

The Structure of Management and Planning
for the Coastal Zone

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The Structure of Management and Planning for the Coastal Zone

. Dr. John M. Armstrong

Any concern over the future of the coastal zone ultimately focuses on man's ability, or inability, to control the impact of his use on its resources. The ecological character of the coastal zone and the impact that man has on it inevitably leads us to a consideration of the policies, programs, and institutions through which man can exercise his powers of rational decision making. Historically, the policies, programs, and institutions which deal with the coastal zone have been lumped under the rubric, coastal zone management. The term has been used to describe anything from theoretical studies of how traditional economics might be used to allocate the resources of the coastal zone to detailed programs for establishing operational agencies and procedures to regulate use of the coastal zone.

The panel[†] that I had the pleasure of chairing at the Woods Hole workshop examined coastal zone management and planning and the way in which they might be used to improve our utilization and protection of the coastal zone. To accomplish this goal, the panel first had to define what it meant by coastal zone, why management of the coastal zone is necessary, and what coastal zone management should be.

Definition of the Coastal Zone

No definition of the coastal zone can satisfy all requirements. From an *ecological* viewpoint, the coastal zone is a complete natural system made up of shallow-water elements, beaches, bluffs, plains, and uplands. These elements make the coastal zone distinctly different from other, inland, land resource systems. In a *management* sense, the seaward limit or boundary of state jurisdiction definition is suitable for *most* cases of management programs. In cases of national concern, we may have to exercise the limits associated with federal jurisdiction. On the *landward* side, the coastal zone is much more difficult to define because of overlapping jurisdictions, land use patterns, special districts, etc. We try to use a fuzzy definition that relates to the extent of marine or lake influence inland, as defined *by the states*. Thus, definition relates to the problem at hand.

Why Do We Need Coastal Zone Management and Planning?

The rationale for a coastal zone management program is well stated in the committee report of Senator Hollings which accompanies Bill 3507, the Magnuson Coastal Zone Management Act of 1972. In summary,

- The economic value of the coastal zone is high. It is an area rich in living and mineral resources. Its recreational value is immense but often immeasurable. Recreational demand on the coastal zone is increasing tremendously.
- It is ecologically fragile and vulnerable to external stresses man can impose.
- The multiple political interests and power structures in the coastal zone have made it difficult to manage. Government agencies' overlapping jurisdictions, which we cannot ignore, can cause nonuniform guidelines and regulations.
- In traditional resource management or planning, man has dealt with each resource subsystem individually--land, water, submerged land.

It is imperative to view the coastal zone as a complete natural system so we may exist in harmony with the ecological web that makes the coastal zone what it is. It is a system distinct from but related to the larger biogeophysical land system located inland from the coast and in a management sense can be viewed somewhat separately from more general land use problems.

Using a management perspective, we can group the impact problems of the coastal zone use into four classes:

Localized Major Areas

This class involves the development of *individual* units, such as a manufacturing plant or some other industrial complex. In this class of problem, the issues must be resolved *primarily by action at local (or regional) levels*. The Hilton Head chemical complex provides a good example of the issues in this category.

Localized Major Impacts with National Involvement

The current energy crisis provides an excellent example here. The increasing demand for energy and the energy projections for national use suggest that we may develop new deep ports and/or offshore facilities for handling supertankers quite soon. Although it is fairly local areas that will feel the impact of the new facilities, the need for the fuel is nationwide and the beneficiaries of the new facilities include a broad cross-section of the country.

Degradation of the Coastal Zone from Historical Usage

The New York Bight in its historical role as septic system for the metropolitan area is a classical example for this category.

Rehabilitation of the Coastal Zone

A willingness to break with past traditions and to reexamine past uses of coastal regions to determine possible new thrusts for action is a major imperative for future coastal zone management. In our panel we considered the possible rehabilitation and reconstruction of the port of New York in our study.

What Do We Mean by Coastal Zone Management?

A management process is a set of procedures and guidelines designed to achieve a set of stated objectives. As implied earlier, in the coastal zone the stated objective would be to improve and maintain the zone's usefulness for man by ensuring the quality and extent of the natural system on which he depends. This goal should be achieved, now and for the future, in ways that would be at least partially compatible with our expressed or imputed economic, social, and environmental goals. With such a best-use objective in mind, we could establish a basic definition of

coastal zone management through introduction of its major functions:

Coastal zone management is the process of (1) developing an understanding of the coastal zone as a system, (2) using this knowledge to create a dynamic plan for its best use, and (3) implementing and enforcing that plan.

This process structure can be expanded further:

The Coastal Zone Management and Planning Process

- Determine what man's *desires* are in using the coastal zone, e.g., values, priorities.
- Determine what the *capacity* of the coastal zone is in relationship to man's desires.
- Determine what uses are *compatible* with these capacities. (What is the impact of the various uses on the natural coastal zone system?)



- Determine what the *trade-offs* will be if capacities and uses are not compatible or matched.
- Determine how the need for capacity match can be *communicated* to the public.
- Determine what mechanisms are needed (and possible) to *regulate* and *promote* the compatible uses. (What kind of a coastal zone management program is needed?) Establish principles by which management can be accomplished, e.g., dependency, minimum impact, etc.

The operational functions of management within this process structure are based on three interrelated principles:

1. Allocation of resources in the coastal zone.
2. Objective setting—what do we want?
3. Regulation *including proponent management* (positive use of the resources through, for example, incentives, pricing, strategies, etc.).

The allocation process requires a resources inventory and classification to establish a resource baseline from which we can make allocative decisions (i.e., a plan for the future use that covers the various coastal zone resource attributes). This process, in turn, leads to the development of a program to evaluate and monitor how well the coastal zone system is functioning and enables us to determine the effectiveness of our management system.

Who Should Do Coastal Zone Management?

The simple answer is everyone, but that desirable fundamental is not very helpful. To begin to pinpoint responsibilities in a more useful way, we conclude quickly that the scope of the problems and the common resources involved require that *government* do the job—federal, state, including interstate regional groupings, and local, a collective term which I will use to include all levels of government below the state level—counties, municipalities, towns, villages, and various groupings thereof.

The major issues are centralization and decentralization. This fundamental management question is not unique to the coastal zone. Generally, the higher the level of government (centralization), the more diffuse the perspective, the more likely the objectivity, the more expert the talent available, and the more funds and political impact. Moving in the opposite

direction (decentralization), the lower the level of government, the more intimate the knowledge of the problems, the more myopic the outlook, and the greater the likelihood of living with the effects (good and bad) of the decisions. Furthermore, if higher government does not limit its own decision-making appetite, it can become hopelessly weighed down in detail at the expense of the liveness and perspective it claimed in the first place.

Usually, in such cases it is appealing to seek out a middle ground, ideally one that preserves the recognized unique attributes of the extremes.

To distribute authority in the coastal zone among the various levels of government involved, we need to invoke the principle of delegation of authority. Under this principle, coastal zone decision making is delegated at the lowest level of government consistent with the scope of the problems, but decisions must conform to the goals and constraints specified by the next higher level.

The constraints are generally formulated to ensure that the external effects of the local decisions are kept within tolerable bounds.

Thus, a workable system incorporating the principle of delegation of authority—and its corollary, management by exception—would place decision making at the lowest level

commensurate with the anticipated impact of the decision, while prescribing the policy framework and types of external considerations that must be referred to a higher level. Typically, we might expect to encounter the situation where 'you can act provided you do not _____,' where the responsibility for filling in the blanks is that of the higher level. The need to do so will tend to keep higher level attention on these broad effects and articulate their dimensions.

The General Role of Levels of Government

With the foregoing concepts in mind, we can begin to allocate responsibilities by levels of government.

Federal Level

The federal level should provide the *leadership*. This includes

- (1) the designation of a lead agency to coordinate the many coastally relevant functions of federal government,
- (2) the articulation of what is '*in the national interest*,'
- (3) the development of *means* to foster that national interest,

- (4) *the delegation of decision-making authority* to lower levels of government insofar as the decisions remain in harmony with the national interest,
- (5) *providing assistance* to the lower levels in the form of grants and technical guidance, and
- (6) maintaining an *overview* to improve the effectiveness of the overall system in serving the basic objective of coastal zone management.

State Level

The state is the focal point of coastal zone management. The state is the level which must bear the responsibility of seeing that the three functions of management are discharged, either by itself or by enlisting the cooperation of others. It must *understand* its coast—socially, economically, and environmentally. It must develop a *plan* (or family of plans) that articulates objectives and selects time-phased ways of achieving those objectives. It must ensure that that plan is *implemented*.

It is easy to conceive of some specific exception in which the state may not be the natural focal point. Interstate regional mechanisms may be more appropriate in places such as the southern New England coast–New York coast, Delaware Bay, and Chesapeake Bay. In some states, delegations of considerable authority to the local level might be more appealing because of geographic features or a tradition of decentralization, e.g., New York and California. New York's coastal zone consists of (1) a highly urbanized, saltwater coast and (2) a comparatively long, comparatively unpopulated, freshwater lakefront some 300 miles away. California has recently demonstrated a strong tendency toward decentralized control of its 1350-mile coastline by preparing the formation of six regional coastal zone commissions.

The states themselves seem to be in the best middle position to make the judgments as to the extent to which they will regionalize or localize their basic authorities. For example, the federal level may offer inducements, but unless the state itself perceives the need for and seeks interstate regional integration, the regionalization would probably not be viable. In short, it would not be 'wise' or politically feasible for the federal, regional, or local levels to decide how the state should distribute its authority.

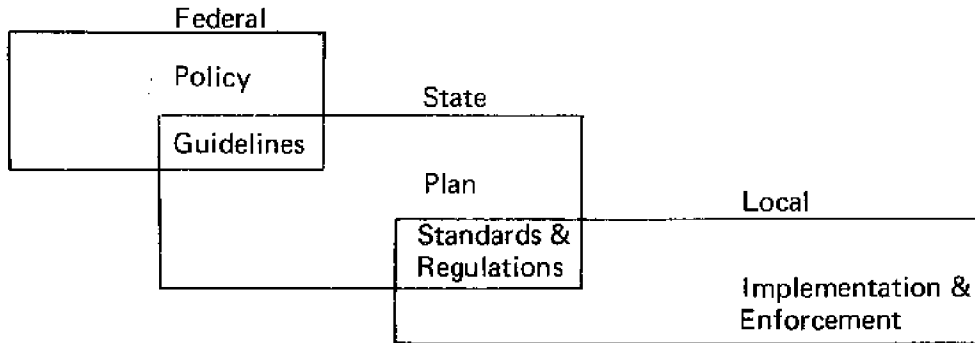
Local Level

It is at the local level that the impacts (good and bad) are primarily felt and that most of the everyday decisions must be made and carried out. Presumably, there will emerge from the state level, after much strong participation by the local levels, a blueprint or basic strategy (comprehensive plan), with supporting legislation, authority, funding, staffing, and guidelines. If the principle of delegation of authority is emphasized by the state, the local governments will make all decisions so long as they are in harmony with the state plan (which, in turn, should be in harmony with federal guidelines). They will anticipate review by the state to see that they stay within these bounds. To the extent that they feel the plan inadequate or prejudicial to their values, they must initiate the presentation of their case before the state.

The Functional Flow of Coastal Zone Management

In expanding the preceding principles, let us look briefly at the functional flow of coastal zone management as related to division of responsibility just discussed. In a very generalized sense, the principles of coastal zone management within the various roles of government can be explained by an overlapping of discrete sets of responsibilities. Conceptually, management

activities should extend from federal policy to local implementation levels, with principal



planning responsibility resting with the state. In this context, one can think of the overlapping between these activities as transfer functions: between policy and plan, it would be federal guidelines; between plan and implementation and enforcement, it would be state-established standards and regulations.

The functional flow of the overall management process may be expected to have a number of feedback and control functions. Long-term effects can be provided for, and recourse for challenge made possible at every level of decision making.

Policy Formulation

The flow starts with the formulation of policy. Since the coastal zone is a national resource, a national coastal zone management policy responsive to the needs and values of the citizenry should be established by the federal government. Consideration should be given to making provisions for such a policy to be administered by a single federal agency with coordination responsibility for other federal agencies with coastal zone responsibilities. The proposed policy should result in the enactment of appropriate and adequate legislation.

Program Definition

A clear definition is mandatory to distinguish between issues of federal concern wherein the federal government will retain approval authority and those which are of principal concern only to the states. Identification of these systems and resources will be carried out with the advice of the individual states in order to assure to the fullest

extent possible that the outcome is consistent with constitutional precepts of states' rights.

<p>Coastal resource systems that, within the definition of the law, are of principal concern to the states will be eligible for consideration as part of a program supported by federal planning grants.</p>	<p>Coastal resource systems that span interstate jurisdiction and coastal zone resources that are of national significance, even though only contained within a single state's boundaries, shall be defined by Congress and be under federal jurisdiction.</p>
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Program Guidelines

The responsibility will rest with the federal government to issue program guidelines for the benefit of those concerned with the development of coastal zone management programs:

<p>In the case of grant-supported programs, the guidelines will reflect the funding opportunity, which should not be interpreted as federal control of state responsibilities, but as an opportunity for states to undertake comprehensive coastal zone planning programs.</p>	<p>In the case of federal programs with approval authority, guidelines will be designed for subsequent use by federal agencies.</p>
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Providing Standards and Regulations

In the interest of clarity, the terms 'standards' and 'regulations' should be interpreted as a performance specification, while the latter refers to the temporal or spatial description of an area (i.e., an area will be used in such a manner as not to interfere with its characteristics).

In the case of state programs, the states, either individually or in regional groups, will develop coastal zone management programs under the direction of a single coastal zone management agency with sufficient authority and financing to accomplish its program. Although functionally independent of other agencies of the states, the coastal zone management agencies will utilize information and expertise of other agencies as appropriate and be responsive to both federal guidelines and declared state goals and objectives.

In the case of programs for which the federal government retains approval authority, the federal agency will move directly to the issuance of use standards and regulations. These will then be provided to the appropriate state agency (the coastal zone management agency in those areas choosing to pursue a qualifying planning program) for incorporation into state standards and regulations.

Summary

Our model of the coastal zone management process would show that national coastal zone management policy would flow from the federal government, with the responsibilities of management at the state level. State coastal management programs would place high priority and emphasis on involvement and participation of local units of government and on the citizenry to evolve coastal zone management plans and programs. States would use grant programs as incentives to promote and encourage such involvement.

State management programs would be encouraged by the federal government through guidelines and grant programs to the states. The question of establishment and enforcement of standards and regulations concerning use and protection of the coastal zone is best left to the states *except* for coastal zone resource systems that span state jurisdiction and coastal zone resources that are of national significance, where such systems and resources should be identified by the Congress of the United States.

The political arena of the Congress would at least assure the state and local interests of the opportunity to participate in the determination of what coastal areas should be of national concern and what effect and relationship their designation would have to the particular interests of the states. Further, it would seem reasonable that identification of the areas of federal interest would be carried out with the advice and cooperation of the individual states

and to the fullest extent possible would be consistent with the objectives of the established state coastal zone management program.

In this connection, our management model would indicate the establishment of regional coastal zone management information centers, which would develop and coordinate scientific studies and social and legal information and make this information available to federal, state, and local governments and to all users of the coastal zone. Each center would continuously monitor the coastal zone environment and inventory coastal resources for the purpose of providing information for federal and state coastal zone management programs. These coastal zone management information centers would be established in regions corresponding to the major types of coastal environments in the nation, each region comprising one or more coastal state(s). At least five such centers are needed. The centers would advise the federal government in the designation of coastal zone resources that would be of greater significance than individual state concern.

State coastal zone management programs should have three primary functions:

- coordinate with all other agencies that have responsibility or expertise in coastal zone affairs, and prepare an integrated use plan for the coastal zone,

- encourage wise use of the coastal zone through incentive and regulatory methods and programs,
- encourage public participation in the decision process by means of citizen advisory boards and educational programs.

Finally, the federal government should establish a coastal zone management program, vest it in an existing agency, and provide for coordination with all federal agencies involved in coastal zone activities. In addition to evolving specific guidelines for state programs, it would also establish guidelines for coastal zone management in federal lands.

†The Coastal Zone Management and Planning Panel members that participated in formulating the management recommendations were

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