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Implications of the Extended Territorial Sea for Delaware:

A Preliminary Analysis

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by

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IMPLICATIONS OF THE EXTENDED TERRITORIAL SEA FOR DELAWARE: A PRELIMINARY ANALYSIS

Section One--Introduction

On December 27, 1988, President Ronald Reagan issued Proclamation 5928 broadening the U.S. territorial sea from 3 nautical miles to 12 nautical miles (see Appendix 1). The 1982 Law of the Sea Convention (LOS) allows nations to claim territorial seas of up to this width. Most of the other coastal nations of the world have already claimed 12-mile territorial seas.

Statements made at the time of the proclamation and subsequent to it indicate that the action was taken for national security purposes (Schachte 1990), permitting the United States to keep foreign intelligence-gathering ships seaward of the new 12-mile limit. Nothing in the proclamation itself changes the present jurisdiction or control of the coastal states with regard to the ocean areas off their shores. Indeed, the proclamation contains a proviso which explicitly asserts that "nothing in this Proclamation extends or otherwise alters existing Federal or State law or any jurisdiction, rights, legal interests, or obligations derived therefrom." Legislation formally enacted by Congress and signed by the president would be required to extend state boundaries seaward from their present 3-mile limit, which was established by Congress in the Submerged Lands Act of 1953. Nevertheless, the December 27, 1988, extension of the territorial sea represents a true extension of U.S. sovereignty over an additional 9 miles of adjacent ocean, ocean that had been part of the U.S. Exclusive Economic Zone (EEZ) and, as such, was an area within which all nations had significant freedom of action.

This action has had the effect of extinguishing the "high seas" rights that other nations have heretofore enjoyed in this zone save for the right of innocent passage. This change in the legal character of the 3- to 12-mile zone--its "domestification"--has reopened the issue of the jurisdiction and control over the ocean offshore of the United States and its division between the federal government and the coastal states, as that issue is now largely a domestic one. Many coastal states have legitimate interests and concerns regarding the

resources that exist in the zone (fish, minerals, etc.) and/or the uses to which the area is put (e.g., waste dumping). Concerns and interests on behalf of three states--Alaska, North Carolina, and Hawaii--were outlined in testimony given at a congressional hearing on the extension of the U.S. territorial sea held by the Oceanography Subcommittee of the House of Representatives Merchant Marine and Fisheries Committee on March 21, 1989 (House of Representatives 1989).

Other coastal states are now in the process of examining the extent to which the extension of the U.S. territorial sea affects their interests, given their particular coastal situations. In October 1989, the University of Delaware Sea Grant College Program agreed to fund a small study of the implications of the territorial sea extension for the State of Delaware. The study was proposed by Robert W. Knecht and Biliana Cicin-Sain, co-directors of the Center for the Study of Marine Policy at the University of Delaware Graduate College of Marine Studies (CMS). This technical report summarizes the results of the five-month study conducted by the center, under the supervision of Knecht and Cicin-Sain, and with the assistance of CMS graduate students Tim Dennis, Diana Olinger, and Ming Xu.

At an early stage, the study was discussed with officials in the Delaware Department of Natural Resources and Environmental Control (DNREC) who confirmed that such an endeavor was timely and could assist them in their policy-making. Subsequently, state officials have had input into the study at several stages in its development. Their advice and assistance are gratefully acknowledged.

Although not formally organized along such lines, the study is structured around the following questions which, in our judgment, need to be answered if a coastal state is to have a sound foundation for its policy with regard to the extended territorial sea:

1. What resources (fish, minerals, oil, etc.) are known to exist (or are likely to exist) in the area newly designated as territorial sea, i.e., in the 3- to 12-mile zone?

2. What activities (ocean dumping, oil transportation, etc.) exist or are planned in the 3- to 12-mile zone?

3. How do (or could) these resources and activities affect the interests of the adjacent coastal state, and how are the interests and concerns of the state factored into current management schemes?

4. What is the present level of activity of the state in the management of resources and uses in that portion of the territorial sea presently under state jurisdiction, i.e., the 0- to 3-mile zone, and what is the present level of competence/expertise in the state regarding the management of ocean resources and uses?

5. Given the responses to the above questions, could a stronger state role in the management of resources and activities in the 3- to 12-mile zone be of economic or environmental benefit to Delawareans? Is more management attention also needed in the 0- to 3- mile zone?

6. What options exist (or could be developed) for a stronger state role in the 3- to 12-mile zone? In the 0- to 3-mile zone?

7. What "costs" would likely be associated with the various options? Are they commensurate with the benefits likely to be achieved from a stronger state role?

8. Given all of the above, what policy should the state advocate regarding the jurisdiction and management of the extended territorial sea (i.e., the 3- to 12-mile zone)?

While limitations in time and funding prevented a full exploration of each of these questions, this study does lay the necessary groundwork and presents a preliminary analysis of the issue. The report is organized into five parts in addition to this introduction. Section Two contains background on the nature of the territorial sea under international law and presents the relevant history regarding the U.S. territorial sea. Section Three outlines a problem related to the ocean boundaries of the State of Delaware that could assume greater significance if the state chooses to seek a broader role in the governance of the ocean off its shores. In Section Four, such information as is available on the resources and uses now occurring in the 3- to 12-mile zone offshore of Delaware is reviewed, and the ways in which these resources and uses impact the state are discussed. Section Five contains a brief review of the coastal and ocean management programs that already exist in the state and the extent to which these efforts affect activities in the 3- to 12-mile zone. Finally, in Section Six, some preliminary conclusions are drawn regarding the expanded territorial sea and its possible impacts on Delaware; options for a Delaware position are developed; and suggestions are made for the next steps to be taken.

Section Two--The Extended Territorial Sea

As mentioned earlier, in December 1988, the United States claimed a 12-mile territorial sea by means of a presidential proclamation. This action moved the seaward boundary of the U.S. territorial sea from 3 nautical miles to 12 nautical miles from the shoreline, bringing the United States into alignment with most of the other coastal nations of the world.

The concept of the "territorial sea" has existed in international law since the 17th century. Within a zone of water immediately adjacent to its shoreline, a nation is allowed to exercise virtually complete sovereignty--over the surface of the water, the water column, the sea floor beneath, and the air space above--subject only to the obligation to permit the "innocent passage" of ships through the zone. A good description of the legal development of the concept of the territorial sea in international law is provided by Schachte (1990).

The territorial sea can be thought of as a kind of buffer between the land area of a coastal nation and the adjacent high seas. Originally, its existence was predicated on the need for coastal nations to be able to control (hold dominion over) the band of sea immediately adjacent to their shores for defensive purposes and, indeed, the early width of the zone was said to be linked to the range of a cannonball fired from the coast (Churchill and Lowe 1983). Most coastal nations claimed territorial seas of 3 or 4 miles in width up to World War II. Beginning in 1946-1947, stimulated in part by the so-called Truman Proclamation in 1945 in which the United States declared jurisdiction and control over the oil and gas resources of continental shelves adjacent to its shores, certain Latin American countries with minimal continental shelves claimed territorial seas of as much as 200 miles in width (Churchill and Lowe 1983).

This tendency toward "creeping jurisdiction" concerned the United States and other maritime nations which sought free navigation over the world's oceans to the greatest possible extent. The U.S. was especially concerned that territorial seas broader than the traditional 3 miles in width would threaten free transit through the more than 100 straits around the world used for international navigation. (Territorial seas of 12 miles, for example, would

eliminate high seas in all straits narrower than 24 miles in width.) Hence, up to the time of the Third U.N. Law of the Sea Conference (1974-1982), the U.S. strongly resisted efforts to increase territorial seas beyond the 3-mile width. In 1982, however, the Law of the Sea Conference adopted a convention that allowed nations to claim territorial seas of up to 12 nautical miles in width but also, in effect, guaranteed the right of free passage (called "transit passage") through straits used for international navigation. Given the near universal acceptance of these provisions of the convention, the U.S. re-evaluated its position on the issue of the width of the territorial sea and, in 1988, made the decision to broaden the U.S. territorial sea to be consistent with the new international norm.

The proclamation issued by President Reagan on December 27, 1988, is reproduced in Appendix 1. The document states that, henceforth, the U.S. territorial sea will be 12 nautical miles in width; that the president has the power to take such action under the Constitution; that the action is consistent with international law as embodied in the 1982 LOS Convention; that the action is being taken to protect national security and other interests of the United States; and that nothing in the proclamation extends or modifies the jurisdiction of the coastal states or of any federal agency.

While the action of the president on behalf of the national government was plainly taken for national security purposes, it is clear that the broadening of the territorial sea has domestic implications as well. The following are some of the domestic questions raised by the action:

1. What federal laws apply in the new 3- to 12-mile-zone territorial sea?

2. Has the "coastal zone," for purposes of federal consistency under the Coastal Zone Management Act of 1972 (CZMA), now been extended to 12 miles?

3. Have the "navigable waters of the United States" been extended to 12 miles and with them, the jurisdiction of the U.S. Army Corps of Engineers under the Rivers and Harbors Act of 1899 and the 1970 Clean Water Act?

4. Are coastal zone management programs similar to those being put into place by the coastal states in the 0- to 3-mile portion of the territorial sea now needed in the 3- to 12-mile area as well?

5. If so, who should prepare such management programs? (At present, no federal agency has overall responsibility for the area.)

6. Should the adjacent coastal state play a role in the planning and management of the 3- to 12-mile zone? If so, what type of role?

Legal analysts generally agree that the answers to the first three questions lie in the "intent" of Congress when it enacted the various pieces of legislation that pertain to the territorial sea. The central question is whether Congress intended for the geographic scope of a particular piece of legislation to automatically expand with any (future) expansion of the U.S. territorial sea (Knecht 1990). So far, only one piece of federal legislation has been examined with respect to congressional intent--the Coastal Zone Management Act of 1972--and sharply conflicting conclusions have been reached. The U.S. Justice Department and the National Oceanic and Atmospheric Administration concluded that the seaward boundary of the coastal zone (for purposes of the CZMA) remains at the old territorial sea boundary--the 3-mile limit (Knecht 1990). Two other authors, both associated (now or in the past) with the State of California, reached the conclusion that the coastal zone (for federal consistency purposes under the CZMA), has now been broadened to 12 miles in width (Saurenman 1990 and Eichenberg 1990). However, the question was settled in October 1990 when Congress, in enacting the legislation reauthorizing the coastal zone management program, explicitly defined the "coastal zone" as extending only to the 3-mile limit contained in the 1953 Submerged Lands Act.

Meanwhile, Congress is considering legislation that is designed to reduce the current uncertainty by, in effect, placing a fixed 3-mile distance on the territorial sea in all federal legislation, regardless of earlier congressional intent. Such an action could not be considered a long-term solution, however, since it would appear to create a legal void in the 3- to 12-mile zone.

Since the time of the proclamation, certain coastal states and the organizations representing them have been examining the extended territorial sea

and its implications. Individual states and territories have testified at the three congressional hearings so far held on the issue (July 1988, March 1989, January 1990). Representatives of the Coastal States Organization and the Western Governors' Association have also testified on the issue. To date, the testimony by states individually or on behalf of the coastal states collectively has tended to be general in nature and has emphasized the substantial interest and concerns that many states have relative to the extended territorial sea and the resources it might contain. Increased state competence and expertise relative to the management of ocean resources has also been highlighted (U.S. House of Representatives 1989). It is likely, however, that most coastal states have not yet studied the issue in a substantial way and that their positions on this matter are still relatively undefined.

Bearing in mind that Congress might be forced by the continuing uncertainty to act soon on the issue of the expanded territorial sea, the Western Governors' Association took steps to survey the coastal states regarding their views on these issues. Of the 17 responding coastal states, 13 appeared to support either joint or shared management with the federal government (8 states) or full state control (5 states). Several states and territories have already undertaken initiatives pertaining to the extended territorial sea and, in some cases, the EEZ beyond. Active study and/or policy development with regard to the territorial sea is under way in Alaska, Hawaii, Washington, Oregon, California, North Carolina, and Florida (Cicin-Sain 1990).

The State of Delaware is also now beginning to examine this issue in somewhat more detail. On June 8, 1989, the Attorney General's office released a memorandum agreeing with the California Attorney General's opinion on the impact of the expanded territorial sea on the extent of the coastal zone for purposes of the CZMA (see Appendix 2). However, the state has not yet developed a policy position with regard to the expanded territorial sea or the role that the state should play in its planning and management. It is relevant to note, of course, that Delaware, given its limited ocean coastline, possesses one of the smallest territorial seas of any of the U.S. coastal states. This report is intended to provide information that will be of use to state policy officials as they fashion a position on this matter.

Section Three--The Offshore Boundary Problem

Before Delaware's interest in the 3- to 12-mile zone can be assessed, problems related to the lateral marine boundary between Delaware and New Jersey must be examined, as the nature of the lateral boundary significantly affects the size of Delaware's potential ocean area. New Jersey and Delaware do not agree on how the boundary between them in Delaware Bay should be extended into the Atlantic Ocean (see Figure 1 for a map showing Delaware's jurisdiction in Delaware Bay and its present 3-mile jurisdiction in the Atlantic Ocean). New Jersey, after apparently agreeing with Delaware in 1975 on a "due east" line (see Line A in Figure 2), in 1978 proposed a far different marine lateral boundary line, one that was based on (and simply extended) the prevailing direction of the boundary in the lowest portion of Delaware Bay (Line B) (Jordan 1989). A so-called "equidistant line" is also shown on the map (see Line C) as the use of this principle in certain circumstances is firmly rooted in international law. These three proposals are summarized in Table 1.

The lateral boundary between Delaware and Maryland is also not agreed upon but almost certainly will be either a "due east" line or very close to it (line D in Figure 2), as a line with such a direction is roughly equivalent to an equidistant line (given the approximate north-south trend of the coastline) and would also parallel (and hence be consistent with) the agreed upon "due east" line between Virginia and Maryland. Obviously the amount of ocean area that potentially could be "claimed" by Delaware in the 3- to 12-mile extended territorial sea would be greatly influenced by the location of the New Jersey-Delaware marine lateral boundary. The area of ocean "space" within the 3- to 12-mile zone offshore Delaware with three possible offshore boundaries is estimated very roughly in Table 1.

If the State of Delaware, as a matter of policy, decides to seek a stronger role in the expanded territorial sea, early resolution of the boundary problem with the State of New Jersey increases in importance, as the amount of ocean area

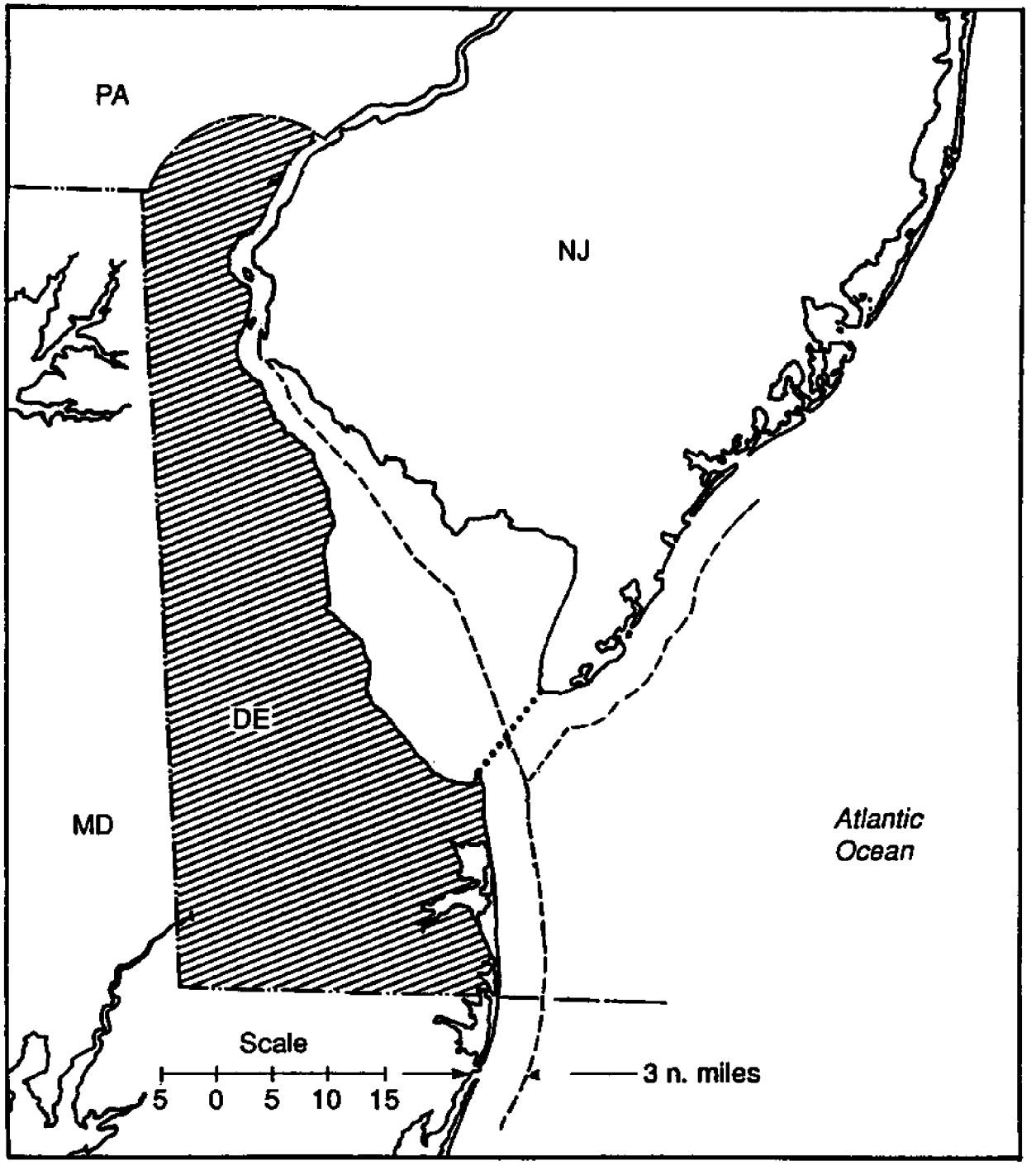

Fig. 1 - Present Bay and Ocean Jurisdiction of State of Delaware

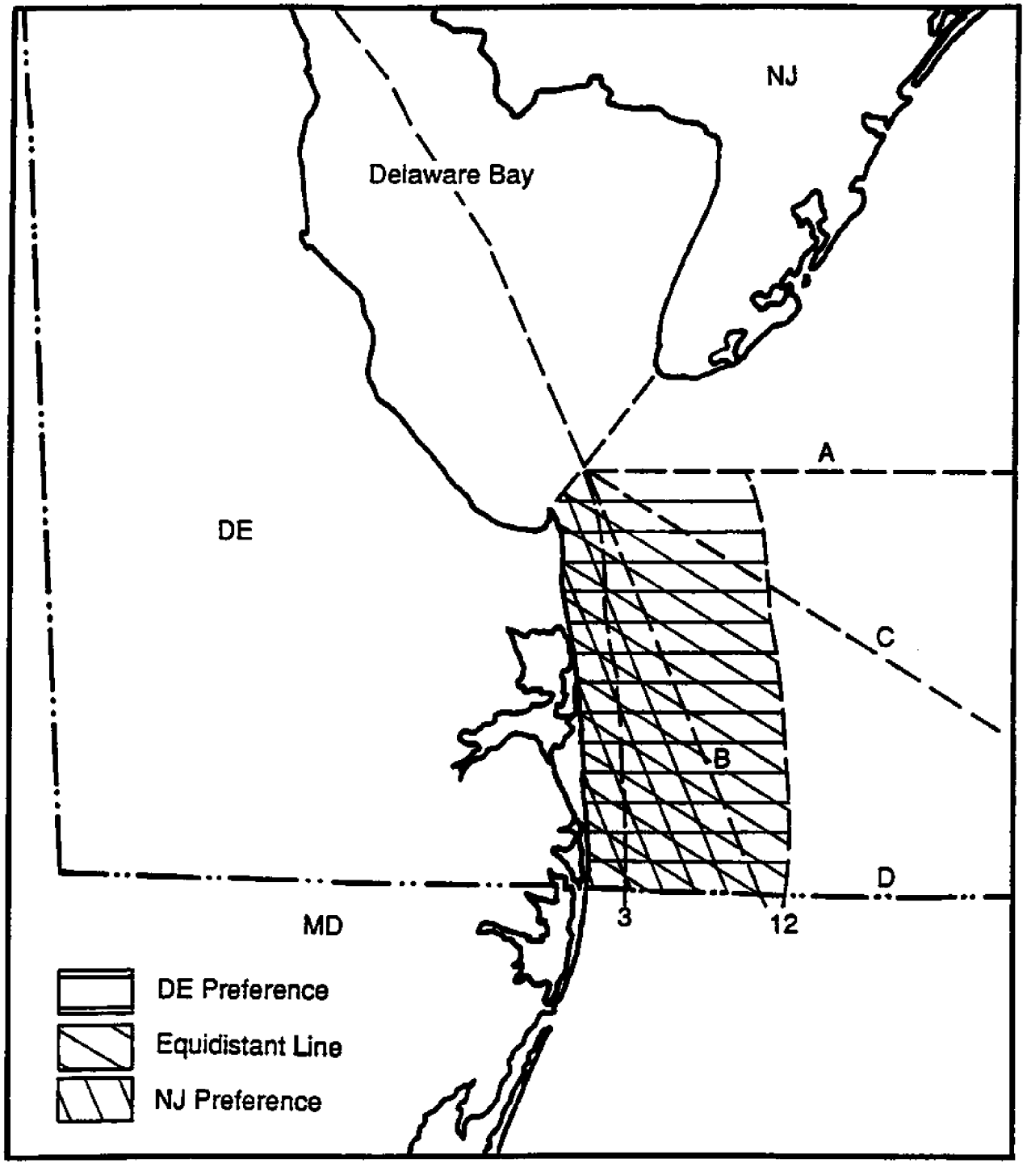

Fig. 2 - Effect of three different lateral marine boundaries on the ocean area included within a state of Delaware 12-mile territorial sea.

TABLE 1

Size of Delaware's Ocean Area Under Different Boundary Conditions

Boundary	Type of Line	Approximate Area of Ocean Between 3 and 12 Miles*
Line A	Due East Line (Delaware's preference)	250 square nautical miles
Line B	Prevailing Direction Line (New Jersey's preference)	110 square nautical miles
Line C	Equidistant Line (International Law Principle)	230 square nautical miles

*Note: The approximate area of Delaware's present ocean jurisdiction (out to the 3-nautical-mile line established as the state boundary in the Submerged Lands Act of 1953) is 75 square nautical miles.

potentially within Delaware's jurisdiction directly depends on the ultimate position of this boundary line. The location of the New Jersey-Delaware marine lateral boundary will also play an important role in determining any federal oil and gas revenues to be shared with Delaware (if and when revenue sharing is authorized, and if and when oil or gas is discovered). Given the distant location of the potential hydrocarbon deposits (the Baltimore Canyon area about 80 miles offshore), any boundary line lying southward of an equidistant line (Line C) would seem to rule out the possibility of any future federal oil and gas revenues to the State of Delaware.

Section Four--Potential State Interests and Concerns In the Extended Territorial Sea

In this section of the report, a preliminary review is made of the potential interests and concerns of the State of Delaware related to the extended territorial sea. These interests and concerns will center on both the resources (fish, minerals, hydrocarbons) that are known to exist in the ocean area adjacent to the State of Delaware, especially in the 3- to 12-mile zone, and the uses (navigation, ocean dumping, etc.) that are found (or are planned or likely to be found) in the same area.

Listed below are the resources and uses of the offshore ocean zone that are of potential interest and concern to the state together with the major sources consulted for the information.

TABLE 2

Delaware Offshore Area Resources and Uses

Resources/Uses	Source of Data and Information
Fisheries	Division of Fish & Wildlife (DNREC), National Marine Fisheries Service (U.S. Dept. of Commerce), and Univ. of Delaware scientists
Offshore Oil and Gas	Delaware Geological Survey (DGS) and U.S. Dept. of Interior (MMS)
Hard Minerals (Primarily sand and gravel)	DNREC, DGS, U.S. Army Corps of Engineers (Philadelphia District)
Navigational Safety	U.S. Coast Guard, Delaware River and Bay Pilots Association, and the Maritime Exchange (Philadelphia)
Ocean Disposal of Wastes	Environmental Protection Agency (Region 3)

Each of these resources and uses is discussed below. Not withstanding the limitations found in much of the data, an effort has been made to answer the following types of questions:

--What kinds of resources (type, magnitude, variability) are found in the 3- to 12-mile zone?

--What kinds of resources are found in the 0- to 3-mile zone?

--Does the state actively manage the resources in the 0- to 3-mile zone?

--Is the state involved in managing (or assisting in the management of) the resources in the 3- to 12-mile zone?

--Would the state's interests in the resources be better protected if it could exercise management control over the whole 0- to 12-mile range?

And for the uses:

--Are the uses different in the 3- to 12-mile zone as compared to the 0- to 3-mile zone?

--Are there potential uses in the 3-to 12-mile zone that could have adverse impacts on the state's environment and/or resources?

--Does the state have adequate legal leverage over such activities at present? If so, in what way?

The goal, of course, is to develop the information needed to form a basis for the state position with regard to the extended territorial sea.

Delaware's Fisheries

Delaware's fisheries have had a long and varied past. The first users of Delaware's abundant marine resources were Native Americans. They traded dried oysters, fish meats, and shell ornaments with inland tribes (Rockland 1983). Later, in the 1800s, shad was important to the inhabitants of the region, providing an inexpensive source of protein. Sturgeon, both the adult and its eggs, were significant from about 1850 until the late 1930s (Rockland 1983), when the species ceased to exist in any numbers, probably due to overfishing. In the 1940s, croakers (or hardheads) were abundant but today are rare.

The most important species in the history of Delaware's commercial fishing industry was the menhaden. In 1953, Lewes, Delaware, led the nation in pounds of fish landed--400 million pounds--of which 360 million pounds were menhaden (Price and Dinkins 1986). By 1966, the stocks, once used for soil enrichment, oil for lamps and paints, and a source of vitamin B_{12}, were so depleted that menhaden ceased as a major fishery in Delaware. The decline has been attributed to several factors--the natural cyclical nature of the fishery, overfishing, and degradation of estuarine nursery areas (Price 1973).

The oyster fishery is the state's oldest shellfishery, reaching its peak levels shortly after World War II. In 1954, the value of oysters landed in Delaware was $2.7 million (Lesser and Ritchie 1979). At this time, Delaware had 15 large dredge boats, landing facilities, and several shucking houses. The fishery ended for all practical purposes in about 1958 when MSX disease virtually destroyed the population. A surf clam industry exists in the state, but clams currently are harvested at relatively low levels (Rockland 1983).

Summer flounder was taken at significant levels in Delaware in the 1950s, but with the prohibition of trawling in the bay, the stock has become less important. The croaker was prominent in 1955 and 1957 (Rockland 1983), but the species has exhibited sporadic changes in migratory patterns and stock size. Striped bass and trout have also been caught in large quantities, as are eels, which are sold as bait to crabbers and exported live to Europe and Japan. Crabs and lobster also continue to be taken.

Today, the sturgeon and menhaden fisheries are largely absent in Delaware, while shad and oyster fisheries continue, but on a much smaller scale. Instead, the bluefish and weakfish, found only in limited quantities in the late 1950s and early 1960s, are now leading the industry (Price and Dinkins 1986). Changes in the types of species that have historically dominated the Delaware fishery are thought to be the result of not only climate-related conditions but also human-induced impacts (Price and Dinkins 1986).

Of primary importance to the present study is the location of fish stocks of economic or recreational importance to the State of Delaware. If the stocks

of primary interest are found in Delaware Bay or in the ocean but within 3 miles of shore, then the extension of the territorial sea from 3 to 12 miles in breadth will be of little consequence to Delaware's fishery interests. However, if significant stocks of fish of economic interest to the state are found in the 3- to 12-mile ocean zone or migrate in and out of this zone, increased state attention to this new jurisdictional zone could be merited.

As is often the case with fisheries information, the available data have a number of shortcomings. First, the information is based on landings data; i.e., landings reported by commercial fishermen or surveys of fish catches by recreational fishermen. Such information can be inaccurate for several reasons. Fishermen may not know the exact location where their fish were caught, and even if they do, it could be advantageous to them (because of competition or to circumvent fishery regulations) to report erroneous locations. Furthermore, one would prefer information that relates more directly to stock abundance, such as scientific population surveys and surveys of eggs and larvae, rather than information derived from landings data alone as factors such as market conditions can affect fishing effort and, consequently, the number of fish landed.

An additional problem is related to the fact that landings data, at most, are only divided into two categories: landings of fish reported as having been caught in the 0- to 3-mile ocean zone, and landings of fish reported as having been taken in the 3- to 200-mile ocean zone. No data exist on catches in the 3- to 12-mile zone per se. Hence, this critical piece of information has been "inferred" from the available data based, in part, on discussions with local fishery experts.

In the sections below, we first examine recreational fishing in Delaware, as it appears to exceed commercial fishing activity. We then turn to commercial fishing and examine landings information and apparent location of catches. Finally, some conclusions are drawn with regard to the relevance of the expanded territorial sea to Delaware's fisheries interests.

Recreational Fishing. Data on recreational fishing in Delaware are obtained each year through aerial surveys and dockside interviews. According to

preliminary data from the National Marine Fisheries Service, total participation in 1989 was estimated to be 279,000 persons, 57% of whom were out-of-state visitors (NMFS 1989). These individuals took a total of about 917,000 fishing trips during the year. Data from the previous year (1988) indicated that private/charter boats comprised 45.3% of the participation, with shore fishing accounting for 39.8%, and head boats (party boats) 14.9%. The 1989 preliminary data show that 4,371,000 fish were estimated to have been taken by recreational fishers during the year (see Table 3). Aside from dogfish shark and toadfish, bluefish, weakfish, black sea bass, tautog, and Atlantic mackerel were the dominant catches. As Table 4 shows, the numbers of these species caught per year varied widely over the half-dozen years between 1982-1987 as did the total number of fish estimated to have been taken (Seagraves 1988).

While Delaware has about 260 miles of tidal shoreline, the focus of this study is mainly the 26-mile Atlantic shoreline portion. With regard to shore-based fishing effort, Atlantic beaches account for the greatest share--54.2% (Seagraves 1988). The number of fish caught per recreational trip, however, was highest for private/charter boats in Delaware Bay (3.0), private boats in the small bays (1.7), head boats (1.6), and then shore-based fishers (0.3).

With regard to the ocean area adjacent to the Mid-Atlantic region as a whole (including New Jersey, Delaware, Maryland, and Virginia), recreational fishermen are estimated to take 25% more fish from the 0- to 3-mile ocean zone as compared to the ocean area beyond 3 miles. In terms of the economic impact of recreational fishing on the state, Rockland (1983) estimated that a total expenditure of about $13 million could be directly attributed to recreational fishing activity in Delaware for the year 1982. He also suggested that 450 jobs and $3.5 million dollars in wages were associated with recreational fishing in Delaware during that year (Rockland 1983).

TABLE 3

Estimated Total Number of Fish Caught by Marine Recreational Fishermen, by Species Group--Delaware (January 1989-December 1989)

Species Group	Estimated Catch (In Thousands)
Toadfish	915
Bluefish	542
Dogfish Shark	497
Atlantic Mackerel	463
Tautog	376
Black Sea Bass	367
Weakfish	316
White Perch	159
Summer Flounder	144
Skates/Rays	119
Spot	93
Sea Robin	63
Red Hake	55
Sharks	49
Herring	46
Freshwater Catfish	43
Eels	*
Codfish/Hake	*
Striped Bass	*
Sea Bass, Other	*
Dolphin	*
Scup	*
Porgy	*
Kingfish	*
Atlantic Croaker	*
Barracuda	*
Cunner	*
Little Tunny/Atlantic Bonito	*
Tunas/Mackerel	*
Winter Flounder	*
Flounder, Other	*
Other fish	*
Total:	4,371

* Denotes less than 30,000 reported. However, the amount actually reported is included in the total.

Source: National Marine Fisheries Service Preliminary 1989 Atlantic and Gulf Marine Recreational Fisheries Statistics Survey Estimates Tables.

TABLE 4

Year-to-Year Variations in Marine Recreational Fish Taken in Delaware--1982-1987

Total Number Caught by Species	1982	1983	1984	1985	1986	1987
Summer Flounder	327,649	891,570	850,040	644,635	259,151	280,200
Weakfish	114,178	688,369	604,457	1,937,870	1,154,981	939,300
Bluefish	166,594	207,215	137,436	433,800	316,248	372,000
Black Sea Bass	21,142	22,987	15,154	24,575	144,225	51,800
Tautog	21,069	9,199	39,413	32,250	55,661	20,400
Other species	126,563	118,711	88,664	140,865	209,570	154,200
Total Number Fishes Caught	777,195	1,938,051	1,735,164	3,213,995	2,139,836	1,817,900

Source: "Survey of the Sport Fishery of Delaware Bay" by Richard J. Seagraves, Delaware Division of Wildlife, April 1988.

Commercial Fishing. There are basically three types of fish and shellfish found off the coast of Delaware. First, are endemic species, those living year-round in the region, such as the oyster. Second, are the boreal fish, such as cod, which migrate into the area in the winter. Third, are temperate species, present only in summer, such as weakfish (Rockland 1983). As with the recreational catch, weakfish have dominated Delaware's commercial catch in recent years. In 1989, for example, they represented 44% of the total finfish catch. Weakfish, along with American shad, bluefish, black sea bass, and menhaden accounted for about 90% of the total commercial landings (1,204,947 lbs.) in 1989. Note that these figures (and those in Table 5) do not include catches by recreational gill-net fishermen, who are not required to maintain records or file reports. A comparison of yearly commercial landings (in pounds) can also be found in Table 5 (Miller 1990).

Most of the commercial catch in 1989 occurred in Delaware Bay (77%), followed by the Atlantic Ocean (18%), and the Delaware River (2%). The Indian River, Nanticoke River, and Rehoboth Bay accounted for the remaining 3% (Miller 1990). Of the species caught in the Atlantic Ocean in 1989, black sea bass catches were 61% of the total, with American shad and weakfish constituting 28% of the remainder. The number of commercial licenses issued in Delaware in 1989 was 179, including 129 commercial gill-net licenses. Fixed and drifting gill-net gear was responsible for 86% of the commercial landings in 1989 (Miller 1990).

As stated earlier, information as to whether particular fish were caught inside or beyond the 3-mile limit is very poor. However, some of the data collected by the National Marine Fisheries Service are shown in Table 6. The data have been aggregated for the years 1976-1988 and refer to four species that are an important part of the commercial catch by Delaware commercial fishermen. In Table 6, it is observed that three out of four species were taken in considerably larger abundances from within the 3-mile limit as compared to beyond it. In comparison, black sea bass was almost exclusively taken beyond the 3-mile territorial sea.

TABLE 5

Reported Delaware Commercial Landings
(in pounds)

Species	Year 1989	1988	1987	1986	1985
Weakfish	530,188	530,603	577,735	723,444	990,817
American Shad	225,043	317,296	258,985	242,356	203,368
Black Sea Bass	132,086	171,010	196,562	167,235	82,159
Bluefish	104,107	209,263	354,634	400,216	187,989
Menhaden	90,451	127,713	22,034	20,081	176,135
White Perch	41,366	37,799	32,326	22,170	14,395
Spot	28,989	37,722	140,109	86,455	17,237
Carp	16,906	33,464	30,654	51,316	5,717
Alewife	8,036	15,998	5,341	5,535	7,567
Tuna species	6,869	3,476	4,511	3,537	3,169
Shark species	6,569	6,917	11,220	3,732	8,674
Summer Flounder	2,950	6,564	4,105	3,679	4,077
Catfish species	2,900	1,690	3,114	2,061	536
Atlantic Mackerel	1,752	2,888	1,422	528	15,936
Black Drum	1,749	2,398	4,720	1,078	1,408
Butterfish	1,688	2,091	857	1,777	3,572
Atlantic Sturgeon	698	545	170	690	353
Tautog	628	670	889	349	2,574
Hake species	430	22	75	49	2,304
Atlantic Croaker	0	162	770	466	66
Other species	1,542	489	1,404	1,173	1,104
TOTAL	1,204,947	1,508,780	1,651,637	1,737,927	1,729,157

Source: "Commercial Fish Landings in Delaware in 1989" by Roy W. Miller, Delaware Division of Fish and Wildlife, 1990.

TABLE 6

Delaware Commercial Fish Landings by Distance from Shore (1976-1988)

Species	Less than 3 miles				More than 3 miles			
	Catch (lbs.)	% at this distance	Value ($)	%	Catch (lbs.)	% at this distance	Value ($)	%
Bluefish	2,535,100	97.3	462,911	97.5	70,100	2.7	11,899	2.5
Flounder	61,800	99.7	46,571	99.5	200	0.3	242	0.5
Mackerel	18,900	84.8	3,269	85.4	3,400	15.2	561	14.6
Sea Bass	1,200	0.1	955	0.2	1,031,800	99.9	539,120	99.8
All	2,617,000	70.3	513,706	48.2	1,105,500	29.7	551,822	51.8

"Catch" refers to the catch (in lbs.) of each species at each distance; the "% at this distance" designates the percentage of the total catch that was caught within 3 miles of shore, etc. Thus, the 97.3% caught at less than 3 miles for bluefish, for example, combines with the 2.7% caught at more than 3 miles to equal 100%.

"Value" represents the worth in dollars of each catch, and the "%" is the percentage of the total value for each species. Thus, the 97.5% of the total value earned at less than 3 miles for bluefish, for example, combines with the 2.5% earned at more than 3 miles to equal 100%.

Source: National Marine Fisheries Service.

It should be noted that stocks of fish are known to migrate seasonally between inshore waters and offshore waters as well as north and south along the Atlantic coast. For example, stocks of flounder or weakfish might be found beyond the present 3-mile limit at certain times of the year and at other times, be found predominantly within the 3-mile limit, or in Delaware Bay. However, quantitative information on seasonal variations in the location of fisheries stocks is not yet available.

Fisheries Management. We now turn briefly to the management of fishery stocks of interest to the State of Delaware and seek to understand the extent to which the state is able to exert effective management controls.

Three agencies are involved in the management of fishery stocks in the Atlantic Ocean adjacent to Delaware: Delaware's Division of Fish and Wildlife (within the Department of Natural Resources and Environmental Control) for stocks located within the 3-mile limit; the Mid-Atlantic Fishery Management Council for stocks located primarily beyond the 3-mile limit in the Exclusive Economic Zone; and the Atlantic States Marine Fisheries Commission for coordinating the management of stocks migrating between adjacent states in the Mid-Atlantic region. Table 7 lists the stocks of primary interest to Delaware (recreational and commercial), and provides a subjective judgment as to their current condition (under stress or not) obtained from discussions with knowledgeable fishery specialists at the University of Delaware and in DNREC (interviews 1989-1990). Table 7 also indicates which of the above three entities has primary management (or coordination) responsibility and estimates the likelihood that an extension of Delaware's fishery jurisdiction to 12 miles would permit improved management.

Ideally, fishery stocks that are found predominantly in Delaware's waters should be managed by Delaware; stocks that are found mostly within 3 miles but which migrate both north and south of Delaware within the inshore areas of adjacent states should be managed by consistent management strategies in each of the involved states; and those that are found predominantly in the EEZ should be managed by federal regional fishery councils.

TABLE 7

Status of Fisheries Stocks of Interest to the State of Delaware

Species	Location of Stock: Bay	0-3 mi.	>3 mi.	Stressed?	Under Management/ By Whom	Would 12-Mile Delaware Jurisdiction Assist Mgt.?
Weakfish	XX	X	x	Yes	No/DE	Perhaps
Bluefish	X	X	x	Perhaps	Soon/FRC & ASMFC	Perhaps
Striped Bass	XX	X	X	Yes, but recovering?	Yes/DE & ASMFC	Perhaps
Summer Flounder	x	XX	X	Yes	Yes/FRC	Perhaps
American Shad	X	XX	x	Recovering?	Yes/DE	Unlikely
Surf Clam			XX	Recovering?	Yes/FRC	No
Menhaden	XX	x		?	Yes/DE	No
Shark	x	X	XX	?	No/	Unlikely
Black Sea Bass	x	X	XX	?	No/	Perhaps
Tautog	X	XX		Somewhat?	Yes/DE	Perhaps
Atlantic Mackerel		X	X	?	Yes/FRC	Perhaps

Key: XX = most common location
X = often found
x = sometimes found

DE = State of Delaware
FRC = Mid-Atlantic Regional Fishery Management Council
ASMFC = Atlantic States Marine Fisheries Commission

Source: National Marine Fisheries Service fishery statistics 1986, 1988, 1989. Charles Lesser, Lee Anderson, Frank Daiber, and Timothy Targett--personal communication 1989-1990.

Unfortunately, given the lack of good data as to where fishery stocks are located and their seasonal migrations, combined with the resistance by state legislatures to adopt consistent management regimes in adjacent states, reality is far from this ideal. Striped bass regulations, for example, differ considerably among Maryland, Delaware, and New Jersey, and such differences could contribute to a slowing in the recovery of that stock. Fishery management plans under the federal Magnuson Fisheries Conservation and Management Act of 1976 exist for the American lobster, Atlantic mackerel, Atlantic surf clam, and summer flounder, but it is not certain that Delaware's interest in these stocks and others might be better protected if the state were in a position to extend its management authority out to the 12-mile limit of the new territorial sea.

In summary, a number of species of finfish and shellfish of interest to Delaware commercial fishermen can be found at various times beyond the present state jurisdictional limit of 3 miles. These include summer flounder, winter flounder, black sea bass, scup, Atlantic mackerel, and Atlantic surf clams. Except for the surf clams, these species are also of interest to Delaware's recreational fishermen. While much better data on location of stocks and migration patterns are clearly needed, it is possible that for a few of these stocks, at least, extending Delaware's fishery jurisdiction to 12 miles might permit improved conservation and management of the stocks.

Aquaculture

The development of aquaculture in the State of Delaware involves primarily the inshore region. In fresh water, striped bass hybridization and the raising of freshwater crayfish has been carried out, while in the estuarine system, oysters have been cultured in substantial quantities. The ranching of salmon has been considered but seems rather unlikely as Delaware has no native salmon population. A task force has recently completed a state aquaculture plan, which could result in more attention being focused on this activity in the future (Delaware Aquaculture Task Force 1990). However, none of the recommendations contained in the task force's report would appear to impact the 3- to 12-mile zone of ocean adjacent to the state.

Offshore Oil and Gas Prospects

In a few coastal states (primarily Louisiana, Texas, California, and Alaska), offshore oil and gas deposits are found in near- and offshore coastal waters. However, no such deposits have been discovered off the Atlantic coast despite the fact that a dozen or more wells of one type or another have been drilled. Interest in the Mid-Atlantic region has focused so far on the Baltimore Canyon area, which is approximately 75 miles east of Delaware and southern New Jersey. While additional federal lease sales can be expected to be held in this area sometime in the future, the prospects for important discoveries of oil or, more likely, natural gas remain uncertain. If and when hydrocarbon deposits of economic interest are discovered and developed, the waters off Delaware and its coastal area could be impacted, as pipeline corridors, pipeline landfalls, and onshore oil and gas processing and support facilities could be proposed.

With regard to potential hydrocarbon resources, Delaware Geological Survey geologists Richard N. Benson and John H. Roberts recently published a paper calling attention to the potential for hydrocarbon deposits in buried rift basins in the near-shore area of the Mid-Atlantic region (Benson and Roberts 1989). While this work is still very speculative, the results of modeling studies indicate that dry gas could be present in reservoirs in synrift rocks beneath more than 6,000 meters of post-rift sediments, and in the oldest post- rift rocks. The authors also conclude that if oil-prone source beds are present in rift basins buried beneath the post-rift sediments of the intercontinental shelf and the adjacent Atlantic Coastal Plain, and providing they are not too deeply buried (less than 4,000 meters), they may still be within the window for liquid hydrocarbon generation. Last, they note that potential structural traps are apparent on the relatively few seismic profiles currently available, and that knowledge regarding the critical unknowns of source, reservoir, and sealing beds can only be gained through evaluation of actual drill hole data.

Hard Mineral Resources

In general, sand and gravel are the least valuable ocean minerals by volume. However, as land-based supplies diminish or are found at ever greater distances from construction projects in urban centers, marine sand and gravel will become economically viable alternatives. Furthermore, marine sources of

sand are attractive for use in beach replenishment projects because they usually require minimum transportation from the offshore deposit to the site of the nourishment project on the beach and tend to have similar physical characteristics (such as grain size and color).

As well-documented, a major problem facing Delaware's Atlantic Ocean beaches is beach erosion. This erosion can be caused by a number of different factors including alongshore transport of sand, periodic storms and the intense wave action associated with them, and, over the longer term, by rising sea level. Recently, concern has been expressed that global warming related to greenhouse gases produced by fossil fuels could increase the sea level along many shores of the world, and hence could also cause increased coastal erosion. Several years ago, Titus and others performed an analysis of the potential erosion likely to be caused by rising sea level at Ocean City, Maryland (Titus et al. 1985). In this analysis, they suggested that while relative sea level increased only about 0.59 ft. from 1930 to 1980, an increase of 1.13 ft. (mid-range low estimate) can be expected between 1980 and 2025. They concluded that the quantity of sand necessary to maintain the current shoreline for the next 40 years will be double the current level required in order to keep up with the likely advance in beach erosion associated with rising sea levels.

In 1989, a large beach nourishment project was completed at Delaware's Fenwick Island, Bethany, and South Bethany beaches. The 1 million cubic yards of sand used in this project was obtained from an ocean site about 3 miles offshore of Fenwick Island (see Figure 3). [This figure also shows the location of Fenwick Shoal (about 5 miles offshore), believed to contain substantial sand deposits similar in characteristics to those found at the near-shore location.] However, no quantitative information exists on the quantity or quality of the sand deposits on Fenwick Shoal.

In a similar context, the Philadelphia District of the U.S. Army Corps of Engineers (COE) is in the reconnaissance phase of a shore protection study of the Delaware coast from Cape Henlopen to Fenwick Island. Some of the draft results of this 18-month effort have recently become available (Trolle 1990). While the reconnaissance study does not obtain new data, it has assembled all of the

existing data and, to the extent possible, has analyzed shoreline conditions, long-term erosion rates, and onshore and offshore sand supplies. Some of the information was taken from a July 1988 publication of the Delaware Geological Survey that reported on Atlantic coast beach sands as a part of its South-East Area Sand Inventory Project (Delaware Geological Survey 1988). Other information was obtained from earlier studies undertaken by the COE and its Coastal Engineering Research Center. Seven potential "borrow" sites for beach replenishment sand supplies are described, but quantitative information is limited to two sites--a site off Bethany Beach and the area including the linear shoals off Fenwick Island (the site from which the sand was taken for use in the 1988-89 beach replenishment projects).

It is our understanding that the final version of the COE shore-protection study will recommend a "phase two," which will propose a feasibility study to be cost-shared between the federal government and the state. This feasibility study will include the acquisition of new data, for example, by actually coring on Fenwick Shoal and obtaining quantitative information about the amount of sand available at that location and at other promising sites. According to the COE, the feasibility study will provide information on potential sand supplies in the 3- to 12-mile zone where virtually none is available at the present time (Broadhurst 1990).

Concerning heavy minerals, a recent study conducted off the coast of Virginia has shown high concentrations of potentially valuable heavy minerals, such as titanium ilmentile and rutile, both within the 12-mile zone and beyond (Virginia Div. of Mineral Resources 1988). This study suggested that important mineral values are not restricted to surficial sediments of the intercontinental shelf, but are found in the upper 4½-6 meters of shelf sediments at several core-sampled locations. Of 390 large volume samples that have been analyzed, 52 have concentrations of one or more economically interesting minerals equal to or greater than threshold values for land-based deposits. The total heavy mineral concentration for all samples averages 3.3%, with the highest value being 14.7%. Samples were obtained along the entire Atlantic coastline at Virginia and at the entrance to Chesapeake Bay. While few similar studies have been done offshore

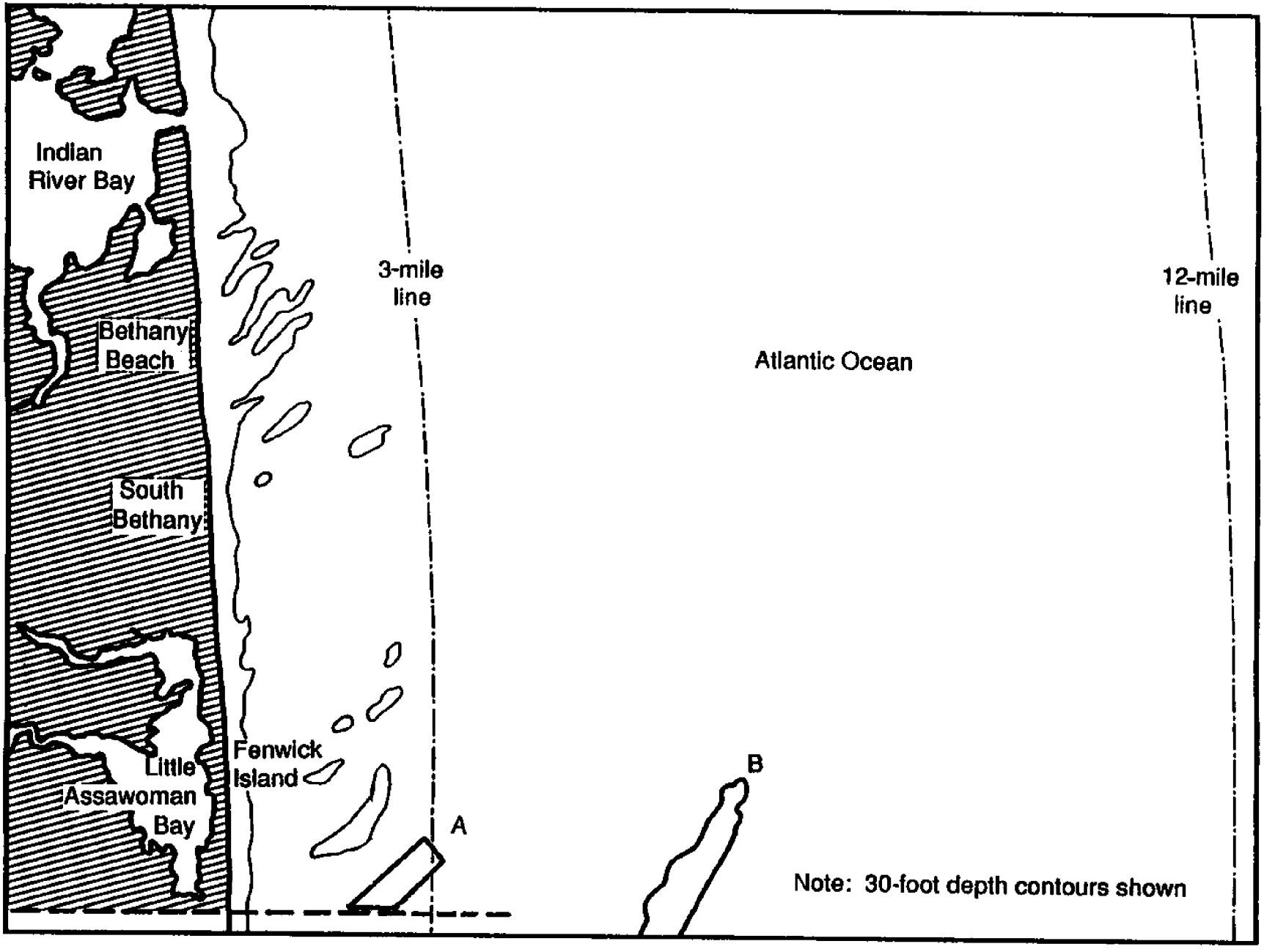

Fig. 3 - Location from which sand was removed for 1989 beach replenishment project (A). Location of Fenwick Shoal (B).

of Delaware, one can assume that, considering the similar geological situation, heavy minerals may also be present in Delaware's near- and offshore areas.

Navigational Safety

The Delaware River and upper Delaware Bay are home to seven oil refineries with a total processing of approximately 1.1 million barrels of crude oil per day. On a daily basis, ships carrying about 1 million barrels of oil make the arduous 80-110 mile journey from the mouth of the Delaware Bay to the refineries. Oil and petroleum products constitute about 40% of the goods carried on the 3,000 ships that traverse the navigation channels leading in and out of Delaware River and Bay ports each year.

In the past five years, five significant accidents have occurred in connection with this navigation (News Journal 1990). Three of these (September 1985, September 1986, and June 1989) involved groundings in the narrow, sometimes rocky, navigational channels, while the other two (March 1986 and August 1990) involved collisions. A total of approximately 1.4 million gallons of hydrocarbons was spilled in these accidents.

The navigational channels in Delaware River and Bay are dredged to a depth of 40 feet. Hence, vessels of deeper drafts must transfer a portion of their cargos to shallower draft vessels (barges) at one of the lightering areas in the lower bay. Virtually all deep-draft vessels are said to "run with the tide" when they travel up the bay and river in order to have another 3 feet of water under the hull. Figure 4 shows the vessel traffic lanes that have been established at the entrances to Delaware Bay. Two lanes exist, the east sea lane and the southeast sea lane, with a traffic separation area between incoming and outgoing lanes in both cases. Bottom typography is such that the use of the east sea lane is limited to vessels having drafts less than 32-35 feet, while vessels with drafts up to 55 feet can employ the southeast sea lane.

Also shown in Figure 4 are the shoal areas of the ocean and bay, i.e., areas that are 30 feet or less in depth. As can be seen, the topography is such that vessels must enter and exit the bay through a relatively confined area immediately north of Cape Henlopen. The most recent accident, in August 1990,

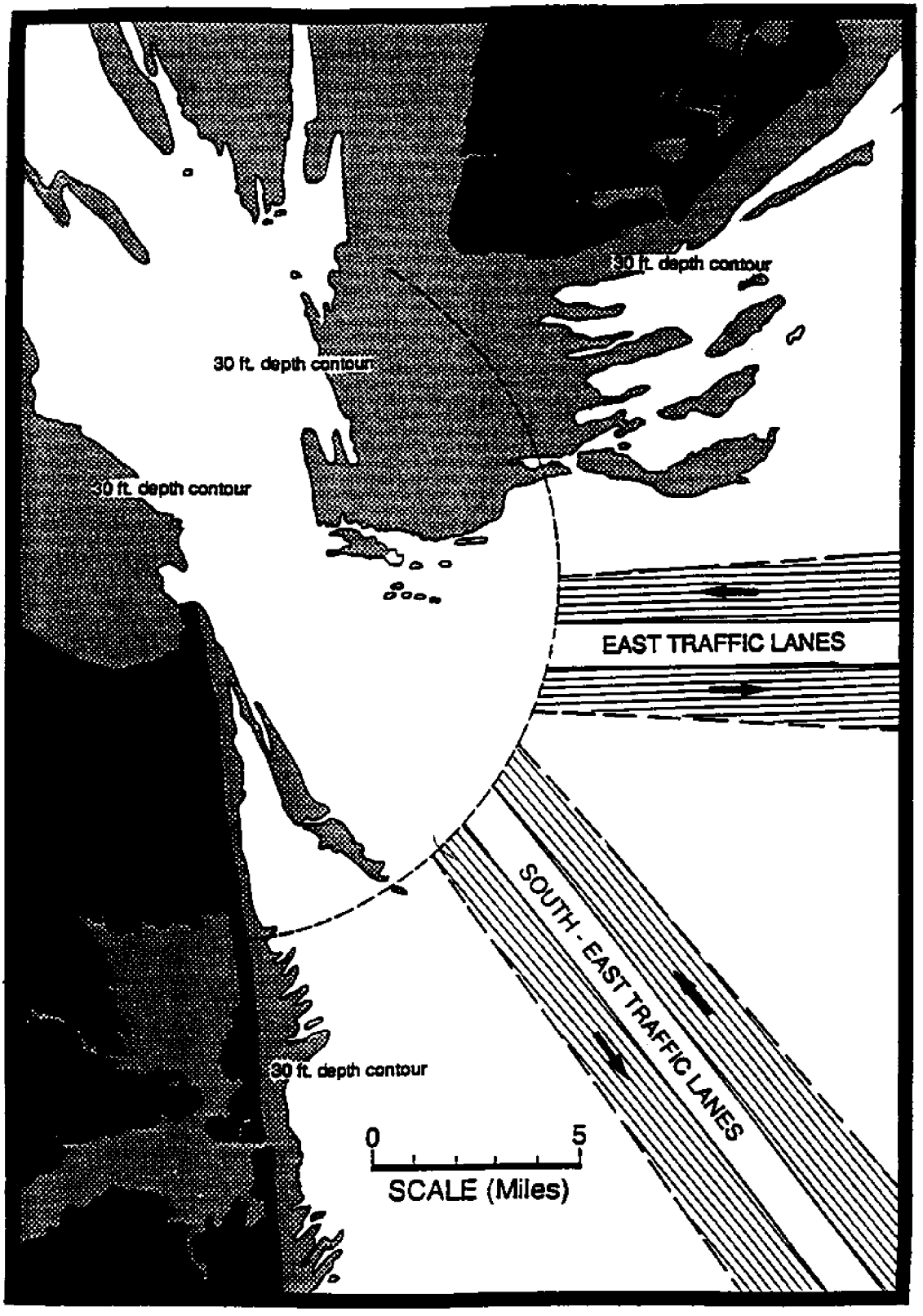

Fig. 4 - Vessel Traffic Lanes Entering the Delaware Bay.

occurred about 3 miles from Cape Henlopen and involved a collision between a tanker and an ocean-going barge traveling in opposite directions. While the exact cause of this accident is not yet known, its occurrence in the congested area around Cape Henlopen highlights the navigational risks present in this area. Increased state attention, therefore, may be called for with regard to issues surrounding navigational safety in the waters off the Delaware shoreline. In this connection, a higher level of state interest in the offshore area of the extended territorial sea might be justified. While the measures that an adjacent coastal state can impose are somewhat limited due to the predominant federal role in the regulation of interstate and international navigation, the state could, for example, take the lead in the development and implementation of an improved oil spill contingency plan.

Other Offshore Activities

Other activities may occur in the ocean areas adjacent to the State of Delaware which could be of concern. High on the list, of course, would be the intentional dumping of hazardous wastes. Indeed, years ago, a chemical-waste dump site was operated off the mouth of the Delaware Bay in the Atlantic Ocean. However, at present, the only authorized ocean dump site in the region (exclusive of sites used for the disposal of dredged material in connection with navigation channel maintenance) is 106 miles east of the southern portion of New Jersey--the "106-mile dump site." With the enactment of the Ocean Dumping Ban Act in late 1988, this site is due to close by the end of 1991.

Section Five--Existing Coastal and Ocean Programs of the State of Delaware

In contrast to most other coastal states, virtually all of Delaware's coastal and ocean-related activities are managed within a single agency--the Department of Natural Resources and Environmental Control (DNREC). Table 8 shows the principal coastal and ocean-related activities of the state and their present organizational location in DNREC. The major state programs are presently split among three divisions--Soil and Water, Water Resources, and Fish and Wildlife--with the oil spill planning work within a fourth--Air and Waste Management. While this split may at one time have been logical, the rationale is less obvious

TABLE 8

Organizational Location of Coastal and Ocean-Related Activities in the Department of Natural Resources and Environmental Control

Division of Soil and Water

- Management of beaches
- Non-point source pollution management (partial responsibility)
- Coastal zone management (policy, networking, oversight)
- Inland Bays recovery program
- Ecosystem restoration

Division of Water Resources

- Oversight of Delaware Bay and Inland Bays National Estuary Programs
- Non-point source pollution management (partial responsibility)
- Marina regulations (water-quality aspects)
- Marine water quality, including NPDES permits
- Submerged lands management and leasing

Division of Fish and Wildlife

- Fisheries conservation and management
- Regulation of boating
- Shellfish leases
- Aquaculture permits

today. If the state were to decide to give greater emphasis to the planning and management of its bay ocean areas, then clear thought should be given to some rearrangement of activities that bring related programs into closer proximity with one another.

In terms of areas of apparent priority attention in coastal and ocean affairs, emphasis appears to be placed on the following:

1. Improving coastal water quality (as demonstrated by the state's active participation in two National Estuary Programs, work on a non-point source pollution management program, and increased attention to marina regulations);

2. Beach planning and management (as demonstrated by the recent preparation of a "Beaches 2000" plan);

3. Fisheries management (especially regarding continuing conflicts between recreational and commercial fishermen over the allocation of declining stocks).

However, visibility for the state's coastal zone management program is virtually nil given the networked nature of the program (e.g., the lack of a formal CZM office or even a CZM-related telephone number in the state telephone book), and the fact that no area-specific special planning and/or regulatory system exists in Delaware's coastal areas even though the entire state is defined as a "coastal zone" for coastal management purposes. Similarly, at present, there appears to be no focal point for ocean-related activities in DNREC or in other parts of the state government.

Therefore, in terms of existing coastal and ocean programs, except for the conservation and management of certain fisheries stocks, most of the state's current effort is devoted to the problems of the Delaware Bay and the Inland Bays, and to those problems along the immediate shoreline. Relatively little effort is presently being expended on use or resource-related issues in the offshore waters currently under state jurisdiction or within the newly extended territorial sea.

Section Six--Conclusions, Options, and Recommendations

There are three principal reasons why a coastal state might wish to exercise a greater degree of jurisdiction and/or management control over the expanded territorial sea adjacent to its coast. First, the 3- to 12-mile zone might contain resources of interest to the state--e.g., fishery stocks, hard minerals, or hydrocarbons--which could be of direct economic or strategic importance. Second, uses might be occurring (or be planned for the future) which could adversely affect economic activities or environmental quality of the adjacent state--e.g., ocean dumping or the marine transportation of hazardous materials, such as oil. To the extent that the adjacent state has additional controls or jurisdiction over the ocean area in question, it would, thus, be in a better position to protect its own interests. Third, the adjacent ocean area might be seen as an inherent part of the adjacent land area, connected by historical and cultural ties. For example, island states and territories often have a keen sense that the surrounding ocean water for some distance seaward (up to 175 miles in the case of the Commonwealth of the Northern Marianas) is a part of their rightful heritage, an area that has been used traditionally for fishing, transportation, and other activities for centuries.

We turn now to the specific situation in Delaware and the resources of potential interest to this state. First, with regard to fishery resources, the data available at the present time are not sufficient to determine whether stocks would be better conserved and managed if the state exerted jurisdiction and control out to a new 12-mile limit. However, it seems likely that one or more important stocks (weakfish, bluefish, summer flounder, and/or black sea bass) will be found to migrate between the near-shore and the 3- to 12-mile zone, and hence may benefit from management over the entire range.

Concerning mineral resources, Delaware does not appear to have hydrocarbon resources as Louisiana, California, and Alaska do, but it does have sand resources in the offshore area that undoubtedly will be important to meet increasing future beach replenishment needs. If a higher level of state involvement and/or control in the 3- to 12-mile zone would result in a greater

assurance that these resources would be available for periodic replenishment of Delaware beaches, such a step would appear to be in the state's interest.

Concerning uses of the offshore area that are or could be of concern to the State of Delaware, ocean dumping does not appear to be a problem, as it is being phased out under the Ocean Dumping Ban Act of 1988 and, except for navigational dredging, should not exist after 1991. Safe navigation, however, must be of concern given the proximity of heavily used shipping channels to the state's ocean and Delaware Bay shorelines. For example, nearly 1 million barrels of crude oil per day pass within 2 miles of the ecologically sensitive Cape Henlopen area en route to Delaware River refineries. An extension of state control to 12 miles offshore would include a significant portion of the navigation traffic lanes approaching the entrance to Delaware Bay. Even given the limitations on the state with regard to the regulation of navigation involving interstate or international commerce, the state could demonstrate a higher level of concern by mounting more active planning and policy initiatives concerning the safety of navigation adjacent to its shorelines.

Finally, with regard to the third point noted earlier, it seems unlikely that the history and tradition of the state can be interpreted to include a significant offshore dimension.

In summary, the 3- to 12-mile zone of extended territorial sea could be important to the State of Delaware in three ways:

1. Important offshore sand resources that very likely will be needed in future years for beach replenishment may exist in this zone.

2. As some fishery stocks of interest to the state may migrate in and out of the zone during various seasons, improved management could result from the extension of fisheries jurisdiction.

3. The state's valuable beaches and sensitive shorelines might be better protected from the threat of damaging spills if the state was able to exert a stronger influence over ships entering and leaving the Delaware Bay, especially those transporting hazardous substances such as crude oil, refined products, and bulk chemicals.

However, it is important to note that additional data and information are needed before a detailed assessment of the state's interests in the 3- to 12-mile zone can be determined. While the current assessment of the U.S. Army Corps of Engineers regarding the potential reserves of offshore sand appears promising, it is not definitive. Hence, additional, site-specific estimates of sand reserves are needed. Similarly, better data on the seasonal migration of fishery stocks are required before a final judgment can be made on the possible improvement in fisheries management that could result from the extension of state jurisdiction. Furthermore, concerning the safety of navigation, additional study is needed to determine exactly what the State of Delaware can legally require with respect to the regulation of shipping in and out of the bay. In this regard, experiences from other states concerning the regulation of oil transportation may be useful.

Options for the State of Delaware Relative to the Expanded Territorial Sea

Last, we examine the options open to the State of Delaware relative to the ocean area included in the expanded territorial sea. The options range from maintaining the status quo to advocating national legislation granting jurisdiction and management control of the 3- to 12-mile zone of the expanded territorial sea to the adjacent coastal state. A set of options is presented, followed by suggestions for an approach that would appear to be appropriate.

Option 1-a. Status quo. This option would be selected if the state believes its interests in the adjacent ocean waters 3 to 12 miles off its shores are not significant at present and will not increase in the near term. No additional work would be done on this issue at the present time.

Option 1-b. Status quo, but obtain additional information. Under this option, the state would endeavor to gain the additional information recommended in order to be in a more definitive position with respect to its interests in the 3- to 12-mile zone. Based on a more comprehensive assessment of those interests, the state would then decide on an appropriate course of action.

Option 2. Development of a set of state policies applicable to the 3- to 12-mile zone. The Attorney General's Office of the State of Delaware has concluded that, for purposes of the federal consistency provisions of the Coastal Zone Management Act of 1972, the coastal zone of the state extends to the new 12-mile limit. However, if this additional legal leverage is to be of value, the state must have policies in place that apply to the

3- to 12-mile zone. Hence, under this option, the state would begin a process of formulating policies (concerning fisheries, minerals extraction, navigational safety, etc.) with regard to this zone. Presumably, after such policies were adopted by the state, they would be formally amended into the state's coastal zone management program.

Option 3. Advocate joint planning and management of the 3- to 12-mile zone with the federal government. In this scenario, the state would support an approach that called for joint or cooperative management of the new zone by the federal government and itself. To be credible, however, the state should also commit itself to the preparation of a management program for the ocean areas under its present jurisdiction (i.e., the 0- to 3-mile zone).

Option 4. Advocate full state jurisdiction and control. Under this option, coastal states would seek federal legislation extending state offshore jurisdictional boundaries to the new 12-mile limit of the territorial sea. This would be favored by coastal states having significant resources or environmental concerns in the 3- to 12-mile zone, or states/territories having a tradition that includes the adjacent waters as a part of their ocean space and heritage. Obviously, this option would be the most difficult to achieve politically. It should be noted that, based on the results of the recent survey by the Western Governors' Association (1990), coastal states appear more likely to favor a joint approach to management of this zone (Option 3) than to opt for full state jurisdiction (Option 4).

Recommended Course of Action For Delaware

General Recommendation. Based on this preliminary analysis, we suggest that the state adopt a "phased approach" in developing its policy with regard to the expanded territorial sea. Initially, it seems appropriate to adopt both Option 1-b and Option 2. Subsequently, depending on the results of the additional information gained, the state would make a final decision with respect to its position on this matter.

Specific Recommendations

1. If economically feasible, the state should join with the Corps of Engineers (Philadelphia District) in the phase-two feasibility study of sand deposits in the offshore region adjacent to Delaware. The phase-one reconnaissance study, now under way by the Corps, will contain information on shoreline conditions, long-term erosion rates, and onshore and offshore sand supplies, but will not contain new data. The feasibility study, however, will obtain new data including, we are told, actual coring of promising offshore areas such as Fenwick Shoals.

2. If possible, the state's existing fisheries data should be re-studied in an effort to better understand the extent to which stocks of most interest to the state migrate between the near-shore ocean area and the 3- to 12-mile zone. Also, consideration should be given to modifying reporting requirements to help ensure that the location of catches is more accurately specified, especially with regard to the 3- to 12-mile zone. Furthermore, efforts should be made to guarantee that the data being obtained by the National Marine Fisheries Service concerning recreational fishing include, to the maximum extent possible, information on fish taken in this zone.

3. As mentioned above, it would be desirable to undertake a legal analysis of the extent of the state's powers to regulate shipping within and adjacent to its offshore jurisdiction. A second aspect of the study should examine the substance of the issue: What would the State of Delaware do if, indeed, it could regulate navigation in certain ways? What kind of hazardous spill contingency planning is needed? How can the interests of the adjacent states be best incorporated into such studies?

4. It is recommended that the state re-examine the way in which it is organized to deal with ocean matters. Is a need developing for a specific ocean organizational focus in the Department of Natural Resources and Environmental Control? Where are ocean policy issues concerning state-federal relations now dealt with? Where are matters related to ocean environmental quality and oil spill contingency planning now lodged? Is there an adequate and appropriate relationship between the state's CZM program and sectoral activities such as fisheries management, beach planning and management, and the estuarine programs? Finally, should use of the coast and use of the adjacent submerged lands be organizationally co-located?

5. The state does not appear to have a specific "wet dimension" to its coastal zone management program. Some states, such as Oregon, have recently (1990) formulated both a territorial sea management program for the ocean side of their coastal zone program and a set of policies applying to important portions of the EEZ. Given the economic and environmental importance of Delaware's portion of Delaware Bay and its Atlantic Ocean jurisdiction, it would seem that such a program is important to Delaware as well. It is recommended, therefore, that a specific territorial sea (or coastal waters) management program be developed by the state to cover the state's water jurisdiction in Delaware Bay, and its present ocean jurisdiction along the Atlantic coastline. The objectives of such a program would be to (a) describe the planning and regulatory framework now in existence in this zone; (b) highlight gaps and inadequacies that exist given present and emerging uses and needs; and (c) develop regulatory and/or planning initiatives to close such gaps. The

preparation of such a program is an important and necessary preliminary step if the state is to undertake a more active role with regard to its bay and ocean areas.

6. It is recommended that efforts be pursued once again with the State of New Jersey to reach agreement on a mutually acceptable marine lateral boundary extending into the Atlantic Ocean from the mouth of the Delaware Bay. This boundary will have increased significance if Delaware seeks to protect and enhance its interests in the ocean area adjacent to its shoreline. It makes sense to reach agreement before an actual resource or use-related controversy develops. One possible way to begin to lay a foundation for an agreement between the two states is to request the Delaware Sea Grant Program to initiate discussions with its counterpart in New Jersey. A small cooperative effort between the two Sea Grant programs that explores the legal background, and delineates the geographic range within which a technically acceptable boundary exists, could set the stage for a resolution of the matter.

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APPENDIX 1

UNITED STATES: PRESIDENTIAL PROCLAMATION ON THE TERRITORIAL SEA OF THE UNITED STATES (December 27, 1988)

Proclamation of December 27, 1988

TERRITORIAL SEA OF THE UNITED STATES

By the President of the United States of America

A Proclamation

International law recognizes that coastal nations may exercise sovereignty and jurisdiction over their territorial seas.

The territorial sea of the United States is a maritime zone extending beyond the land territory and internal waters of the United States over which the United States exercises sovereignty and jurisdiction, a sovereignty and jurisdiction that extend to the airspace over the territorial sea, as well as to its bed and subsoil.

Extension of the territorial sea by the United States to the limits permitted by international law will advance the national security and other significant interests of the United States.

Now, Therefore, I, Ronald Reagan, by the authority vested in me as President by the Constitution of the United States of America, and in accordance with international law, do hereby proclaim the extension of the territorial sea of the United States of America, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Commonwealth of the Northern Mariana Islands, and any other territory or possession over which the United States exercises sovereignty.

The territorial sea of the United States henceforth extends to 12 nautical miles from the baselines of the United States determined in accordance with international law.

In accordance with international law, as reflected in the applicable provisions of the 1982 United Nations Convention on the Law of the Sea, within the territorial sea of the United States, the ships of all countries enjoy the right of innocent passage and the ships and aircraft of all countries enjoy the right of transit passage through international straits.

Nothing in this Proclamation:

(a) extends or otherwise alters existing Federal or State law or any jurisdiction, rights, legal interests, or obligations derived therefrom; or

(b) impairs the determination, in accordance with international law, of any maritime boundary of the United States with a foreign jurisdiction.

In Witness Whereof, I have hereunto set my hand this twenty-seventh day of December, in the year of our Lord nineteen hundred and eighty-eight, and of the Independence of the United States of American the two hundred and thirteenth.

/s/ Ronald Reagan

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M E M O R A N D U M

TO: DAVID S. HUGG, III
EXECUTIVE SECRETARY & PRINCIPAL PLANNER
OFFICE OF THE SECRETARY

FROM: KEVIN P. MALONEY KPM & RSK
DEPUTY ATTORNEY GENERAL

DATE: 8 JUNE 1989

RE: EXTENSION OF TERRITORIAL SEA TO 12 MILES

Until December 27, 1988, the United States territorial sea extended three miles seaward. On that day, President Reagan, by proclamation, extended the territorial sea from 3 to 12 miles. Because of the specific provisions of the Coastal Zone Management Act, the President's action also had the effect of extending the Coastal Zone Act's consistency review from 3 to 12 miles. My conclusion is consistent with an opinion letter from the California Attorney General's Office. (A copy is enclosed for your information.)

Basically, I am in agreement with all of the major conclusions drawn by the California Attorney General's Office. First, the Presidential proclamation does not alter state boundaries. Second, the Presidential proclamation does extend the seaward boundary of the federal coastal zone from 3 miles to 12 miles. Third, the extension of the federally defined coastal zone does not extend the state coastal zone or extend state permit jurisdiction. Fourth, the extension of the federal defined coastal zone does affect the consistency provisions of the Coastal Zone Management Act.

Please see the California Attorney General's Opinion for a thorough review of the authority and legislative histories which support the foregoing conclusions.

Please feel free to call me if you have any questions.

KPM/bac
Enclosure

Xc: Edwin H. Clark, II, Secretary (w/attach.)
Michael F. Foster, State Solicitor (w/attach.)
DNREC Legal Office