) Revitalization of urban waterfront and port redevelopment, and
- c) Provision of greater public access to coastal areas.

The funds for these activities were limited under the bill as initially proposed, but funds were slashed even further under the compromise bill as passed. The bill originally reported out of the House Merchant Marine and Fisheries Committee provided \$35 million for these 306 A projects; the compromise authorized only \$20 million. Moreover, to be eligible for the grants, a coastal state must have an approved management program and must show "satisfactory progress" in achieving the national coastal objectives of the Coastal Zone Management Act.

Unlike the earlier, less structured orientation of the CZMA, Section 306 A provides funds with specific results expected. The amendment describes in some detail the type of expenditures allowable to achieve the goals listed in the amendment. For example, the amendment suggests small-scale construction projects such as paths, walkways, bridges, parks, and the rehabilitation of historic structures. To revitalize urban waterfronts and ports, the amendments authorize the rehabilitation or acquisition of piers, or the installation of bulkheads as permissible expenditures. The authors of the amendment apparently felt that this specificity would better enable states to enhance the effectiveness of their management programs.

A new addition to § 308 of CZMA grants limited federal funds to states detrimentally affected by increased coal trans-shipment or alternate ocean energy development. This section is expected to affect particularly the coastal zone of the Great Lakes region, which already is experiencing adverse environmental effects from increased coal trans-shipment. Some of these undesirable effects include accelerated erosion, increased dredging and dredge disposal problems, and decreased public access

to the beach areas. The bill as cleared authorized \$150 million over five years to ameliorate these and other energy related environmental damages to coastal areas.

Under the former provisions of § 312 of the Coastal Zone Management Act, a state that failed to meet the obligations of state and national interests in its coastal management program stood to lose all financial assistance. This drastic penalty was, in fact, the only penalty permitted under former § 312. Final



Photo by Conrad Newmann

bill HR 6979 provides a more flexible alternative designed to better implement state management programs. The Secretary is now authorized to reduce the amount of the total grant by a maximum of 30 percent should the Secretary determine that a state shows inadequate progress in achieving the national coastal objectives of § 303. Of course, if a state unjustifiably deviates from its management program or grant agreement and refuses to remedy the deviation, the Secretary may still withdraw approval and financial assistance from the State's management program. Before this severe penalty is imposed, however, the coastal state must have notice and opportunity for a public hearing. The Amendment also ensures that a state will have fair opportunity to rectify any deviations prior to being penalized.

New § 312 also directs the Secretary to obtain and disseminate to the states, information concerning improvement of state coastal management programs. These distributions will probably contain information about other federal monies available to enhance coastal management programs.

EVALUATION

Another kind of evaluational system is included in HR 6979 as an amendment to § 316 of CZMA. The committee comments refer to an effort to achieve a "coherent and consistent" national coastal policy by requiring the Secretary of Commerce to review systematically other federal coastal resource programs to pinpoint conflicts between these programs and the Coastal Zone Management Act. For example, the objectives or effects of other agency administrative decisions may operate in opposition to those of the Coastal Zone Management Act. Final bill HR 6979 places priority upon implementation of the CZMA; new § 316 directs federal agencies with programs conflicting with the National Coastal Policy to revise or amend their procedures to eliminate interagency counteraction as much as possible.

Finally, the Coastal Zone Management Act was modified to provide for a two-house Congressional veto of final regulations promulgated under the Act. If, after 90 calendar days of continuous session, a concurrent resolution of disapproval has not been passed by both houses, the proposed final regulation will become effective. This provision will expire with the authorization of the entire bill on September 30, 1985.

In conclusion, the basic thrust of House Bill 6979 as cleared by Congress seems to be a redistribution, rather than an increase, of federal monies to aid states in administering coastal management policy. Congress has seen fit to specifically spell out national objectives to be met by coastal state programs, and to emphasize an implementation as opposed to a *developmental* phase for these programs. Small grants have been made available to mitigate environmental damage to states adversely affected by expanded use of alternate energy sources, and even smaller amounts have been provided to redevelop urban waterfronts and port areas. The amendments are intended to strengthen the Coastal Zone Management Act and to encourage and support voluntary participation by the states in the Coastal Zone Management program. It is hoped that the new amendments will enable state and federal agencies to coordinate activities and policies to permit a cautious approach to development of coastal areas without damaging irreplaceable natural resources.

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