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Regional Planning on the South Shore: A Proposal for Improving Coastal Resources Management in Rhode Island

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Regional Planning on the South Shore:
A Proposal for Improving Coastal
Resources Management in Rhode Island

Thomas R. Ouellette

A Paper Submitted in
Partial Fulfillment of the
Requirements for the Degree
of
Master of Marine Affairs

University of Rhode Island

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INTRODUCTION

The Rhode Island coast is distinguished by estuaries and brackish ponds, sand dunes and barrier beaches, fertile agricultural soils and productive wildlife habitats. The state's coastal zone includes both the urban waterfront of Providence and the traditional rural environment of Washington and Newport Counties. Because of Rhode Island's small area (less than that of the average county in the United States) and high population density, the state's shoreline is in great demand by nearly all of its residents. Many are either dependent economically upon, or enjoy the recreational use of, the resources of the coast. However, the people of Rhode Island have long recognized the threat to those resources from their excessive or unwise use, and the consequent impact on the aesthetic, social, economic and environmental well-being of the entire state.

In that light, Rhode Island achieved national pre-eminence in 1971 with the creation by the State Legislature of the Coastal Resources Management Council (CRMC) (Rhode Island General Laws 4-23-1). Formation of the council was recommended by the Governor's Committee on the Coastal Zone which was appointed in 1969 to study possible mechanisms for managing the state's coastal zone. The creation of the Committee was spurred by a report of The Natural Resources Group, an organization of concerned citizens, which clearly documented the absence of an adequate coastal management policy and the clear threat to the state's coastal resources from increasing development pressure.¹

The Act creating the CRMC served as a precursor to the federal Coastal Zone Management Act of 1972 (CZMA) (P.L. 92-583) which was enacted to address the growing awareness of coastal resource use conflicts in all coastal states. In accordance with the general guidelines provided in 15 CFR 920.50 for the preparation of state coastal management plans, Rhode Island became, in 1973, one of the first states to receive a planning grant under Section 305 of the federal statute. The Rhode Island Coastal Resources Management Program (RICRMP) was adopted by the CRMC on

March 14, 1978, and was approved by the federal Office of Coastal Zone Management (OCZM) on May 12 of that year.

The substantive goals of the CZMA are very broad: Section 303 establishes a national policy to "...preserve, protect, develop and where possible, to restore or enhance..." the resources of the coastal zone. This broad mandate has led to disagreements over the extent to which the CZMA was intended to balance the divergent interests present in the coastal zone. Those interests include the assessment of environmental protection requirements versus economic needs, long-term versus short-term costs and benefits, and the differing interests and perspectives of various levels of government. Opponents of this balancing role believe that the Act, as originally passed, was intended to be first and foremost an environmental protection statute, and that the major emphasis should be on the preservation of such prime coastal resources as wetlands, beaches, dunes and barrier islands.²

In the present analysis, the position is taken that the pre-eminent responsibility of the CZMA, and, hence, of the constituent state coastal management programs, is indeed the protection of the environment. In that respect, the protection afforded coastal resources by the RICRMP is less effective than it could and should be.

Barrier beaches, salt marshes, coastal ponds, sea cliffs, erosion-prone bluffs and conservation areas have been designated as Geographical Areas of Particular Concern (GAPC) and Areas for Preservation and Restoration (APR) by the University of Rhode Island Coastal Resources Center (CRC). The inventorying of those resources was required as part of the Planning and Development phase of the federal coastal program in order to express a degree of statewide concern about those areas, and to direct the state, through the CRMC, toward implementing policies for their protection and proper management.³ However, while the RICRMP recognizes those areas, it does not include specific requirements or guidelines for their protection. Instead, they are included within general resource categories. Persons seeking building permits must only comply with general RICRMP regulations regardless of whether

the area has been designated as an APR or a GAPC.⁴ It is specifically stated in the RICRMP that:

- 1) The program will not have zoning controls or powers. These will remain the responsibility of the local government.
- 2) The program does not regulate single family homes or control sprawl unless they have a direct impact on coastal resources.
- 3) The program will not stop all development on altered or developed barrier beaches.
- 4) The program does not propose increased public acquisition of recreation facilities other than those areas proposed in the Bay Islands Park Plan.
- 5) It is not a growth management program, however the program does direct growth away from some key coastal resources.

The RICRMP is thus a "negative" management structure in which undesirable action is simply restricted, rather than a "positive" structure in which inappropriate action is constructively discouraged while appropriate action is encouraged.

Chief among the inadequacies of the RICRMP are its failure to provide zoning regulations or guidelines and its refusal to affirmatively manage growth in the coastal zone. Local zoning powers and traditional home rule, which are jealously guarded in Rhode Island as throughout New England, were dominant factors in the formulation of the RICRMP. Zoning rationale varies from town to town where the only requirement is that a zoning ordinance be consistent with itself.⁶ The result is that resource allocation is carried out on the local level and that development is considered on an ad hoc basis.

A further cause of the RICRMP's ineffectiveness is the indiscriminate land and water use classification system originally assigned to coastal resources by the CRMC. Those designations provide inadequate recognition of sensitive natural areas. To correct that oversight, the Coastal Resources Center has proposed to the Council revised classification guidelines for water resource uses. The classification "multiple use recreation" was originally applied

to all coastal ponds and tidal waters except those ponds which were totally or largely undeveloped. The latter were classified "conservation/low intensity use". Under the proposed reclassification, the "multiple use recreation" designation will be eliminated and the "conservation/low intensity use" classification broken down into two categories: "conservation" and "low intensity recreation". This scheme will facilitate the protection of the ponds' estuarine ecosystems by limiting permissible recreational activity to low use levels, and through the designation of a greater number of restricted conservation areas. Areas of ponds currently subject to heavier use will be designated as suitable for "high intensity recreation," thereby directing that activity away from less suitable waters⁷ (see Figure 1).

Robert Knecht, former Assistant Administrator of OCZM, noted that comprehensive coastal programs which were developed hurriedly resulted in "broad brush" approaches to resources management. Issues were not treated with specificity adequate to provide a clear indication of how particular resources were to be treated or how use of certain areas was to be restricted.⁸ Rhode Island's plan was not developed hurriedly, but as previously described, was one of the earliest in the nation to be formulated and approved. Consequently, management issues which have since gained recognition in other states were not fully defined or anticipated. Indeed, that fact was recognized by the framers of the RICRMP, who stated in the document's introduction that "...the planning process has [not been] finished...;" that "...elements of the Program will have to be refined in the future..."

Rhode Island, however, is not unique among coastal states in facing this situation. Sarah Chasis of the Natural Resources Defense Council wrote that, "The problems facing the coast greatly outstrip the management tools which have been developed. Improvement and strengthening of coastal zone programs are essential if we are to ensure the continued viability of our nation's coast."⁹ Therefore, the objective of the

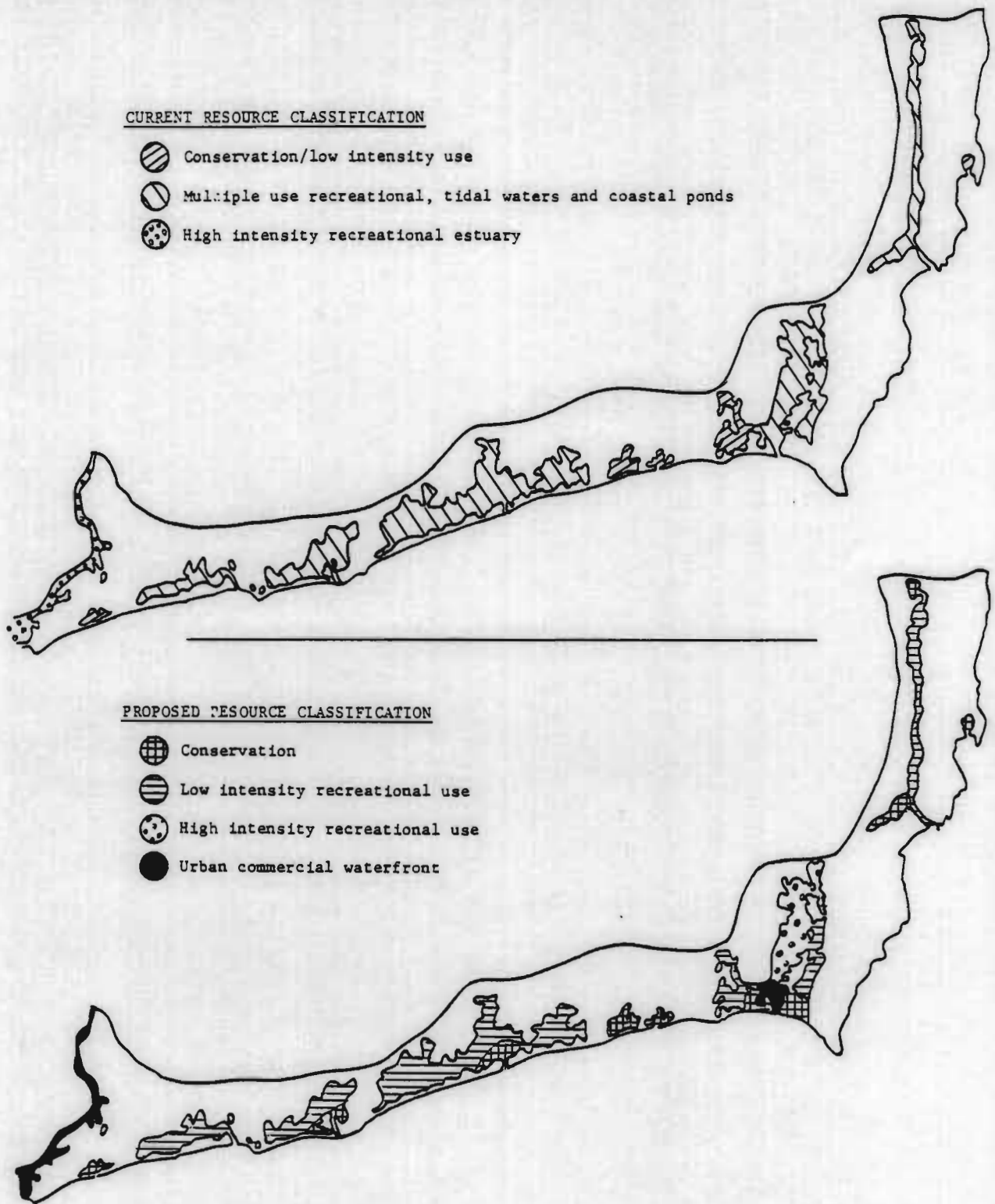


Figure 1. Proposed reclassification of South Shore water resource uses.
 Source: University of Rhode Island Coastal Resources Center.

present investigation is to examine alternative management strategies which may provide more effective protection for Rhode Island's coastal resources.

THE STUDY AREA

The focus of this analysis includes the coastal communities of Washington County (Westerly, Charlestown, South Kingstown, Narragansett and North Kingstown) extending from the shore inland to U.S. Route 1, and encompassing the Narrow River estuary in North Kingstown. The area is known colloquially as the South Shore. It is geographically and demographically distinct from the remainder of the state's coastal zone. The coastal towns of Washington County have been subject in the past to, and are expected to experience in the future, much higher rates of population growth than are the coastal communities of any other county in Rhode Island (see Figure 2).¹⁰

Significant portions of the South Shore remain undeveloped or exist as open space. Large tracts of prime agricultural soils and soils of statewide importance¹¹ are still actively farmed. The extensive coastal ponds present along the length of the southern Rhode Island shore are unique on the New England coast. The ponds are former depressional areas in the glacial outwash from the recessional Charlestown moraine which was deposited during the Wisconsin glaciation approximately 20,000 to 16,000 years ago. They have responded to subsequent sea level changes and barrier beach dynamics to become estuarine complexes. The ponds receive fresh water input from the small streams which drain the moraine.¹²

A constant estuarine condition is maintained in several ponds by permanent breachways constructed for boat access. The salinity in other ponds varies with the periodic breaching of the adjacent barrier beaches by storm activity. The ponds and barrier beaches, located on the Atlantic flyway, provide important habitat for migratory as well as resident

	POPULATION GROWTH: 1960-1990								
	<u>1960</u>	<u>1970</u>	<u>% Increase</u>	<u>1975</u>	<u>1980</u>	<u>% Increase</u>	<u>1980</u>	<u>1990</u>	<u>% Increase</u>
Bristol County	37,200	46,000	23.65%	45,600	46,800	2.63%	46,300	49,400	5.55%
Kent County*	74,600	93,300	25.06%	96,900	100,000	3.2 %	100,000	106,200	6.2 %
Newport County	81,400	94,200	15.72%	78,800	87,000	10.4 %	87,000	95,600	9.88%
Providence County*	397,200	378,600	- 4.68%	365,600	344,500	- 5.77%	344,500	326,600	-5.19%
Washington County*	51,100	74,400	45.59%	69,800	78,700	12.75%	78,700	92,200	17.15%
State Total			<u>10.5%</u>			<u>0.90%</u>			<u>3.5 %</u>

* Includes only coastal communities.

Figure 2. Past and projected population growth in the coastal communities of Rhode Island counties.
Source: See note 3.

shorebirds and waterfowl. The surrounding uplands, in various stages of succession, support many species of small mammals and resident and migratory songbirds. Several rare and endangered birds (king rail Rallus elegans, sora Poranza carolina, long-billed marsh wren Cistothorus palustris, and bobolink Dolichonyx oryzivorus) and one rare species of wild rye (Elymus canadensis) have been recorded in the area.¹³

In addition to the coastal ponds, the Narrow, or Pettaquamscutt, River estuary flows through North Kingstown, South Kingstown and Narragansett. The Narrow River will be described in greater detail later in this paper.

A number of other sensitive barrier beach and wetland areas are proposed for reclassification by the CRC as discussed in the introduction. These include lands adjacent to the Quonochontaug and Charlestown breachways in Charlestown, and the Jerusalem and Galilee marshes in South Kingstown and Narragansett.¹⁴ Additionally, the Rhode Island Department of Environmental Management has established the South Shore Management Area consisting, to date, of three parcels within the coastal zone in which existing agricultural and open space uses will be maintained for game management.

DISCUSSION

Existing Coastal Resources Management Alternatives

The hypothesis to be tested in this investigation, based on the objective stated above, concerns the feasibility of establishing a regional resource planning and management commission on the South Shore.

The inadequate resource protection discussed by Kenneth Paine, Executive Director of the Rhode Island League of Cities and Towns, is evidenced by the inconsistent zoning from town to town on the South Shore of sensitive natural areas.¹⁵

Barrier beaches in Westerly, Charlestown and Narragansett are zoned for residential development, as is the entirety of the Narrow River watershed. South Kingstown has established a High Flood Danger (HFD) Zone, prohibiting all 24-hour occupancy on both developed and undeveloped barrier beaches in that town. However, the statute has been successfully challenged in two court cases, Annicelli v. South Kingstown and Zeppa v. South Kingstown.¹⁶

North Kingstown and South Kingstown zone as "public" existing publicly owned land, but neither they nor any other towns provide zoning protection for publicly held open space. North Kingstown has, however, implemented innovative "overlay districts" to protect areas with severe development constraints. As defined in the North Kingstown zoning ordinance, overlay districts "...establish additional requirements for the primary zoning districts based on specific hazards and problems outlined in the soil interpretation tables prepared by the U.S. Department of Agriculture's Soil Conservation Service, and in the report of the U.S. Geological Survey on ground water resources."¹⁷ Westerly employs agricultural zoning in certain areas, but, rather than promoting agricultural land use, that designation simply creates a holding area in which large lot zoning is enforced only until more intensive development is desired.¹⁸ Existing zoning on the South Shore is shown in Figure 3.

Sorensen discussed the conflicts between local and state planning processes such as those between the RICRMP and the local zoning ordinances on the South Shore. He observed that:

...advocates of local government sovereignty usually resort to ideologies of home rule, local autonomy and government that is close to the people. Advocates of local government control argue for a decentralized approach to planning in which cities and counties would initiate and implement land use programs. Regional and state plans would be a collection of local government plans (the so-called "bottom-up" approach). A decentralized bottom-up arrangement would tend to promote public participation, public access and governmental responsiveness.

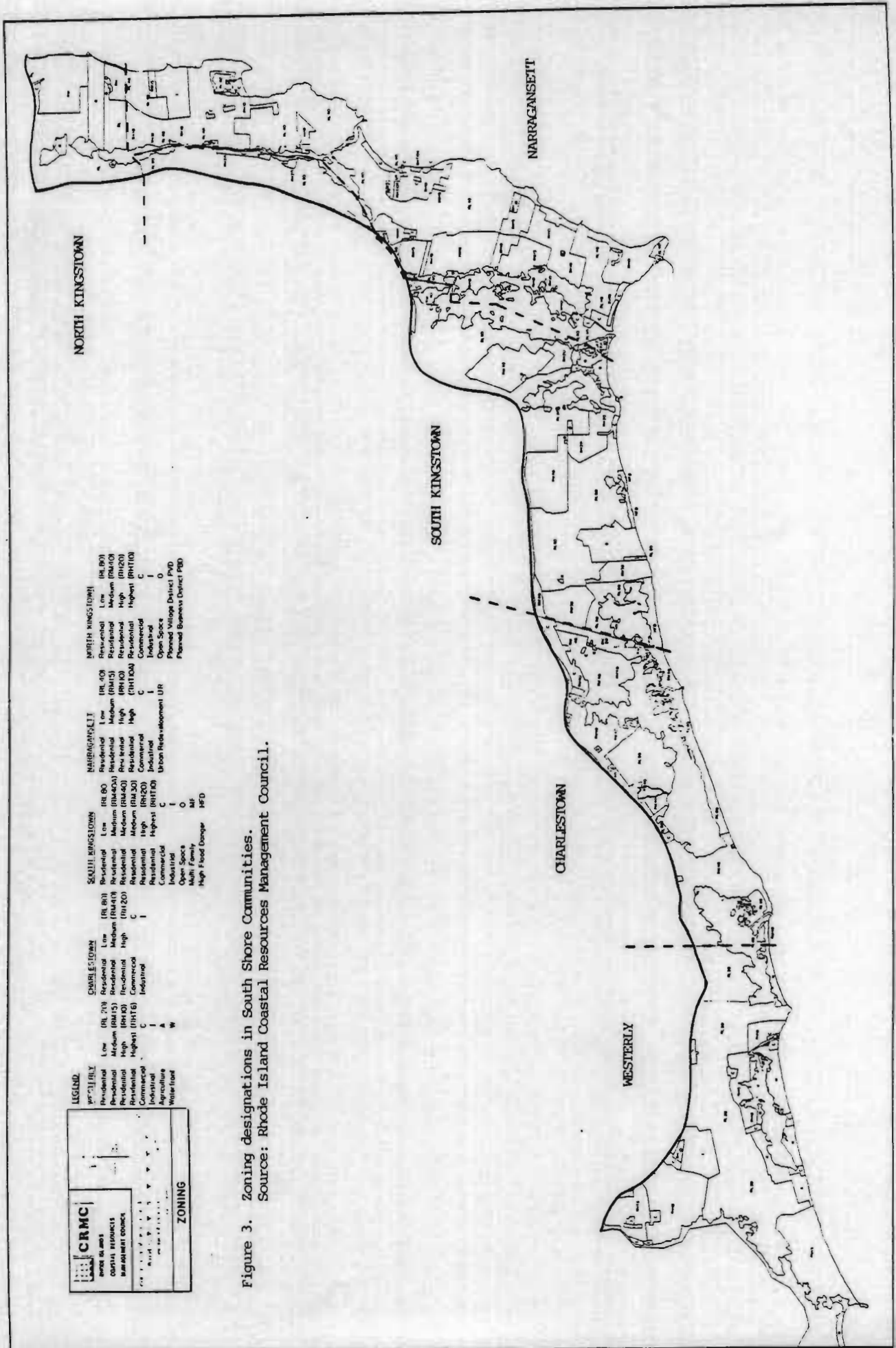


Figure 3. Zoning designations in South Shore Communities.
Source: Rhode Island Coastal Resources Management Council.

Advocates of a strong state role in land use planning argue for a centralized or "top-down" approach. Under this arrangement state agencies establish policies as a basis for state development and implementation of land use plans at the local government level. A centralized top-down approach would favor governmental efficiency, professionalism, and the use of advanced technologies¹⁹ in addition to providing a statewide perspective.

This conflict is, no doubt, the reason why the proposed state-local land management bill has not passed the Rhode Island Legislature, and why the RICRMP lacks zoning regulations. As a means of overcoming this problem, Scott has suggested the institution of "collaborative planning," involving both levels of government.²⁰ Sorensen explained that collaborative planning is a compromise between the centralized top-down and decentralized bottom-up approaches. It is designed to involve cities and counties significantly without relying on them so heavily that important regional and state goals are compromised. The five key components of the collaborative planning process (CPP), and the extent to which existing state management programs are an expression of that process, are illustrated in Figure 4.²¹

The assemblage and integration through the CPP of various state and local guidelines into a single specific local land use plan provides a mechanism by which those with stakes in coastal resource development and conservation can predict with greater certainty how their interests will be affected. The impacts of local plans, the authority for the development of which remains within the local government, would be evaluated in context with measures and standards derived from the objectives and policies of the state's program, in this case a revised and more effective RICRMP.

As can be seen in Figure 4, Rhode Island presently lacks the local management plans envisioned by Sorensen, as well as most of the other components of the CPP. This may be attributed both to home rule and to a perceived lack of need for regional plans within so small a state. Yet, in view of the aforementioned inadequacies in the state's present

The Five Key Components of the CPP

	State issues, objectives, policies & guidelines	Local units of Government prepare plan	State reviews local plans, approves or rejects	Sanctions imposed if local governments do not develop adequate plan	State reviews projects seemed inconsistent with act or approved local program
Mandatory Local Comprehensive Planning					
California 1947, 1965	x	x	x		
Arizona 1971	x	x			
Colorado 1972	x	x		x	x
Rhode Island 1972	x	x			
Nevada 1973	x	x		x	
Oregon 1969, 1973	x	x	x	x	x
South Dakota 1974	x	x			
Virginia 1975	x	x		x	
Idaho 1975	x	x		x	
Wyoming 1975	x	x		x	
Montana 1975	x	x		x	
Florida 1975	x	x	x	x	
Nebraska 1975	x	x			
Shorelands or Coastal Zone Management					
Wisconsin 1966	x	x	x	x	
Minnesota 1969	x	x	x	x	
Michigan 1970	x	x			
Rhode Island 1971					x
Vermont 1971	x	x	x	x	x
Washington 1971	x	x	x	x	x
Maine 1971	x	x	x	x	
Delaware 1972					x
Alabama 1973	x	x			
North Carolina 1974	x	x	x	x	x
Hawaii 1975	x	x			x
Montana 1975	x	x		x	
California 1976	x	x	x	x	x
Alaska 1977	x	x	x	x	
South Carolina 1977	x	x	x	x	x

Figure 4. The extent to which state mandatory local comprehensive planning programs or shoreland management programs are an expression of the collaborative planning process. Source: See note 19.

resource management structure, it would appear that a regional approach deserves consideration.

In this context, two regional management strategies which have been developed in areas physically, demographically and socioeconomically similar to coastal Washington County will be examined in this paper. They are:

- 1) The North County Local Coastal Program, Monterey County, California, and
- 2) Great Britain's coastal planning policies and Heritage Coast Program.

A third program will be analyzed which incorporates elements of both the California and British programs, and which is indicative of the applicability of those strategies in Rhode Island:

- 3) A Plan for the Narrow River Watershed.

These programs involve the application of state and national management guidelines at the local and regional levels. They are thus examples of the collaborative planning process described by Sorensen. The three programs will not be described in their entirety; rather, specific mechanisms will be selected from each which pertain to resource management issues on the South Shore. Provisions which closely approximate existing Rhode Island policies will not be discussed.

North County Local Coastal Program

The California Coastal Act was passed by the State Legislature in 1976 and came into effect on January 1, 1977. The Act established a framework for resolving conflicts among competing uses for limited coastal lands. The highest priority is placed upon the preservation and protection of natural resources including environmentally sensitive habitat areas, i.e., wetlands, dunes, and other areas with rare, endangered or threatened plant and animal life. In the case of sensitive habitats, only uses dependent on these resources are allowed within such areas. For agricultural land, the intent of the Act is to keep the maximum amount of prime land in production. On lands not suited for agricultural

use, coastal-dependent development has the highest priority. Public recreational uses have priority in coastal sites which are not habitat areas and not needed for coastal-dependent uses. Visitor-serving commercial recreation has priority over private residential, general industrial and general commercial development.

The goals and policies of the Coastal Act are to be carried out by local governments through a process of comprehensive and coordinated land use planning known as the Local Coastal Program (LCP). Upon certification of its LCP by the Regional and State Coastal Commissions, the local government assumes full permit authority for development within the coastal zone; the State Coastal Commission will continue to exercise permit jurisdiction over development in the state tidelands. The State Commission is required to review at least once every five years the progress of local governments in carrying out the Coastal Act.²³ The California Coastal Plan is described by Bardach as an example of an effectively functioning collaborative planning process: "[The California Coastal Plan]...exploits the current ideological trend in favor of decentralization and localism. It neutralizes some of the anti- (state coastal) plan arguments that one might have expected from the local government lobby."²⁴

Each of California's fifteen coastal counties is required to prepare an LCP. The LCP for Monterey County has been developed in three phases. In Phase I, coastal planning issues have been identified and defined as potential conflicts between Coastal Act policies and existing conditions, plans and proposed uses. This phase was completed and adopted by the county in June 1978, and approved by the Coastal Commission in April 1979. The Coastal Land Use Plan was prepared in Phase II. An implementation program, Phase III, is currently in preparation.

The coastal zone of Monterey County was divided into four segments for the purpose of plan preparation. North

Monterey County is similar in character to Rhode Island's South Shore. The majority of land in the North County is in open space, agricultural or low-density, rural residential use. Extensive areas are either uncultivated or undeveloped. The coastline of the North County along Monterey Bay consists of broad beaches, including three state beaches, dunes and a heavily developed sand spit. The North County includes an extensive estuarine area: the wetland area of Elkhorn Slough, one of California's principal remaining estuaries, has been designated a National Estuarine Sanctuary and the remainder a National Wildlife Refuge. Other smaller sloughs and wetlands also contain biologically important habitats.

Agriculture (primarily row crops) is the principal economic activity in the North County, which includes part of the fertile Salinas Valley. Commercial development in the area is of low intensity and is centered in the fishing port of Moss Landing, which is similar in size and character to Galilee in Narragansett. Industrial uses are also concentrated in Moss Landing. These include fish and shellfish processing, boat building, a Pacific Gas and Electric fossil fuel power plant, and the Kaiser magnesia and refractory brick factory.

The North County LCP has as its highest priority the protection and preservation of valuable natural resources. The management issues and policies which are addressed in that context and which might provide more effective management in Rhode Island follow:²⁵

Visual Resources

The Coastal Act requires the protection of scenic coastal resources. Particularly susceptible to visual damage due to inappropriate development are beaches, dunes, the low areas adjacent to the sloughs, and ridgelines. All of these areas are highly visible from long distances; they rely on unbroken horizontal lines for continuity. These areas, in addition to wooded hills and slopes adjacent to scenic corridors should be zoned for scenic conservation treatment. Only

recreation and low-intensity residential uses that are compatible with the scenic character of the area should be allowed. Scenic or conservation easements should be required in conjunction with subdivision construction in wooded ridge, hill and slope areas. Agricultural uses on flat or rolling land should be preserved as a productive and visual resource.

Highways, roads and waterways of high visual quality should be officially designated as State Scenic Highways, County Scenic Roads and Scenic Waterways. No uses or development should be allowed adjacent to scenic corridors which are visually intrusive or which detract from their character. Where highly sensitive scenic areas cannot be effectively protected through public regulation, that land should be considered for acquisition by public or private agencies or organizations equipped to properly manage such areas.

Environmentally Sensitive Habitats

Environmentally sensitive habitats are described in the LCP as areas in which plant or animal life or their habitats are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activities and developments. The principal policies for the protection of these habitats are:

- 1) Land uses within or adjacent to environmentally sensitive habitats shall be compatible with the long-term maintenance of the resource. New land uses must incorporate all site planning and design features needed to minimize or avoid habitat impacts, and must not establish a precedent for continued land development which, on a cumulative basis, could degrade the resource. New subdivisions shall be allowed only at densities compatible with the protection of these resources.
- 2) To protect environmentally sensitive habitats and the wildlife values associated with large areas of un-

disturbed habitat, the County should retain significant and, where possible, contiguous areas of undisturbed land for low intensity recreation, education or resource-conservation use. Clustering of building sites in the least environmentally sensitive areas should be encouraged where appropriate.

- 3) Field surveys by qualified individuals or agencies shall be required in order to determine precise locations for private or public development, and to recommend mitigating measures to ensure protection of any sensitive habitat(s) present.
- 4) The County shall ensure the protection of environmentally sensitive habitats through deed restrictions or dedications of permanent conservation easements. Where land divisions or developments are proposed, such restrictions or easements shall be established through the development review process. Where development has already occurred in areas supporting sensitive habitats, property owners should be encouraged to voluntarily establish conservation easements or deed restrictions.
- 5) A comprehensive natural resource and water basin management plan should be prepared for the North County. The plan should include recommendations for monitoring residential and industrial runoff, regulation of discharges into coastal wetlands and stream courses, instream flow protection, regulation of spoils disposal, and development of best management practices for control of non-point discharge and erosion. All appropriate public agencies should participate in the management plan.
- 6) Where management and regulation techniques are not sufficient to protect endangered environmentally sensitive resources, public or private acquisition of land or water areas representative of each of the identified habitat areas should be encouraged by the

County.

Water Resources and Water Quality

Ground water capacity is not generally a subject of concern in Rhode Island as it is in drought-prone California. Yet public water supplies reached critical levels in New Jersey, New York and Connecticut in 1980. This issue, then, deserves attention in Rhode Island, as well. Management policies for the North County include:

- 1) A County ground water study should be conducted by the U. S. Geological Survey or other qualified organizations to determine the safe yield of ground water supplies.
- 2) An ordinance should be drafted by the County to phase development at a level compatible with the availability of ground water supplies. Other sources of water should be investigated.
- 3) An on-site waste water management program should be initiated by the County to provide for public or private monitoring, maintenance and replacement services.
- 4) Agricultural runoff should be monitored and techniques established through a County Agricultural Management Program to reduce pesticide and nitrate content.

Agriculture

Agriculture is a traditional coastal activity in the North County. It has contributed substantially to the region's economy, pattern of employment and way of life. Open space and the scenic quality of the landscape have been preserved as the result of agricultural land use. Farming, of course, does not play as important a role in Rhode Island's economy, but it is a valuable reminder of the heritage and character of the South Shore. In both areas, prime agricultural soils are threatened as residential development and land speculation raise the property values and taxes of farmland. Agricultural management policies include:

- 1) The County shall develop, in coordination with other appropriate public and private agencies, a comprehensive agricultural management plan for existing and future agricultural uses. The goal of the plan would be protection of long-term agricultural production, ground water availability and water quality.
- 2) Agricultural land use shall be classified according to a three level system as follows:

Agricultural Preservation: prime and productive agricultural land. Division shall be permitted only when it does not adversely affect the land's long-term agricultural viability. Subdivision or conversion of Agricultural Preservation farmland for non-agricultural use shall be permitted only where there is an overriding need to protect the public health and safety or where the land is needed to infill existing developed areas.

Agricultural Conservation: small parcels of prime agricultural soils not within or adjacent to designated Agricultural Preservation areas, or lands preserved through enrollment in legislated tax incentive programs such as California's Williamson Act.²⁶ Subdivision or conversion of Agricultural Conservation lands shall be allowed only under limited circumstances to accommodate orderly growth and benefit the public welfare.

Rural Residential: property under very low density residential use. Agricultural use is encouraged in areas of mixed residential and agricultural uses.

- 3) Well defined buffer zones, obtained through scenic or conservation easements, should be established adjacent to farming areas to protect agriculture from impacts of, and mitigate its effects upon, incompatible adjacent development.

Aquaculture

The development of aquaculture is encouraged

as a priority economic, research and educational activity within the coastal zone. That development must, however, be consistent with the requirements of recreational boating, commercial and recreational fishing, and wildlife and water resources protection. Management policies for aquaculture in the North County include:

- 1) Aquaculture activities shall not be permitted which require major dredging or filling, or other significant alteration of coastal wetlands, streams or shorelines.
- 2) Aquaculture activities shall not be permitted in established public shellfish-gathering grounds or in areas with important stands of submerged vegetation.
- 3) Aquaculture shall not interfere with navigation or with established public access to the shoreline.
- 4) The County should support the formation of an Aquaculture Advisory Committee to foster the exchange of information and advice between interested public agencies and citizens.

Land Use and Development

Development within the North County coastal zone shall be consistent with the use designations indicated in Figure 5. Many of the management policies relating to those designations have been discussed. Additional provisions include:

- 1) Special Treatment Areas are to be established so as to facilitate a comprehensive planned approach toward developing industrial and high intensity uses. These areas are designated for intensive levels of development so that other rural areas may experience lower development concentrations. Therefore, maximum use of the site should be made while protecting against adverse impacts.
- 2) Residential development at medium to high densities shall be concentrated in areas with adequate sewer, water and transportation services. These developments

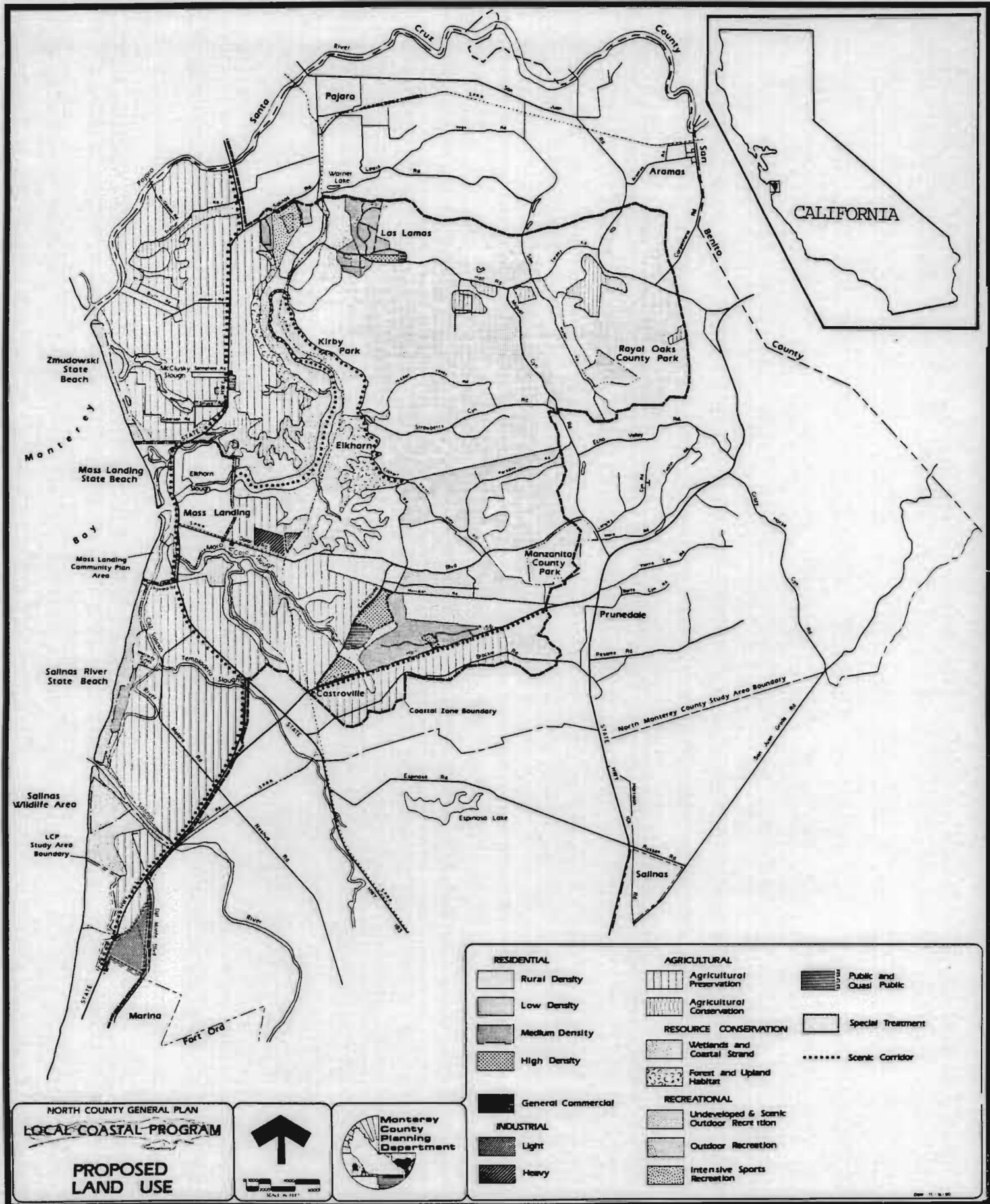


Figure 5. Proposed land use, North County Local Coastal Program, Monterey County, California.
 Source: See note 23.

shall be constructed within established urban/rural boundaries before additional land is designated for concentrated development.

- 3) Low-density residential areas should be located in rural areas where an essentially residential character exists. These areas should be developed and infilled to the extent allowed by site and cumulative impact constraints allow before Rural Residential areas are designated for low-density residential development.
- 4) The County shall encourage the improvement, rehabilitation and expansion of low- and moderate-income housing. The County shall provide means to expedite projects which demonstrate innovative ways to implement housing policy.
- 5) The State should acquire privately-owned dune areas which are offered for sale, with the goal of linking them with present publicly owned dunes under an overall recreation management and development plan.
- 6) Carrying capacities of estuarine, wetland and upland areas designated as suitable for conditional recreational development should be determined and should not be exceeded.
- 7) A system of recreational hiking trails and bridle paths should be developed.
- 8) Development that would threaten rare and endangered plant and animal species in Resource Conservation areas shall not be allowed.

Public Access

The California Coastal Act ensures the right of the public to shoreline access consistent with the protection and preservation of coastal resources.

Management policies related to public access include:

- 1) Existing major access areas, whether in public or private ownership, should be permanently protected for long-term use. They shall be improved where

- necessary and managed properly by designated public agencies or private, non-profit organizations.
- 2) Improved access shall be provided through deductions in conjunction with new residential or commercial development where there is a history of public use or where there are desirable and suitable access destination points that are not adequately served by other adjacent accessways.
 - 3) New development should not encroach on well established accessways nor preclude future provision of access.
 - 4) Educational displays alerting visitors to the fragile nature of dune and wetland environments should be posted at major access areas to them. Public education should be encouraged through communications media and programs in schools.
 - 5) Recreational hiking trails and bridle paths, proposed in the section on land use and development, should be located out of public view and should blend in with the surrounding environment and natural terrain features where possible. However, the location of trailheads should be apparent to the public and situated to facilitate supervision.
 - 6) Construction of trails should ensure that environmentally sensitive habitats are protected from over-use. Trails along river and stream corridors should be sited and designed to avoid impacts to riparian vegetation, wildlife and water quality. Measures include, but are not limited to, control of runoff and erosion, contouring and siting of trails to conform to the natural topography, and separation and screening from important areas.
 - 7) Access trails to intertidal areas should be sited to spread the zone of public use in appropriate areas, rather than concentrate it in a small area.
 - 8) An important factor in the management of public

access is the provision of parking facilities.

Policies regarding parking include:

- a) The provision of parking, including the access road to the parking site, should not encroach upon a major shoreline destination or access area.
- b) Improvement of parking facilities should entail minimum disturbance and should have minimal impact upon environmentally sensitive resources.
- c) The number of parking spaces provided should correspond to the capacity of the shoreline destination point as determined by its size, the sensitivity of the resources, and by the type(s) and intensity of uses appropriate for the area.

Administration and Implementation

The North County LCP is to be used as a long-range guide by County and State Agencies in all decisions relating to conservation, management and development on the coast. The County shall assume primary responsibility for administering the plan as it affects private land use. The County, and in some cases other jurisdictions, will need to develop and adopt a series of ordinances, procedures or agreements in addition to the land use plan itself in order to implement the Land Use Plan Map (Figure 5) and policies. The major implementation measures include:

- 1) Rezoning. Rezoning of the North County will be necessary in order to reflect the uses, densities and locations of the Land Use Map.
- 2) Development permits. All development in the coastal zone will be required to obtain a development permit from the County. Approval will be based on demonstrated compliance with the plan and all its provisions.
- 3) Site plan review. Projects applying for a coastal permit will undergo a comprehensive site plan re-

view to determine the consistency of the proposal with the LCP.

- 4) Performance standards. Environmental performance standards are incorporated in the LCP as specific policies designed to protect riparian and forest areas, wildlife habitats and other sensitive concerns. As the carrying capacities of the coastal areas are determined through improvement in the data base and available information, the policies will be refined to include qualified performance standards.
- 5) Growth management. A growth management program phasing residential and, where appropriate, commercial and industrial, development should be instituted based upon natural resources protection, water availability, and public facilities capacity constraints. Development and subdivision proposals would be processed at set periods during the year.

The North County Local Coastal Program also advocates as mechanisms for maintaining agricultural and open space land use, the transfer of development rights or credits, conservation and scenic easements, public and private acquisition, and the establishment of land trusts. These methods will be discussed in the final section of this paper with specific reference to Rhode Island's South Shore.

Great Britain's Coastal Planning Policies and Heritage Coast Program

The second management structure which will be examined for its possible contribution to the protection of coastal resources on the South Shore is that of Great Britain's coastal planning policies. The coast of England and Wales offers a great variety of scenery. Its complex of geological formations produces, over relatively short distances, sandy bays and coves, shingle beaches, estuaries and offshore islands. Some 687 miles (25 percent) of the coast is either substantially developed or earmarked for development,²⁷ compared with 11 percent

of Britain's inland area.²⁸ Of the remaining 2,054 miles of coast, much of the scenery, although good, is not regarded as being of high quality. Since 1945, the demands for energy and recreational facilities and tourist accommodations have placed great pressure on the coast. In most cases the national interest, or lack of alternative locations, has led to its development.²⁹

Britain's present management and planning policies for the coast are embodied in three documents which were produced by the Countryside Commission, formerly the National Parks Commission: The Coasts of England and Wales: Measurements of Use, Protection and Development (1968); The Planning of the Coastline: A report on a study of coastal preservation and development in England and Wales (1970); and The Coastal Heritage: A conservation policy for coasts of high quality scenery (1970). These policy studies superseded the Coast Protection Act of 1949, which had proven ineffective in preventing the continued erosion of the coastal environment.

The management programs set forth in those documents were initiated because of the opposition of planning authorities at the national level to the "blanket" protection policies and uniform zoning regulations which had been imposed by some coastal counties. Uniform regulations were necessarily applied indiscriminately to coastal resources and were often negative. Furthermore, in order to expedite those policies, county governments chose to define essential development in very broad terms. County Councils adopted "resolution policies" arrived at by Council resolution rather than through a consistent development plan. As a result, planning decisions were made on an ad hoc basis: while obviously unsatisfactory schemes were rejected, the attrition of stretches of unspoiled coastline by the slow accumulation of piecemeal development was not prevented.³⁰

The system of coastal planning which was consequently instituted by the Countryside Commission differentiates between separate policy areas and combines development control

with positive proposals for utilizing and conserving the undeveloped coast. According to this concept, uniform development control policies may be applied generally to a variety of potential areas, but management policies must relate specifically to each locality.

Recreational use of protected land may be promoted, and development pressure reduced, through acquisition and "management agreements." The management agreement is intended to compensate the landowner for any financial losses entailed through its implementation while enabling the planning authority to make laws and appoint wardens to enforce them. The agreement may thus overcome possible conflicts between the intentions of the owner and those of the planning authority. Management agreements have involved private owners and the Forestry Commission, Nature Conservancy and National Park Planning Authorities.

The management plan established by the Countryside Commission in The Planning of the Coastline involves subdividing the coast into homogeneous areas for policy purposes. The document states:

Ideally each separate area or zone should be a broad stretch of coast and hinterland which can be distinguished from its surroundings by its scenic qualities and topography, by its value for scientific research or its particular suitability for certain land use functions, existing or potential, and because these factors give rise to policies within the area which do not necessarily apply outside. It is essential that policies for these coastal zones should avoid the error of many existing protective policies: that is, to start by prohibiting all but essential development and undermine this protection by a very loose definition of the development that will be permitted. Policy statements for coastal areas should provide positive guidance on all matters relating to the future use and physical development of the land.³¹

Facilities should be provided for a range of recreational activities from solitary to intensive use. Taking positive steps to meet recreational needs is, in the opinion of the Countryside Commission, the only realistic way to secure long-term conservation of the coast.

Coordinating the management actions of public, quasi-public and private landowners, including farming interests, is important to the success of the Commission's conservation policy. Principal landholding bodies, aided by the skills and manpower of voluntary organizations active in the field, should have a voice in the formulation of countryside and coastal policies. Local planning authorities, responsible for that coordination, should be served by an officer qualified and experienced in rural conservation and the management of countryside resources.

The policies which have been described provide the basis for Britain's coastal management plans. A two-tier management system has been developed consisting of "structure plans" and "local plans." Structure plans are statements of general policy, indicating broad planning strategy. They are mandatory, requiring central government approval. In order to prevent reversion to ad hoc resolution policies, which occurred under previous broad-based management programs, local planning authorities are encouraged to prepare the second-tier local plans which show policies in greater detail. Because they are prepared by local planning authorities, the plans normally will receive local approval. The Minister of Housing and Local Government can, however, require the production of local plans where he considers them essential.

Priority in the preparation of local plans should be given to areas which are under pressure for development and where there will be greater need for control and for public understanding of policies. It is in such places that a local plan with its more detailed and articulated policies will achieve the greatest benefits. In areas where there is no pressing need for a local plan for purposes other than coastal conservation, it will be possible to prepare a "subject plan," i.e., a local plan dealing with that particular subject only.³²

In The Planning of the Coastline, the Countryside Commission observed that some stretches of Britain's coast,

where the scenery by national standards was of the highest order, merited special attention. Such areas were likely to be increasingly threatened by development and recreation pressure greater than that experienced in the larger National Parks and Areas of Outstanding Natural Beauty. Accordingly, such areas have been protected through the establishment of a nationwide system of Heritage Coasts. As of 1977, 34 Heritage Coasts, including 730 miles of the undeveloped coastline of England and Wales, had been designated (see Figure 6). These are areas of exceptional scenic quality which are representative of the whole of the British coast rather than local or regional features. While they are substantially undeveloped, certain small settlements are included in order to secure comprehensive planning. The areas are named Heritage Coasts to ensure that the heritage of the nation's coastline is protected from development and its consequences.

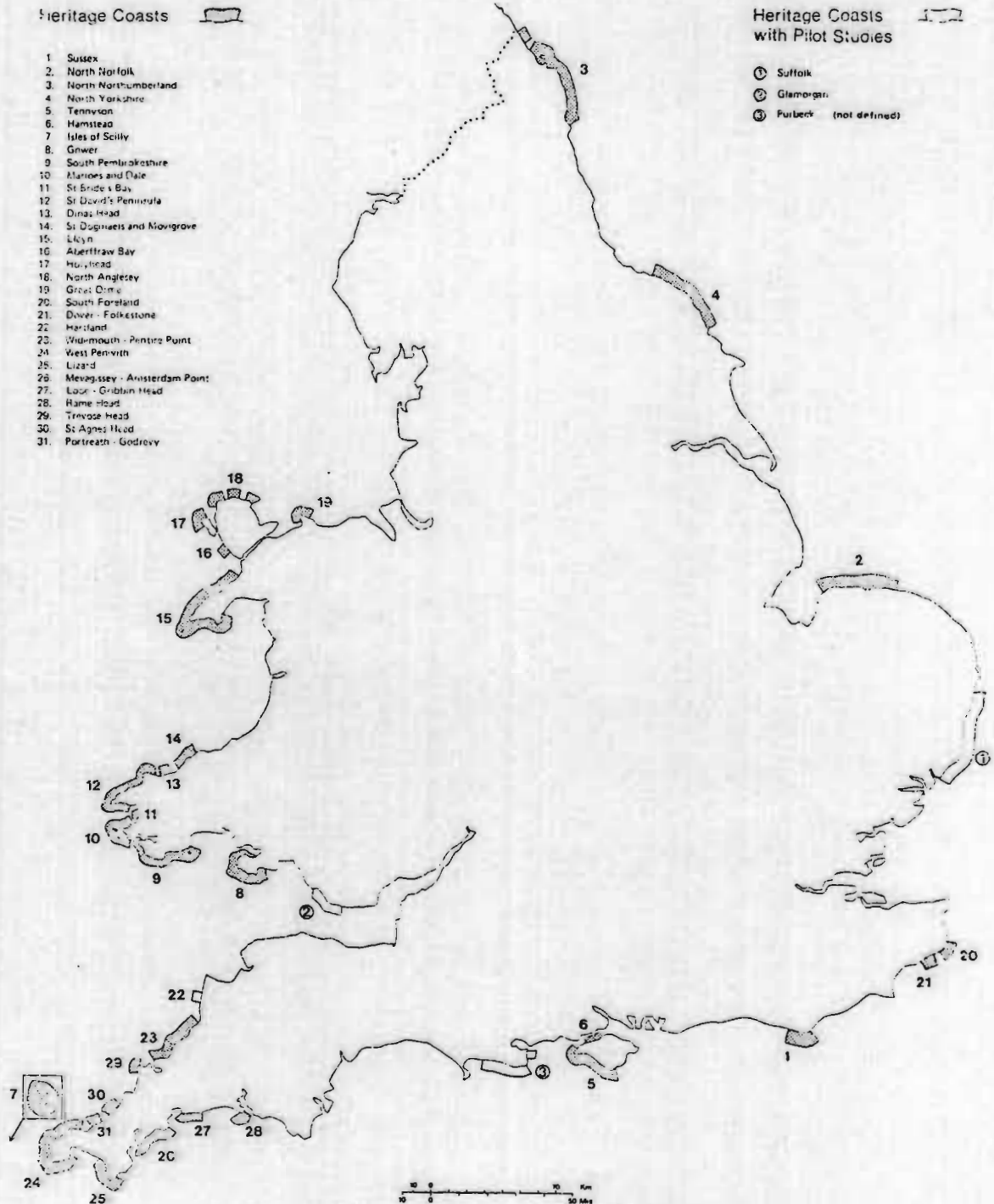
The two main planning objectives of these coasts are:

- 1) to conserve in its natural state, as far as possible, the quality of the coastal scenery through careful management, and
- 2) to facilitate and enhance their enjoyment by the public through the promotion and encouragement of recreational activities consistent with the conservation of fine natural scenery.³³

It is the philosophy of the Countryside Commission that some development for which a coastal site is essential must be accommodated on the coast; to deny the need for a coastal site, where such a need can be proved to exist, in order to preserve undeveloped coastline simply because it is undeveloped, defeats the objectives of conservation. The management policy for the Heritage Coasts accepts the need to accommodate those pressures that can be met without conflicting with the conservation of the environment. It also implies, wherever possible, the full use of coastal resources in conjunction with a strictly enforced development policy. This should exclude completely from vulnerable areas those

Defined Heritage Coasts

May 1977



Based on the Ordnance Survey map

COUNTRYSIDE COMMISSION
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Figure 6. Defined Heritage Coasts in England and Wales, May 1977.
Source: "Heritage Coasts," Heritage Coast Information Sheet No.11, Countryside Commission.

forms of development (including some recreational activities) which, by reason of noise, scale, traffic, or damage to the habitat, would be totally incompatible.

The average Heritage Coast is 21 miles long and extends inland one mile. It is thus similar in size to the South Shore coastal zone. Four separate categories of coast, requiring different management techniques, are identified in the Heritage Coast program. Those categories are also characteristic of the South Shore.

First are those areas in early stages of defacement as the result of insensitive planning. Areas of this type on the South Shore include the cluttered summer cottage developments in Matunuck and Point Judith, and the developed barrier beaches in Charlestown and Westerly. Second are the relatively unspoiled stretches with limited road access. Such areas are distinctly vulnerable to any road improvements which would attract more vehicles. The remaining undeveloped barrier beaches on the Rhode Island coast, the landward shores of the coastal ponds, and the shoreline of the Narrow River meet this criterion. The third category comprises coastal heritage features of outstanding national (regional in relation to the South Shore) significance, including cultural and historic attractions both natural and manmade. The Gilbert Stuart Birthplace and Casey Farm in the Narrow River watershed, the historic grist mill located on the Mill Pond stream in South Kingstown, and the Jireh Bull Garrison site³⁴ merit such consideration. The fourth type of coast includes those areas already in some form of public or quasi-public ownership. These areas offer the greatest scope for creative management. Within such areas, public access should be limited only to the extent necessary to effectively protect the environment. Indeed, significant public interest (including financial support for management and acquisition) may be generated as a result of increased access. Applicable properties on the South Shore include the Ninigret and Trustom Pond National Wildlife Refuges; the

Galilee, Jerusalem and Succotash marsh areas, and the Quonochontaug and Charlestown breachway areas which are presently managed by the Rhode Island Department of Environmental Management (DEM); and DEM's South Shore Management Areas in South Kingstown which are maintained as open space for game management.

The management policies prescribed for the Heritage Coasts are based upon two fundamental principles:

- 1) Determination of the intensity of use and of the optimum capacity above which the pressures on the environment will be so great as to cause serious damage. The carrying capacity of a resource is considered in terms of ecological and visual effects on the environment arising from the number of people present and their activities. The determination of what is an acceptable capacity for any particular resource will depend on three factors: (1) the tolerable degree of ecological disturbance, (2) the desired level of solitude or of acceptable visual intrusion, and (3) the available funds for investment in management.

- 2) Determination of management zones in those parts of a Heritage Coast outside of existing settlements, based on different intensities of use. The three zones suggested by the Countryside Commission are:

Intensive zones, consisting chiefly of the more popular beaches and other major recreational centers catering to large numbers of people. Permitted uses, which are of a simple nature only, include swimming, sunbathing, walking, sightseeing and picnicing. Activities which detract from these forms of recreation would not be allowed. The heavily used beach areas of Washington County fit this category.

Remote zones, which aim to maintain selected stretches of relatively inaccessible and unspoiled coast free

from vehicles. Fragile habitats should be protected from damage caused by vehicles and large numbers of people. Such areas should provide solitude for people who prefer quiet recreational activities. An area fitting this category on the South Shore could be Moonstone beach which borders the Rhode Island Audubon Society's Moonstone Waterfowl Refuge.

Transitional zones, consisting of the remainder of the Heritage Coast outside of existing settlements. Recreational and service facilities should be grouped in selected locations so as to cause the least damage to the environment. A reasonable degree of road access should be provided, but stretches between transitional zones should remain undeveloped. Activities, including scenic viewpoints, should be provided for visitors who are not prepared to walk any great distance from their cars.

The full range of possible recreational activities allowed within the three zones is shown in the model Chart of Acceptable Activities (Figure 7).

The principal objectives underlying Britain's management of its Heritage Coasts have been outlined. The policies through which those objectives are to be achieved are categorized as follows:

Land Use and Development

In order to be effective, the management of a Heritage Coast must be closely allied to a firm policy of land use and development control within the statutory planning framework. That policy should conserve the special quality of the landscape, safeguard features of scientific interest, and support agriculture, forestry and simple forms of recreation in such a way that they do not conflict with one another. Any non-recreational uses other than these should be prohibited unless the specific siting within the Heritage Coast is manifestly in the national interest. Environmentally

CHART OF ACCEPTABLE ACTIVITIES

Activity	Remote Zones	Transitional Zones	Intensive Zones
Beach games	B	A	A
Camping (motorised)	D	D	C
Camping (lightweight)	C	B	B
Canoeing	C	A	B
Cycling	C	A	B
Field Studies, nature study and Outdoor Education	B	A	B
Flying model aircraft	D	B	C
Golf	D	B	B
Motor sports	D	D	D
Picnicking	B	A	A
Playing portable radios	D	B	B
Pleasure Motoring	D	A	B
Pony Trekking	C	A	B
Potholing	B	A	B
Power Boating	D	C	B
Riding horses	C	A	B
Rock and Cliff Climbing	B	A	B
Rowing	B	A	A
Sea Angling	A	A	A
Swimming	A	A	A
Sailing	B	A	A
Sand Yachting	D	D	D
Skin Diving	C	A	B
Sunbathing	A	A	A
Surfing	B	B	A
Walking	A	A	B
Water Ski-ing	D	D	D
Wildfowling	C	B	D

Codes:

- A indicates the zone or zones within which the activity is considered most appropriate and in which its promotion or development should be encouraged.
- B indicates a zone within which the activity itself is acceptable, but for various reasons (for example the need for car parks, buildings or structures which would themselves be inappropriate in the zone concerned, or because of the limitations of the zone itself) is not the ideal location and no steps need be taken to promote the activity.
- C indicates a zone within which the activity, subject to certain safeguards, may be appropriate on a limited scale. Acceptability will depend on the nature of the locality and the scale of the activity envisaged. Steps need not be taken to promote the activity.
- D indicates a zone within which the activity is wholly inappropriate and should be resisted. This category includes activities characterised by excessive noise or disturbance, or those which require large tracts of land or water for satisfactory

Figure 7. Model chart of acceptable activities in a Heritage Coast.
Source: See note 27.

appropriate siting and design standards should be imposed on any new development. Where possible, all buildings and facilities should be grouped at or close to established centers.

In the absence of special provisions controlling development in some Heritage Coast jurisdictions, local planning authorities have resolved land use conflicts by working closely with developers, landowners, farmers and other interested parties through Countryside advisory committees. In this way, a local planning authority may be able to achieve a degree of cooperation which might not have been possible through the enforcement of stricter measures.

The policy governing recreational development should be threefold: first, to encourage those activities which rely wholly or mainly on the natural resources of the coast and have little or no impact on the landscape; second, to confine those activities which are likely to conflict with each other to specified parts of the coast to reduce or eliminate this conflict; and third, to discourage and resist the introduction of activities which are likely to damage the character or scenery of the Heritage Coast. The determination of what are acceptable activities should be based on the nature of the management zones previously described. The model Chart of Acceptable Activities (Figure 7) illustrates one method of achieving this.

Access

The means of access provided within a Heritage Coast include roadways, parking facilities, footpaths, bridlepaths and open country. The degree of public access is a key factor in the levels of use within the Coast areas. The concept of optimum capacity is likely to succeed only as a result of the careful management of all recreationists in accordance with an agreed ac-

cess policy. Specific provisions of that policy include:

- 1) Vehicular Access and Parking Facilities. Road capacities and widths should be related to the acceptable levels of use (the carrying capacity) of the resources to which they give access. The provision of parking spaces, particularly in remote or transitional zones, should also be related to acceptable aggregate capacity. Siting and design standards should be imposed on parking lot construction.
- 2) Footpaths and Bridlepaths. The routing of footpaths is an effective way to regulate the intensity of use in a Heritage Coast. Paths should, however, divert walkers away from fragile habitats. Routes should be provided along the lines of interesting natural features, particularly hill ridges, valleys and rivers. Paths should be adequately marked and made known to the visiting public. The cheapest and simplest way of keeping paths open and unobstructed is by encouraging their regular use. Possible locations of trails on the South Shore were discussed in relation to the California Local Coastal Program.
- 3) Access from the Sea. Boat access should be controlled in accordance with the described management zones. Local bylaws may be desirable to confine direct access to related points, and to specify the type of vessel (motorized vs. nonmotorized), and permitted noise levels within each zone. This criterion has been considered by the Rhode Island Coastal Resources Center as a method of regulating recreational use of coastal ponds on the South Shore.

Provision of Recreational Facilities

Supporting facilities for recreational activities should be provided only where necessary and appropriate according to the model Chart of Acceptable Activities (Figure 7). The range and scale of facilities envisioned for a Heritage Coast are illustrated in a

model Facilities Provision Chart (Figure 8). New facilities should adhere to environmental siting and design standards. They should be deliberately grouped at principal focal points and should not be scattered throughout the Heritage Coast. Existing facilities should also be resited and grouped if necessary. Close contact with local landowners, public agencies and other bodies is essential to this effort.

Landscape Improvement

Management policy regarding landscape quality in Heritage Coasts should be coordinated between concerned public agencies, local planning authorities and landowners. Measures which may be taken to improve the landscape include the burying or rerouting of overhead electric and telephone cables, and the redesign or removal of obsolete or unnecessary buildings and signs.

Information and Interpretation

The Countryside Commission envisioned a variety of information and interpretive facilities for Heritage Coasts, similar to those found in American national parks, informing visitors of recreational opportunities and supporting facilities. Promotion of resource use would conform to the designated management zones. The projected facilities include:

- 1) A central, or perhaps several, Coastal Information Visitors' Centers, providing exhibitions and displays, lectures and film shows, and demonstrations of local activities and natural history. A center of this type, focussing on coastal ecosystems, was recently proposed as a part of the possible revitalization of Marina Park in South Kingstown.³⁵ Other possible locations might include the Narrow River watershed and/or either Ninigret or Trustom Pond National Wildlife Refuge, and Galilee, where the focus could be on the Rhode Island fishing industry.

FACILITIES PROVISION CHART

Zone	Principal Focal Point	Facilities normally provided at each site	Additional facilities provided at selected sites only
Settlements	Settlements, either with or without a coastal frontage	Settlement car park Beach car park Information Centre (or Post) First Aid Post Restaurant Cafe Lavatories Litter Bins	Stables Jetty and landing facilities (or moorings) Lifesaving equipment Shelter
Intensive	Beaches	Beach car park Lavatories Information Centre Shelter Jetty and landing facilities First Aid Post Lifesaving equipment Restaurant Litter Bins	Cafe Picnic space and facilities
	Roadheads	Roadhead car park Litter Bins	Lavatories Information Post First Aid Post
	Main headlands or viewpoints	Viewpoint car park (either adjacent or with foot access)	Lavatories Information Post Restaurant (or Cafe) Picnic space and facilities Observation Platform Litter Bins
	Features of special interest	Car park (either adjacent or with foot access)	Lavatories Information Post Cafe Litter Bins
	Picnic areas	Picnic space and facilities Picnic area car park Litter Bins	Information Post Lavatories
	Anchorage	Car park Jetty and landing facilities Lavatories First Aid Post Lifesaving equipment Fishing jetty Litter Bins	Information Post Restaurant
Intensive (Contd.)	Individual locations (other than those listed above) where justified		Moorings Fishing jetty Lifesaving equipment Vista car park (on a scenic road) Litter Bins
Transitional	Main beaches	Beach car park Lavatories Litter Bins	Information Centre (or Post) Jetty and landing facilities (or moorings) First Aid Post Lifesaving equipment Fishing jetty Restaurant Cafe Picnic space and facilities Shelter
	Small beaches	(Served by roadhead facilities)	Moorings Fishing jetty Litter Bins
	Roadheads	Roadhead car park Litter Bins	Lavatories Information Post
	Main headlands or viewpoints	Viewpoint car park (either adjacent or with foot access)	Cafe Observation Platform Litter Bins
	Features of special interest	Car park (either adjacent or with foot access)	Litter Bins Lavatories
	Picnic areas	Picnic space and facilities Picnic area car park Litter Bins	Information Post Lavatories
	Anchorage	Car park Jetty and landing facilities Fishing jetty Litter Bins	Lavatories Information Post First Aid Post Lifesaving equipment Restaurant
	Individual locations (other than those listed above) where justified		Vista car park (on a scenic road)

Figure 8. Model chart of facilities to be provided in a Heritage Coast.
Source: See note 27.

- 2) A visitor's map showing the features and facilities within the Heritage Coast should be available to the public at various locations throughout the area. Stationary interpretive maps and displays should be located at natural and man-made focal points. Measures of this kind could be particularly applicable on the South Shore.
- 3) Self-guided nature trails focusing on marine biology or geology. These could be developed in conjunction with the footpaths which were described.
- 4) Warden service. The provision of warden service is regarded as essential for a Heritage Coast. Wardens would be available to advise visitors on all aspects and features of the area, including the reasons for and methods of managing and conserving the landscape. The U. S. Fish and Wildlife Service personnel who manage the Ninigret and Trustom Pond National Wildlife Refuges might fill this role.

Implementation

Many of the policies which have been described for the Heritage Coasts may be implemented under existing British legislation. It is assumed by the Country-side Commission that the local planning authority would be the most effective body in managing the day-to-day control of land use and development within the Heritage Coast area. The Commission also recommended, however, that a special planning committee be appointed to effectuate the objectives of the Heritage Coast. The committee should include, and maintain an effective liason with, government officials, landowners, farmers, voluntary organizations, amenity societies and others concerned with conservation and recreation interests. It is anticipated that the good will generated by such consultation will enable local planning authorities to obtain more readily the agreement of private landowners and others for carrying out specific management objec-

tives. An appointed Conservation Officer would be responsible for coordinating policies. Wardens, as previously described, would carry out the practical tasks of management.

Planning objectives may be achieved in certain instances through management agreements such as those discussed in relation to general coastal planning. In other situations, public or quasi-public acquisition may be the only effective long-term safeguard. Usually, however, a management agreement is likely to prove the cheapest and most effective way of securing objectives which cannot be obtained by planning controls. Management agreements are also much more acceptable than compulsory acquisition. Comprehensive legislation to enable public authorities to make positive agreements with private owners and, where necessary, to bind successors in title, is recommended by the Countryside Commission.

A Plan for the Narrow River Watershed

California's Local Coastal Program, as has been shown, places highest priority upon the protection and preservation of natural resources, specifically, environmentally sensitive habitat areas. Great Britain's planning policies place an equal degree of emphasis upon maximum recreational utilization of coastal resources within the limits of necessary environmental protection, i.e., the multiple use concept. A third program which will be examined for its applicability to resource management on the South Shore is the Plan for the Narrow River Watershed (hereafter referred to as the Narrow River Plan, the Watershed Plan, or the Plan). The Narrow River Plan embodies elements of both the California and British programs, thus occupying a middle ground between the extremes of those two concepts.

The Tri-Town Narrow River Planning Committee was created by the towns of South Kingstown, North Kingstown and

Narragansett in 1975 to sponsor the development of a comprehensive land use plan for the Narrow River watershed.³⁶ The Committee commissioned A Plan for the Narrow River Watershed which was produced in 1976 by RIVER LANDSCAPES, a joint venture of Roy Mann Associates, Inc., and Moriece & Gary, Inc., of Cambridge, Massachusetts.

In 1981 the three towns created by resolution the Narrow River Watershed Council. At the time of this writing, the Council was expected to become functional in the fall of 1981. The Council will be an advisory body. While its creation was proposed in the 1976 Watershed Plan, the provisions of the Plan, which was designed to address the management issues confronting three of the five South Shore communities, offers insight into the applicability of the California and British concepts in Rhode Island. The attitudes of the Watershed Council and the South Shore governments toward the Plan provide an indication of the feasibility of establishing an innovative regional resource planning and management authority including all of the coastal communities of Washington County.

The Narrow River is a drowned river estuary typical of the northeast coast of the United States. The river valley was created by pre-glacial geologic processes and by the later deposition of glacial outwash sediments which eventually formed the river's southern and northern watersheds. The valley was subsequently inundated by ocean waters as the sea level rose, thus creating the present estuarine ecosystem. Fresh water enters the Narrow River via the Mattatuxet River, which flows into the estuary from the north, and from other small streams throughout the watershed.

The Narrow River and its watershed provide habitat for a variety of wildlife species. The river supports shellfish and functions as a nursery and overwintering area for finfish. Approximately 250 acres of salt marsh in the lower river area have remained largely intact but are threatened by continuing storm water runoff and by incremental dredging and filling which has been allowed in the past. Water quality in the river

has been affected by high coliform counts caused by suspected local septic system failures,³⁷ by storm water runoff, sediment discharge from cleared upland areas, and potential urban and highway runoff. Soil and slope characteristics within the watershed dictate moderate and severe limitations for septic system installation.

The natural features of the river and watershed are of great aesthetic as well as ecological value. Dominant aesthetic resources include hill ridges, the floodplain, upland edges of wetlands, water/land edges and woodlands. Development within the watershed includes discrete townships and suburban and rural settlements. Highest densities occur in South Kingstown and Narragansett in the middle river area. The Narrow River offers a variety of recreational activities, including boating, fishing, shellfishing and swimming.

The objective of the Plan is to use to positive advantage the scenic, ecological and recreational resources of the river in the planning and management of future watershed development. The management policies proposed by the Tri-Town Planning Committee were outlined according to the following management issues:

Growth Management

Future growth should be guided to suitable locations and minimized in areas inappropriate for development. Methods proposed for managing future development include:

- 1) Village Centers. Existing developed areas could become the focal points for most future development in the watershed, providing residential, commercial and recreational facilities. This objective could be achieved through zoning and subdivision regulations recently enacted in South Kingstown³⁸ and Narragansett³⁹ allowing cluster development.

Cluster zoning provides for the preservation of open space within a community while permitting development of the normal number of housing units

allowed under pertinent subdivision regulations. The original lot size on a given parcel is reduced, thereby enabling the concentration of units in a segment of that parcel. The remaining acreage is maintained as open space for the residents of the cluster development. Both South Kingstown and Narragansett require that 20 percent of any parcel on which dwellings are clustered, exclusive of roadways be retained as open space.

Planned Unit Developments (PUDs) should also be established. PUDs allow the integration of residential and commercial uses, thereby reducing required capital investments in roads, utilities and other community services. These development schemes are specifically intended to retain and preserve existing open space within the development area. Developments will be subject to environmentally appropriate siting and design standards.

- 2) Open Space. Open space and scenic amenities can be maximized by limiting development in outlying areas. Both traditional zoning methods and innovative land management programs are suggested in the Watershed Plan as a means of controlling development outside of village centers. Low density residential development (two-acre zoning) alone or in combination with cluster development provides the most restrictive controls possible within the context of traditional zoning. Any future revision of zoning regulations by individual towns could render land management in adjacent towns less effective.

A relatively recent means of land management suggested in the Plan is that of the transfer of development rights (TDR). TDR might be used within the Narrow River watershed in order to establish the proposed village centers. Under TDR, owners of agricultural or open space land zoned for development

who wish to develop their property would be entitled to construct that project within a designated development district purchased by the town, or to sell that development right to a third party. In this way, the landowner will receive the same income he anticipated from building on his own property, the town will receive property tax revenue that it would otherwise have foregone under restrictive zoning provisions such as exclusive agricultural zoning, and the open space land will be preserved for the benefit of all residents. (Loss of tax revenue is often a deterrent to the implementation of more restrictive zoning.)

Another, although expensive, means of land management proposed for the Watershed is land banking. This mechanism involves the public or quasi-public acquisition of property in order to prevent unwanted future development. Deed restrictions or lease agreements may then be applied to the sale and development of that land. However, the loss of municipal tax revenues in the interim, in addition to the substantial initial cash outlay required, may be an important deterrent to implementation.

Developing Open Space, Recreational, Scientific and Educational Resources

The Planning Committee envisioned a recreational and educational role for the Narrow River and proposed the establishment of public park areas in the upper and lower parts of the estuary, to be linked through recreational activities involving the river corridor as well.

Encouragement of non-motorized boating was recommended for the park areas. In those areas open to motorized craft, speed limits would be imposed in order to prevent conflicts with non-motorized boats and with non-boating recreational uses of the river and its

shoreline. Any channel modification to alleviate natural shoaling and increase boat access would be allowed only after careful environmental impact review. The Committee proposed the construction of hiking, bicycling and nature trails beside the river and through upland areas using existing roads or utility rights-of-way.

The scientific value of the Narrow River estuary was also recognized by the Committee. The continuation and expansion of scientific study and other educational uses of the river's natural resources is a primary goal of the Watershed Plan.

Public acquisition of full or partial interest in land was considered by the Planning Committee to be the principal means of reserving open space for public recreational or educational facilities. Public acquisition of full interest ("purchase in-fee-simple") is, however, expensive and often results in the reduction of municipal tax revenues. For those reasons, "less-than-fee-simple" methods of acquisition were recommended by the Committee. These include easements and covenants, land trusts, and preferential tax treatment. Additionally, private "pre-acquisition" organizations may assist in land preservation by purchasing endangered property and holding it until the appropriate public agency is able to assume title to the land.

Scenic and natural areas can be protected on a long-term basis through restrictive easements and covenants, applied to property titles, prohibiting or limiting development. Such agreements may also be designed to encourage appropriate recreational development. Easements and covenants, which are voluntary, afford property owners tax deductions on their federal income tax returns. The Committee urged that voluntary agreements of this kind be solicited by state and local officials. Land trusts, which likewise provide prop-

erty owners with federal income tax deductions, are non-profit organizations established to preserve land through acquisition or dedication of full or partial interest in land. Preferential tax treatment may also be provided to land owners as an incentive to maintain land in agricultural or open space use through legislated programs such as the Rhode Island Farm, Forest and Open Space Act, revised 1980. These and similar programs will be discussed in greater detail in the final section of this report.

Floodplain Zoning. Specific floodplain zoning, more restrictive than that which presently exists, was proposed by the Committee as a means of controlling future development and assuring maintenance of open space adjacent to the river. Additionally, a long-term program of voluntary and assisted housing relocation out of the floodplain was recommended.

Environmental Management

In order to protect sensitive watershed resources, the Committee recommended "special district zoning" which would allow only open space uses in areas of (1) coastal floodplains, (2) erodible shallow and wet soils, (3) steep and long slopes and bluff areas, and (4) water/land and wetland edges.

Coastal floodplain zoning should not only require the floodproofing of structures and prohibit the use of septic systems, but should restrict future development in the 100-year floodplain to open space uses. The Planning Committee recommended stricter septic system specifications based on soil suitability and applied individually by the towns, including the requirement of technical site plan reviews for development on erodible, shallow or wet soils. North Kingstown's overlay districting was suggested as a model program. Comprehensive planning, including consideration of sanitary and storm water sewers, was viewed as the most

effective implementing mechanism for these measures.

Appearance and Design

The Tri-Town Committee recommended the acquisition of scenic easements as the most effective means of protecting woodland areas. Cutting and trimming standards were proposed in order to maintain existing canopy trees. The promotion of forest management under the Farm, Forest and Open Space Act, revised 1980, was also advised. Acquisition of scenic easements was recommended along scenic highways and secondary roads. Easements may prohibit future obstruction of views by vegetation, buildings and signs. Existing road maintenance programs should be used to selectively clear shrub vegetation to reveal stone walls, woodlands, road canopy trees and views of the river. Measures similar to these have been successfully implemented along the Merritt Parkway in Connecticut.⁴⁰ Further, specific stretches might be officially designated as scenic roadways and highways. Aesthetic design and siting standards and site plan reviews should also be required for boat docks and shore protection facilities.

Organizational Considerations

The Plan for the Narrow River Watershed called for the active participation of residents, local governments and state agencies. The Planning Committee proposed the establishment of a permanent inter-town commission to deal with watershed issues, utilizing as a basis existing intergovernmental processes. The Narrow River Watershed Council was established in 1981 to fulfill that role.

The creation of a joint state-local commission to guide implementation of the Plan was also recommended. Local regulation of watershed development would be monitored by the commission and appealed through local zoning boards of appeal. The commission could be empowered to acquire and hold land, and could be pro-

vided a permanent source of revenue (perhaps bonding) to finance land acquisition.

Applicability of the Three Management Strategies
to South Shore Coastal Resources

It is recognized in the By-Laws of the Narrow River Watershed Council that "...the conservation, utilization, development, management and control of the Narrow River Watershed under a regional council will bring the greatest benefits to the [individual] town[s] and regional population." It is further stated in the By-Laws that:

"...the purpose [of the Council is to promote and provide for] the perpetuation of the watershed's value to all, to develop recommendations for ratification by member towns, to influence local, state and federal policies to address regional concerns, and more specifically, to appoint a Narrow River Advisory Commission to develop and effectuate the plans and policies of the Council.

The goal of the Narrow River Watershed Council is to provide for a joint exercise by the member towns of their sovereignty in the common interests of the people of the region and to strengthen local self-government capabilities to work in a coordinated manner towards the fullest realization of the Narrow River Watershed."⁴¹

The resolutions of South Kingstown, North Kingstown and Narragansett creating the Narrow River Watershed Council recognize the prior preparation of the Plan for the Narrow River Watershed and the desires of each town to effectuate many of the objectives of the Plan. The Council, however, is in no way bound to the Plan. Nevertheless, the attitude of Council members and other local officials to the Plan which, again, includes policies common to both the California and British management programs, provides an indication of the applicability of innovative management techniques on the South Shore.

In this regard, officials associated with planning in the three towns were questioned about the likelihood of the

planning and management measures proposed in the Plan for the Narrow River Watershed being implemented in those towns. The same questions were asked of officials in the remaining South Shore towns, Charlestown and Westerly, as part of the effort to determine the feasibility of establishing a regional planning commission for all of coastal Washington County. Westerly officials were unable to comment on the Watershed Plan or on the proposals contained therein.⁴²

When the Watershed Council becomes operational in the fall of 1981, it is expected to assume a progressive position in addressing the management issues faced within the Watershed area.^{43,44} To this effect, the village center concept, central to all three programs, is considered an effective method of development control for the Watershed.^{45,46} South Kingstown and Narragansett have recently adopted cluster zoning provisions which would allow concentration of development in village centers. North Kingstown's overlay districts would allow similar control.⁴⁷ The construction of shopping centers is seen as an inducement to the concentration of both residential and commercial development within the Watershed.⁴⁸ The deep resistance to condominiums and apartments which was evident on the South Shore as recently as 1976, is apparently decreasing.⁴⁹ Such a change could lead to increased acceptance of planned unit developments (PUDs). In Charlestown, which does not presently have a cluster zoning ordinance, cluster development is considered a desirable planning objective in order to protect the aquifers lying beneath that town.⁵⁰

The preservation of farmland and open space is the cornerstone of the California Local Coastal Program. Its importance on the British coast in areas where recreational development would be harmful to the environment is emphasized in that country's planning policies. It is integral, as well, to the Plan for the Narrow River Watershed for the reason that agricultural and open space land are seriously threatened throughout the South Shore:

Land use in the towns of Narragansett, South Kingstown and Westerly was recorded in 1970 and 1977. During that period, forest and wetlands acreage increased 9 percent while residential use decreased 10 percent. However, during the same period, intensive agricultural activities decreased 11 percent and extensive and open farming decreased 54 percent. It is those open agricultural areas which are most desirable for subdivision because of their deep soils, slight slopes and resistance to erosion. Although residential acreage declined during the early 1970s, any economic revitalization in the future would subject that abandoned agricultural land to severe development pressure. In fact, "other" urban acreage, presumably commercial development, increased 71 percent from 1970 to 1971.⁵¹

Additionally, owners of open space land, which is taxed at fair market value, i.e., highest potential use, often find that the tax burden is too costly to continue using their land for low intensity uses such as farming, forestry and open space. These high taxes often force the conversion of land to industrial, commercial, residential or other high intensity use.⁵¹ In 1973, Rhode Island property taxes averaged 29.1 percent of farm income, compared with the national average of 8.1 percent. Only Massachusetts, New York and New Jersey had higher tax rates.⁵⁴ That pressure will increase substantially as a result of scheduled property revaluations on the South Shore.

Presently North Kingstown has a policy of open space zoning. However, those lands designated as open space are, in actuality, parcels which are publicly owned by either local, state or federal interests.⁵⁵ South Kingstown employs similar districting, referred to in that town as "public" zoning.⁵⁶ Areas so designated in the South Kingstown coastal zone include Trustom Pond National Wildlife Refuge, Jerusalem salt marsh and Marina Park on upper Point Judith Pond. While these areas are protected by such status, open space zoning is not utilized under these circumstances to define pro-

jected open space land use, or to preserve privately held farmland or open space. Open space zoning is not employed in Narragansett because of that town's small area. Instead, Narragansett has chosen to maintain several large undeveloped parcels within its boundaries through public acquisition.⁵⁷ In Charlestown, open space zoning is viewed as a promising mechanism for land management, to be considered in the development of that town's Comprehensive Plan.⁵⁸

Preservation of private open space or agricultural land in these towns must, at this time, be pursued through the Rhode Island Farm, Forest and Open Space Act, revised 1980. The Act, originally passed by the State Legislature in 1968, is a voluntary use value assessment program. Under the revised program, farm, forest or open space land is assessed according only to the production value of the land after capitalization. In return, the land owner must agree to maintain his property in its existing condition, and is subject to a land use change penalty tax if he converts that property to intensive use at a future date. Designation of farmland, for which a minimum of five acres is required, is made by the Rhode Island Department of Environmental Management, thereby circumventing the refusal of some tax assessors to comply with the 1968 Act. The town is further prevented from altering the use value assessment by the Board of Assessment Review, any decision of which may be appealed to the county Superior Court.^{60,61,62} This program is very similar in purpose and operation to the Williamson Act (Land Conservation Act) discussed in reference to the North County Local Coastal Program.^{63,64}

A second state program designed to achieve these ends is the Purchase of Development Rights program which was passed nearly unanimously by the Rhode Island State Legislature in early 1981. The Legislature has appropriated \$2,000,000 for Fiscal Year 1982 to organize an administrative commission and to establish operating rules and regulations for the program. Under tentative procedures, the state would pay to the

land owner the difference between the development value and the agricultural value of the property, which is to be maintained in agricultural use. Funds will be raised through general revenue bonds and will be allocated according to soils type, with no minimum or maximum acreage limit. Preservation of the prime agricultural soils of the South Shore is a primary objective of the new program.⁶⁵

Another mechanism which has been discussed for protecting these lands is the transfer of development rights (TDR). TDR is similar to the Purchase of Development Rights program but is conducted largely within the private sector. The mechanism for implementing TDR was described in the previous section of this report. TDR, which was advocated in both the California and Narrow River plans, was also recently proposed for implementation in South Kingstown.⁶⁶ It is regarded as a potentially effective form of land use management in North Kingstown, although the location of a suitable development district has not been considered.⁶⁷ Narragansett is the smallest of the towns in area on the South Shore and does not have any acreage for such a development district.⁶⁸ Thus, opportunities for implementation of TDR within the Narrow River watershed appear limited at this time. Officials in Charlestown, where a variety of management policies are being examined in preparation for the development of that town's Comprehensive Plan, are, however, interested in the TDR concept.⁶⁹ Adoption of TDR by Charlestown and South Kingstown could provide an incentive for similar action in other South Shore communities.

Agricultural and open space land may also be set aside through various forms of acquisition. Acquisition in-fee-simple involves the purchase of property rights in toto and is thus an expensive means of land preservation. Less-than-fee-simple acquisition of those property rights necessary only to maintain the land in its existing condition is, therefore, more commonly employed. Less-than-fee-simple options include the purchase of development rights by a municipality or the state,

and the purchase of conservation and scenic easements. Two organizations, most notably, have acquired property on the South Shore through outright purchase: The Rhode Island Department of Environmental Management established the South Shore Management area through fee-simple acquisition.⁷⁰ The Rhode Island Audubon Society also established the 115 acre Moonstone Waterfowl Refuge, which includes part of Trustom Pond and its watershed, through outright purchase.

Organizations wishing but unable to purchase land for conservation purposes may be assisted by pre-acquisition agencies such as The Nature Conservancy (TNC) and the Trust for Public Lands (TPL). Acquisition of land by government agencies is often delayed by the lack of immediate funding or by lengthy but required administrative procedures. The expansion of Trustom Pond National Wildlife Refuge by the U. S. Fish and Wildlife Service, for example, requires Congressional approval and is presently subject to federal budget negotiation. Because the threat of development adjacent to the refuge is imminent, TNC and TPL, both private, non-profit organizations, have considered acquiring and holding that threatened property until the Fish and Wildlife Service is able to assume title.^{71,72}

Additionally, agencies interested in acquiring ecologically sensitive areas may purchase land through "bargain sales." A bargain sale is advantageous to both the purchasing agency and the landowner. The purchaser is able to acquire valuable property that it could not have afforded at its fair market value. The landowner may deduct the difference between the fair market value and the bargain sale price from his federal income taxes and is subject to reduced capital gains tax.⁷³

Endangered land has also been protected from development through its acquisition by neighboring landowners. In 1969, homeowners in Prospect Heights, Illinois, were unexpectedly confronted with the imminent filling and subdivision of a scientifically and aesthetically valuable freshwater wetland situated in their neighborhood. With the guidance of a knowledge-

able lawyer, owners of property adjacent to the wetland incorporated themselves as the Hillcrest Homeowners Association and raised the necessary funds to purchase the threatened property. The Association later sold one acre of the fifteen-acre wetland for a private homesite. In so doing, the Association recouped the entire purchase price of the wetland.⁷⁴ The Friends of Trustom Pond, recently organized in response to the proposed subdivision of property adjacent to that National Wildlife Refuge,⁷⁵ may be able to exercise similar influence.

Local land trusts, which were discussed in the Plan for the Narrow River Watershed, offer an additional voluntary means of resource protection. Independent land trusts have been successfully established in all of the other New England states.⁷⁶ The local land trust is a non-profit, tax-exempt organization managed by an elected group of local volunteers and enabling widespread public participation. If the trust is dissolved at a future date, the property will revert to another tax-exempt conservation organization, as required by law. Contributions to the trust are tax-deductible under Internal Revenue Service ruling.^{77,78}

Floodplain zoning, proposed in the Plan for the Narrow River Watershed, is also a principle component of the California Local Coastal Program. Narragansett, Charlestown and Westerly presently adhere to the guidelines of the National Flood Insurance Program (NFIP). The NFIP requires only that certain design standards be applied to construction within the flood plain, specifically, that that the living areas of residences be at or above the 100-year flood level.⁷⁹ Current Flood Insurance Agency storm surge level calculation methodology is being revised to more accurately account for wave set-up and run-up.⁸⁰ North Kingstown's overlay districting places certain limitations on flood plain development, however, flood plain acreage in North Kingstown associated with the Narrow River is minimal and is effectively protected by required large-lot zoning.⁸¹ South Kingstown's High Flood Danger Zone prohibits all 24-hour occupancy on both developed

and undeveloped barrier beaches. The HFD zoning is, however, presently being tested in court. In the case of Zeppa v. South Kingstown regarding construction of a house on Green Hill Beach, the HFD zoning was found in Washington County Superior Court to be an indirect confiscation of property without compensation and, therefore, unconstitutional. A previous case, Annicelli v. South Kingstown, is on appeal to the State Supreme Court to reverse the municipal denial of a barrier beach building permit.⁸² Despite the controversy surrounding South Kingstown's HFD zoning, the town of Charlestown is willing to consider the same type of restrictive flood plain zoning for inclusion in its Comprehensive Plan.⁸³

A bill, sponsored by Senator John Chaffee of Rhode Island, to eliminate NFIP subsidization of reconstruction of buildings located on barrier beaches is currently before the U. S. Congress. The elimination of flood insurance may make HFD zoning more effective or even unnecessary: the desire to build in the HFD zone should be reduced or, hopefully, eliminated in the absence of such guaranteed subsidization.

Perhaps the most controversial proposal in the Plan for the Narrow River Watershed involves the voluntary and assisted relocation of houses out of the flood plain. Such action would not be particularly beneficial to North Kingstown, again because of the limited flood plain area and existing large-lot zoning in that town.⁸⁴ The legal and funding problems incumbent in such relocation are of concern in Narragansett.⁸⁵ Other towns share these reservations while acknowledging the environmental benefits of eliminating flood plain development. However, the abolition of flood insurance may also generate greater interest in housing relocation.

The Watershed Plan also called for the formation of watershed protective zoning districts defined by soil and slope conditions. Development in areas of shallow bedrock and water tables or high erosion potential within those districts would be subject to site plan review, as required for North Kingstown's overlay districts.⁸⁶ The concept of a consis-

tent land use plan based on soil conditions is also of interest to Charlestown officials.⁸⁷

An important component of the California, British and Narrow River plans is the provision of public access. The British policy coordinating road width and parking facilities with resource carrying capacity was not addressed in the Plan for the Narrow River Watershed. Construction of new beach access roads on the South Shore is probably unlikely, although the concept might effectively be applied to parking lot construction or expansion.

The development of recreational trails is a facet of the California and British programs which is particularly applicable to all of the South Shore. Footpaths, bridlepaths and educational nature trails along the Narrow River shoreline and its watershed were suggested in the Watershed Plan. They might also be constructed around and between the coastal ponds. Access of this type can contribute significantly to the awareness of area residents of the value of those resources. These accessways must, of course, be constructed in accordance with appropriate environmental safeguards. The most effective means of establishing public trails in the Narrow River area may be through voluntary action of landowners. Residents who may be interested in allowing public access on or over their property may also be reluctant to give control of accessways to municipal authorities because of anticipated inadequate trail maintenance by the town. Instead, those landowners may be willing to work individually or together to maintain trails.⁸⁸ Alternatively, control of trails could be donated or dedicated to conservation organizations such as the Audubon Society or The Nature Conservancy, which would subsequently be responsible for their maintenance.

CONCLUSIONS

It is apparent that many of the land use policies and management tools which have been applied successfully in California and Great Britain are acceptable in Rhode Island within the defined management structure proposed for the Narrow River watershed. The motivation for the formation of the Narrow River Watershed Council by North Kingstown, South Kingstown and Narragansett derives in large part from the fact that the Narrow River estuary is contiguous between the three towns. They share not only the scenic and recreational resources of the estuary, but also the responsibility for its wise use and the consequences of its improper management.

The objective of this investigation has been to examine the feasibility of establishing a regional South Shore planning commission, drawing on the pertinent principles and policies of the three management programs which have been discussed. The fact that all five towns are not physically linked by a contiguous system such as that described above has been cited as an obstacle to the establishment of any unified regional planning body.⁸⁹ In fact, the towns do share common concerns. All of the South Shore communities are endowed with coastal ponds and estuaries, fragile dune and beach habitats, and fertile outwash plain. Quonochontaug Pond is divided between Westerly and Charlestown, and access to Green Hill Pond in South Kingstown is gained through the Charlestown breachway and Ninigret Pond in Charlestown. Property damage on South Shore beaches will be inflicted indiscriminately across town borders by the next hurricane to strike the New England coast. All communities have suffered losses in agricultural land use during the last decade and, consequently, will face the threat of increased urbanization in the future, as indicated by the projected population increases for coastal Washington County presented in Figure 2.

The formation of the Narrow River Watershed Council indicates local recognition of, and determination to address,

that threat. The enthusiasm in Charlestown for many of the proposals of the Plan for the Narrow River Watershed⁹⁰ indicates acceptance of the regional management concept by towns outside the Narrow River watershed. Through the implementation of consistent regional planning policies, the high scenic and environmental quality of the South Shore, which has remained intact because of the region's physical isolation from the urbanized cities to the north, would be preserved. Consistent open space and farmland preservation policies would protect the heritage of the region and would insure the viability of agriculture as an economic base in all communities. If the Watershed Council is successful in its mission, even greater interest in regional planning may be seen in the other towns.

A number of planning measures which reflect the policies discussed in this paper are already available to the South Shore and may serve as a foundation for regional management action. Principally, the communities should adopt collectively those individual town zoning ordinances which are most effective in the protection of coastal resources. These include the cluster zoning ordinances of South Kingstown and Narragansett. Open space zoning, or overlay districts such as those in North Kingstown, could likewise be adopted in all towns. Beaches and barrier beaches, both developed and undeveloped, may be better protected by uniform zoning policies similar to South Kingstown's High Flood Danger districting. Alternatively, the possible repeal of National Flood Insurance may open the way for other area-wide flood control legislation. All towns presently have construction and design standards, although these might be reviewed and revised, if necessary, to impose a maximum degree of consistency.

One of the cornerstones of the California Local Coastal Program is the provision of low- and moderate-income housing in any residential development. The South Shore communities address this need in various ways. The Town of Narragansett Zoning Ordinance includes a special exception for multi-fam-

ily dwellings. Westerly subscribes to Section 8 of the U. S. Housing Act of 1937 (P.L. 73-479) which provides low-income residents with rent assistance through subsidies to landlords.⁹¹ North Kingstown is a participant in the Community Development Block Grant program as provided by the Housing and Community Development Act of 1974 (P.L. 92-383).⁹² Under this program, grants are available to small cities (less than 50,000 population) for a variety of revitalization purposes. However, only South Kingstown advocates (as a premise to its zoning ordinance) the promotion of a "...maximum choice of housing opportunities for all economic and social groups." Adoption and implementation of a similar policy by the other communities on the South Shore would inspire greater appreciation of the region's resources by all groups through their shared responsibility for following necessary management policies.

The state-local land management bill which has gone before the State Legislature a number of times but has failed to win approval would provide planning mechanisms to be applied regionally. Narragansett and South Kingstown favored that legislation.^{93,94} North Kingstown initially opposed the bill because too much land use control would have been removed from local authorities.⁹⁵ (This was the reason for the bill's defeat state-wide.) Support might, however, be generated for the more limited county-wide program suggested in this paper.

The policies which have been discussed as applicable within such a regional program would contribute to implementation of the collaborative planning process described by Sorensen.⁹⁶ Official sources of support for regional cooperation presently exist in Rhode Island: the Coastal Resources Center has established on-going scientific studies and environmental education programs involving the coastal ponds of Narragansett, South Kingstown and Charlestown. Expansion of research activities either by the CRC or by other departments of the University of Rhode Island to include the coastal ponds of Wes-

terly and the Narrow River would provide the necessary information base for a county-wide regional planning program.

The communities are empowered to form inter-town councils under the provisions of the Rhode Island Council of Governments Bill of 1964. The bill enabled the formation of the Coalition of Coastal Communities and Towns, and may be applied to the Narrow River Watershed Council. However, there is no existing enabling legislation in Rhode Island for the establishment of regional planning bodies, and no regional organizations have been formed.⁹⁷ The Joint Municipal Planning Commission legislation (R.I.G.L. 45-22.1) was intended to allow town planning boards to act together, but it has not been employed in any formal organizational arrangement.⁹⁸ The most effective enabling legislation for watershed commissions would be the "Rivers" bill which has been passed by the State Legislature but has not entered into force.⁹⁹ Enforcement of this legislation should be encouraged, and additional enabling legislation for a South Shore Planning Commission should be proposed.

The role of a planning agency should include the involvement of that body's constituents in the formulation and implementation of policy. The planning process should be positive, encouraging appropriate resource use, and not strictly regulatory. The planning authority should provide landowners with information and management techniques to enable them to protect the environment. Resource carrying capacities, mitigation measures, and necessary development prohibitions may be more effectively enforced if appropriate and responsible development is encouraged. The California Local Coastal Program and the British coastal planning policies provide functioning examples of this cooperative process. The Coastal Resources Center's proposed resource use classification revisions are an effective contribution to this effort. Within such a management arrangement, the adversary relationship which often exists between planning authorities and landowners can be avoided.

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