

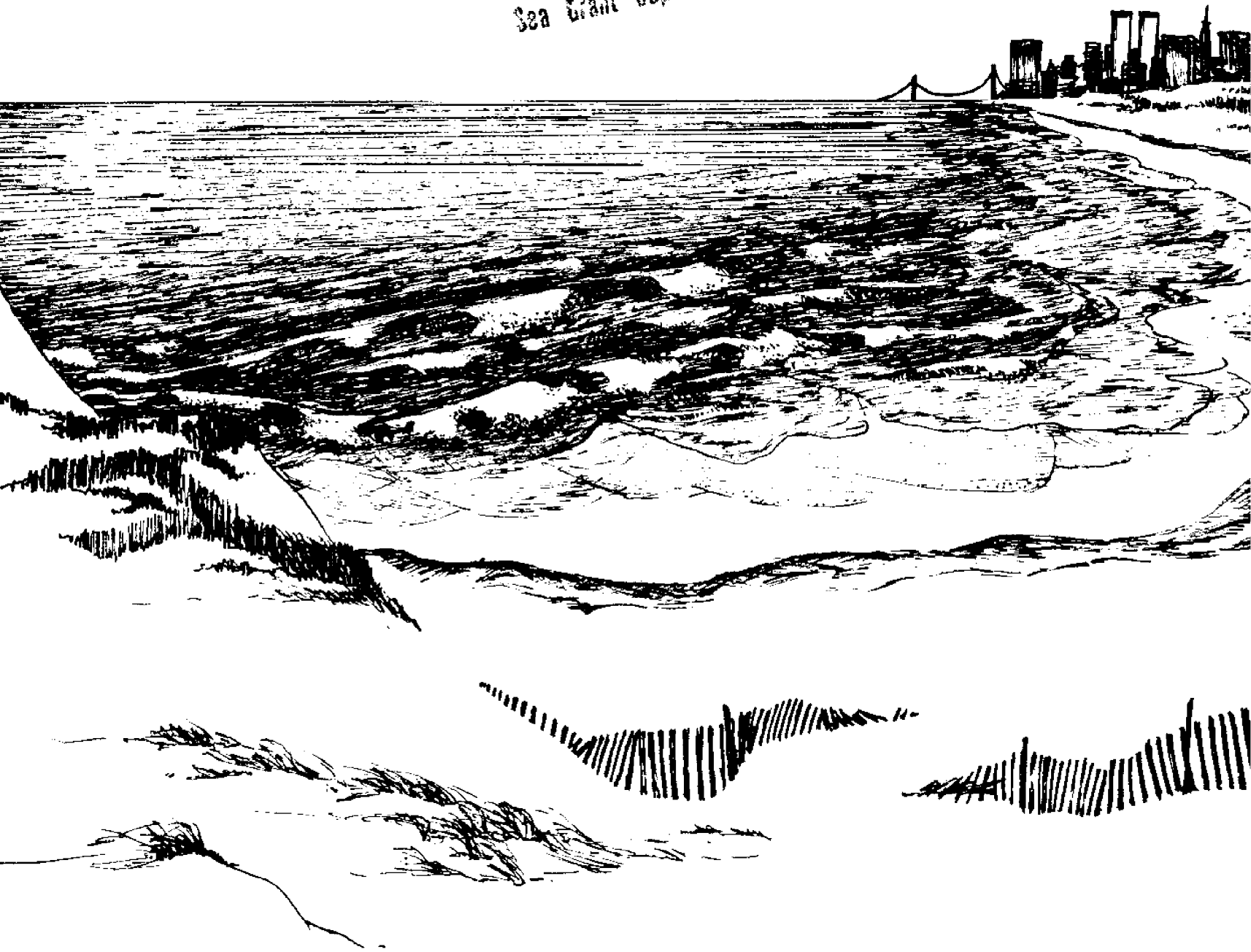
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Jurisdictional Zones and Governmental Responsibilities

Paul D. Marr

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MESA NEW YORK BIGHT ATLAS MONOGRAPH

22

The offshore water in the bend of the Atlantic coastline from Long Island on one side to New Jersey on the other is known as New York Bight. This 15,000 square miles of the Atlantic coastal ocean reaches seaward to the edge of the continental shelf, 80 to 120 miles offshore. It's the front doorstep of New York City, one of the world's most intensively used coastal areas—for recreation, shipping, fishing and shellfishing, and for dumping sewage sludge, construction rubble, and industrial wastes. Its potential is being closely eyed for resources like sand and gravel—and oil and gas.

This is one of a series of technical monographs on the Bight, summarizing what is known and identifying what is unknown. Those making critical management decisions affecting the Bight region are acutely aware that they need more data than are now available on the complex interplay among processes in the Bight, and about the human impact on those processes. The monographs provide a jumping-off place for further research.

The series is a cooperative effort between the National Oceanic and Atmospheric Administration (NOAA) and the New York Sea Grant Institute. NOAA's Marine EcoSystems Analysis (MESA) program is responsible for identifying and measuring the impact of man on the marine environment and its resources. The Sea Grant Institute (of State University of New York and Cornell University, and an affiliate of NOAA's Sea Grant program) conducts a variety of research and educational activities on the sea and Great Lakes. Together, Sea Grant and MESA are preparing an atlas of New York Bight that will supply urgently needed environmental information to policy-makers, industries, educational institutions, and to interested people.

ATLAS MONOGRAPH 22 discusses the various zones of governmental jurisdiction and governmental responsibilities affecting New York Bight. Zones of jurisdiction extend from the coastal rim to the seabed of the outer continental shelf and the high seas. The various levels of government deal with responsibilities ranging from land use controls and marine wetlands management on the coastal rim to fishery management, the direction of traffic on the seas, or the management of mining activities on the bed of the territorial sea and the outer continental shelf. The presence of government in the Bight, says Marr, is becoming more and more complex as the demand for coastal and marine resources continues to increase.

Credits

Marjory Scarlet Simmons monograph editor
April Shelford, Kathrine Barns, Peter Crosswell, Kathleen Grove, and L.J. List cartographers
Graphic Arts, SUNY Central Administration composition and pasteup
SUNY Print Shop printers
Mimi Kindlon cover and text design

Staff and Consultants

Donald F. Squires director, Sea Grant Institute
Bruce M. Kantrowitz, Jean McAlpine senior editors
Cynthia Williams and Marjory Scarlet Simmons associate editors
Jay J.C. Ginter project manager
Michael W. Dobson cartographic services, SUNY at Albany
Miklos Pinther base maps, American Geographical Society

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**New York Sea Grant Institute
Albany, New York
October 1979**

Paul D. Marr, PhD, is associate professor, Department of Geography, State University of New York at Albany. His teaching and research activities include urban and regional planning and coastal zone management. He is author of *Managing County and Local Environments* (New York Department of Environmental Conservation 1977) and coauthor with Eugene K. Schuler, Jr., of *Governmental Jurisdictions of the New York Coastal Zone* (New York Sea Grant Institute 1976).

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Acknowledgments

I wish to thank the many helpful government employees who provided information on agency operations and reviewed the draft. The work of Richard Nunez and Peter Bluhm was an especially valuable source on the shore zone. Jay J.C. Ginter provided helpful coaching on fishing management and April Shelford transformed my sketches into crisp and understandable maps and figures. Marjory Scarlet Simmons deserves a special acknowledgment for her patient and expert editing of the text. Don Squires and the New York Sea Grant Institute also deserve recognition and thanks for funding earlier work on governmental coastal jurisdictions that formed a basis for parts of the second half of this monograph.

Government agencies—with their associated regulations and jurisdictions—pervade the New York Bight area. Each level of governmental activity operates within a legally defined space and conforms to six jurisdictional zones—the shore, the coastal rim, the territorial sea, the contiguous zones, the outer continental shelf, and the high seas. The responsibilities of public agencies at each level of governmental activity—including minor civil divisions, substate regions, state, interstate commissions, the federal government, and international agencies—conform to one or more of the jurisdictional zones. The zones and governmental activities are in a state of flux, reflecting technological change and the continually increasing demand and competition for coastal and offshore resources. Changes have resulted in the development of new resource management agencies and the extension of established program responsibilities.

Introduction

Government institutions deal with a broad range of responsibilities in the New York Bight area—from land use controls and marine wetlands management on the shoreland rim to fishery management, the direction of traffic on the seas, or the management of mining activities on the bed of the territorial sea and the outer continental shelf. Initial federal interest in coastal policy in the late eighteenth century was concerned with defining the territorial sea. Then, for over 100 years, there was a lapse of federal interest in managing the coastal waters of the nation except for a growing concern about channels being blocked with debris which resulted in the passage of the Rivers and Harbors Act of 1899. After the turn of the century the federal interest was initially restricted to near-shore problems of navigation and solid waste dumping, and then in the 1930s interest grew in defining the federal policy on offshore petroleum production. Only since the second world war has a concern for coastal resources and the quality of coastal environment truly developed.

The various means of implementing govern-

mental response to coastal issues include establishing new programs, broadening the activity of existing agencies, passing new legislation, issuing proclamations, and litigation. All levels of government have become involved in coastal affairs, from minor civil divisions (MCDs) to international organizations. The tempo of involvement is increasing. Various agencies pursue their mandates, often with little coordination with related programs in other bureaucracies, regardless of whether one or more levels of government may be involved. The result is a complex web of activities and regulations that is often difficult to understand and often leads to conflicts.

This monograph places in perspective the changing character of governmental responsibilities that affects the New York Bight area. Presented first is a discussion of the various zones of jurisdiction extending from the coastal rim* to the seabed of the outer continental shelf and the high seas; second is a review of the functions of governmental agencies, including a synopsis of the administrative complexity that exists for the coastal rim and the Bight waters.

*The coastal rim is comprised of those MCDs fronting on New York Bight.

Jurisdictional Zones

The jurisdictional zones of the New York Bight area (see Map 1) extend from the arc of coastlands seaward for 200 nautical miles (nmi). The *coastal rim*, the first of six diverse zones, includes the New York metropolitan area at the apex of the Bight. Along the Bight shores toward Montauk, LI, and toward Cape May on the southern coast of New Jersey are urbanized areas that gradually blend into the less populated land used as vacation resorts and open space. The second zone, the *shore*, is a narrow band of land subject to regular tidal flooding and is bounded by the mean high tide and the mean low tide. Through tradition, sharpened by the findings of the courts, the upper limit of the shore is the farthest extent of private land ownership and the accepted limit of local government jurisdiction. The other zones, the seaward zones, are the territorial sea, the contiguous zones, the outer continental shelf, and the high seas. The *territorial sea* extends 3 nmi off shore from mean low water and is the outer limit of complete national sovereignty. Next are the *contiguous zones*, special purpose belts, each having its own width and a separate mode of enforcement or management. Each zone is a partial extension of national sovereignty concerned with such problems as fisheries management and environmental protection. The jurisdictional zone of the *outer continental shelf* includes the floor of the ocean and the resources below and extends from the outer edge of the territorial sea to the 200 m isobath. The seabed of the shelf and the resources beneath have been claimed by the federal government and are presently the site of possible petroleum and natural gas developments. The last zone, the *high seas*, constitutes a jurisdictional zone free from national claims; it occupies the surface, the water column beyond the contiguous zones, and the seabed beyond the edge of the continental shelf.

Coastal Rim

The economic focus of the New York Bight coastlands is the extensive New York-Newark-Jersey City, NY-NJ-CT Standard Consolidated Statistical Area. This conurbation of 17,028,710 people (Map 2 and Table 1) includes the adjacent Standard Metropolitan Statistical Areas (SMSAs) in New York, New Jersey, and Connecticut. This 20-county area is centered in the cities on either side of the lower Hudson River,

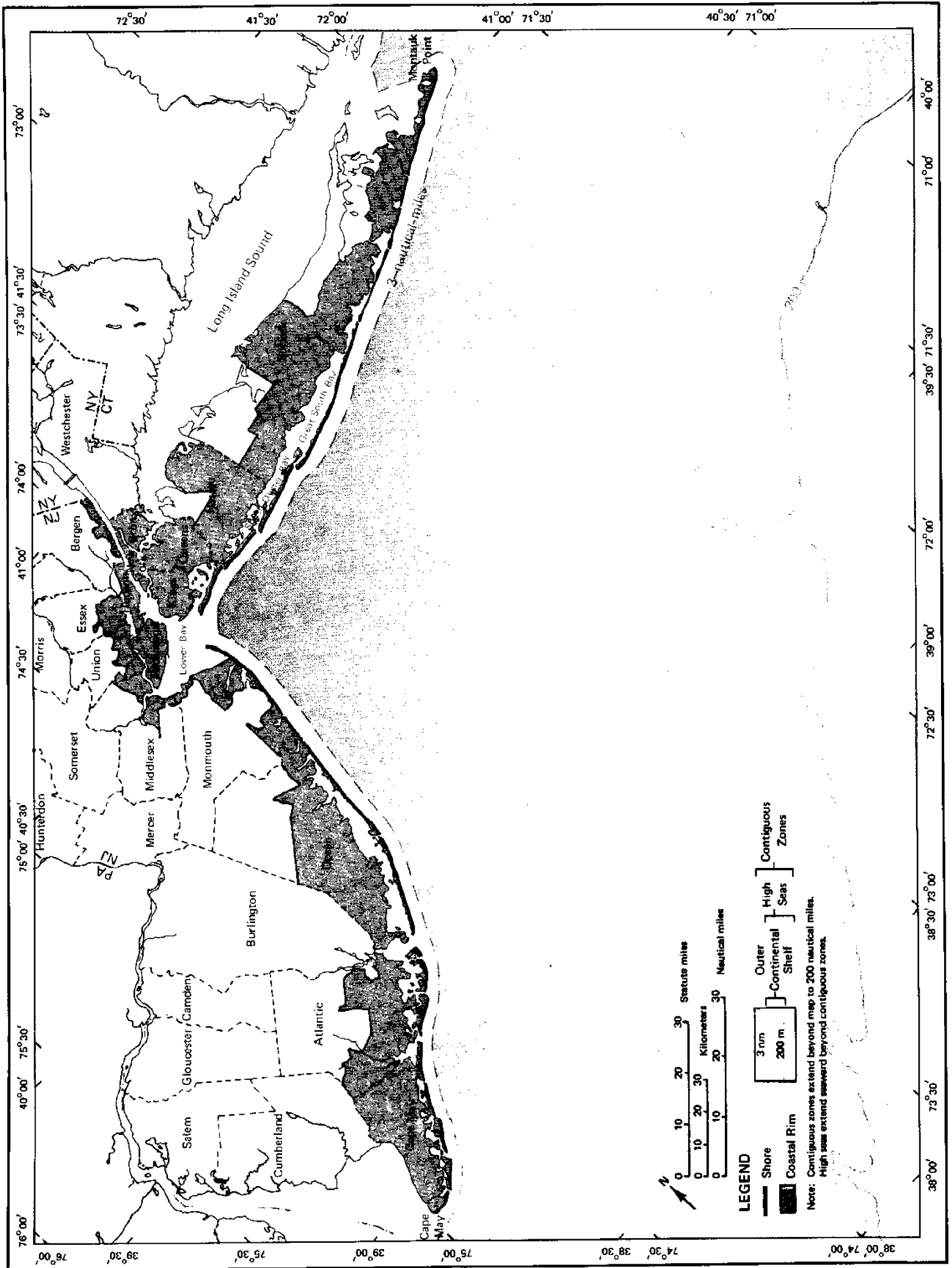
Upper and Lower New York Bays, and connecting waterways. These inland waters are intensively used. They are the point of origin and destination for most of the seagoing shipments traversing the Bight. They are also the site of an active internal water commerce, recreation for part-time sailors and fishermen, and the means for transporting the liquid wastes of millions of people and their industry into the Bight.

Table 1. New York-Newark-Jersey City, NY-NJ-CT Standard Consolidated Statistical Area

Component Parts	Population	
	County	SMSA
New York SMSA		9,973,577
Bronx	1,471,701	
Kings	2,602,012	
New York	1,539,233	
Queens	1,986,473	
Richmond	295,443	
Putnam	56,696	
Rockland	229,903	
Westchester	894,104	
Bergen	898,012	
Nassau-Suffolk SMSA		2,553,030
Nassau	1,428,080	
Suffolk	1,124,950	
Newark SMSA		2,054,928
Essex	929,986	
Morris	383,454	
Somerset	198,372	
Union	543,116	
Jersey City SMSA		609,266
Hudson	609,266	
New Brunswick-Perth Amboy-Sayreville SMSA		583,813
Middlesex	583,813	
Patterson-Clifton-Passaic SMSA		460,782
Passaic	460,782	
Long Branch-Asbury Park SMSA		459,379
Monmouth	459,379	
Stamford SMSA		206,419
Fairfield (Part)	206,419	
Norwalk SMSA		127,516
Fairfield (Part)	127,516	
TOTAL FOR CONSOLIDATED AREA		17,028,710

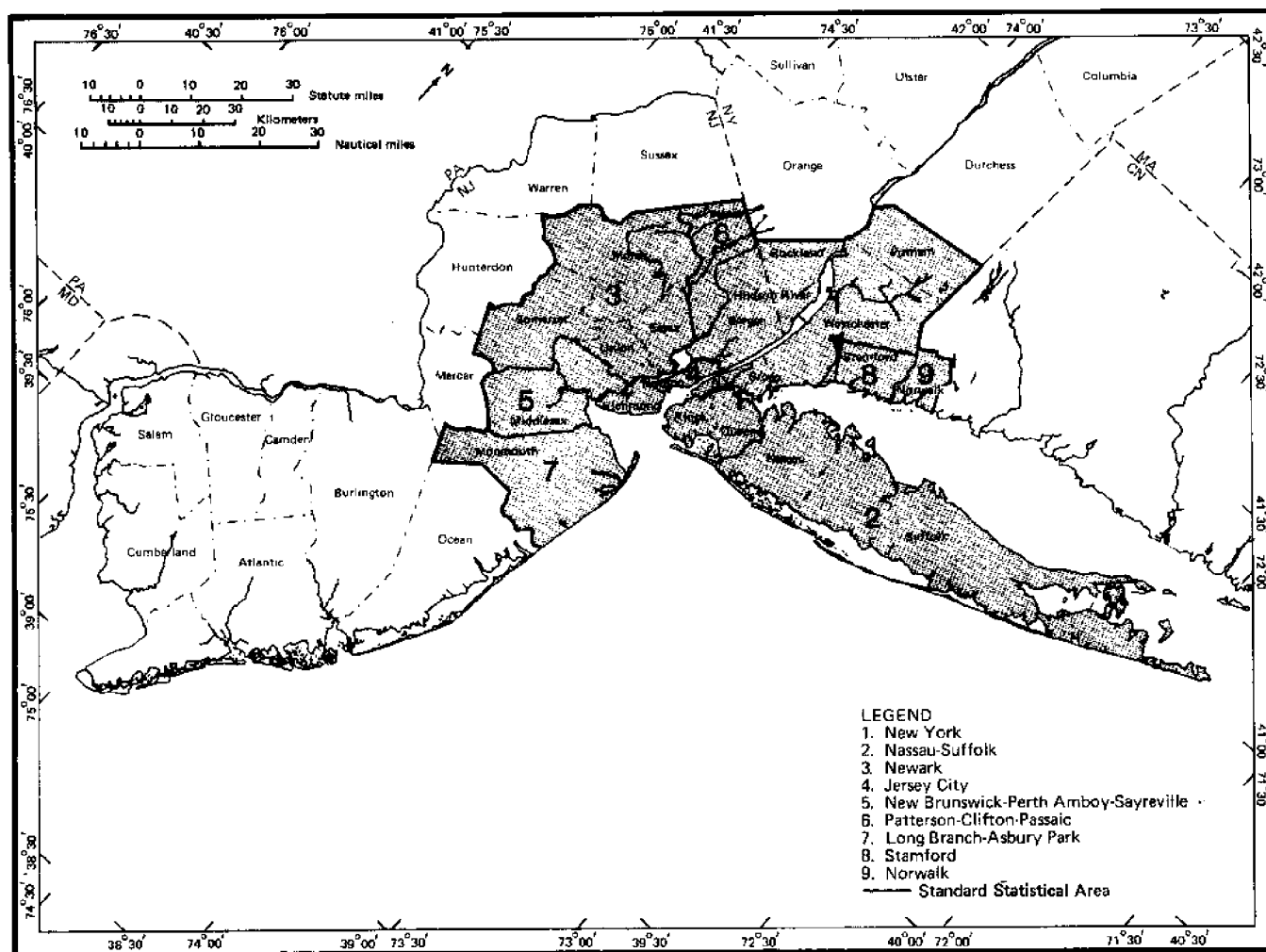
Source: US Executive Office of the President, Office of Management and Budget 1975

Map 1. Jurisdictional zones of the New York Bight area



Transverse Mercator Projection

Map 2. New York-Newark-Jersey City, NY-NJ-CT Standard Consolidated Statistical Area



Source: US Executive Office of the President, Office of Management and Budget 1975

Transverse Mercator Projection

Although the New York-Newark-Jersey City SCSA encompasses the economic core of the Bight region, it constitutes only a part of the total local jurisdictions existing from Montauk to Cape May. Map 2 and Table 2 display the number and population of counties and MCDs bordering the Bight and the connecting internal waters. New York and New Jersey coastlands include 28 and 106 MCDs respectively. In addition to the general purpose governments, there are an estimated several hundred special districts within the New York and New Jersey civil divisions. These districts often function as special purpose governments providing one or more services that may include, for example, recreation, street lighting, and sewer services. They facilitate suburban, industrial, and recreation developments often attracted to the shore. They also directly affect the quality of coastal waters through discharges from wastewater treatment plants and may increase public access to the shore through the construction and operation of

parks and boating facilities. The operating policies of special districts are often formulated independently of local planning and regional planning, even though it is customary for many MCDs and special districts to share executives and governing boards.

Together the population of the shore rim communities totals 11,861,562, of which approximately 67% resides in New York City, 16% resides on coastal Long Island, and 17% is situated along the coast of New Jersey from the New York-New Jersey border to Cape May. Each of these municipal units has considerable power to regulate land development facing its respective shores, and to control the quality of solid and liquid wastes discharged into its waters. The resources and willingness of these local governmental and special district units to act constructively to maintain the quality of the Bight shore and offshore waters vary greatly. The municipalities range in size and accumulated wealth from New York City,

population 7,894,862, to the Village of Hewlett Neck in Nassau County, population 529, and the Borough of Cape May Point in Cape May County, population 204. The functions of these communities also vary greatly. Those in the immediate New York-New Jersey shore area are heavily industrialized, others are suburban, and the more distant are summer resort municipalities with little economic base except for the seasonal recreation industry.

There have been as many policies toward the inland and offshore waters as there have been MCDs and special districts. These municipalities and special districts have viewed the coastal wetlands as sources of valuable new lands and as precious nature preserves. The coastal waters have been valued as channels of commerce, as sources of industrial water, as a conveyance for sewage, and as prime attractants for recreationists. But more often, the coastal waters have been accepted without concern for actions to improve their quality. This passive attitude may be changing. Public pressure and federal and state pollution control, wetlands control, and wildlife conservation programs have awakened communities to the value of their coastal resources. There remains, however, considerable latitude for different responses by each county, MCD, and special district.

Shore

The shore is a border zone with few of the organizational, administrative, dimensional characteristics, or resources of the coastal lands or coastal waters. It is a dynamic interface between land and water that shifts location in response to a combination of geologic, meteorologic, and oceanographic processes. As a result of these changes the shore directly affects the domain of the land and of the sea. The shore is the middle range of the extreme limits of tidal action. The fullest range of the tides is bounded by extreme high water and extreme low water, defining a tidal zone whose horizontal dimension varies inversely with the slope of the shore zone topography. This extreme tidal range occurs infrequently. The more common tidal limits are mean high water and mean low water. The four tidal levels, extreme high and low water and mean high and low water delimit four zones—uplands, dry sand area, shore, and underwater land (Figure 1). The underwater land extends off shore beyond the limit of mean low water and is only occasionally exposed at its upper limits. The shore, or the foreshore, is bounded by the mean high and mean low water tidal levels. The zone between mean high water and extreme high water is the dry sand area

Table 2. States, counties, and MCDs bordering New York Bight and connecting internal waters

State		County		MCD	
Name	Population	Name	Population	Number	Population
New York ^a	18,236,967	New York City ^b	7,894,862	1	7,894,862
		Nassau	1,428,080	11	1,167,326
		Suffolk	1,124,950	16	773,018
			10,447,892	28	9,835,206
New Jersey	7,168,164	Bergen	898,012	5	57,589
		Hudson	609,266	9	536,996
		Essex	929,986	1	382,417
		Union	543,116	2	154,063
		Middlesex	583,813	7	318,560
		Monmouth	459,379	26	237,066
		Ocean	208,470	27	148,741
		Atlantic	175,043	14	133,995
		Cape May	59,554	15	56,925
			4,466,639	106	2,026,356
TOTAL	25,405,131		14,914,531	134	11,861,562

^aIn New York, MCDs include towns, villages, cities, and Indian reservations.

^bNew York City is comprised of five counties, but is counted in this table as one MCD.

covered several times a year. Beyond is the upland zone, which is not inundated under normal circumstances. These tidal limits coincide with other boundaries. Mean low water is the baseline used by Congress and international maritime conventions for measuring the seaward extent of the territorial sea, and the contiguous and fishery conservation zones. Mean high water, the upper limit of the foreshore, is the customary boundary separating public and private lands from local and state government jurisdiction.

Each of the tidal limits has a vertical and horizontal component. The two principal limits, mean low water and mean high water, are most critical and are subject to continuing examination. The vertical component is based on tide gauge readings over a specified 19-year soli-lunar cycle known as the *tidal epoch*. The horizontal displacement of tidal lines may change as a result of natural causes such as coastal accretion—the slow and gradual deposition of particles—or by coastal erosion, considered a relatively rapid process. Other natural slow and gradual changes that affect the tidal limits are the result of broad changes in geologic structure resulting in *reliction*, the rising of the coast, or *submergence*, the lowering of the coast. In either situation the

phrase “slow and gradual” is significant. Changes of a slow and gradual nature result in a lateral shift of the legal mean high water and the legal mean low water lines, and consequently affect the legal boundaries of land ownership and governmental jurisdiction. However, if the coastline is perceptibly changed because of a violent storm, landslide, or earthquake, it is said to be the result of *avulsion* and does not change the legally defined tidal lines (Nunez and Bluhm 1974).

The use of mean high water and mean low water as legal limits is deeply rooted in history. Roman law recognized that all navigable waters, including navigable tidal waters, could be freely used for navigation and fishing. In England, after the Magna Carta (1215), the foreshore was considered a public trust owned by the king for the benefit of his subjects. This tradition of navigable waters as a public trust evolved and became the basis of the colonial concept that navigable waters and the public rights to their use extended inshore to mean high water (*Shively v. Bowlby*; Appendix A). State governments and the federal government recognize the same principles of public ownership in the tidal zone (Nunez and Bluhm 1974). The various zones of ownership and jurisdiction are 1) the uplands—a zone of customary private

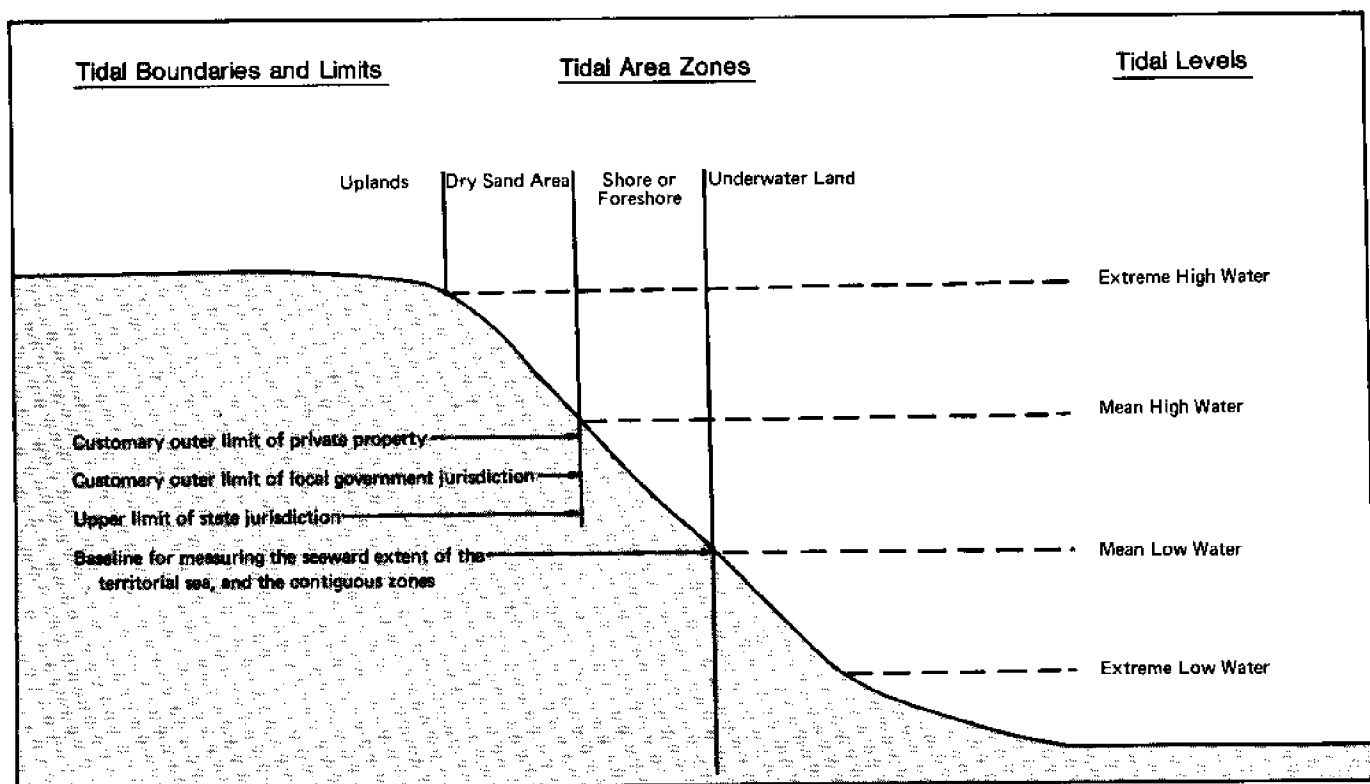


Figure 1. Tidal area boundaries, limits, and zones

ownership; 2) the dry sand area—a zone of mixed public and private rights; and 3) the foreshore and the underwater lands—zones often publicly owned (Figure 1).

Responsibility for the foreshore, originally the jurisdiction of the British Crown, was divided between the various states and the federal government after the American Revolution. Today, individual states have the exclusive responsibility to enforce the rights of the public in the foreshore. These rights of the public include, for example, the right of passage over the foreshore for fishing, bathing, and other lawful purposes (*Tucci v. Salzhauser*). Jurisdiction over the use of the adjacent surface waters for navigation belongs to the federal government. Through the commerce clause of the US Constitution, Congress has the power to regulate commerce between the states, and this power has been extended to the navigable waters of the shore zone. Under the Rivers and Harbors Act of 1899 and succeeding legislation, the role of the federal government has been further defined as having control over the shape and size of harbors and the right to regulate all obstructions affecting the navigable capacity of waterways.

There are instances where private rights extend into the foreshore and the adjacent navigable waters and also where both public and private ownership extend to the resources on and below the foreshore bed. Ownership of bed and below-bed resources is subject to severe restrictions; public access for navigation and for fishing during periods of high water cannot be prevented (*Martin v. Waddell*). Upland owners may have access to foreshore lands through *riparian rights* (rights of the owner of land bordering the shore to access and egress and to use the sea resources), but states can exercise their police powers to regulate activity on foreshore lands regardless of ownership (Nunez and Bluhm 1974).

Landowners whose property adjoins the foreshore customarily have riparian rights to navigable waters for fishing and boating (*City of New York v. Wilson & Co., Inc.*). This access has been defined in litigation as the right to build docks and boating facilities on the foreshore, and has been extended to include the construction of facilities to navigable depths over underwater lands (*Town of Brookhaven v. Smith*). Riparian rights are protected even when the foreshore may be filled for public use. In such a

case, riparian rights must be purchased from the upland owner or the upland owner can continue to exert rights at the outer edge of the fill (Nunez and Bluhm 1974).

Territorial Sea

The territorial sea, also referred to as the marginal sea, is the seaward extension of national territorial sovereignty. It is 3 nmi wide, measured from the place of mean low water (mean lower water in the Pacific), and encompasses the air space above, the sea surface, the water column, the seabed, and the subsoil beneath. These conditions, however, do not restrict foreign merchant ships from the right of innocent passage through the territorial sea. The relationship of the territorial sea to other offshore jurisdictional zones is shown in Figure 2.

Like the traditional use of the shore zone, use of the territorial sea is rooted in history. The first definitive work on the territorial sea that sets tradition of western European countries was written by Bynkershoek in 1702 (Bynkershoek 1923). In his treatise he melded the past historical claims of nations with a discussion of the theoretical basis for national claims to territorial space. He concluded that territorial space must be susceptible to possession. He interpreted this to be protection from shore batteries which at that time could fire at an extreme range of approximately 1 league or 3 nmi. This convention came to be accepted by many European countries in the eighteenth century and was well established when this distance was adopted by the United States.

The first US statement on the question of the territorial sea was made in 1793 when war was declared between England and France. President Washington wanted to retain US neutrality and instructed Secretary of State Thomas Jefferson to notify the British minister that the new nation was provisionally establishing 1 league or a 3 nmi zone of territorial protection (Jefferson 1793). Since this first definition of territorial waters was in response to a neutrality policy, it did not elaborate on other aspects of national sovereignty. These were established in the following century through custom, treaty, and litigation. The 3 nmi territorial sea was referred to in an 1818 coastal fisheries convention with England. Later in the century the idea of territorial waters was strengthened in customs agreements. The last of the negotiations in the nineteenth century was the Bering Sea Arbitration, concluded in 1893.

In the following half century, the US concept of the territorial sea remained largely unchanged. A meeting was held in 1930 at The Hague to clarify international disagreements on the width and meaning of the territorial sea, but delegates failed to reach an accord. In contrast, the federal and states rights to the resources of territorial waters were tested in court and were the subject of significant legislation. California, Louisiana, and Texas leased offshore lands for petroleum production and received

royalties. In the 1930s the federal government questioned the right of California to continue this practice. In the mid-1940s the federal government sued California, alleging that it unlawfully issued leases seaward of low water and outside the inland waters of California. The Supreme Court found that the federal government rather than California had "paramount rights in and power over that belt, an incident to which is full dominion over the resources of the soil under that water area, including oil" (*US v. California*).

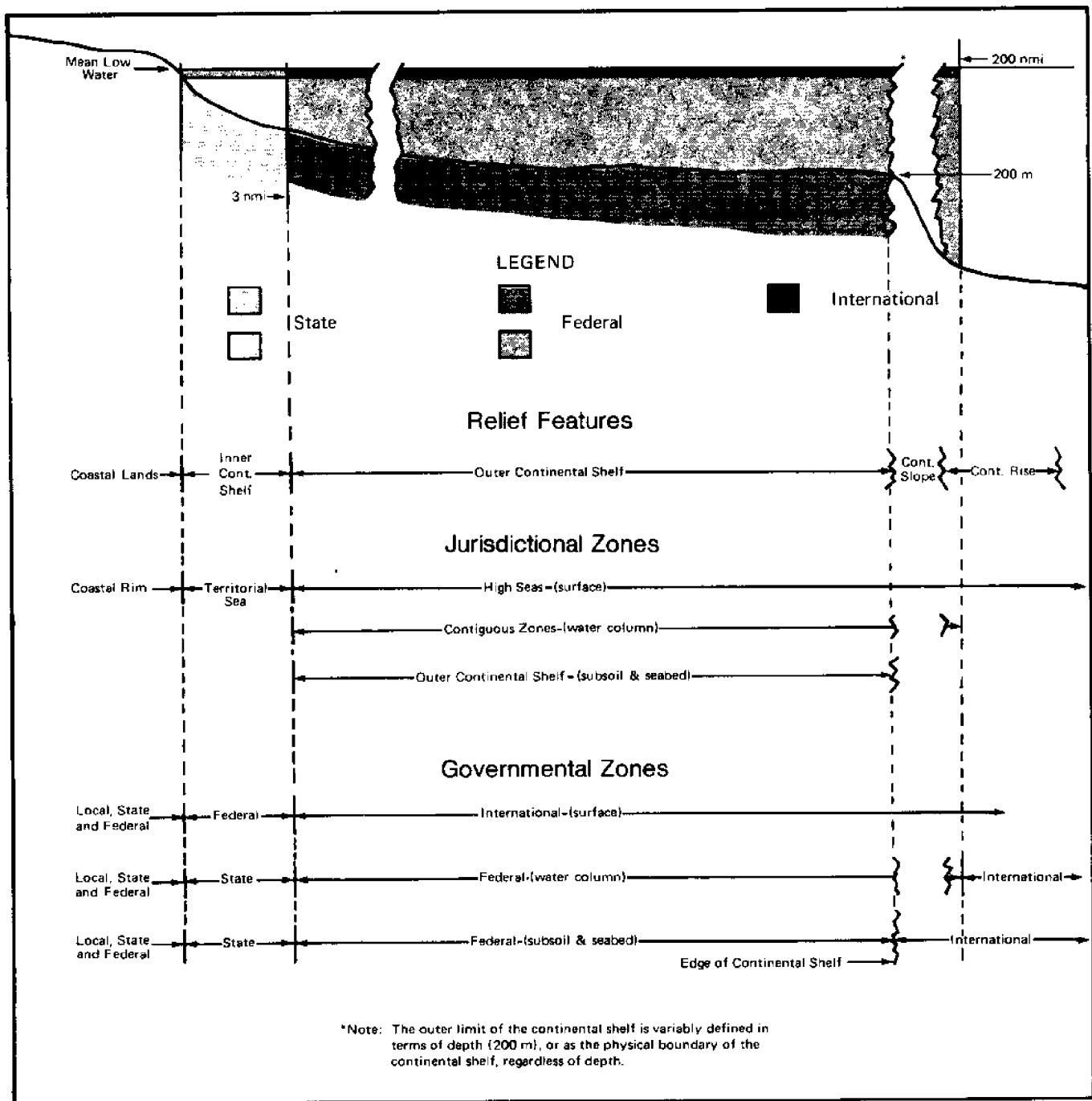


Figure 2. Offshore zones of jurisdiction

A federal suit was also brought against Louisiana regarding oil and gas leasing activity. The two cases clearly established the paramount rights of the federal government in the territorial sea. Two conclusions important for all coastal states can be drawn from the cases: 1) the original 13 colonies did not obtain rights to the offshore zone when they revolted from the British Crown, nor did any other states, and 2) the interest of the federal government in commerce and national defense required that the federal interest in this area be paramount (Suher and Hennessee 1974).

The states lost their offshore mineral resources claim to the federal government in the Supreme Court but successfully turned to Congress for redress. The result was the passage of the Submerged Lands Act of 1953 (PL83-31; Appendix 2) which gave the states: "1) title to and ownership of the lands . . . and the natural resources within such lands and waters, and 2) the right and power to manage, administer, lease, develop, and use the said lands and natural resources all in accordance with applicable State law . . ." For purposes of this act, natural resources were broadly defined to include petroleum and natural gas, fish, shellfish, and other marine animal and plant life. The act also clearly extended the federal-state boundary seaward 3 nmi.

Shortly after settlement of the internal US territorial sea dispute, international developments began. Two successive Law of the Sea conferences were held in Geneva in 1958 and 1960. Four conventions were drafted at the productive 1958 meeting including the Convention on the Territorial Sea and the Contiguous Zone (Appendix 3). Despite prolonged discussion, neither meeting reached agreement on the width of the territorial sea, although a 6 nmi width missed adoption by a single vote (Neblett 1967). The United States still adheres to the 3 nmi territorial sea. It is among 30 of 125 coastal nations that continues to hold to this narrow traditional limit (US Department of State 1974, 1975a).

The Convention on the Territorial Sea and the Contiguous Zone entered into force for the United States in 1964. The sections of the convention particularly appropriate for New York Bight follow:

- The sovereignty of a nation extends beyond its land territory and internal waters to a belt of sea adjacent to its coast.
- The sovereignty of a coastal nation extends to the air space over the territorial sea and to the seabed and the subsoil.
- The normal baseline of the territorial sea is mean low water line. Where the coast is

deeply indented and cut or where a fringe of islands exists along the vicinity of the coast, the method of straight baselines joining extreme points of land may be used.

- Waters landward of the baseline are considered to be internal waters of the nation.
- Islands are naturally formed areas of land whose territorial sea is determined in the same manner as the territorial sea of the mainland.
- Offshore deep water ports or roadsteads used for loading or unloading cargo or for anchoring ships wholly or partly outside territorial waters are included in the territorial sea.
- Ships of all nations shall enjoy the right of innocent passage. Passage of foreign fishing vessels is not considered innocent if the vessels do not observe regulations of the coastal nation. The coastal nation may take necessary steps in its territorial sea to prevent passage which is not innocent.

The criteria for the delineation of the territorial sea and the various contiguous zone boundaries are incorporated in the articles of the convention. The comparatively even coasts of New Jersey and Long Island offer little difficulty in establishing the baseline for the outer limit of the territorial sea. However, the entrance to Long Island Sound from Montauk Point to Plum Island, Fishers Island and the mainland, the entrance to Lower New York Harbor, and the entrance to Delaware Bay from Cape May to Cape Henlopen provide examples of the methods used in establishing each of these three critical lines in complex coastal waters. The mapping of the base and boundaries at each location is presented in Map 3.

The territorial sea is the jurisdictional domain of the federal government and the individual states. Local government jurisdiction traditionally ends at the mean high water boundary of the foreshore, although boundaries of local governments in New York project off shore. The offshore rights of local governments, however, appear moot because they do not have jurisdiction over state-owned lands within their boundaries. Local governments, however, may in the future seek to extend their interests into the territorial sea if this zone is extended farther to sea and if the zone develops additional potential for yielding income from sand, gravel, or mineral production.

The federal government maintains a considerable interest in the territorial sea. Although the states have rights to the income from mineral production, to engage in fisheries regulation, and may regulate the environmental quality, the federal government is exclusively responsible for commerce, harbors and channels, defense, and international affairs, and will have an equal if not greater voice than states in new developments such as the generation of power at offshore sites and the operation of superport terminals.

Contiguous Zones

Contiguous zones are special purpose belts of the high seas immediately beyond the territorial sea. A nation may extend its jurisdiction over the contiguous zones for a variety of purposes: tariffs, smuggling, neutrality, defense, environmental protection, public health, and fisheries management, each implemented within a specific distance from shore. The establishment and enforcement of contiguous zone legislation is the exclusive responsibility of the federal government; local and state governments have no direct responsibilities in the contiguous zone except as specifically allowed by the federal government. For example, the Fishery Conservation and Management Act of 1976 (PL 94-265) established regional fishery management councils with designated state representatives.

The contiguous zone concept was first used by the United States to control traffic in contraband. As early as 1799 anti-smuggling actions were permitted to a distance of 12 nmi of the coasts (Shalowitz 1962). The contiguous zone was next used to enforce Article XVIII of the US Constitution, establishing national prohibition in 1920. The extensive smuggling of alcoholic beverages from supply ships lying just beyond the 3 nmi limit and other related activities led to the Tariff Act of 1922 (PL 67-356). This law provided treasury officers with the authority to board and search vessels, passengers, and their luggage and to seize "merchandise" within 12 nmi of the coast. Related conventions and acts followed. In 1924 the United States signed a convention with England agreeing to the boarding of vessels under the British flag within one hour sailing time of the coast to prevent smuggling of intoxicating liquors. The Tariff Act was further revised in 1930 but held to the 12 nmi limit. After the repeal of prohibition, other

variations were made in defining an anti-smuggling contiguous zone. For example, the Anti-Smuggling Act of 1935 (PL 74-238) provided that no customs-enforcement area was to include any waters more than 100 nmi from the area where the President located such vessel nor was it to include any waters more than 50 nmi outwards from the outer limit of customs waters.

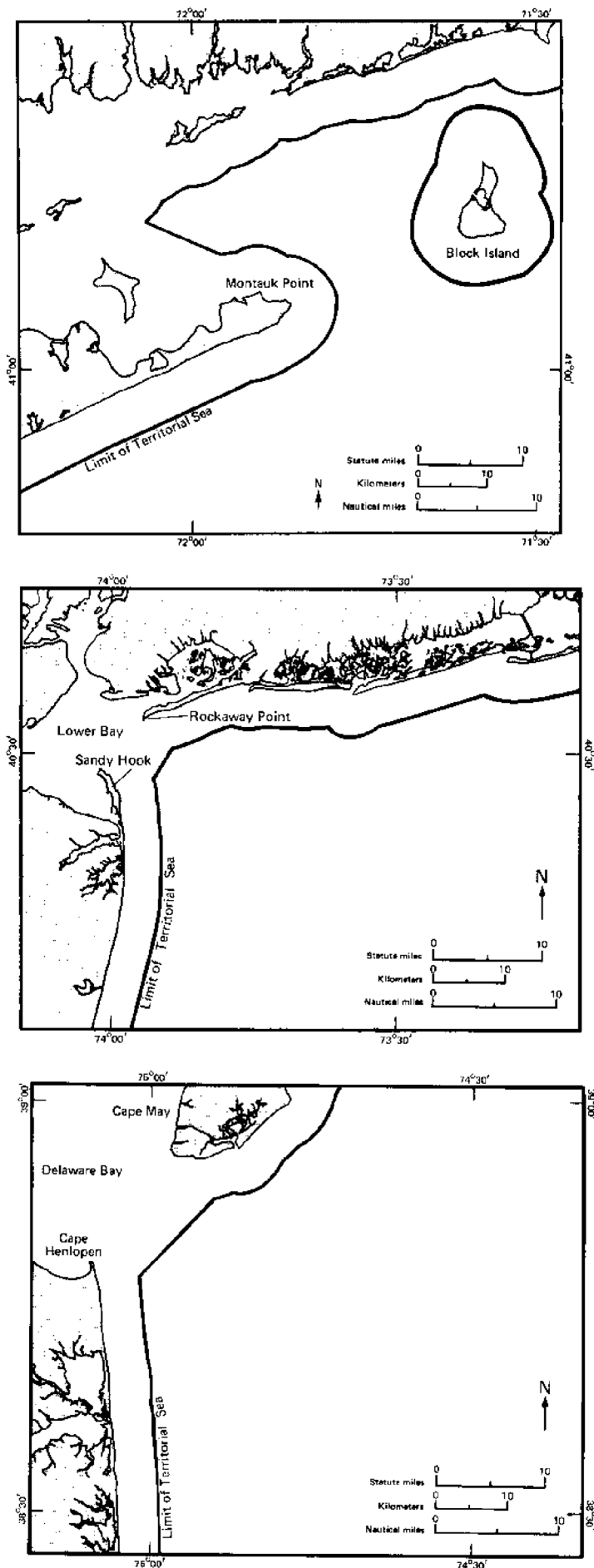
The next episodes in the delineation of the contiguous zones were two responses to the outbreak of the second world war. Two relevant documents published in 1939 set extended jurisdictional limits in an effort to curb the activities of belligerents. One was a declaration by President Roosevelt of a 200 nmi zone of neutrality off the shores of the United States and the West Indies. The second was the Declaration of Panama, establishing an approximate 300 nmi defense zone around the western hemisphere except for Canada (US Department of State 1939). This later agreement was followed in 1947 by the Inter-American Treaty of Reciprocal Assistance, which permanently extended the 300 nmi defense zone from pole to pole (US Department of State 1974, 1975a).

Contiguous zones are most commonly thought of as economic zones associated with fishery resources. The federal government became directly involved with fishery resources immediately beyond the territorial sea at the end of the second world war. Since then it has extended its jurisdiction farther off shore until it now reaches a distance of 200 nmi for the fishery resources of the water column, the floor of the continental shelf, and beyond on the ocean floor where the continental shelf extends seaward of the 200 nmi limit.

Two important documents form the basis of specific federal legislation and international agreements in fishery resources management. The first is President Truman's proclamation issued in 1945. The wording of the proclamation is purposefully broad but sets the basis for US rights to offshore fishery resources and the basis for future agreements with other nations within explicitly bounded conservation zones (Presidential Proclamation 2668, 28 September 1945). An international framework for establishing agreements for restricting the activities of foreign fishing fleets in waters adjacent to the territorial sea went into effect in 1966. In that year the Senate ratified the Convention on Fishery and Conservation of the Living Resources of the High Seas prepared in 1958 in Geneva.

The provisions of the Geneva convention most appropriate to the Bight include:

Map 3. Limits of the territorial sea off LI Sound, Lower New York Bay, and Delaware Bay



Source: US Interagency Baseline Committee 1976
Mercator Projection

Article 1

1. All States have the right for their nationals to engage in fishing on the high seas, subject (a) to their treaty obligations, (b) to the interests and rights of coastal States as provided for in this Convention, and (c) to the provisions contained in the following articles concerning conservation of the living resources of the high seas.

Article 6

1. A coastal State has a special interest in the maintenance of the productivity of the living resources in any area of the high seas adjacent to its territorial sea.

Article 7

1. Having regard to the provisions of paragraph 1 of article 6, any coastal State may, with a view to the maintenance of the productivity of the living resources of the sea, adopt unilateral measures of conservation appropriate to any stock of fish or other marine resources in any area of the high seas adjacent to its territorial sea, provided that negotiations to that effect with other States concerned have not led to an agreement within six months.

2. The measures which the coastal State adopts under the previous paragraph shall be valid as to other States only if the following requirements are fulfilled:

- (a) That there is a need for urgent application of conservation measures in the light of the existing knowledge of the fishery;
- (b) That the measures adopted are based on appropriate scientific findings;
- (c) That such measures do not discriminate in form or in fact against foreign fishermen.

The specific regulation of fishing activity in coastal waters was formulated in another international convention and in subsequent legislation passed by Congress. The first of these was the International Convention for the Northwest Atlantic Fisheries (ICNAF) which became effective in 1950 with passage of the Northwest Atlantic Fisheries Act (PL 81-845). ICNAF, signed by 16 nations, set zones in which each nation agreed to police its own vessels. This became an unacceptable procedure because the heavy fishing quotas imposed by ICNAF members on their vessels gradually led to overfishing and the serious depletion of fishing stocks. This drain on fishery resources was particularly severe close to New York and New Jersey. This led to the passage of the Bartlett Act of 1964 (PL 88-308) which prohibited foreign fishing vessels from taking fish in territorial waters and from taking any fishery resource from the continental shelf except in the case of specific

agreements between other nations and the United States. Two years later, in 1966, the same year the Convention on Fishing and Conservation of the Living Resources of the High Seas became effective, the Twelve-Mile Act (PL 89-658) was passed specifying an extension of the exclusive fishing rights of the 3 nmi territorial sea by adding a 9 nmi exclusive fishery zone.

ICNAF and the Bartlett and Twelve-Mile acts provided neither sufficient protection for nor a management program to restore the dwindling coastal fishery resource. Consequently, the United States withdrew from ICNAF in 1976 and Congress passed the Fishery Conservation and Management Act of 1976 (PL 94-265), effective 1 March 1977. This new act repealed the Bartlett and Twelve-Mile acts and extended the exclusive fishery contiguous zone to 200 nmi from the baseline of the territorial sea. This change (Map 4) is a significant addition to coastal waters under direct US economic control and extends well beyond the edge of the outer continental shelf.

Foreign fishing is no longer permitted within the 200 nmi zone, nor is fishing for anadromous species of the continental shelf permitted beyond this limit unless allowed by an international agreement, by reciprocal privileges granted to US vessels, or by permit. The act establishes an exclusive US management program for: 1) all fish within the conservation zone; 2) anadromous species of the zone throughout their range except in foreign territorial waters or recognized foreign fishery conservation zones; and 3) all continental shelf fishery resources beyond the fishery conservation zone. The exception to this is the protection of Atlantic tuna under the Atlantic Tunas Convention Act (PL 94-70). Under the Fishery Conservation and Management Act of 1976, fishery management plans are prepared by eight regional fishery management councils. Despite the broad powers of this act, it neither diminishes the jurisdiction or authority of US states to manage the fishery resources within their respective territorial waters, nor prohibits the regulation of fishing by vessels registered in a state if the activity is conducted beyond the state's territorial waters.

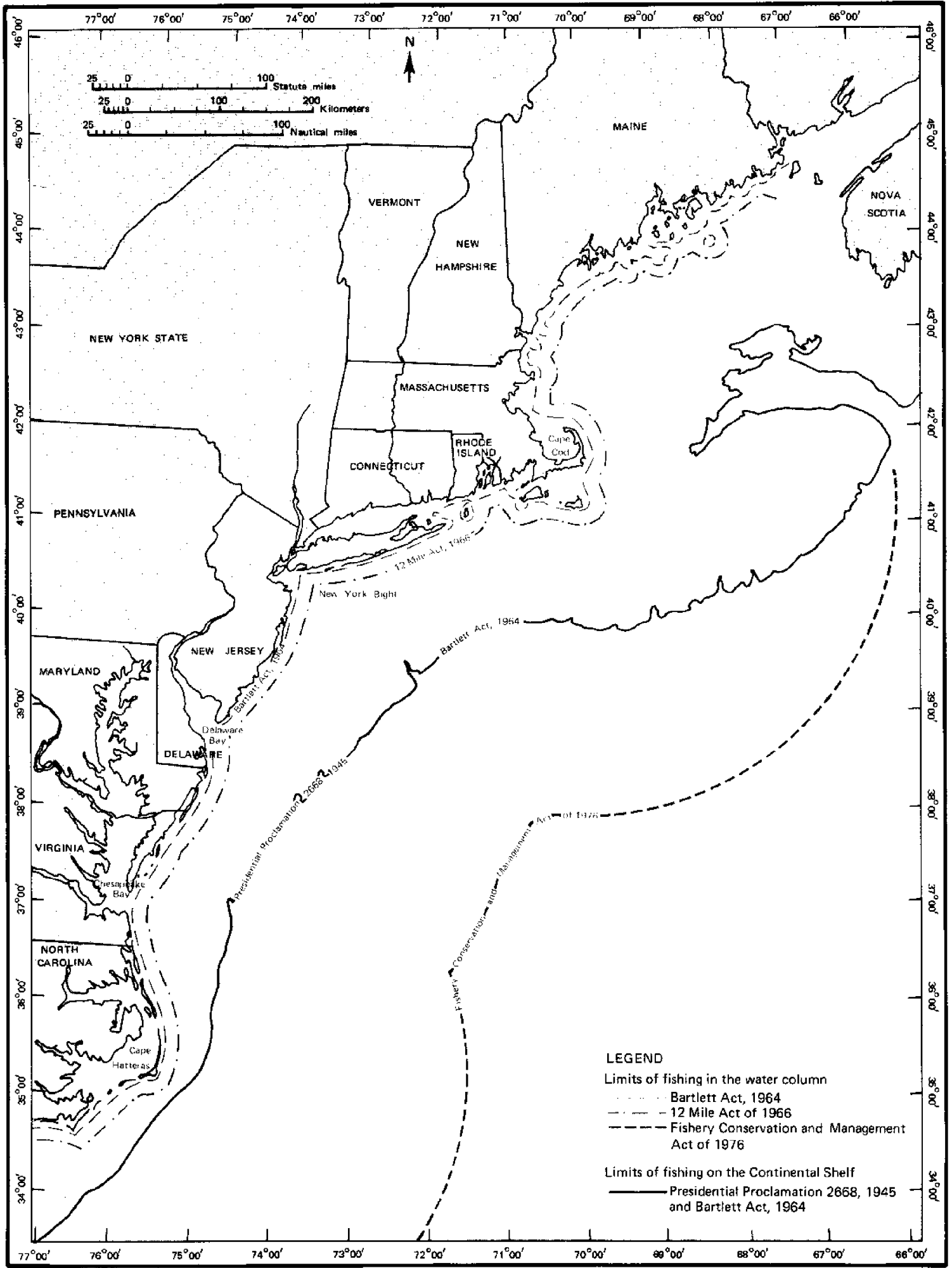
The Fishery Conservation and Management Act of 1976 also authorizes the United States to renegotiate preexisting fishery agreements with foreign nations if necessary. Table 3 lists the new agreements with foreign nations, the earlier agreements, and conventions still in force that affect fishing vessels sailing from New York Bight and adjacent ports.

The new act does not automatically change the 12 nmi limit of the contiguous zone for other purposes. The 1958 Geneva meeting that prepared the Convention on Fishing and Conservation of the Living Resources of the High Seas also produced the Convention on the Territorial Sea and the Contiguous Zone, which is still in effect. The brief part of the convention dealing with the contiguous zone established a zone that was not to extend beyond 12 nmi from the baseline of the territorial sea. This convention recognized that a coastal nation could take action in the contiguous zone to control infringement of its customs, fiscal, immigration, and sanitary regulations that were in force in the territorial sea. The Convention on the Territorial Sea and the Contiguous Zone was ratified by the United States in 1964 (US Department of State 1975b).

The 12 nmi limit of the contiguous zone adopted by the United States in 1964 is one of the key jurisdictional limits in the regulation of waste disposal and the prevention of pollution at sea, although the important legislation in these matters—the Marine Protection, Research, and Sanctuaries Act of 1972 or MPRSA (PL 92-532) and the Federal Water Pollution Control Act of 1972 (PL 92-500)—are also applicable to the territorial sea; and the high seas. The problem of waste disposal in New York Bight extends from the early decades of this century. Dumping of sludge and chemical wastes (Maps 5 and 6) continues today (Gross 1976) but is scheduled to end by 1981. Both early and present dumpsites are beyond the territorial sea; acid and toxic chemical dumpsites are located 15 nmi and 157 nmi respectively beyond the entrance to New York Harbor, well beyond the limits of the contiguous zone. The disposal of wastes dumped at sea and originating in US ports is now regulated by the Environmental Protection Agency (EPA) with the assistance of the Coast Guard and the US Army Corps of Engineers, pursuant to MPRSA. The regulation of sewage discharged into the Bight from shore treatment plants and from ships at sea in territorial waters and the contiguous zone is regulated by the Federal Water Pollution Control Act of 1972.

The control of pollution at sea from sources other than galley wastes and sewage is regulated by MPRSA but the origins of this aspect of environmental protection are involved with outer continental shelf resources and international conventions. Federal concern for the condition of offshore resources is first mentioned in the Outer Continental Shelf Lands

Map 4. Extent of fishery zones



Lambert Conformal Conic Projection

Act of 1953 (PL 83-212) which assigned the responsibility for waste prevention and conservation of the natural resources of the outer continental shelf to the Secretary of the Interior. In the following year the International Convention for the Prevention of Pollution of the Sea by Oil was prepared in London and entered into force for the United States with passage of the Oil Pollution Act of 1961 (PL 87-167). This legislation established penalties for petroleum discharges from ships of US registry in the territorial sea and the contiguous zone, and for petroleum discharges from any ships in territorial waters.

Further international concern for pollution was written into three conventions prepared at Geneva in 1958. The Convention on the High Seas requested that the signatory nations prevent oil pollution from ships, pipelines, and petroleum operations of the

seabed and its subsoil. The same document called for the prevention of pollution from the discharge of radioactive wastes. The Convention on the Prevention of Pollution of the Sea and the Contiguous Zone declared that the Convention may enforce sanitary regulations in the territorial sea, contiguous zone and the Convention on the Protection of the Continental Shelf stated that the exploitation of the continental shelf resources should not result in any interference with fishing or the conservation of the natural resources of the sea. Each of these agreements became effective in the United States by 1964.

The international agreements of 1958 and the federal legislation that followed were not sufficiently broad in their scope nor were they effective in controlling the environmental pollution of the oceans. By the late 1960s and the early 1970s the increasing use of the oceans for shipping, development and transit and the heavy u-

Table 3. Conventions and bilateral executive agreements affecting New York Bight waters and fishing vessels sailing from New York Bight and adjacent ports

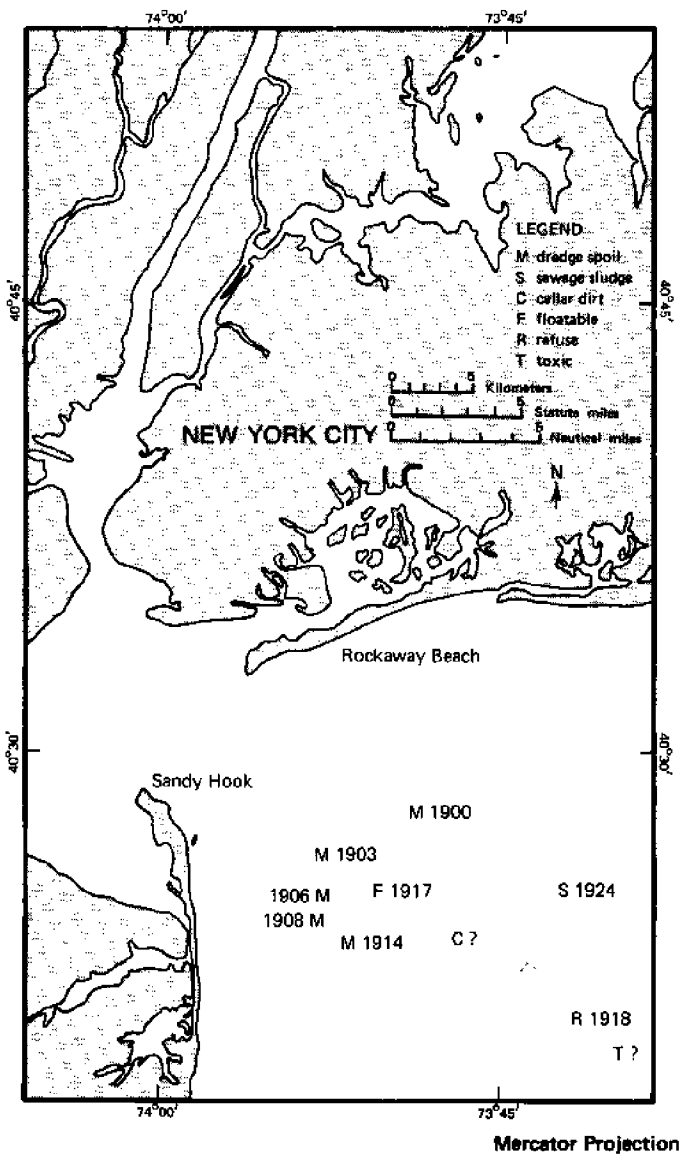
Title (effective date)	Termination	Member Countries	Areas of Geographical Interest
International Convention on the Conservation of Atlantic Tunas (May 1966)	Indefinite	Japan, Canada, United States, Brazil, France, Portugal, Spain, Morocco, Ghana, Republic of South Africa, Korea, Senegal, Ivory Coast	All waters of the Atlantic Ocean
Agreement between the Government of the United States and the Government of the USSR Concerning Fisheries of the Coast of the United States (February 1977)	July 1982	United States, Soviet Union	General
Agreement between the Government of the United States and the Government of Poland Concerning Fisheries of the Coasts of the United States (February 1977)	July 1982	United States, Poland	General
United States-Canadian Reciprocal Fisheries Agreement (July 1977)	December 1977	United States, Canada	Western Atlantic from Hatteras to Davis Strait
Agreement between the Government of the United States and Romania (July 1977)	July 1982	United States, Romania	General
Convention on Fishing and Conservation of the Living Resources of the High Seas (March 1966)	Indefinite	34 countries by January 1975	General
Convention on the Continental Shelf (June 1964)	Indefinite	34 countries by January 1975	General
Convention on the High Seas (1962)	Indefinite	56 countries	General
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1974)	Indefinite	27 countries	General
Convention on the Territorial Sea and Contiguous Zone (1964)	Indefinite	53 countries	General

Sources: US Senate Committee on Commerce 1975; US Department of State 1975b; US Department of State, personal communication.

for dumping wastes resulted in international conferences at Oslo in 1971 and in London in 1972 to consider new agreements to protect the living resources of the sea. The London meeting produced the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter. This document pertained to all marine waters other than the internal waters of the signatory nations, pro-

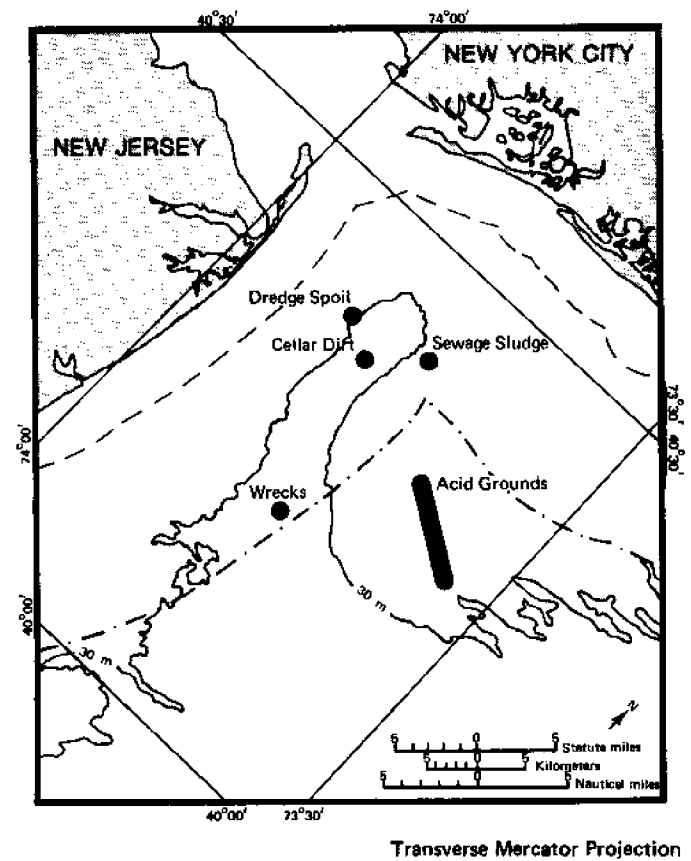
hibited the dumping of highly toxic chemicals and metals, petroleum products, high-level radioactive wastes, biological and chemical warfare agents, and permitted under strict regulation the dumping of less damaging chemicals, metals, biological agents, and scrap. The Senate ratified the convention in 1973 and it entered into force for the United States in 1974 when it was ratified by the fifteenth nation. While the London meeting was in session, Congress passed MPRSA, which became the domestic enabling legislation for the convention. A 1974 amendment to the MPRSA brought the act into full agreement with the convention. This law now prohibits the transport from the United States and the transport in any US flag vessels any material for the purpose of dumping into ocean waters except by permit. Further, no material transported from outside the United States is allowed to be dumped in the territorial sea or in the

Map 5. Historic waste disposal sites in New York Bight



Source: Gross 1976

Map 6. Present waste disposal sites in New York Bight



Source: Gross 1976

12 nmi contiguous zone of the United States without authorization.

MPRSA clearly protects New York Bight from uncontrolled dumping by any ship leaving US ports regardless of the country of registry, and therefore extends the jurisdiction of the United States for the purpose of enforcing this act over territorial waters and the contiguous zone, as well as out into the high seas. The law also pertains to ships of US registry throughout the world.

It has been proposed by several nations that a 200 nmi pollution prevention zone be established throughout the world. This broad special purpose contiguous zone is still under discussion, but is generally opposed by the major maritime powers (Knight 1975).

Since the enactment of MPRSA, ocean dumping in New York Bight by industry has been substantially reduced from 150 industrial dumpers in 1973 to 12 in 1977. By the end of 1981 all firms are scheduled to use environmentally acceptable land-based alternatives or dump waste that complies with ocean dumping standards.

Municipalities now dumping in the Bight will produce a threefold increase in sludge from secondary treatment plants scheduled for completion between 1977 and 1983. Land-based alternatives exist for sludge disposal but it will be difficult to shift to these methods by 1981, the federal deadline for ending ocean sludge disposal (Anderson 1977).

Outer Continental Shelf

The outer continental shelf became an accepted legal extension of national sovereignty only after the second world war. The war greatly increased the demand for petroleum, and technology had progressed sufficiently during the war to allow the drilling of oil and gas wells beyond the territorial sea. As a result, President Truman issued Proclamation 2667 in September 1945, establishing US claim to the natural resources of the seabed and subsoil of the continental shelf. The proclamation was directed at the development, conservation, and protection of offshore resources. It generally pertained to contiguous submerged land to a depth of 183 m (100 fa) of water. Within 10 years other countries in many parts of the world unilaterally extended their claims to offshore resources and continental shelf claims

became customary in international law (Knight 1975).

The years following the Truman proclamation on the continental shelf were also important in deciding domestic issues concerning the relationship between the states and the federal government on matters of offshore resources. In 1953, the Outer Continental Shelf Lands Act was passed to clarify the federal administrative policy on the continental shelf. This act clearly reserved for the federal government the jurisdictional responsibility over the seabed and subsoil and all artificial islands and fixed structures on the continental shelf beyond the 3 nmi limit. Among the principal provisions of this act applicable to the extensive shelflands of New York Bight are:

- Outer continental shelf, submerged lands, the seabed, and the subsoil are subject to US jurisdiction and control.
- The freedom of navigation and the freedom of fishing on the high seas above the shelf are not affected.
- US jurisdiction is also extended to all artificial islands and fixed structures erected on the shelf for the purpose of exploration, exploitation, and removal of resources and are to be treated as if they were an area of exclusive federal jurisdiction within a state.
- The civil and criminal laws of each state are declared to be US law on the continental shelf for the areas within extended state boundaries. State taxation laws do not apply.
- Federal courts have original jurisdiction for cases arising out of outer continental shelf activities.
- The Secretary of the Interior administers leases and establishes measures for resource conservation. The secretary is authorized to cooperate with the conservation agencies of adjoining states in matters concerning resource conservation.
- Pipeline rights-of-way through submerged lands may be granted by the Secretary of the Interior for transporting recovered resources. The Federal Power Commission regulates natural gas transmission. The Interstate Commerce Commission regulates oil transmission.
- The Coast Guard regulates the use of navigational safety devices and safety of the life and property on islands and structures.
- The authority of the Secretary of the Army to prevent obstructions to navigation is extended to artificial islands and structures.

The Secretary of the Interior, pursuant to his authority to manage the outer continental shelf mineral deposits, assigned the responsibility for geological exploration to the US Geological Survey (USGS) and the responsibility for lease management to the Bureau of Land Management.

Many national claims to continental shelf resources were unilaterally established in the decade following the second world war. This led to the inclusion of the continental shelf as one of several agenda items set before the first Law of the Sea meeting in Geneva in 1958. The result was the Convention on the Continental Shelf, which went into effect for the United States and other signatory nations in 1964. Its provisions broadly agreed with directions taken in the Outer Continental Shelf Lands Act of 1953. Article 1 of the convention defined continental shelf as referring:

- a. to the seabed and subsoil of the submarine areas adjacent to the coasts but outside the area of the territorial sea to a depth of 200 meters, or beyond that limit to where the depth of the superjacent waters admits of the exploitation of natural resources of the said areas;
- b. to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands.

The convention declared that coastal states exercise sovereign rights over the shelf for resource exploration and exploitation. Despite the extension of national sovereignty to the continental shelf, the convention excluded interference with: 1) the laying or maintenance of submarine cables and pipelines on the shelf; 2) navigation; 3) fishing; 4) the conservation of living sea resources; and 5) oceanographic and other scientific research.

Two issues affect application of the convention. First, the outer limit of the shelf as defined in the convention is flexible. Technology will likely permit the exploitation of shelf resources at increasing depths. The effective outer limits of the shelf will no doubt extend well beyond the 200 m isobath and out into the deepest parts of the shelf surface, about 550 m (1,804 ft), and then proceed down the continental slope and possibly into the continental rise (Figure 2). Second, the convention defined living species as those which "... at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed" has been interpreted narrowly to exclude shrimp and even lobsters. This caused considerable concern among domestic fishermen who felt that lobsters were being taken in great numbers and that their habitat was being interfered with to the detri-

ment of the lobster fishery. Subsequently, the ruling on lobsters was reversed with the passage of an amendment to the Bartlett Act in 1974 that declared lobsters, mollusks, and sponges continental fishery resources. They are now protected under the Fishery Conservation and Management Act of 1976.

In an effort to protect continental shelf fishery resources from illegal fishing, and perhaps not incidentally to protect the mobile species that frequent the shelf bed, stern enforcement guidelines were announced following passage of the Bartlett Act amendment in 1974. The regulations were written to establish the US position that the taking of shelf fishery resources would result in the arrest and seizure of vessels except as provided by bilateral agreements. Enforcement includes the right to board and arrest vessels: 1) with gear designed to catch shelf fishery resources, or 2) with bottom gear that can result in the catch of continental shelf fishery resources, except where the procedures are designed to reduce incidental catches and are approved by US agreement.

Although the fishery question is very important for New York Bight, another issue—the potential development of East Coast offshore petroleum resources—is beginning to unfold in the Baltimore Canyon Trough lease area in the southern part of the Bight and in the Georges Bank lease area north of the Bight. The developing relationship between the states and the federal government over the sharing of outer continental shelf revenues is reminiscent of the disputes between the states and the federal government over the jurisdiction of mineral resources in the territorial sea. The coastal states are no longer challenging the federal government claim to ownership of shelf mineral resources, but they are endeavoring to work through Congress for a share of offshore lease revenues. In addition, some coastal states and local governments (for example, Suffolk County, LI) have challenged the federal leasing operations in court on the grounds of potential environmental damage to coastal areas and resources from oil pollution and on the grounds that the environmental impact statements prepared pursuant to the National Environmental Policy Act of 1970 (PL 91-190) are inadequate.

The coastal states were entirely successful in the Submerged Lands Act of 1953 in obtaining full rights to offshore petroleum resources. Their aspirations may not be as great in regard to the outer continental shelf resources, but they will likely press for a share of lease and royalty revenues.

High Seas

The high seas is a zone immediately beyond the territorial sea not subject to the exclusive jurisdiction of any one nation. The historical extent of the high seas has varied depending on the claims of the width of territorial seas by coastal nations. In recent centuries territorial sea claims have generally not exceeded 3 nmi. However, accepted width of the territorial sea has changed during the last 50 years when technology and the demand for resources made it possible to extend national control over the high seas to exploit living resources with greater effectiveness and to recover nonliving resources of the continental shelf.

These trends are occurring along many of the national maritime frontiers of the world. The United States, however, still adheres to the 3 nmi limit of territorial waters permitting the high seas zone to extend over almost all of New York Bight (Map 7). The high seas concept also pertains to the water column and the seabed but here the successive United States contiguous zone claims and the extension of national sovereignty over the outer continental shelf and beyond have effectively reduced the limit of absolute freedom of movement and use of the subsurface components of the high seas.

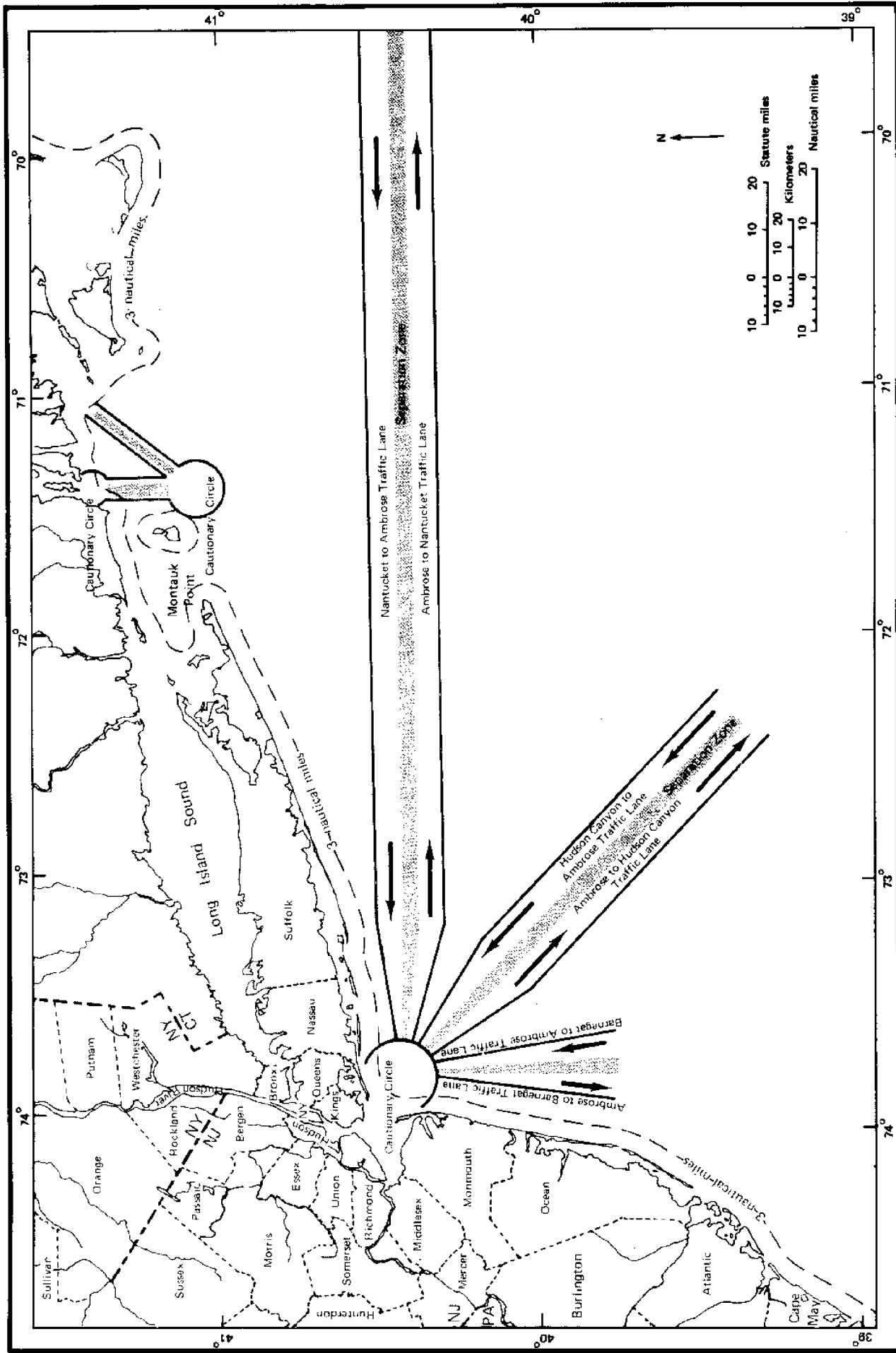
The United States presently adheres to the 1958 Convention on the High Seas, which entered into force in 1962. This may be modified as a result of the 1977 Law of the Sea Conference. Several articles pertinent in the 1958 convention are concerned with the definition of the high seas, the scope of the meaning of freedom of the high seas, and pollution. The first article defines the high seas as encompassing all parts of the sea not within the territorial sea. The second article disallows any nation to subject the high

seas to its sovereignty and describes the freedom of the high seas to include the freedom of navigation, fishing, the laying of submarine cables and pipelines, and of flying over the high seas. Article 24, concerned with oil pollution, requires all nations to prepare regulations to prevent pollution by discharge from ships or pipelines or from exploration and exploitation activities. Article 25 mandates that every nation take action to prevent pollution from dumping radioactive materials but implies that it is permissible if done in accord with standards set by a competent international organization.

The high seas is also a zone of active United Nations interest. It works through its specialized agency, the Intergovernmental Maritime Consultative Organization (IMCO), which began its work in 1958. IMCO responsibilities include establishing standards for ship safety, oil pollution control, and navigational safety. A principal result of the activity of the agency in New York Bight is the establishment of navigational lanes on the high seas. Three sets of lanes, prepared in conjunction with the Coast Guard, radiate from Ambrose Channel and separate the heavy volumes of marine traffic that converge on and depart from the port of New York (Map 7).

The extent of the high seas in the Bight at this time is variable. For commercial navigation uses of the surface waters, it extends to within 3 nmi of the coast. International waters pertaining to fishing in the water column extend beyond the 200 nmi contiguous fishery zone. The zone of international jurisdiction of the ocean floor and beneath extends from the edge of the continental shelf, sometimes approximated by the 200 m isobath, or to a greater distance from shore if commercial exploitation for living and nonliving resources can be extended down the continental slope and rise.

Map 7. Surficial extent of the high seas and navigational lanes



Mercator Projection

Source: National Ocean Survey 1975

Governmental Responsibilities

Levels of governmental activity vary in each of the six zones of the New York Bight area. A summary of governmental involvement from the coastal rim to the high seas is presented in Table 4. Five of the six zones discussed earlier are shown in this table. The sixth zone, the shore, is excluded since it does not have unique administrative functions.

There are 134 MCDs in the coastal rim zone. This does not include the estimated hundreds of special districts, often functioning as autonomous or nearly autonomous agencies, that can directly affect the shorelands and the nearshore waters of the Bight. The most common local agencies directly affecting the development and quality of local coastal zones are the planning and zoning boards, recreation and parks departments, and public works departments through sewage treatment facilities. Small municipalities may not have all three functions, but major cities may have more. The remaining agencies that have some jurisdiction over the Bight area are New York and New Jersey state governments, the federal government, and in the high seas the United Nations.

The substate and interstate organizations represent official organizations chartered by the states and federal governments that have responsibilities affecting the shore or offshore resources of the Bight (Marr and Schuler 1976).

The number of separate governments and their respective agencies involved in the management of New York Bight is impressive. Although they are all situated in direct contact with the Bight and connecting internal waters, they are not traditionally oriented to the interrelatedness of shore and offshore activities and resources. The concept of planning and managing Bight resources is one that probably does not enjoy a high priority in most municipalities when compared with the range of traditional issues that face most governments.

In the territorial sea and the zones beyond, the number of governments with jurisdiction is immediately reduced and the agencies operating in these zones are concerned with various aspects of marine management, protection, regulation, or research. Within the territorial sea, the governmental relation-

Table 4. New York Bight governments and governmental agencies

Levels of Governmental Activity	Coastal Rim		Territorial Sea		Contiguous Zones		Outer Continental Shelf		High Seas	
	Govts	Agencies	Govts	Agencies	Govts	Agencies	Govts	Agencies	Govts	Agencies
Minor Civil Divisions	134	402 ^a	? ^b	? ^b	—	—	—	—	—	—
Substate Regions	—	4	—	? ^b	—	—	—	—	—	—
State ^c	2	9	2	6	—	—	—	—	—	—
Interstate	—	3	—	1	—	—	—	—	—	—
Federal ^c	1	14	1	10	1	10	1	13	—	8
International	—	—	—	—	—	—	—	—	1	1
TOTAL	137	432	3	17	1	10	1	13	1	9

^aThis is an estimate. Most but not all MCDs have planning and zoning, recreation, and wastewater treatment agencies that have waterfront related responsibilities. Some have less, others such as New York City have many more than three water-oriented agencies. Therefore, the number of MCDs was multiplied by three to arrive at 402.

^bThe offshore extension of local government and regional planning agency jurisdiction in New York State has not been clarified. Local government boundaries extend off shore but these municipalities do not exercise jurisdiction over offshore lands owned by New York State.

^cEnumeration of state and federal agencies includes only departments and independent offices.

ships have changed little since the passage of the Submerged Lands Act of 1953, except for recent federal and state concern for water quality and coastal zone management. Within the zones of federal jurisdiction, the contiguous zones and the outer continental shelf, government agency interest has increased considerably as a result of potential petroleum developments. The renewed interest in fisheries is also helping to establish the offshore zones as areas of national concern.

The high seas, the outermost zone, is the province of no single nation. The surface, the water column, and the lands beneath are regulated through international law and conventions. Federal presence, nevertheless, is unilaterally imposed because of its interest in defense, fisheries, and research. This zone, like those closer to shore, will receive greater attention as technology advances and the increasing value of resources enables more exploitation of this zone for its dispersed natural wealth.

Minor Civil Divisions

Isolating MCD agencies primarily concerned with coastal affairs is difficult. Although the boundaries of coastal communities extend off shore, their jurisdiction is ineffective because land beyond mean high water is owned by the states, and municipalities do not regularly exercise control of state land within their limits. Also, the structure of local government is substantially directed through state enabling legislation. These two situations, coupled with the historic lack of interest in offshore resources, have resulted in the reaction of local governments to their waterfronts through a range of governmental departments characteristic of communities whether they are situated on the coast or inland. The result is dispersal of local government policy and program responses that might otherwise be directed to shore and offshore waters. Also, it is not uncommon for communities to front on comparatively small sections of shores or bays and the ocean (Map 8a). This does not ordinarily provide municipalities with the opportunity to make significant improvements in their coastal environment based on their own initiative. Recent state and federal programs and requirements are beginning to reverse the problem of fragmentation by requiring regional compliance to particular programs. Local governments must now construct wastewater treatment facilities to improve the quality of estuaries, rivers, bays, and the ocean. More recently, state programs have been initiated in New Jersey

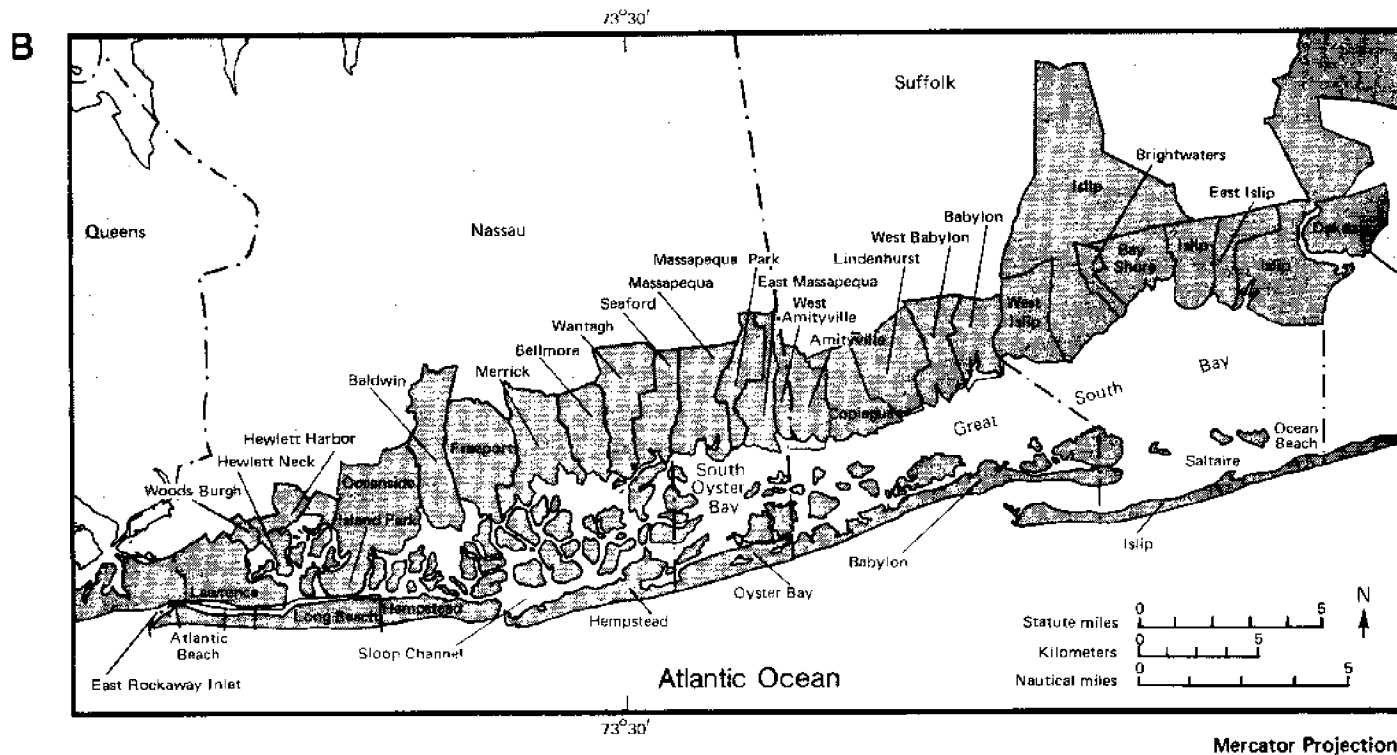
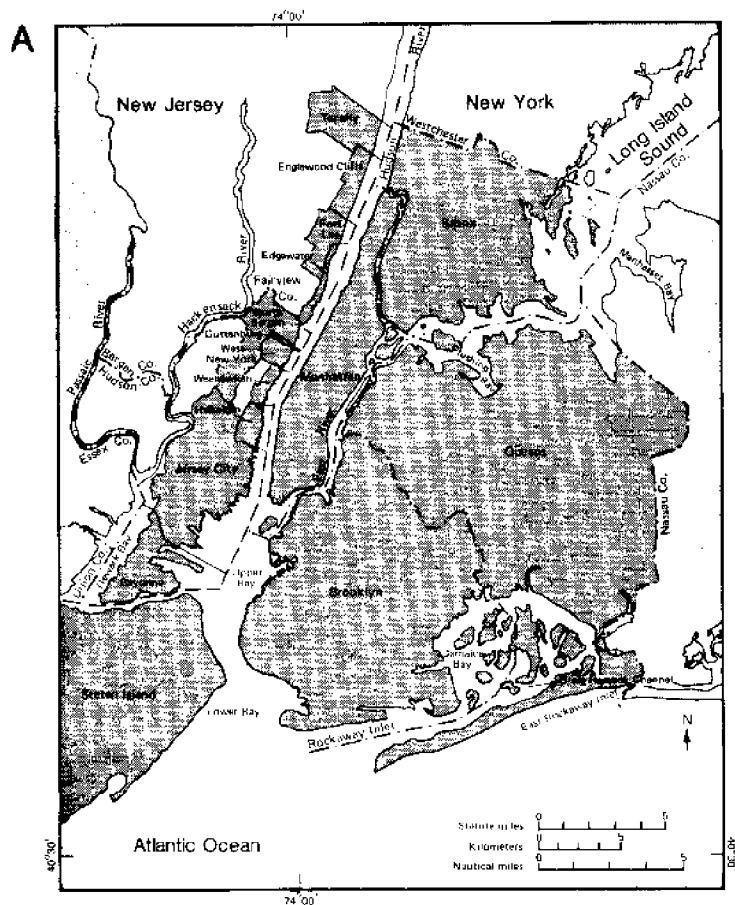
(Wetlands Act of 1970) and New York (Tidal Wetlands Act of 1973) to manage and preserve marine wetlands that heretofore were under the land use controls of local government.

MCD responsibilities related to the coastal environment are planning and zoning, parks and recreation, and wastewater treatment. The planning function provides municipalities with long-range comprehensive policy for land and water development, and zoning provides short-term control of the physical development. Both functions pertain to public and private activities. Through the operation of planning and zoning, which should but does not always work in a complementary manner, shoreline development may be shaped to reflect community goals and objectives for economic development, public access, conservation, and recreation. The planning function should also help to guide local public works that can affect development pressures, such as the planning and construction of roads, water and sewage systems, parks, and public safety installations.

A particularly pertinent role of local planning and zoning is the implementation of the National Flood Insurance Program. This program requires that flood plain management plans and regulations be prepared to assure that new onshore developments are safely constructed or situated with respect to flooding caused by coastal storms. Planning agencies in New York may be assisted by local environmental councils responsible for developing open space plans and identifying areas of critical environmental concern. As a result of recent legislation, municipalities in Suffolk County must seek county review and approval of all developments within 152 m (500 ft) of the shore (Koppleman 1975b).

Among the parks and recreation functions of MCDs is the power to acquire land for public enjoyment, including the acquisition of park lands in coastal areas, but this is often very expensive real estate and may remove prime land from the community tax rolls. In many coastal communities sewer facilities may eventually be completed to comply with state and federal requirements. These are usually secondary treatment plants and will result in an increase in inland and offshore water quality through a reduction in discharged raw sewage. But this may in part be offset by an increase in phosphates and nitrates from the treatment plants, that is adversely affecting marine life. The improvement in water quality, however, may encourage coastal recreation in areas formerly closed to fishing and water contact

Map 8. Jurisdictional fragmentation of the shoreline by minor civil division



Source: US Bureau of the Census 1973

sports for failure to meet minimal public health standards. Improving water quality can also help to increase public interest in waterfront areas and thereby provide an incentive for waterfront rehabilitation in older urban cores where traditional public recreation opportunities are often minimal.

In New York, special districts are most commonly formed by town government to provide urban-type services to suburban or rural areas. Although town districts are managed by town boards, they are usually operated as separate governmental entities. As such, they provide services for both developing areas and those with developmental potential. Their service patterns are not ordinarily approved by planning commissions, and consequently the developmental pressures that the districts serve and facilitate are not always coordinated with comprehensive planning objectives. This can result in severe pressures to develop attractive coastal areas even if contrary to established community development goals. There were 39 types of special districts in New York State in 1973 (New York State Department of State 1975). Of this total, seven types were concerned with the provisions of water, sewer, sanitary and drainage services. Districts related in whole or in part to coastal development included park, dock, erosion control, and ferry districts.

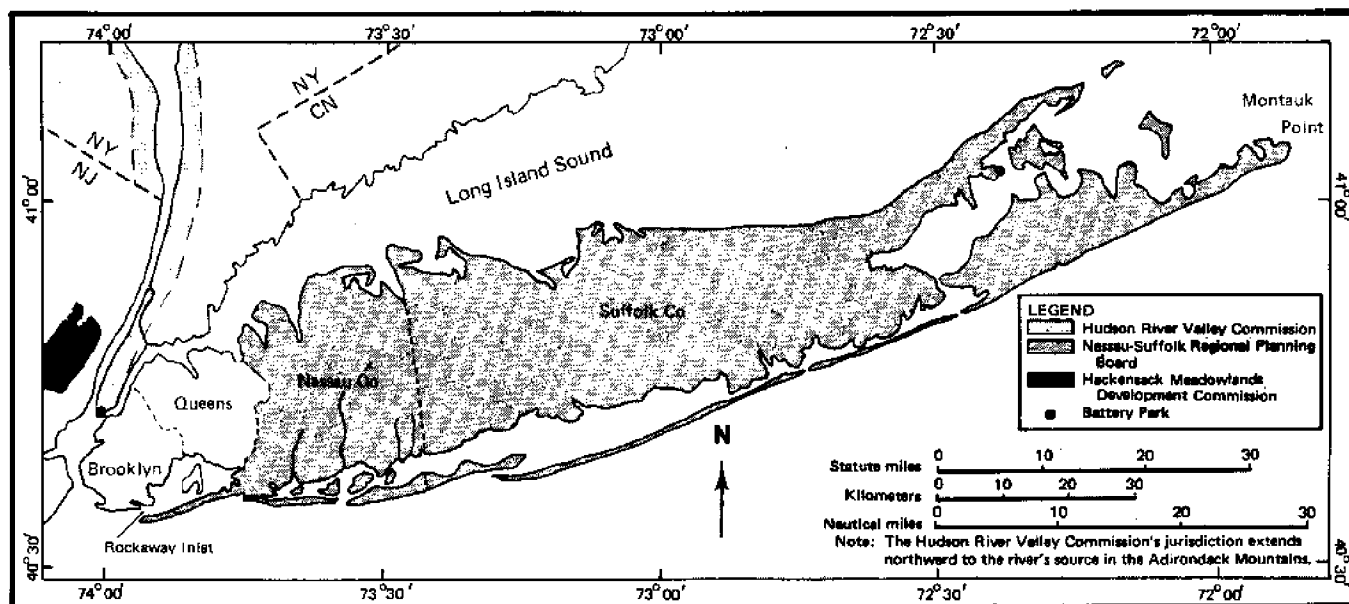
Substate Regions

The substate regions in the New York Bight area (Map 9) do not extend uniformly throughout the coastal rim nor are they similar in function. Their responsibilities are confined to the shoreland rim, but like MCDs their regional planning function potentially extends into the territorial sea.

The Nassau-Suffolk Regional Planning Board is the regional planning agency for Long Island excluding the western tip, a part of New York City. This bi-county organization has prepared a comprehensive development plan and complementary studies for its region. As an advisory organization working closely with county and local planning agencies, it is unique among regional planning organizations in the extent of its interest in marine resources (Marr 1975). Its Regional Marine Resources Council has sponsored and published the findings of many oceanographic studies. The board has completed an important study to provide a method for linking onshore land uses and activities to offshore water quality and water uses (Koppleman 1975a).

The Hackensack-Meadowlands Development Commission. The Hackensack meadowlands are comprised

Map 9. Substate organizations



Mercator Projection

principally of tidal salt marshes and meadows, crossed by highways and rail lines and fringed by intensive urban development. In 1968 the New Jersey Legislature established the Hackensack-Meadowlands Development Commission, which has jurisdiction over 7,985 hectares (19,730 acres), including parts of 14 municipalities and segments of Bergen and Hudson counties. The purpose of the commission is to insure the preservation of the meadowlands and to regulate development. Its powers enable it to implement a master plan in cooperation with federal, state, and local governments. This work is carried out with enabling legislation that gives it independent administrative, financial, and regulatory powers. It may issue bonds and levy special assessments and may acquire property. Stage one of its master plan—environmental controls, uniform engineering specifications, zoning, subdivisions regulations, and a building code—became effective in 1970 (Hackensack-Meadowlands Development Commission 1975).

The Hudson River Valley Commission, the third planning agency, was established by New York in 1966 to conduct research, provide planning assistance, and review proposed developments within a mile of the Hudson River. Its jurisdiction within the Bight area is restricted to the New York shore of the Hudson River estuary, from the lower tip of Manhattan to the northern limits of the city. Its development review responsibilities within New York City are carried out by the New York City Planning Commission.

The Battery Park City Authority is the fourth agency. It was established by New York State in 1968 to develop the submerged lands of the Hudson River on the lower part of Manhattan north of Battery Park to Chambers Street. This authority is filling a formerly obsolete waterfront area of the bulkhead line to provide additional land area for lower Manhattan.

State

Coastal management responsibilities are more easily identified in state government, which characteristically places marine-related activities in environmental, planning, public lands, and parks departments. The coastal and marine activities of states take place in the rim and the territorial sea zones.

The traditional state interests in coastal affairs include the quality of nearshore waters affected by wastes from urban and industrial outfalls, the

management of shell and fin fisheries, and the provision of coastal parks and recreational facilities. Within the last decade, both New York and New Jersey have substantially expanded their coastal management activities. This has been prompted by the reevaluation of coastal resources and the realization that they are fragile, productive, economically significant, that they are limited, and that they are a public trust. This change has been substantially strengthened by federal programs that have mandated compliance with environmental standards or have offered significant funding opportunities for state participation in water quality, coastal planning, and other programs. At this time, marine and marine-related programs of the two New York Bight states have been expanded to include the regulation of marine construction, coastal and marine research, flood plain management, wetlands and riparian lands management, coastal zone management, and planning assistance to local communities.

The general programmatic response of New York and New Jersey to coastal issues is similar. Both states have departments or departmental subunits responsible for each marine problem area (Table 5). New Jersey, however, has concentrated a greater number of its coastal related programs within its Department of Environmental Protection (NJDEP). A second agency, the Department of Community Affairs, provides planning assistance, and a statewide consortium of academic institutions, including the New Jersey Sea Grant program, provides marine research and advisory activities. In New York, the coastal management and research work is more widely dispersed among six state agencies and educational institutions.

Water Quality. New York and New Jersey water quality programs include monitoring water quality, assistance in the construction of wastewater treatment facilities, licensing sewer systems, regulating ocean dumping in state waters, and monitoring oil spills. Water quality monitoring networks exist in both states and include samplings of inland and offshore waters.

These state programs, largely supported by federal grants pursuant to the Federal Water Pollution Control Act of 1972 provide financial, planning, and construction assistance to local governments and sanitation districts. The environmental departments in each state are involved, but in New York the wastewater treatment program is further assisted by the Environmental Facilities Corporation, a public

benefit corporation that provides, on request and for a fee, a full range of assistance from planning to operations and maintenance services for water treatment and air pollution control facilities.

Fisheries Management. The management of shellfish and finfish is the responsibility of the environmental departments of the respective states. The shellfish programs include monitoring water quality of shellfish beds and closing areas to shellfishing if health standards cannot be met. Shellfish in polluted areas are transplanted to certified waters. Areas free of pollution but devoid of shellfish are reseeded. Further fisheries work includes the policing of fishing grounds to halt traffic in illegally harvested shellfish and the enforcement of commercial and sport finfishing regulations.

Parks and Recreation. New Jersey, through the NJDEP, and New York, through the Office of Parks and Recreation, operate statewide recreation area programs. Among the most popular are the coastal recreation facilities that line the shores of the extensive bays and estuaries and the barrier islands along the Bight shores. In New York and New Jersey, the demand for public coastal recreation opportunities is supplemented by local governments. The demand for shorefront recreation in the New York metropolitan area is being augmented by the National Park Service, which is developing the Gateway National Recreation Area and the Fire Island National Seashore.

Coastal Construction. Permits are required in New York and New Jersey for the construction of marine structures in navigable and estuarine waters and in marine wetlands. This includes the construction or alteration of waterfront harbor facilities, such as the deposition of any fill, the construction of bulkheads and piers, and dredging in nonnavigable waters. Dredging in navigable waters is regulated by the federal government, but the deposition of dredge spoil from any source is becoming a local and state concern because of potential negative ecological impacts. Marine construction permits are granted only after ascertaining the effect of proposed work on navigation, the general welfare, and natural resources.

Planning assistance to local governments is a statewide function of the Department of Community Affairs in New Jersey and the Department of State in New York. This technical and financial assistance is funded primarily by the federal 701 Comprehensive Planning and Management Assistance Program. Through agreement between the federal Office of Coastal Zone Management and the Department of Housing and Urban Development, coastal communities receiving these funds will in the future have to include a coastal planning element in land use planning work funded by 701 grants.

Research and advisory services directed to coastal and marine problems are provided through the Sea Grant programs of both states. These activities are substan-

Table 5. State agency programs in the coastal rim and the territorial sea

Coastal program	Responsible agency		Area of Jurisdiction	
	New Jersey	New York	CR	TS
Water quality	Environmental Protection	Environmental Conservation, Environmental Facilities Corporation	X	X
Fisheries management	Environmental Protection	Environmental Conservation	X	X
Parks and recreation	Environmental Protection	Parks and Recreation	X	
Coastal construction	Environmental Protection	Environmental Conservation	X	X
Planning assistance	Community Affairs	Department of State	X	
Research and advisory services	Sea Grant	Sea Grant	X	X
Flood plain management	Environmental Protection	Environmental Conservation	X	
Wetlands management	Environmental Protection	Environmental Conservation	X	
Riparian lands management	Environmental Protection	General Services	X	X
Coastal zone management	Environmental Protection	Department of State	X	X

Note: CR = coastal rim, TS = territorial sea

tially funded by the federal Office of Sea Grant and are undertaken in New York by the Sea Grant Institute, a consortium of the State University of New York and Cornell University, and in New Jersey by the Marine Sciences Consortium, a program including public and private colleges and universities. The institute in New York conducts research, educational, and advisory service work. The research is directed toward resolving problems facing communities, marine industry, or the general public, and is concerned with improving the short- and long-term utilization of marine resources. The advisory service aspect is directed toward providing technical information and assistance for coastal communities and their marine industries. Other state institutions, such as the respective environmental departments of New York and New Jersey, and the New York Ocean Science Laboratory at Montauk Point also conduct marine-related research. In New Jersey, the Marine Sciences Consortium includes a Sea Grant component at Rutgers University that provides advisory service activities throughout the state.

Flood Plain Management. The National Flood Insurance Program has been extended to include communities vulnerable to coastal storms and coastal erosion. The program provides low-cost flood insurance to individual property owners in communities that have carried out prescribed planning, building code regulations, and enforcement procedures for local flood prone areas. It is directed primarily at prospective construction, new acquisitions, and new financing of structures in designated flood prone areas. Participation by vulnerable coastal communities is voluntary, but those not participating are subject to sanctions such as the loss of Federal Housing Administration and other federal financial services for the community and its residents. Communities can qualify if they adopt measures that encourage or require property owners to locate beyond flood hazard zones or that require flood proofing or elevating structures in the flood hazard areas. The flood insurance program is administered in New York by NYDEC and in New Jersey by NJDEP.

Wetlands. Marine wetlands legislation was enacted in New York in 1973 and in New Jersey in 1970. The wetlands programs are intended to restrain the serious degradation of wetlands by empowering the environmental departments of the two states to regulate future use through the issuance of permits. The intent is not to prohibit all further developments but rather

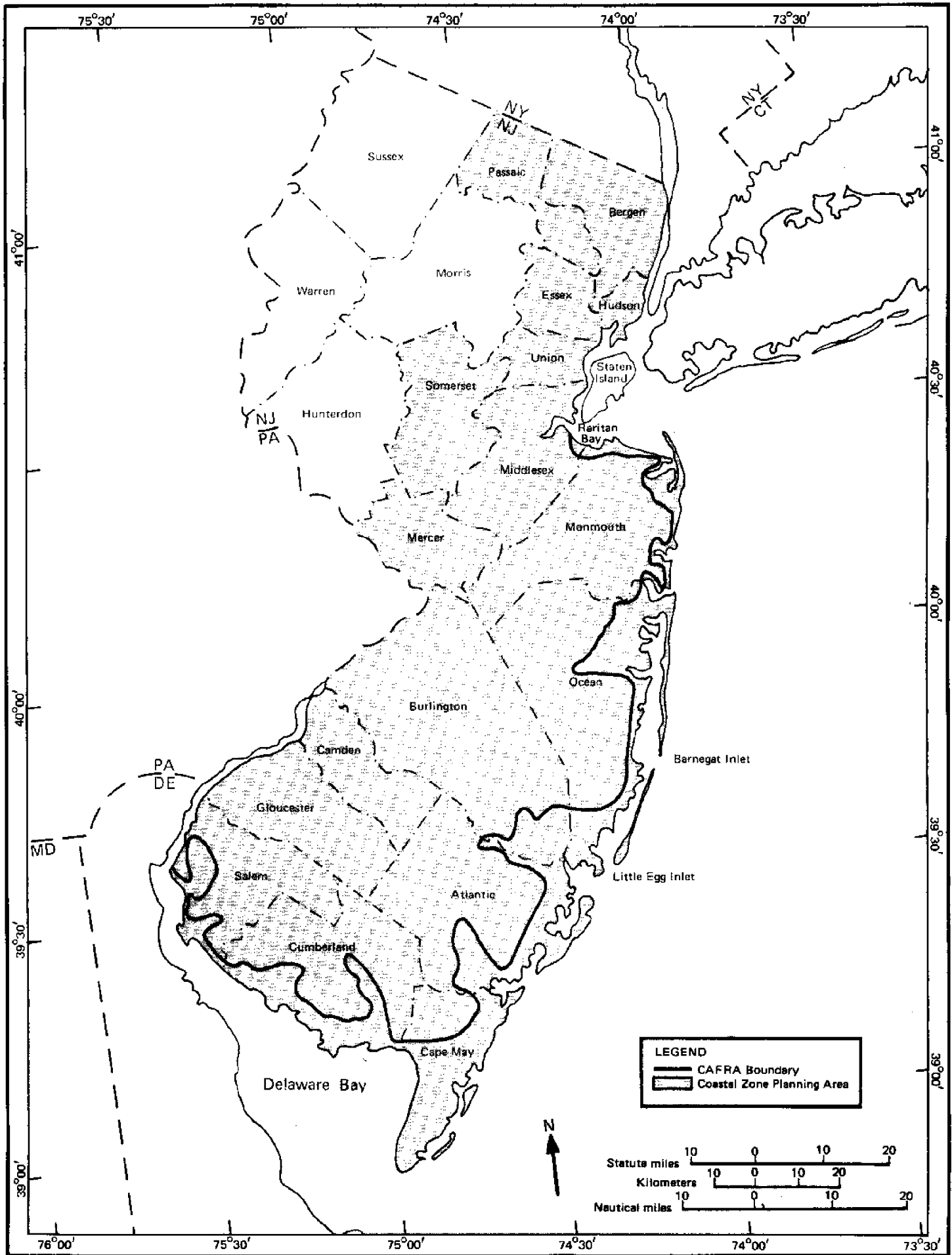
to assure that future activities do not degrade certain ecological standards. Potential uses are classified, some are banned, others are restricted, and those not disturbing the basic nature of the marshes, such as fishing, scientific observation, outdoor recreation, and minor repair of existing structures, are permitted. Regulatory procedures provide for project review hearings and appeals. The regulated New Jersey wetlands extend from Raritan Bay to Cape May and then to the head of tidewater on the Delaware River at Trenton. The New York tidal wetlands extend along the northern and southern shores of Long Island and then north to the Tappan Zee Bridge.

Riparian Lands. Coastal states have long held title to lands below mean high water. Interest in these properties has increased as their potential for mining and other commercial use has become more apparent. In New York, the Office of General Services (NYOGS) is the trustee of the state tidal and submerged lands, and grants easements for their use and issues licenses for the removal of minerals, sand, and gravel. Easements may be granted for the construction of wharves, piers, and other facilities to be used for waterborne commerce. NYOGS recently established sites for dredging sand in Lower Bay where sand for construction work is obtained and marketed in the New York metropolitan area. The commercial dredging companies operating at these locations pay royalties to the state general fund, based on the volume of sand removed.

The management of riparian lands in New Jersey is quite different. Beginning in 1970, the sale and lease of these lands was granted only after an environmental review and the demonstration that the proposed use would serve the public interest. The review procedure for sale or lease is elaborate and no construction can proceed without also obtaining a waterfront development permit. Control over riparian lands extends throughout the state and is the only form of state coastal regulation from Sandy Hook north to the New York State line on the Hudson River. Proceeds from riparian sales and leases are deposited in the New Jersey school fund.

Coastal Zone Management. The 1973 New Jersey Coastal Area Facility Review Act (CAFRA) established one of the first comprehensive state coastal management programs. Two immediate causes for the legislation were: 1) the realization that the 1970 wetlands act did not protect adjacent uplands from development, and 2) the shift in planning for several

Map 10. Coastal Area Facility Review Act and coastal zone planning areas in New Jersey



Source: New Jersey Department of Environmental Protection 1976

Lambert Conformal Conic Projection

major industrial projects from Delaware to New Jersey, following the strong coastal legislation passed in Delaware in 1971. The CAFRA program applies to a strip of coastlands of variable widths from Raritan Bay to Delaware Bay and extends off shore to the limits of the territorial sea and the boundaries of adjacent states (Map 10). CAFRA gave interim review authority to the NJDEP and required it to prepare a coastal area plan by 1977. The act did not place a moratorium on development but required that procedures be instituted to review project proposals, requiring submission of an environmental impact statement with appropriate information on the characteristics of the project. Review findings must be based on the adequacy of the proposal to meet environmental requirements and satisfy the promotion of the health, safety, and welfare of the public. The planning process required the preparation of an environmental inventory by 1975, the writing of alternative long-term environmental strategies by 1976, and the selection of an environmental design or plan by 1977. Each step had to be presented to the governor and the legislature for approval.

The coastal planning and regulatory activity in New Jersey paralleled the implementation of the federal Coastal Zone Management Act of 1972 (PL 92-583). This act provides funds to marine and Great Lakes states for the preparation and implementation of coastal management programs. Both New York and New Jersey received funds from the National Oceanic and Atmospheric Administration's (NOAA) Office of Coastal Zone Management for coastal planning work beginning in 1974. The development of state coastal management programs has both a developmental phase of four years and a subsequent management phase. The management phase is to be continuing and will be funded largely by federal funds, but the management program must be approved by the respective states and by the US Secretary of Commerce. The major tasks required during the developmental phase are stated in Section 305 of the act and include:

1. an identification of the boundaries of the coastal zone subject to the management program;
2. a definition of what shall constitute permissible land and water uses within the coastal zone which have a direct and significant impact on the coastal waters;
3. an inventory and designation of areas of particular concern within the coastal zone;

4. an identification of the means by which the state proposes to exert control over the land and water uses . . . including a listing of relevant constitutional provisions, legislative enactments, regulations, and judicial decisions;
5. broad guidelines on priority of uses in particular areas, including specifically those uses of lowest priority;
6. a description of the organizational structure proposed to implement the management program, including the responsibilities and interrelationships of local, areawide, state, regional, and interstate agencies in the management process.

The coastal zone for which the management program is to be prepared includes shorelands and intertidal areas and extends off shore to the outer edge of the territorial sea. Also, state coastal management programs must be prepared with the close cooperation of the public, local government, and related state and federal agencies.

The financing of the New Jersey coastal management activities by the federal government supplements the ongoing CAFRA program in NJDEP. In New York, coastal planning work is the responsibility of the Department of State, which has subcontracted to the NYDEC, regional planning boards, and local governments for technical assistance.

Interstate

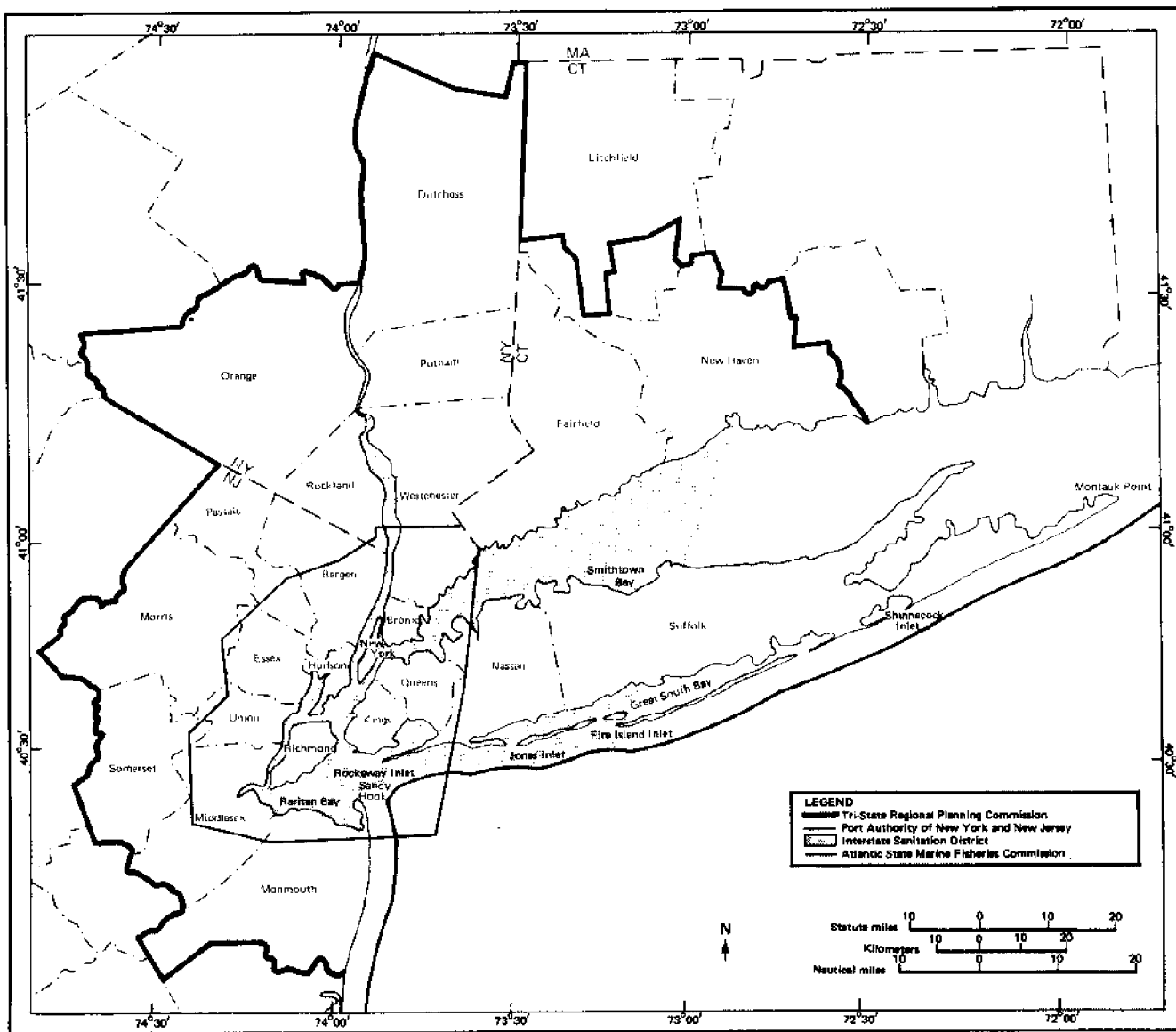
Four interstate agencies have jurisdiction in the New York Bight area; each was established by interstate compacts approved by Congress. The activities of the Atlantic States Marine Fisheries Commission (PL 76-295) is confined to the territorial sea, a narrow portion of the Bight (Map 11), but coincident with the extent of traditional state jurisdiction in offshore fisheries management. The other three interstate agencies—the Interstate Sanitation Commission, the Port Authority of New York and New Jersey, and the Tri-State Regional Planning Commission—are organized to provide unified sanitary regulation, port, and planning services in the complex New York metropolitan area (Map 11).

The Atlantic States Marine Fisheries Commission is a coordinative organization of states formed in 1941 to

promote better utilization and prevent physical waste and depletion of fishery resources. The commission can recommend the coordination of the police powers of member states and can act as a joint regulatory agency but has not exercised this authority. It may also recommend legislation to the member states and to Congress and advise on fish stocking programs. The National Marine Fisheries Service (NMFS, formerly the Bureau of Commercial Fisheries, a branch of NOAA) performs research tasks for the commission.

The Interstate Sanitation Commission, a three-state organization formed in 1936, is responsible for setting standards for sewage discharge, classifying waters by expected use, conducting investigations and hearings on compliance, and it can exercise control over the development of new sources of pollution. The commission can also order local governments to treat sewage and to bring action in state courts to enforce its rulings and orders. It cooperates with state and special sanitary districts in order to coordinate activities and water pollution standards.

Map 11. Jurisdictions of interstate agencies in the New York metropolitan area



Mercator Projection

The Port Authority of New York and New Jersey was formed in 1921 as a compact between New York and New Jersey for the purpose of purchasing, constructing, leasing, and operating transportation facilities within the district boundaries. The jurisdiction of the Port Authority covers a 32 to 48 km (20 to 30 mi) radius of the Statue of Liberty. The Port Authority is a comprehensive transportation enterprise engaged in operating piers, rail and bus commuter facilities, truck terminals, airports, bridges, and the World Trade Center office complex. One of several operators of marine facilities in the New York metropolitan area, it provides the most extensive set of shipping services at its seven marine terminals in Elizabeth, Newark, and Hoboken, NJ, and New York City.

The Tri-State Regional Planning Commission is an interstate regional planning agency concerned with immediate and long-range planning studies. It operates within an approximate 97 km (60 mi) radius measured from Times Square and extending to Montauk Point. This commission is an advisory body that encourages increased cooperation among state, county, and local governments for the purpose of rationalizing the investments in physical facilities that have a pronounced effect on the region's growth and development. It is directly involved in many planning activities, such as transportation, health facilities, crime control, housing and community renewal. It is actively engaged in coastal zone planning studies and has prepared a report on the management of its coastal lands and waters (Marr 1975).

Federal

Federal involvement in the New York Bight area extends from the coastal rim to the high seas. This breadth of activity is the prerogative of any coastal sovereign power which must protect itself and represent itself in negotiations with other nations concerning the geographic extent of coastal zone boundaries. The historic federal interest also includes maritime commerce. In the last half century, the nature and complexity of federal involvement in coastal regions has grown at an increasing rate. This growth began with efforts to control the smuggling of prohibited beverages and gained its greatest impetus from technological changes and the increased demand for coastal resources. Most recently, the realization of

the damages caused by pollution, the relentless quest for petroleum, and the intensified international competition for fishery products has further stimulated federal programs in the Bight.

An accurate account of the federal presence in the Bight is difficult. The major agency responsibilities that involve management, licensing, and program funding, for example, can be readily identified, but other agency functions are more difficult to define. Several nonmarine agencies have responsibilities important in the Bight area but find this aspect of their work incidental to their organizational mission. In other instances, agencies are shifting their organizational responsibilities to incorporate aspects of coastal affairs because of the opportunity to expand their bureaucratic missions. Some departments have responsibilities classified in more than one category (Table 6).

Five categories of activities are used to classify the present range of federal programs. These are broader than the more specific categories used in discussing state agency responsibilities but are better suited to the number and variety of federal programs involved in coastal and marine work. The five categories are discussed below.

Management. Agencies included in this group are responsible for fisheries, maritime commerce, maintenance of navigation, management of federal properties, and the operation of national recreation sites.

Three federal departments—Commerce, Defense, and Interior—carry out management responsibilities for land and water resources of New York Bight. The Department of Defense, through the US Army Corps of Engineers, is responsible for the improvement of rivers and harbors for navigation. This work began in 1824 and is principally directed at deepening and widening channels and harbor entrances for the safe waterborne movement of shipping, commercial fishing, and recreational boating. In cooperation with state and local governments, the Corps has recently undertaken programs for shore erosion control. The Corps also reviews discharge permit applications to the EPA for discharges into navigable waterways and the ocean, undertakes estuarine studies to determine the potential effects of development, and reviews proposed structures on the continental shelf and connecting shoreward pipelines to determine their impact on navigation and the environment.

NOAA's NMFS has a broad program that assesses and protects fishery resources, assists the fishing industry, advises other governmental agencies on fishery issues, and assists the states in studying and developing fishery resources. Other sections of NOAA are engaged in reviewing proposals for federal and federally funded water projects to assess impacts on the marine, estuarine, and anadromous environment and fishery resources. A related agency is the Interior Department's Bureau of Sport Fisheries and Wildlife, which is responsible for protecting the fish and wildlife resources of coastal wetlands, for reducing habitat damage, and for improving the condition of these resources. The bureau's responsibilities also include the assessment of the effect of proposed water resource development projects on the fish and wildlife and the conservation of estuarine environments.

Two Department of Interior agencies are directly engaged in leasing of outer continental shelf lands for petroleum exploration and development. The Bureau of Land Management prepares leases, evaluates their potential schedules, conducts bidding, and prepares environmental impact statements for proposed leases. The bureau is assisted in its leasing operations by the USGS which assesses the petroleum resource potentials of lease areas, and evaluates hazards of exploitation. The USGS also oversees the geographical exploration activities of lessees and inspects drilling operations. The more traditional role of the USGS applies to the coastal rim and is associated with analyzing water supplies and mineral resources and issuing of reports and topographic maps.

Other managerial programs are conducted by the Maritime Administration and the National Park Service. The Maritime Administration is responsible for promoting, encouraging, and developing ports and related facilities. It conducts surveys and studies of ports and provides technical advice on their development. The National Park Service plans, develops, and manages natural, historical, and recreational areas. The principal activity of the Park Service in the Bight area is the development of the Gateway National Recreation Area at the entrance to New York Harbor and of the Fire Island National Seashore.

Regulation, Licensing, and Protection. This category includes agencies issuing permits and licenses, policing the taking of resources, and enforcing federal regulations.

The federal regulatory and enforcement respon-

sibilities in New York Bight are assigned to a variety of agencies for the protection or regulation of wastewater treatment facilities, maritime commerce, dredging, commercial fishing, recreational boating, and petroleum operations. The maintenance of water quality is assigned to EPA, the Corps of Engineers, the Coast Guard, and the Maritime Administration. EPA has primary federal responsibility for the regulation of water pollution. It establishes criteria and administers an enforcement program against the pollution of interstate and navigable waters from municipal and industrial discharges and from ships in the territorial sea and in the contiguous zones. EPA issues permits for dumping industrial wastes, municipal sludge, and dredge spoil in the Bight. The industrial and municipal dumpers are scheduled to cease dumping in the Bight by the end of 1981 with the exception that industrial waste dumping will be permitted if the materials are nontoxic, will have no deleterious effect on the environment, and if there is no suitable land-based alternative. EPA regulations also apply to petroleum platforms on the outer continental shelf. The Corps of Engineers issues permits in conjunction with EPA for dumping dredge material in ocean waters after review to assure that the marine environment will not be degraded. The water quality duties of the Coast Guard include oil spill and ocean dumping surveillance, enforcement of regulations, and the organization of clean-up response teams for inshore and offshore oil discharges. The Maritime Administration, in turn, enforces liability claims against owners and operators of vessels for the cost of oil removal from navigable waters, the territorial sea, and the contiguous zones.

The surveillance and enforcement of international fishery agreements and treaties is assigned to NMFS and the Coast Guard. NMFS inspects foreign vessels to insure compliance of agreements to protect fishery stocks under US jurisdiction. This task is carried out in cooperation with the Coast Guard, which intercepts foreign vessels for NMFS agents and if violations are found, escorts the vessel to port.

The Coast Guard is also responsible for the safety of life and property at sea and the enforcement of maritime laws. This includes the licensing of commercial and recreational vessels, search and rescue operations, and the installation of aids to navigation. Fixed structures at sea, such as drilling platforms, are also under its jurisdiction. The Coast Guard supervises personnel and equipment safety and reviews platform siting to assure that they do not endanger marine safety.

Table 6. Federal agency responsibilities in the jurisdictional zones of New York Bight

Activity	Federal Agency	Agency Subunit	Primary Responsibility	CR	TS	CZ	OCS	HS	
Management	Dept. of Commerce	Maritime Admin.	Port development	X					
		NOAA/NMFS	Fisheries management and assistance		X	X	X	X	
	Dept. of Defense	Corps of Engineers,	Maintenance of harbors and navigation channels and beach erosion control	X	X		X		
	Dept. of the Interior	Bur. of Land Mgt.	Leasing of continental shelf lands				X		
		Bur. of Sport Fisheries and Wildlife	Conservation of wildlife and their habitats	X					
		USGS	Assists in lease preparation and overseas drilling operations					X	
Regulation, Licensing, & Protection	Dept. of Commerce	NOAA/NMFS	Enforcement of international fishery agreements and treaties; regulation and licensing of foreign fishing in conservation zone			X	X		
	Dept. of Defense	Corps of Engineers	Dredging, filling, and construction permits in navigable waters	X	X	X	X		
	Dept. of Health, Education & Welfare	Public Health Serv.	Recreation area sanitation, shellfish sanitation	X		X	X		
	Dept. of Transportation	Coast Guard	Enforcement of maritime laws and treaties, merchant marine and boat safety, oil pollution control cleanup and surveillance, ocean dumping surveillance and control, navigation safety; regulates hazardous cargoes, enforcement of fishing treaties beyond territorial sea; conducts search and rescue operations; and issues deepwater port permits	X	X	X	X	X	
		Off. of Pipeline Safety	Regulates construction and monitors pipelines from continental shelf inland	X	X		X		
	Environmental Protection Agency		Enforcement of pollution regulations in interstate and navigable waters; ocean discharge and dumping permits	X	X	X	X	X	
	Fed. Energy Admin.		Permits for offshore drilling				X		
	Fed. Maritime Comm.		Regulates common carriers and assesses them for costs of pollution damage	X	X	X			
	Fed. Power Comm.		Regulates gas transmission lines	X	X		X		
	Interstate Commerce Comm.		Regulates oil transmission lines	X	X		X		
	Funding Non-federal Activities	Dept. of Commerce	Maritime Admin.	Assistance to shipping industry	X				
			NOAA/NMFS	Assistance to fishing industry	X	X	X	X	X
NOAA/Off. of Coastal Zone Mgt.			Coastal planning and management and marine sanctuaries	X	X				
NOAA/Off. of Sea Grant		Coastal and marine research and advisory services	X	X	X	X	X		
Dept. of Defense		Corps of Engineers	Beach erosion control projects	X					

Activity	Federal Agency	Agency Subunit	Primary Responsibility	CR	TS	CZ	OCS	HS
Funding Non-federal Activities (continued)	Dept. of the Interior	Bur. of Outdoor Recreation	Funding of recreational planning and park land acquisition	X				
	Dept. of Housing and Urban Development	National Flood Insurance Prog.	Subsidy of flood and storm damage insurance	X				
		Off. of Community Planning and Devel.	Funding of state and local planning	X				
	Environmental Protection Agency		Wastewater treatment facility grants	X				
	National Science Found.		Sponsors broad research programs including wetlands, oceanographic, and environmental research	X	X	X	X	X
Research, Information, and Data Services	Dept. of Commerce	NOAA/Environmental Data Serv.	Processing, dissemination of environmental data	X	X	X	X	X
		NOAA/Environmental Research Laboratories	Oceanographic research, assessment of environmental impacts	X	X	X	X	X
		NOAA/NMFS	Fishery resource research	X	X	X	X	X
		NOAA/National Ocean Survey	Marine charts, tidal data, coastal erosion research and data, oceanographic and marine technology information	X	X	X	X	X
		NOAA/National Weather Serv.	Marine weather information	X	X			X
	Energy Research and Development Admin.		Oceanographic research on northeast continental shelf		X	X	X	X
	Dept. of Defense	Off. of Naval Research	Oceanographic research		X	X	X	X
	Dept. of the Interior	USGS	Potential oil and production and developmental hazards, hydrological research and data	X			X	
Incidental	Dept. of Agriculture	Agricultural Research Serv.	Sedimentation research, water pollution abatement research	X				
		Farmers Home Admin.	Rural sewer system planning and construction grants	X				
		Soil Conservation Serv.	Sedimentation control	X				
	Dept. of Commerce	Economic Development Admin.	Grants for water and sewer systems and port facilities	X				
	Dept. of Defense	Dept. of the Air Force	Defense	X	X			X
		Dept. of the Navy	Defense	X	X	X	X	X
	Dept. of State		Formulates and implements policies of United States in international ocean affairs, resources, maritime research, and ocean pollution			X	X	X
	Council on Environmental Quality		National environmental policy, reviews effect of federal programs on environmental quality	X	X	X	X	X
	Fed. Power Comm.		Licenses for power plants	X	X			
	Nuclear Regulatory Comm.		Nuclear energy site survey, licensing of nuclear reactors	X				

Note: CR—Coastal Rim, TS—Territorial Sea, CZ—Contiguous zones, OCS—Outer continental shelf, HS—High seas

Other coastal and marine permit-granting and inspection activities pertain to public health, construction, and petroleum operations. The Public Health Service monitors sanitation and drinking water supplies in federal recreational areas and is responsible for the surveillance and classification of shellfish growing areas in the contiguous zones and on the continental shelf. Permits for dredging, filling, and construction in navigable waters are granted by the Corps of Engineers.

The construction and operation of platforms and pipelines connecting drilling rigs with shore terminals require permits and are the concern of several federal agencies. The Federal Energy Administration grants permits for offshore drilling. The Occupational Health and Safety Administration is directly concerned with working conditions on drilling platforms. Easements for laying pipelines on the floor of the continental shelf are granted by the Bureau of Land Management to the 3 nmi limit, at which point permits may be granted by the various states. The USGS requires pipelines to be buried to a depth of at least 1 m (3 ft) in waters shallower than 61 m (200 ft). Dredging for burying the lines requires a Corps of Engineers permit within 3 nmi of shore, and the Corps also reviews construction plans to assure that pipelines will not result in hazards to navigation or the environment. The Interior Department's Office of Pipeline Safety certifies construction, design, operation, and maintenance of the two terminals of the pipelines (Mallon 1974). Finally, the Interstate Commerce Commission regulates oil transmission, and the Federal Power Commission regulates natural gas transmission in pipelines.

Funding Nonfederal Activities. Federal programs in this group are principally engaged in funding state and local government programs, such as comprehensive planning, wastewater treatment facility construction, coastal zone planning and management, coastal research, and park land acquisition.

Federally sponsored programs carried out by state and local government, educational and research institutions, and industry are administered by four departments in addition to the EPA and the National Science Foundation (NSF). The Department of Commerce has four separate funding sources, all directly related to coastal and marine affairs. The Maritime Administration provides an array of assistance to the shipping industry in the form of construction subsidies, financing guarantees, and differential operating subsidies. The administration also assists the support

of state maritime schools and maintains the US Merchant Marine Academy on Long Island. Four programs within NOAA provide further assistance. NMFS has two programs that assist fishermen to purchase vessels. One facilitates the investment of capital for eventual purchases and the other guarantees loans incurred when vessels are purchased. NMFS also provides financial assistance to states to study, develop, and manage fishery resources. The Office of Coastal Zone Management and the Office of Sea Grant support state coastal zone management as well as Sea Grant research, educational, and advisory service programs.

The Departments of Defense, Interior, and Housing and Urban Development, and the EPA subsidize programs primarily directed at the coastal rim zone. The Corps of Engineers works in cooperation with local governments and the states in coastal erosion control projects to halt erosion and to restore and enhance beaches. The Interior Department's Bureau of Outdoor Recreation provides technical and financial assistance to states for the preparation and maintenance of comprehensive outdoor recreation plans and provides financial assistance for the acquisition and development of public outdoor recreation sites. Programs in the Department of Housing and Urban Development provide flood and coastal storm and erosion damage insurance subsidies through the National Flood Insurance Administration, and fund state and local government comprehensive planning assistance through the Office of Community Planning and Assistance. The major federal grant facility construction program directly benefiting the Bight is administered by EPA for waste treatment facilities. EPA awards grants for the improvement and construction of water pollution control facilities to state, municipal, and intermunicipal agencies. This program has resulted in the improvement of the water quality of many of the rivers, estuaries, and nearshore waters of the Bight, but it is only partially implemented at this time. It is anticipated that the completion of the construction program will eventually permit the reopening of beaches now closed to recreation, the resumption of sport and commercial finfishing in many inland and nearshore waters, and the taking of shellfish from beds that are no longer polluted.

Research directed at coastal and ocean problems is funded by NSF, which supports basic and applied oceanographic research at academic, nonprofit, and federal agency laboratories. Topics include environ-

mental quality, seabed assessment, the effects on estuaries of waste discharges and dumping, and management strategies for marshlands maintenance and restoration.

Research, Information, and Data Services. This group includes agencies engaged in oceanographic research, the provision of hydrographic and weather data, and economic information. This does not include agencies conducting research for internal use or agencies funding nonfederal research.

The New York Bight area benefits from governmental research, information, and data services. These programs are capable of providing users with a diversity of environmental, economic, and geologic information. The principal source is the Department of Commerce, through NOAA's Environmental Research Laboratories, Environmental Data Service, the National Weather Service, the National Ocean Survey, and NMFS.

The Environmental Research Laboratories, through its Marine EcoSystem Analysis (MESA) Program, is undertaking a number of investigations among which is a major research program to determine and measure the impact of man on the marine environment and resources of New York Bight.

The Environmental Data Service collects, processes, and disseminates environmental data and provides advisory services on climatological, oceanographic, geophysical, and solar-terrestrial information.

The National Ocean Survey provides information concerning geodesy, hydrography, marine technology, oceanography, and photogrammetry, disseminates marine and air navigation charts, and locates and maps marine boundaries. Estuarine investigation has produced data on the tidal characteristics and the effects of storm surges on marine wetlands. It also does research and distributes findings on beach erosion and physical oceanography that affect navigation, recreation, development, and shoreline and beach preservation and maintenance.

The National Weather Service forecasts weather conditions—warnings of violent storms, floods, and related hazards—and gives special forecasts for marine operators. Its research also includes the analysis of hydrometeorological phenomena, which has broad application to water resource and coastal zone planning.

NMFS carries on a broad fishery research program to better understand how to: 1) conserve and insure wise use of existing commercial and game

fish; 2) develop species not fully utilized; and 3) assure an equitable allocation of stock among groups of fishermen. It also conducts research to improve fishing technology and marketing.

The Federal Energy Research and Development Administration is conducting a long-term basic study of the physical and biological oceanography and food chain and ecosystem dynamics of the northeast continental shelf. The study data will provide a background with which to understand the broader effects of, for example, the exploitation of offshore petroleum resources, the generation of power on offshore nuclear facilities, and petroleum tanker accidents.

The Defense Department, through the Office of Naval Research, manages and directs a broad program of research and exploration. Studies are directed primarily at investigations of physical and biological oceanography.

Data and research findings on geological topics are provided by the USGS, which conducts field investigations and research into the topography, geology, mineral and water resources of the nation, and prepares topographic maps. It coordinates the acquisition of hydrological data and maintains a central hydrological data catalogue. Statistical data and summary reports are available to planners and developers.

Incidental. Some agencies are engaged in programs not primarily concerned with coastal or marine affairs but have meaningful roles, such as reduction of silt loads in streams, environmental impact statement review, and energy regulation.

The federal programs in this category support the normal activities in New York Bight. They are not directly engaged in coastal activities but may have important environmental, regulatory, water quality, or coordinative roles. In addition, the Department of State is responsible for international representation on coastal and marine issues, and the Department of Defense is responsible for protection from hostile foreign intrusions.

The environmental policy activities among the federal agencies in this group are performed by the Council on Environmental Quality. The council makes national policy recommendations for the improvement of environmental quality and appraises the environmental impact statements of proposed federal projects and programs in coastal and offshore areas. In this capacity the work of the council relates to each of the five zones of the Bight. The associated

environmental problem of water quality is the partial responsibility of the Departments of Agriculture and Commerce. The Agricultural Research Service is directed in part to investigate methods for controlling stream sedimentation and other forms of water pollution, and the USDA's Soil Conservation Service is charged with implementing programs that reduce sedimentation. The funding of rural sewer systems planning and construction projects is carried out by USDA's Farmers Home Administration. Sewer system funding is also part of the program of the Economic Development Administration, Department of Commerce, which has a variety of programs in economically depressed areas. This agency also makes grants for port facility construction.

Regulatory responsibilities are carried out by the Federal Power Commission, which licenses power plants, and the Nuclear Regulatory Commission, which conducts nuclear energy site surveys and licenses nuclear reactors.

Federal interagency coordination is achieved in part through 10 federal regional councils. Members of the councils are the regional representatives of the principal funding agencies concerned with social problems and representatives of state governments. The councils have a potentially valuable role in the planning and management of governmental programs in the region since they are concerned with planning and human resource questions.

The Departments of Defense (except for the Corps of Engineers) and State operate outside the normal areas of activity in the Bight area. The Department of Defense has base operations at a

number of sites in the region, but its most significant role is unobtrusive protection. The Department of State, with the assistance of NOAA, formulates and implements US policies in international ocean affairs. The department participates in international organizations concerned with oceans, their resources, and marine research. It also is a party with NOAA to fisheries, resources, and Law of the Sea negotiations; its staff members participate in the work of international fisheries commissions.

International

The United Nations lends a benign presence to the high seas and adjacent waters through the sponsorship of conventions on the Law of the Sea, and conferences on coastal and marine affairs as well as the activities of its London-based specialized agency, IMCO, the catalyst for international agreements on maritime activities on the high seas. The work of IMCO includes agreements on maritime traffic, collision prevention, oil and noxious substance pollution, ocean dumping, and the structural safety of vessels. The United States is a party to the conventions held under the auspices of IMCO. After these international treaties are ratified by the Senate, they are administered by the Coast Guard. The principal effects of IMCO on the Bight area are the regulations for control of pollution and dumping from foreign ships entering the outer reaches of the Bight and the establishment of traffic lanes and separation zones for ship traffic on the high seas.

Conclusion

The presence of government in the New York Bight area is becoming more and more complex as the demand for coastal and marine resources continues to increase. The variety of coastal and marine resources—recreation, protein, the promise of petroleum, construction materials, storage and dumping space—will stimulate a variety of new technologies and new governmental attention. As the growth and change occur, the jurisdictional zones will change in their dimension, intergovernmental relations will continue to be strained, and local and state governments will try to wring some particular advantage out of coastal and marine legislative and judicial activity just as they have done in the past.

During the last 10 years, local governments have become increasingly aware of the value of their coastal lands and waters, and through a number of state and federally sponsored programs are beginning to participate actively in the improvement of their marine environment. Progress, however, is slow and uneven. Local governments are not easily structured to direct a significant and cohesive effort toward coastal issues because the local programs that can affect changes in the coastal area, such as recreation, waste disposal, planning, flood plain management, and urban renewal and rehabilitation, are not traditionally coordinated for this purpose.

The quality of the waterfront and adjacent waters is not a high priority problem of local jurisdiction unless a community is a resort, fishing, or water transportation center. But even communities with these well developed specialized functions are relatively powerless to effect noticeable changes in coastal lands and waters without the concerted leadership and effort of state and federal governments.

New York and New Jersey have become increasingly conscious of coastal resources and their value during the last decade. Historically, these and other coastal states have been and remain more concerned with traditional problems of agriculture, industry, transportation, and urban developments. Nevertheless, tidal wetlands, coastal zone planning, and water pollution control programs have been initiated in recent years to complement earlier interest in fisheries and coastal recreation. Coastal affairs are relatively concentrated in NJDEP, compared to the wider dispersion of these functions in New York State

agencies. Neither state, however, has developed a clearly defined or unified marine policy or program. The states have traditionally deferred to the federal government on offshore issues because their responsibility is limited even in the 3 nmi territorial sea. State coastal zone management efforts are almost exclusively concentrating on coastal lands and the program in each state finds it difficult to extend traditional planning concepts and methods into planning for the use and management of coastal waters. But this level of interest in coastal affairs will very likely change with the greater awareness of such issues as offshore petroleum and fishery resource development, ocean dumping, and the possibility of siting power stations and deepwater ports in coastal waters. Other actions that will help to maintain and develop state interest in coastal affairs are the power to review federal projects through NEPA environmental impact analysis proceedings and to modify federal programs through Congressional action and litigation.

The federal establishment is the significant level of government in the affairs of New York Bight. Its programs have stimulated local and state governments to undertake the improvement of the environmental quality of the coastal rim and its adjacent waters. Other federal responsibilities include management, regulatory, licensing, and protective functions. The federal government also funds a number of non-federal programs and carries on marine research, most notably the MESA program.

The federal government has the initiative in the affairs of the Bight and this will continue. It reorganized its structure in 1970 (Reorganization Plan 4 of 1970) to consolidate a number of federal marine and atmospheric offices into the new NOAA. The federal government is now considering a further reorganization, to again strengthen the management of ocean policies and programs through the merger of additional federal marine activities in NOAA because of increased federal offshore responsibilities following passage of the Fishery Conservation and Management Act of 1976 (*New York Times* 1977). But NOAA, even if reorganized and strengthened, will be only one of many federal agencies that has responsibilities to perform in the Bight.

The result of the multiplicity of federal agencies involved in the Bight makes it difficult to coordinate and manage problems that can be resolved best

through interagency coordination. This situation is further exacerbated when the resolution of a problem such as the disposal of municipal sludge will require the cooperation of major cities, of states, and of federal agency offices that are not now directly involved in marine affairs.

Coordinative administrative mechanisms do exist that now bring together agencies from various levels of government. Both the Coastal Zone Management Act and the Fishery Conservation and Management Act require the contribution of different levels of government and representatives of the public in their program planning activities. In addition, there are federal regional councils at major metropolitan

centers, comprised of the principal grant-making agencies concerned with broad social questions. These councils provide a framework whereby federal, state, and local agencies work together to resolve inter-related regional problems through the coordinated channeling of available manpower and funding resources. Each of these three models of intergovernmental coordination could be used to resolve other special problems in the Bight. The model of the federal councils could be most helpful in developing an intergovernmental and private interest mechanism to meet complex issues that will continue to arise as the demand increases for coastal and marine resources.

Appendix 1. Court cases cited in the text

City of New York v. Wilson and Co., Inc., 278 NY 86, 15 NE 2d 408 (1938)
Martin v. Waddell, 41 US 367 (1842)
Shively v. Bowlby, 152 US 1 (1893)
Town of Brookhaven v. Smith, 188 NY 74, 80 NE 665 (1907)
Tucci v. Salzhauer, 40 App. Div. 2d 712, 336 NYS 2d 721 (2d Dept. 1972), *aff'd* 33 NY 2d 854, 307 NE 2d 256, 352 NYS 2d 198 (1973)
US v. California, 332 US 34-35 (1947)

Appendix 2. US laws and proclamations cited in the text

Anti-Smuggling Act of 1935 (PL 74-238; 49 Stat. 517; 19 USC 1701-1711)
Atlantic States Marine Fisheries Commission (PL 76-295; 54 Stat. 261; 16 USC 667a)
Atlantic Tunas Convention Act (PL 94-70; 16 USC 971)
Coastal Zone Management Act of 1972 (PL 92-583; 86 Stat. 1280)
Coastal Zone Management Act Amendments of 1976 (PL 94-370; 16 USC 1451 et seq.)
Federal Water Pollution Control Act of 1972 (PL 92-500; 33 USC 1151 et seq.)
Fishery Conservation and Management Act of 1976 (also called Two Hundred Mile Jurisdiction) (PL 94-265; 16 USC 1801-1882)
Marine Protection, Research, and Sanctuaries Act of 1972 (also called Ocean Dumping Act) (PL 92-532; 33 USC 1401-1444)
Marine Protection, Research, and Sanctuaries Act Amendments of 1974 (PL 92-254; 33 USC 1401-1418)
National Environmental Policy Act (NEPA) (PL 91-190; 42 USC 4321-4347)
Northwest Atlantic Fisheries Act of 1950 (PL 81-845; 16 USC 981-991)
Oil Pollution Act of 1961 (PL 87-167; 33 USC 1001-1016)
Outer Continental Shelf Lands Act of 1953 (PL 83-212; 67 Stat. 462; 43 USC 1333f)
Presidential Proclamation No. 2667 (1945) (Natural Resources of the Continental Shelf)
Presidential Proclamation No. 2668 (1945) (Policy on Coastal Fisheries)
Prohibition of Fishing in US Territorial Waters by Foreign-Flag Vessels (also called Bartlett Act) (PL 88-308; 16 USC 1081-1086)
Reorganization Plan No. 4 of 1970 (5 USC 906)
Rivers and Harbors Act of 1899 (33 USC 401-413)
Submerged Lands Act of 1953 (PL 83-31; 43 USC 1301-1315)
Tariff Act of 1922 (PL 67-356)
Twelve Mile Exclusive Fisheries Zone Act (also called Contiguous Fisheries Zone) (also called Twelve Mile Fishery Jurisdiction) (PL 89-658; 16 USC 1091-1094)

**Appendix 3. International agreements and conventions cited
in the text**

Convention on the Continental Shelf (15 UST 471;
TIAS 5578; 499 UNTS 311)

Convention on Fishing and Conservation of the
Living Resources of the High Seas (17 UST 138;
TIAS 5969; 559 UNTS 285)

Convention on the High Seas (13 UST 2312; TIAS
5200; 450 UNTS 82)

Convention on the Prevention of Marine Pollution by
Dumping of Wastes and Other Matter (26 UST
2403; TIAS 8165)

Convention on the Territorial Sea and Contiguous
Zone (15 UST 1606; TIAS 5639; 516 UNTS 205)

International Convention on the Conservation of
Atlantic Tunas (20 UST 2887; TIAS 6767; 673
UNTS 63)

International Convention for Northwest Atlantic
Fisheries (ICNAF) (1 UST 477; TIAS 2089; 157
UNTS 157)

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